DOCTOR OF PHILOSOPHY

Quality management (QM) implementation in the Kuwaiti Oil Industry

An empirical study and a proposed generic framework

Reem Al-Shammari

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Aston University

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Thesis Summary

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In an Arab oil producing country in the Middle East such as Kuwait, Oil industry is considered as the main and most important industry of the country. This industry's importance emerged from the significant role it plays in both country's national economy and also global economy. Moreover, Oil industry's criticality comes from its interconnectivity with national security and power in the Middle East region. Hence, conducting this research in this crucial industry had certainly added values to companies in this industry as it investigated thoroughly the main components of the TQM implementation process and identified which components affects significantly TQM's implementation and its gained business results.

In addition, as the Oil sector is a large sector that is known for its richness of employees with different national cultures and backgrounds. Thus, this culture-heterogeneous industry seems to be the most appropriate environment to address and satisfy a need in the literature to investigate the national culture values' effects on TQM implementation process.

Furthermore, this research has developed a new conceptual model of TQM implementation process in the Kuwaiti Oil industry that applies in general to operations and productions organizations at the Kuwaiti business environment and in specific to organizations in the Oil industry, as well it serves as a good theoretical model for improving operations and production level of the oil industry in other developing and developed countries. Thus, such research findings minimized the literature's gap found the limited amount of empirical research of TQM implementation in well-developed industries existing in an Arab, developing countries and specifically in Kuwait, where there was no coherent national model for a universal TQM implementation in the Kuwaiti Oil industry in specific and Kuwaiti business environment in general.

Finally, this newly developed research framework, which emerged from the literature search, was validated by rigorous quantitative analysis tools including SPSS and Structural Equation Modeling. The quantitative findings of questionnaires collected were supported by the qualitative findings of interviews conducted.

Keywords: Structural Equation Modeling (SEM), National Quality Awards (MBNQA), Operations and Production, Framework, Middle East

Dedication

This thesis is dedicated to

My beloved Mother,
My shining star in the dark nights of life.

My cherished Husband,
My turbo engine throughout my journey of life, always pushing me forward and fast.

My dearest Brothers Meshari and Meshal,
My torches of hope and inner security all the time all the way.

My lovely sisters Amal and Wafaa,
My guardian angels and my comfort zone in this hectic world.

And to My dearest Children,
My northern lights scattering rays of love and joy all over the portrait of my life

…for their unconditional love, endless support and encouragement throughout the course of this thesis and the course of life as well.

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In the name of Allah most gracious most merciful

Praise be to Allah, the lord of the worlds. And the blessings and the peace be upon the last messenger of Allah, Mohammed (peace be upon him).

First and foremost, thanks and praise to Allah, the most Gracious and most Merciful.

To her mother, the author expresses deep gratitude for her constant encouragement and continuous moral and administrative support. Without her prayers, love and wisdom I wouldn't have passed the tough moments and reached this stage.

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CHAPTER 1

INTRODUCTION

1.1 Research Background

Business organizations have become increasingly competitive worldwide in 21st century due to globalization and international trade along with advances in information technology and growing competition. To compete in a global market, organizations need to be equipped with new technology, up-to date information, skillful employees, and advanced managerial skills. This global marketplace with the changes in customer values, rapid changes in technology, and increased economic pressures on companies has led to an increased interest in quality management (QM) (Feigenbaum, 1994; Punk & Hui, 2002; Yeung et al., 2003).

Many research articles have been published about quality management since the mid-1990s. Quality innovators and practitioners such as Deming, Juran, Crosby, Feigenbaum, Ishikawa, and Garvin proposed several methods for quality management (Petersen, 1999). The literature indicates that quality management principles have been applied successfully by many organizations throughout the world (LaKhal et. al., 2006). Excellence models such as Deming model in Japan, the Malcolm Baldrige National Quality Award (MBNQA) model in the United States, and the European business excellence model developed by the European Foundation for Quality Management (EFQM) provide methods to assess quality management activities and recognize excellent companies (Sila & Ebrahimpour, 2002; Porter and Tanner, 2004).

In addition to that, the use of quality management has become widespread among organizations during the last decades. Aims of the businesses organizations may differ but the importance of customers is a matter of common interest, and the ability of organizations to adapt to new customer requirements in a global market is of vital importance for long-term success (Kremetik, 2004).. During the past decades, quality management has been recognized as a major edge for competitiveness and long-term profitability. Numerous approaches to management of quality were suggested, in order to help companies improve efficiency and competitiveness through improvement of quality. One of them most popular and most often recommended approaches is the philosophy of TQM – a holistic approach that seeks to integrate all organizational functions to focus on meeting customer needs and organizational objectives (Kumar et al., 2009; Feng et al., 2006).Moreover, the concept of Total Quality Management (TQM) has been developed as a result of intense global competition. Companies with international trade and global competition have paid considerable attention to TQM philosophies, concepts, procedures, tools, and techniques (Zineldin, 2005; Lopez, 2005; EL-Kafafi, 2006). According to Juran, international competition requires higher levels of quality by organizations (Blackiston, 1996).

When TQM is, compared to other concepts such as quality control or quality assurance, it is found broader since it embraces the whole organization instead of focusing on parts of the product. The use of TQM among western organizations has been relatively high during the 1990s (Lawler *et al.*, 1995). Chase (1998) commented that *"TQM is the unquestioned major development in the field of operations management, as well as in management practices in general"*. TQM has long been a hot topic in business and academic circles. Business managers have been fervently trying to figure out how to do it, while academicians have been trying to determine what it is (Greg *et al.*, 1994; Mehralizadeh *et al.*, 2010). TQM has also been acknowledged as an important subject in management theory and practice and has become a frequently used term in discussions concerning quality. TQM enhances traditional ways of doing business. It is defined as a philosophy and a set of guiding principles that represent the foundation of a continuously improving organization. It is the application of sound management principles, quantitative methods and human resources to improve all the processes within an organization and exceed customer needs at present as well as in future (Besterfield *et al.,* 1999). McAdam and Henderson (2004) stated that TQM must remain focused on organizational practice and business goals including operational as well as strategic. TQM culture must be reinforced by supportive leadership enabling organizations to reduce cost, increased flexibility, improved customer responsiveness and adaptation of new technologies to achieve competitive advantage.

"TQM is, according to Slack (1991), probably one of the most significant ideas to sweep across the manufacturing scene over the last few years". Feigenbaum introduced TQM as a concept in 1957 and defined Total Quality as *"an effective system for integrating the quality development, quality maintenance and quality improvement efforts of the various groups in an organization so as to enable production and service at the most economical levels which allows for full customer satisfaction".*

TQM is an attempt to move the focus of quality away i.e. from just being a manufacturing activity into a major concern for the whole organisation. Deming, considered to be the father of quality control in Japan, asserted that quality starts with top management and is a strategic activity

(1982 and 1986). Ishikawa (1985) argued that TQM is nothing new. It is a way of thinking and the set of activities that simply represent good management practice. Yang (2005) gives more detail by stating that TQM is an integrated management philosophy and a set of practices that emphasizes, among other things, continuous improvement, meeting customers' requirements, reducing rework, long-range thinking, increased employee involvement and team-work, process redesign, competitive benchmarking, team-based problem-solving, constant measurement of results, and closer relationships with suppliers.

Since then, TQM has gained its currency and is accepted as an important management process. TQM is now perceived as a potential source of competitive advantage (Powell, 1995; Reed *et al.*, 2000; Douglas and Judge, 2001). Reed *et al.* (2000) had stated that TQM has a potential to generate competitive advantage, and this functionality has increased considerably over the past few decades.

Studies by several researchers, like (Flynn et al., 1995; Froza and Flippini, 1998; Samson and Terziovski, 1999; Demirbag et al., 2006; Kumar, 2006; Arumugam et al., 2008) have shown yielded favorable conclusion on the effect of TQM and organization performance results such as waste reduction, fewer process mistakes, financial improvements, and overall improvement of the quality of the product or the service.

Add to that, Muhlemann (1992) stressed the total involvement philosophy of TQM in business activities. He defined it as a way of managing to improve the effectiveness, flexibility and competitiveness of a business as a whole. For an organization to be truly effective, every single part of it must work properly together, because every person and every activity affects and in turn is affected by others. TQM is also linked to improvements in customer satisfaction, better knowledge of the processes or improved relationships among employees. However, conflicting reports have been published regarding the effectiveness of TQM programs and authors diverge in the way they perceive the links between quality management practices and performance, (LaKhal et al., 2006; Kremetik, 2004; Nagaprasad and Yogesha,2009)

In today's manufacturing environment, TQM is used as a powerful tool to quantify the way a business functions. Researches have confirmed the strategic benefits of quality programs and better quality is proven to contribute to greater market share and return on investment (Cole, 1992; Philips *et al.*, 1983), lower manufacturing costs; improve productivity (Garvin, 1983) and improve the area of strategic performance (Zhang, 2000; Yang, 2006; Kumar et al., 2009; Arumugam et al., 2008).

The type of organizations that use TQM varies from large to small, private to public and from manufacturing to service organizations. Kruger (1998) and Zairi *et al.* (2006) had referred to TQM as a universal business strategy that is not culture-bound. It is equally applicable to manufacturing and service industries, private and public organizations, structures of different sizes, and to companies of any socio-cultural background.

The implementation of quality management practices and concepts has not occurred at equal levels in different regions of the world. While early implementation started in Japan, the US, and Europe, followed by the South East Asian countries; countries in the Middle East have been a bit behind in the quality journey (LaKhal et. al.,2006; Punk and Hui, 2002). The rise and fall of gas/oil prices in the global market during different periods (late 1982, 1998, early1999, up to 2009) and the dependence of Middle Eastern national economies on revenue from the oil industry have forced these countries to evaluate quality initiatives as a way of improving their products and services (Al-Khalifa and Aspinwall, 2000). To compete in the global market, the business organizations of these countries need to emphasize the importance of utilizing quality management practices, programs, tools, and techniques within all sections of their industries. Thus, this research shall investigate the TQM implementation process in the Oil industry (operations and productions) within a developing Arab country (Kuwait) in the Middle East. Further details about this research will be explored in coming sections.

1.2 Research Problem

Total quality management (TQM) is one of the most popular and durable modern management concepts. It is rapidly becoming one of the competitive issues of the last few decades and definitely will be in this twenty-first century. The pressure on companies to improve has become quite intense as TQM is now considered by many as an important quality and business performance improvement tool (Hendricks and Singhal, 2001; Shenaway et al., 2007; Prajogo and Sohal, 2003; Arumugam et al., 2008). In addition to this, TQM is broadly agreed that central to the long-term success of TQM within an organization is the implementation process. Motwani (1994) had proposed that TQM will nearly always work when the proper methods to execute it are employed. Also, the international quality awards such as Malcolm Bridge National Quality Award, European Foundation Quality Management Award, and the increasing world-wide interest in gaining ISO 9000 certification are all signs indicating that TQM is applicable all over the world (Arumugam et al., 2008; Hafeez et al., 2006; Sila & Ebrahimpour, 2002 Jacobs and Suckling, 2007).

Furthermore, this section shall address the six potential shortfalls and gaps at the existing literature that this research had identified and highlighted.

First gap addresses the universal applicability of total quality management practices (TQM) and implementations in other developing countries, although researchers have traditionally advocated that quality management practices are universally applicable to organizations, some studies have revealed that not all quality management practices are effective in all organizations (Benson *et al.*, 1991; Sousa and Voss, 2002). In addition, there are also scholars who have questioned the universal applicability of quality management (e.g., Garvin, 1986; Yoshida, 1989; Mersha, 1997; Hoskisson *et al.*, 1999). Mersha (1997) has argued, for example, that developing countries possess a host of socio-political and socioeconomic factors that inhibit the transferability of quality management concepts, principles, and techniques to these countries. Hence, as there seems to be acknowledged limitations of the findings of some of the earlier studies in their applicability across national boundaries (Dawson, 1994; Rao *et al.*, 1999). This research, shall contribute to the above debate on the universal applicability of total quality management (TQM) as an example of quality management concepts by subjecting it to an empirical examination and investigation in the Oil industry of a developing Arab country in the Middle East, "Kuwait". The findings of this empirical study will also contribute in generating a new way of thinking regarding total quality management in the various culture contexts, and will also help in minimizing the lack of empirical research done in this area.

The second gap and shortfall identified in the literature was the need for research in process-based, mature, and well-developed industries (Sousa and Voss, 2002). Thus, to meet this need, the selection of oil industry as a well-developed industry to conduct the research in it was made. Moreover, the selection of the oil industry as the research context was also due other important reasons. First, Al-Khalifa (2000) had noted that there are radical changes taking place in Arab oil producing (or Gulf Co-operation Council (GCC) countries which consist of Kuwait, Saudi Arabia, United Arab Emirates, Qatar, Oman, and Bahrain), and TQM is considered to be the ideal philosophy to bring about these necessary changes and restructuring. Hence, it seems quite appropriate to conduct this study in an Oil producing and developing Arab country in the Middle East, such as Kuwait, where the focus of the study will be mainly addressing TQM implementation in Operations and production related to the Oil "Petroleum" industry. Second, the criticality of this industry in Kuwait (an oil producing country) as it is considered as the main and the most important industry in the country .This importance emerge from the major role this industry plays that greatly affects the country's main income. That's due to the fact that the revenue from oil/gas exports is the major national income and is considered to be the state's main source of foreign currencies. Therefore, the oil industry, being the mainstay of the national economy, gain most of the developments, projects, etc.. To add more support to the above, the statistics in the Economic report presented in 2008 by the Central Bank of Kuwait shows that: *"The growth in the State of Kuwait GDP at current prices accelerated during 2008 to KD 39787.4 million, against KD 32586.3 million in 2007, i.e. a growth of KD 72011 million (22.1%) during 2008, compared to a growth of KD 3116.7 (10.6%) during the previous year. he growth in crude oil and natural gas production industry contributed the largest portion (86.9%) of the GDP growth during 2008, and the value added at current prices by this industry rose by KD 6260.5 million or 36.1% to KD 23608.1 million during 2008, against KD 17347.6 million during 2007. Also, the value added at current prices by the refined oil products industry rose by KD 438.6 million or 48.4% to KD 1345.2 million during 2008, against KD 906.6 million during 2007. Thus, the value added at current prices by the oil industries (crude oil, natural gas production industry, and refined oil products industry) increased to KD 24953.3 million during 2008, against KD 18254.2 million during 2007, i.e. a growth of KD 6699.1 million or 36.7%, against KD 946.5 million or 5.5% during the previous year. Consequently, the relative weight of oil industries in GDP at current prices increased to 62.7% during 2008, compared with 56% during the previous year."* (Central Bank of Kuwait, 2010).

Third, the importance of the Oil industry is not limited to the national economy of the Middle Eastern countries. All eleven members of the Organization of the Oil Exporting Countries (OPEC) including Kuwait, Qatar, Saudi Arabia, the United Arab Emirates, Iran, Iraq, Algeria, Indonesia, Libya, Nigeria, and Venezuela are developing countries whose economies rely on oil export revenues. Among these eleven countries, the major oil producers are located in the in the Middle East, including Kuwait, Qatar, Saudi Arabia, the United Arab Emirates, and Iraq. More than 50 percent of US imported oil comes from the Middle East, and it is expected that the dependence of US on the Middle East oil will increase in the near future (Salamah, 2003). Also, Asia-Pacific countries would be importing as much as 95 percent of their oil needs from the Middle East (Salameh, 2003). In short, the oil industry plays a significant role in the economy of the Middle Eastern countries as well as the global economy.

It should be also noted that, after the war against Iraq began in March 2003, more attention has been devoted to the oil industry in the Middle East. Middle East oil is not just important because it is the fuel for the most dramatic growth in the world but also because access to it and its use are becoming intimately intertwined with national security and power (Salameh, 2003). In addition, in May 2001, the US Government's National Energy Policy Development Group initiated an increase in investment in domestic oil resources to diversify further the sourcing of US oil imports by increasing production in new oil provinces.

In addition, Al-Omaim *et al.* (2003) had noted that the investigation of TQM deployment in developing countries indicated that global economic development and TQM have developed a symbiotic relationship with a perception that TQM is an essential prerequisite for economic and developmental success. Crosby (1995) stated that nothing is more important to the prosperity of a developing nation than the quality. The only way a developing nation can increase their trade activities and develop in a sustainable way is to improve the quality of their products and services. Moreover, a thorough overview of TQM literature (Ahire, *et al.*, 1995) shows that it is replete with practitioner-oriented "do-every-thing-right" articles and case studies. Only recently have researchers used empirical studies to examine TQM implementation in detail (Zhang, 2000; Baidoun and Zairi, 2003). Many studies on TQM in operations have been done in developed countries, however very few have been done in Arab developing countries. According to Thiagarajan *et al.* (2001), while total quality management (TQM) in the West lacks theoretical basis, knowledge of TQM in developing economics is almost totally lacking. The scant attention given to research in the developed nations, confused by the acknowledged limitations ofmost of the research findings across national boundaries, has made any efforts to readily learn and transfer empirically sound knowledge to developing economies all the more difficult. It is therefore, important to create TQM knowledge base keeping in view the specific requirements of the developing countries as most of studies on quality management practices have focused on developed countries only (Rao et al., 1997; Al-Khalifa and Aspinwall, 2000; Baidoun & Zairi , 2003) and there is still some lack of information about the nature and stage of TQM implementation in some regions of the world such as Asia, South America, Africa and the Middle East (Sila and Ebrahimpour, 2003). This research is an attempt to reduce this lack of information about TQM implementation in developing countries. In this respect, it is only appropriate and logical to carry out research on TQM implementation in Kuwait as one of these countries (developing countries). This in return shall contribute to minimize this identified gap (third gap) in the literature. Add to that, as the maturity level of quality management in Kuwait is much lower than in the West, and so it was sensible to focus more on TQM concepts and implementation. It is worth mentioning also that this empirical study, to the best of the researcher's knowledge based on the literature review of the subject, is considered the first of its kind to be conducted in the Oil industry at the Kuwaiti Business environment.

Add to that, most of the defined Quality Management constructs cited in the literature were not formulated on the basis of empirical research (Black, 1993; Black & Porter, 1996). Various constructs were identified by various writers based on their own experiences in working as consultants, managers or researchers. Hence, there is a clear dearth of theories and generic models of TQM implementation that are empirically based and validated (Thiagarajan *et al.*, 2001). Based on the literature review, a fourth gap is identified here where there is no coherent national model for a universal TQM implementation in Kuwait. Neither any model has so far emerged to be considered by Kuwait as the official quality model which effectively encourages and recognizes the development of effective quality management in Kuwaiti business organizations and institutions. Hence, it is the main objective of this study to contribute to the establishment of such a model as this research shall identify the main constructs that build a new theory of TQM implementation and empirically examine the relationships between these constructs as they formulate this new model of total quality management which applies to Kuwait Business Environment of Arab developing country. This developed model, in addition to its specific Kuwaiti application, should prove useful for further studies made in other cultural contexts. It should also prove useful, as should the supporting research, for all TQM investigations and implementations.

Finally, this research will attempt to minimize the fifth gap identified in this research where a shortfall in literature was found in previous studies as some other variables, control variables, that could have an impact on TQM implementation framework have not been widely explored (Kumar, 2006; Weltgen 2004). Furthermore, this research shall determine what type of impact or effect these variables obsess on TQM implementation framework components and how they are related to each other's. As relations between variables are often complex than simple bivariate relations between two variables. Rather these relations may be modified, or enhanced by, the addition of a third variable in the research design and framework. Examples of this third variable are mediators and moderators (MacKinnon 2008; MacKinnon et al. 2000). These set of control variables are considered as moderators in this research, a detailed discussion of this subject will be presented in chapter 4. Thus, the set of control vvariables that will be explored in this study are national culture values, the difference in managerial levels, TQM awareness, and a group of demographical variables. Based on the literature review which will be explored thoroughly for these control variables in chapter 4, it is worth noting that such control variables deserve being investigated in the Kuwaiti oil industry. For example, the moderating effect of Individual's national culture values on TQM implementation process, where from the national culture theory perspective; studies stated that there is relevance between the practice of TQM and national culture (Katz *et al.*, 1998; Flynn and Saladin, 2002). And as mentioned earlier the Oil industry in Kuwait is considered the most critical industry in the country, expertise and professional resources from all over the world are being brought in and recruited in this oil sector. That, in return, had led to creating a rich environment of individuals coming from different national cultures and backgrounds. Moreover, the research shall empirically examine the links between the constructs of the newly developed model, the company's gained business results, and these control variables and see how they are related and influencing each others. This, in return, shall contribute to enrich both the literature of TQM implementation in the operations and production organizations in general and the newly developed TQM model in the Oil industry in specific.

1.3 Research Aims

According to McIver (1991), aims, established prior to any decisions regarding methods and the resultant data, should be valid, reliable and useful. The main aim of this research is to contribute to the growing body of knowledge in this field bydeveloping a new generic holistic TQM implementation framework, and defining the set of constructs (TQM implementation components) that forms the building blocks of this conceptual framework according to Kuwait's Business Environment, and also by exploring a set of selected control variables that may not have been all explored earlier and that could have an impact on the level of implementing TQM.

In addition, this research aims to examine the relationship between the developed TQM model components, and hence provide recommendations towards having positive effect of TQM implementation which enhances the organization's gained business results in the Oil industry at the Kuwaiti Business environment.

1.4 Research Objectives

Clear objectives with appropriate methods are the basis of sound research (Claire, *et al.* 1994). The main purpose of this research is to develop a new total quality management conceptual model that applies in general to operations and production organizations at the Kuwaiti Business Environment and in specific to organizations in the Oil "Petroleum" industry, as it will serve as a good theoretical model for improving the operations and production level of the Oil industry organizations in other developing and developed countries.

Moreover, the specific objectives of this research can be summarized as follows:

1. To develop a holistic view and conceptual framework of Total Quality Management (TQM) implementation in operations and production (oil industry) from the literature, which will be explored and also validated through a complementary empirical investigation using a combination of qualitative and quantitative methods.
2. To identify the new set of constructs (TQM implementation components) that builds new theory of quality management according to the Kuwaiti Business environment after performing a detailed investigation of the existing TQM literature.
3. To investigate the causal relationships between these constructs as they shall formulate the conceptual model that shall apply to the Kuwaiti Oil industry in specific and in Operations and productions at the Kuwaiti Business Environment in general.
4. To empirically and thoroughly examine the relationship between the TQM implementation components (TQM Constructs, gained business results, and control variables) of the newly developed TQM model. Also to explore also how the implementation of TQM can significantly affect the gained business results of the company within the Kuwaiti Business environment.
5. To investigate the moderating effect of the control variables group on the newly developed TQM implementation framework and how the TQM main constructs are related to each other. The importance of investigating such moderation effects has been recognized for some time in prevention science (e.g., Edwards and Lambert 2007; Muller et al. 2005; Preacher et al. 2007). Moreover, by examining these moderators effects, the research will be able to investigate whether the relationships among the framework variables differentially affects eachothers or not and wether these moderators did really enhance such these relationships (Donaldson 2001, MacKinnon 2001, MacKinnon & Dwyer 1993, Sandler et al. 1997).
6. To examine and analyze the moderating role and effect of these control variables of research respondents (TQM awareness, managerial levels, individual's national cultural values, and a group of demographical variables) on their perceived level of TQM implementation in the Kuwaiti Business Environment. To elaborate on this objective behind these control variables is as follows:
    a. As TQM awareness level which respondents have might affect their perception to TQM implementation, this can imply that TQM Awareness might have an impact on the perceived level of implementing TQM practices. Hence, the objectives here are:

i. To investigate the relationship between the TQM Awareness and the perceived TQM implementation level.
ii. To investigate if the TQM Awareness moderates and controls the relationship between the constructs of the newly developed TQM model and company's business results.
iii. To investigate the effect of TQM Awareness on company's gained business results.

b. As the Kuwaiti Business environment is rich of managers from different ethnic backgrounds, this can imply that National culture values of these managers might have an impact on the perceived level of implementing TQM practices. Hence, the objectives here are:
   i. To investigate the relationship between the national culture values and the perceived level implementing TQM by examining the impact of national culture values of the managers and test if they are determinants factor on the level of TQM implementation or not.
   ii. To investigate if the national culture values moderates and controls the relationship between the constructs of the newly developed TQM model and company's business results.
   iii. To investigate the effect of national culture values on company's gained business results.

c. This research shall also determine the moderating effect of respondents in different managerial levels and their perception level if implemented TQM practices, hence the objectives here are:
   i. Investigating the existence of consensus or discrepancy between different managerial levels variable and the perceived level of TQM implementation.
   ii. Exploring if the difference in managerial levels as moderator or controllers of the relationship between the TQM constructs of the newly developed TQM model and company's gained business results or not.
   iii. Investigating the effect of the difference in managerial levels on company's gained business results.

d. As the demographical variables of respondents here is related to company, grade, job experience, and nationality. The objectives here are:

i. To investigate if there are significant effect of these demographical variables on the perceived level of implementing TQM.
ii. To investigate if these demographical variables moderate and control the relationship between the constructs of the newly developed TQM model and company's gained business results
iii. To investigate if there are any significant effects of these demographical variables on the company's gained business results.

7. To utilize the findings of these empirical investigations to minimize the found gaps in the literature that has been addressed in section 1.2. Accordingly, recommendations towards having positive effects of TQM implementation in the Kuwaiti Oil industry can be suggested to organizations' management and decision makers, as well as recommendations for future research based on the findings of this empirical study in this Kuwaiti context.

1.5 Research Significance

The importance of this study is at both theoretical and empirical levels, as follows:

1.5.1 Theoretical Level

As said earlier, Mersha (1997) and Hoskisson *et al.* (1999) indicated that there are few empirical studies to show whether quality management theories generated in the US are valid in other parts of the world. Thus, it is expected that this study will contribute in providing this useful information addressing this issue and filling the gap related to the universal applicability of quality management specifically in developing Arab countries in the Middle East and the factors influencing the level of its implementation in these business environments.

Furthermore, an important contribution of this research relies in the significance of the selected industry into which this had been conducted, which is the Oil industry. That is due to the significant and critical role this industry plays in many to aspects and levels as discussed earlier in section 1.2.

In addition, as Sousa and Voss (2002) indicated there is a need to test existing instruments to measure quality management practices on large companies in well-developed industries, specifically process-based industries. In fact, a special issue of the *Journal of Operation*

Management (2003) addressed the need for empirical research in process-based industries. Hence, the Oil industry is a good fit for implementing such a study.

Although most studies on quality management have dealt with developed countries, there is little knowledge about the practice of quality management in developing regions in the world, including the Middle East and Africa as mentioned earlier. Hence, a research on quality management practices in a developing Arab country at the Middle East such as Kuwait will contribute to the academic work and add to the total knowledge of quality management.

Moreover, this research is an original attempt to develop a conceptual model for total quality management and its components in the Kuwaiti Oil industry that will be empirically validated. Hence, this study contributes to overcome the lack of availability of such model in Kuwait as discussed earlier, and to what is currently seen as an obvious dearth of theories and generic models of TQM implementation that are empirically based and validated. It also contributes to minimize the gap found in the limited amount of empirical research of TQM implementation in the Oil industry in developing Arab countries. This study also attributes to the formation of a conceptual model for global quality management and its application, which could be used as a basis for international comparison.
Moreover, as this study aims at understanding the implementation of quality management in the Oil industry in Kuwait, it is found significant since it responds to the call for more research in quality management in the international context (Sila and Ebrahimpour, 2003) especially in the Middle East (Dale *et al.*, 2001).

Finally, this study contributes to the literature by introducing a group of control variables (difference in managerial levels, TQM awareness, national culture values of individuals, and demographical variables) to the TQM implementation framework, and investigating its impact accordingly. This in return minimizes the limited amount of empirical research done in this area as addressed earlier.

1.5.2 Empirical Level

- This is the first empirical study that investigates total quality management implementation in organizations at the Oil industry in the Kuwaiti context.
- This study is the first attempt to study the quality management practices in the Oil industry in the developing countries in the Middle East and specifically the Arab countries using Malcolm Baldrige National Quality Awards (MBNQA) as a the basic reference model

for TQM (as another component is will be introduced to it), and empirically tests for the first time the applicability of the MBNQA in the Kuwaiti context using structural equation modeling (SEM) analysis as some studies had emphasized (Wilson & Collier, 2000). These tests of applicability shall include validating the set of hypotheses representing the relationships among TQM main constructs which had been previously tested and validated in previous studies but in different business environments and different cultural contexts. Add to that, although the current studies in quality management implementation in Middle Eastern countries (Qatar, Jordan, and Yemen) were related to TQM implementation yet most of these studies did not use a general framework (such as Malcolm Baldrige Award Criteria or the Deming Model) for measuring or understanding TQM implementation. Therefore, the results of such studies are not comparable with the results of quality management practices in developing countries since they do not use the same framework for quality management assessment.

- This study shall take the analysis process into a more in-depth process by segregating the interrelationships between TQM components into direct and indirect relationships and effects. This will be done using the Structural Equation model (SEM) technique which is a sophisticated form of path analysis providing greater theoretical validity and statistical precision clarifying the direct or indirect interrelationships among variables relative to a given variable. (Schreiber *et. al.,* 2006). This segregation shall help to disentangle the complex of interrelationships among variables (Lleras, 2005) and also enable the researcher to deal with multiple and inter-related relationships, while providing statistical efficiency and to assess directly unobservable concepts for which respondents possess subjective assessments in terms of a number of observable components (Hair et al., 1998). Such in-depth assessment will enable the researcher also to detect deficiencies in interrelationships and be able to revise and enhance them accordingly.
- This study shall investigate the moderating effect that the set of control variables might have on TQM implementation framework's constructs and outcomes. Identifying such effect in the model will most likely enhance the interrelationships among the building blocks of the research's developed model.
- As this study’s findings will assist in identifying the significant impact of each component of the TQM implementation framework on the gained business results, it will obviously contributes by providing guidelines for practitioners in how to effectively implement TQM in the Oil industry at Kuwaiti in specific and in Developing Arab countries at the Middle East in general.

1.6 Research Questions

With reference to the literature review and previous studies, certain enquiries and questions had been raised which meet the above objectives. These research questions are:

1. What are the main constructs (TQM implementation components) that formulate the new TQM model underlying the Kuwaiti business environment?
2. How are these constructs conceptually related to each other in the newly developed TQM model?
3. What are the roles played by the control variables group (Individual national culture, the difference in managerial levels, TQM awareness and a group of demographical variables) in effecting the perceived level of implementing quality practices underlying TQM constructs in Kuwait Business Environment?
4. Do these control variables moderate and control the relationship between the constructs of the developed TQM model and company's gained business results?
5. Do these control variables affect the company's gained business results?
6. What is the relationship between the constructs in the newly developed TQM model and the company's gained business results?

1.7 Research Process

Instead of naming this section research methodology and design, it was planned to do it differently as details of the research methodology and design undertaken in this study will be discussed at length in chapter 5. Hence, this section focuses more on the overall picture of the research process where research methodology and design components are embedded within it. This in turn, gives a better understanding of the whole TQM framework. However, in very short and basic terms, Mouton (1996, p. 35) defines research method as the total set of means that researchers employ in their goal of acquiring valid knowledge. While Huysamen (1994, p.20) defines research design as the plan or blueprint which specifies how research participants going to be obtained and what is going to be done to them with a view to reaching conclusions about the research problem. The basic steps of research design are the literature review, data collection, piloting, data analysis, discussion, conclusion and recommendations.

So, in the search for a thorough understanding of the TQM framework, the research process has involved five basic stages: 1) identification of research problems/objectives, 2) development of research framework, 3) Research methodology, 4) Data analysis, and 6) discussion, conclusion, and recommendations. As much as possible, the organization of the study is arranged in such a way that it allows readers to follow the process easily.

1.7.1 Identification of Research Problem and Objectives

First, the process involved identification of research problems and objectives. As shown in Figure 1.1, an extensive literature review allowed the concepts and issues of TQM to surface up (Chapter 2). It presents a detailed review of the relevant literature related to TQM fundamentals and models. Chapter 3 provides a comprehensive analysis of the second part of the literature review on TQM models, programs, and its status in the Middle East region in general and in Kuwait specifically.

1.7.2 Development of Research Framework

Second, having identified the research problem, the next process was to identify a research framework which was done in Chapter 4. Since this study makes a contribution by attempting to develop a conceptual framework of TQM implementation in the Oil industry and ultimately clarifying its constructs, the extensive review of various literatures would help to achieve a wider and more in-depth understanding of TQM concepts, implementation issues, and factors that might be effecting it.

The TQM constructs and the set of control variables, that are the building blocks of the conceptual framework, were addressed at this stage; the findings were used in the final stage of the research. Both survey questionnaires and interviews were employed to cross-check the end results.

1.7.3 Research methodology

Third, in order to evaluate the proposed research framework, testing was conducted using a survey questionnaire and interviews. Moreover, Mouton (1996, p. 35) defines research method as the total set of means that researchers employ in their goal of valid knowledge. This type of research calls for knowledge about the ‘what’ and the ‘how’ elements of implementation. The ‘what’ aspects of research require the use of quantitative methods while the ‘how’ aspects are best investigated using qualitative methods. In this study, a methodological triangulation approach will be used as the main data collecting strategy for this research. This approach combines utilizing data collected from the literature review in parallel with mainly using both quantitative and qualitative methods. In the literature review research, previous studies were utilized which are covering issues related to quality management and the total quality management such as concepts, practices, empirical studies' findings, behavioral and cultural relations to quality management, and business results measures as well as previous studies done in developing countries. Moreover, a complementary use of questionnaire surveys as the selected quantitative method, and semi-structured open-ended interviews to collect qualitative data. These questionnaires and interviews will be utilized to collect feedback from research participants. With such triangulation method helps to enrich the research findings and provides better validity for it.

Based on the literature review, a standardized questionnaire was developed to collect data from selected companies in the Oil industry. The survey attempts to contribute mainly in the development of the conceptual framework and to assess respondents' perception levels of TQM implementation in the Oil industry at the Kuwaiti Business Environment. Moreover, to guarantee good reliability of the questionnaire used and more stability of the questions under investigation, a pre-testing for the survey questionnaire i.e. pilot study will be conducted. The statistical information that validates this survey questionnaire will be taken from well-known statistical software called SPSS. This software shall assess the reliability, consistency and the validity of the questionnaire in the exploratory phase. Moreover, semi-structured interviews will be conducted to validate the findings of these collected surveys which utilize the triangulation method and strengthen the validity of the quantitative methods (surveys) findings.

1.7.4 Data Analysis

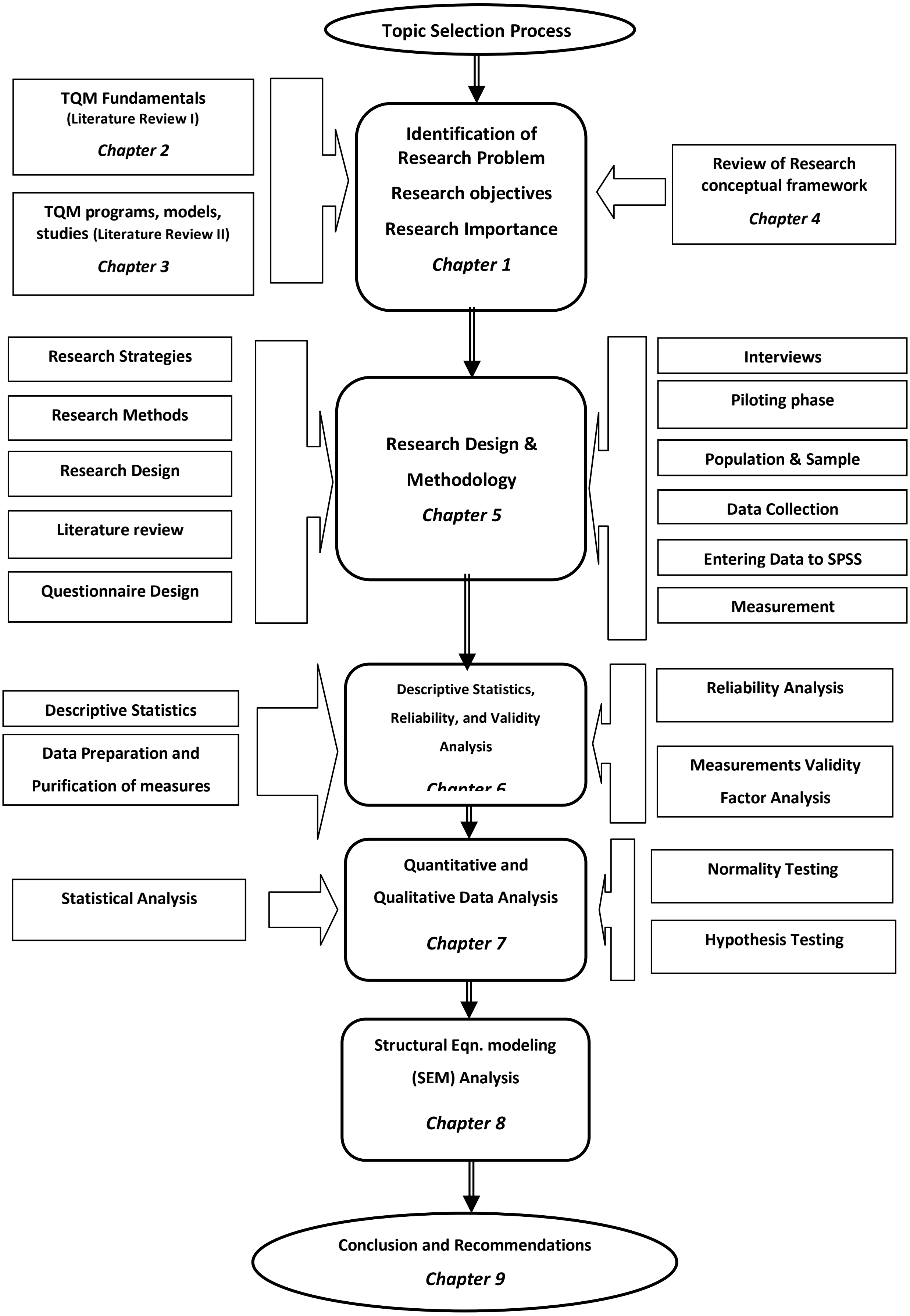
Fourth, the next process was data analysis. All the quantitative data collected from the distributed questionnaires were analyzed using mainly SPSS and LISREL. Qualitative data collected from interviews was analyzed as well in parallel to provide validity to the findings of the quantitative data analysis and utilize triangulation technique. The statistical analysis techniques that will be used for the analyzing phase are mainly Descriptive and inferential statistics Analysis through frequencies and bar charts, Exploratory Factor Analysis (EFA), Hypothesis testing analysis was done through Nonparametric tests such as Wilcoxon Mann-Whitney test and Kurskal-Wallis test, Confirmatory Factor Analysis (CFA) to identify the new constructs, and the Structural Equation Modeling (SEM) analysis technique to examine the causal relationship between components in the developed conceptual model.

As interviews represent the qualitative data in this research, the analysis process of these interviews was done by documenting the interview through hand writing and note-taking during the interview due to some conservative reaction and reluctance found in answering from the interviewee when using a tape-recorder and interviews were then transcribed. These transcripts were computerized as a database and analyzed. Then the findings of this analysis were compared with the questionnaire findings for validation and support.

1.7.5 Conclusion and Recommendations

The interpretations and discussions of key findings of both quantitative and qualitative findings will be presented. In addition, the conclusion and recommendations of this research will be documented and highlighted in terms of research contributions; managerial implications and major limitations faced. Finally, recommendations for future research will be suggested. Figure 1.1 outlines the major steps of the research process discussed.

Figure 1-1 The Research Process



1.8 Ethical Consideration

The integrity of any research depends not only on its scientific rigor but also on its ethical adequacy. Ethical issues are many, varied and may be quite complex. Research involving human participants is undertaken by many different disciplines and conducted in a broad range of settings and institutions. While some issues are specific to professional groups, all research should be guided by a set of fundamental ethical principles to ensure the protection of human participants.

It is also important to mention that the research code of ethics is concerned with researchers' desire and attempt to respect the right of others (Glesne, 1999, p.115). In line with acceptable codes of ethics, ethical principles and norms shall be strictly adopted through-out the research process.

Hence, it should be noted that all information concerning the participants' identity who will be involved in the surveys or interviews or other research issues, the strategy used in their daily business and any other confidential data of the respondents, that are not intended to be known to the public, will be treated with the highest level of confidentiality. All types of confidential information which are gathered to be used only for the purpose of the research will not be disseminated to the public and/or competitors.

Moreover, the research shall be planned and conducted in such a way that results obtained do not offer misleading information (Ary, 1990, p.480). Also, those research participants' shall have the right to give their informed consent before participating, i.e. the participants will be informed about the research objectives and the method of recording their responses (Huysamen, 1994, p.179). Add to that, research participants will be informed about their freedom to withdraw from the study at any point without penalty (Glesne, 1999, p.114).

1.8 Thesis layout

This thesis is structured in ten chapters, each providing an introduction to chapter contents and a brief description to set the content and context, as well as how it relates to other parts of the research summary of the main parts. While Chapter 1 has served as an introduction and background and outline of the research problem; it also presents research objectives, significance of the research, research methodology and design and thesis outline. Following this, three chapters (2, 3 and 4) are dedicated to the review of the relevant literature to build a theoretical foundation upon which the fieldwork was undertaken. Chapter 2 provides an in-depth literature review of TQM fundamentals with regard to certain concepts, their definitions, and its development. Chapter 3 represents the second part of the literature as it explores TQM models, programs, and the quality practices in Kuwait's Oil sector in specific and Middle East in general.

Chapter 4 provides a detailed review of the research conceptual framework and the basic components building this framework. Chapter 5 provides a detailed discussion of the research methodology and design issues that the researcher needs to deal with. It also explains the data collection methods used. Chapter 6 is concerned with the analysis of the preliminary findings of the survey collected and interviews conducted in the selected Oil sector companies. Chapters 7 describe the quantitative and qualitative data analysis. Chapter 8 provides the findings details of the structural equation modelling (SEM) analysis technique that is utilized in structuring the research conceptual framework.

Finally, Chapter 9 discusses a comprehensive interpretation and conclusions that is drawn from this study's Key findings of both quantitative and qualitative analysis. Furthermore, the contribution and limitations of the study are discussed; managerial implications and recommendations are addressed, and suggestions made for future research for both theory and methodology is given in the last part of this chapter.

1.9 Summary

This chapter has outlined the structure of the research. It introduced the background of the study and presented the research problem and objectives. The research was then justified and the research process of this study was then briefly discussed. In addition, some ethical issues were considered, followed by an outline of the thesis chapters. The next two chapters provide a review of the relevant literature on which this thesis is built.

CHAPTER 2

QM Fundamentals: Concepts, Definitions, and Development

A Review of the Literature (I)

2.1 Introduction

It was important that prior to the start of the proposed research, that the historical aspect of Quality management (QM) and TQM be reviewed as it is essential to build the theoretical background and foundation for the study. Hence, this chapter reviews the relevant literature that underpins this research and explores the variety of definitions and important concepts of quality and TQM provided by several researchers worldwide. It also traces the historical development of the philosophy of TQM. In addition, this chapter presents the concept of TQM from the quality gurus and their contribution. Finally, This TQM literature review discusses TQM's scope, basic principles, and the factors influencing it.

2.2 Meaning of Quality

The need for quality as a fundamental component in the formulation of strategies for organizations to implement TQM is clearly outlined by Bilich & Neto (2000) who stated that quality, as a macro function of organizations, must be present in the day-to-day running of an organization, in aspects such as establishment of policies, the decision process, selection of personnel, allocation of resources, definition of priorities and service delivery to satisfy customer requirements (Kremetik, 2004; LaKhal et. al.,2006). The two authors continued and stated that the quality approach, as a strategic element, had brought to organizations a new manner of conceiving quality, as it engages the top decision-makers of the organization in the effort for better performance in service delivery. According to Djerdjour & Patel (2000), quality is no longer an optional extra; it is an essential strategy to survive. TQM, is therefore, a solution for improving the quality of products and services. Before one can discuss the concept of TQM, one first needs to discuss, understand and analyze the concept of 'quality' itself.

Quality is not new but it was not a competitive weapon until Japan's business success after World War II (Yeung et al., 2003). It is widely known that one of the most important and well-recognized contributions to Japanese economic success has been the approach to quality management

(Garvin, 1988). The outbreak of the Second World War created an open environment for organizations from countries around the world to import goods and services, thereby increasing competition (Zuckerman, 2001). Many organizations world-wide are learning lessons from this and are emulating the Japanese achievement in their commitment to quality. Quality cannot be ignored in business today because it is a significant factor in customer's buying decisions (Kremetik, 2004; LaKhal et. al.,2006).

According to Dale (2003) and Evans & Dean (2003) quality, reliability, delivery and price build the reputation enjoyed by an organization. Quality is the most important of these competitive weapons and is an extremely difficult concept to define in a few words in order to agree on a consensus definition; a trait it shares with many phenomena in business and social sciences (Hoyer & Hoyer 2001; Yeung et al., 2003). Quality does not only refer to goods and services but includes quality of time, place, equipment and tools, processes, people, environment and safety and information and measurement (Dale 2003; Schonberger 1990). Quality is an ongoing process that has to be so highly pervasive throughout the organization i.e. it becomes the philosophy and culture of the whole organization. All organizations and each department within the organization need to adopt the same strategy, to serve the customer with even better quality, lower cost, quicker response and greater flexibility (Schonberger,1990).

Improving the quality of an organization's products is fundamental to business success in the 21st century. Managers in modern companies must realize that customers continuously demand better quality, and that the company should endeavor to conform to customer needs. Customer focus requires continuous quality improvement resulting in a dynamic business condition. Dale (1994) argued that an enlightened executive should know that while price and delivery are negotiable, quality is not. According to Feigenbaum (1961), quality management has been found to be the single most important force leading to economic growth of organizations in international markets.

In today's competitive business world, where cut-throat competition is its essence, it has long been recognized that traditional approaches to quality based on product quality are not effective enough. Organizations need to create a competitive advantage based on the best management practice and well-managed process systems.

2.2.1 Quality Definition

There appears to be no uniform understanding and definition of the meaning of the term quality and even well-known authors seem to have different perspectives on this issue. Although the importance of quality in current competitive markets has been acknowledged by many of the academics, researchers and practitioners, but they still do not have a universally accepted definition of the term (Reeves and Bender, 1994; Seawright and Young, 1996; Yeung et al., 2003). According to Reeves and Bednar (1994), a search for the definition of quality has yielded inconsistent results. The two researchers emphasized that regardless of the time period or context in which quality is examined, the concept has evolved throughout history, and had multiple and often muddled definitions and has been used to describe a wide variety of phenomena. As the strategies and tools for assuring quality may have changed, the basic customer expectations have been fairly constant for a long time (Hoyer & Hoyer 2001).

Quality is a concept with many different meanings and interpretations; therefore, it is difficult to define quality. That is, quality could be defined and measured differently depending on the individual perception of excellence (LaKhal et. al.,2006). Shewhart (1931), defined quality as a thing said to have the positive attribute of conformance to specified standards.

However, quality has been defined by some of the quality pioneers as the value for money along with satisfying the needs and expectations of customers (Feigenbaum, 1956, 1961), fitness for use (Juran, 1974), conformance to requirements (Crosby, 1979), delighting the customer (Deming, 1986), equivalent to consumer satisfaction (Ishikawa, 1985), and loss to society (Genichi Taguchi, 1995). According to the International Organization for Standardization (ISO), quality is the totality of features and characteristics of a product that bear on its ability to satisfy stated or implied needs (Ho, 1994).

Aksu (2003, p.591) defined quality as: "*the conformance to a set of customer requirements that, if met, result in a product or service that is fit for its intended use*." Wiele, Dale & Williams (7, p. 20) presented a slightly different perspective with their emphasis on the artistic and energetic properties of quality: "*Quality is what surprises and delights the customer.*" Pycraft, Singh & Phihlela (2000, p. 613) and Stamatis (2003, p. 11) tried to reconcile some of these different views in their definition of quality: "Quality is consistent conformance to customers' expectations." Goodman, O'Brein & Segal (2000, p. 49) supported this point of view by defining quality as consistently producing what the customer wants, while reducing errors before and after delivery to the customer.

More importantly, quality is not so much an outcome as a never-ending *process* of continually improving the quality of what an organization produces. There is no doubt that many organizations have so well ordered their capability to meet their customers' requirements, time and time again, that this has created a reputation for "excellence". Organizations must "delight" the customer by consistently meeting customer requirements, and then achieve a reputation of "excellence". The aim of organizations should be to satisfy existing needs of customers with quality products or services, and to identify, anticipate and create new needs. This requires the cultivation of a close relationship between the organization and its customers.

Moreover, Evans & Dean (2003), Reeves & Bednar (1994), Wood (1997), Savolainen (2000) and Yong & Wilkinson (2002), highlighted that the roots of quality definitions can be divided into four primary categories including: (i) excellence, (ii) value, (iii) conformance to specifications, and (iv) meeting and/or exceeding customers' expectations. From the four categories, quality is measured most precisely when defined as conformance to specifications and is most difficult to measure when defined as excellence. Current efforts to develop a generic quality instrument make it likely that the meeting-and/or-exceeding expectations definition of quality will guide future researchers who attempt to generalize across industries (Parasuraman, Berry & Zeithaml 1993).

The definitions of quality also vary in their usefulness to managers. Quality defined as excellence can provide powerful motivation to a workforce and quality defined as value or conformance to specifications can lead an organization to focus on efficiency, whereas quality defined as meeting and/or exceeding expectations compels management to keep abreast of changes in consumer demands. Each of these definitions has drawbacks for managers when implementing TQM: excellence provides limited practical guidance, value and quality typically represent different concepts, conformance to specifications may cause managers to focus on internal efficiency while neglecting external effectiveness, and understanding and measuring consumer expectations is problematic. For consumers, meeting and/or exceeding expectations are the most relevant definition of quality. When notions of excellence, value or conformance to specifications dominate consumers' expectations, any of these quality definitions may apply (Reeves & Bednar 1994).

Quality should be regarded as an important performance objective to achieve TQM as it directly affects internal and external customers, and leads to both increased revenues and reduced costs (Hendricks and Singhal, 2001; Shenaway et al., 2007)

In addition to all of the above, there appears that there is no global agreement on the definition of quality, Feigenbaum (1997) had provided some global dimensions of quality. Trends such as global customers, technology, and business forces are shaping the concepts of quality. From the global perspective, quality is viewed as:

1- An international business language

2- Complete satisfaction

3- Business effectiveness

4- Competitive connector

5- Partnering

6- Leadership

7- Modern managerial activity-based costing

8- Time management

New definitions of quality refer to it as a social trend. In this holistic view toward quality, the importance of quality of life has been addressed. In the traditional definitions of quality, more wealth-related and materialistic dimensions were emphasized. Also, in the new approach, a balanced view towards quality has been stated. This balanced view suggests that quality of life is not a wealth-related issue and that, to a healthy individual, to a community, and to society as a whole, money cannot be the measure of all things (Dervitsiotis, 2001).

In other words, the holistic approach towards quality is both internal and external for the organizatoin. While in the traditional definitions of quality, terms such as “fitness for use” or “conformance to requirements” were adequate, new definitions of quality encompass social issues, such as social responsibility (Punter and Gangneux, 1998).

2.2.2 Characteristics of Quality

The operation texts are disappointing in their treatment of the characteristics of quality, certainly when compared to the service quality literature. As mentioned earlier, Garvin (1988) and Evans & Dean (2003) provided eight dimensions of product quality: performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality. Performance, Garvin (1988) claimed, was a combination of the user-based and product-based approaches, and is concerned that the product meets a certain set of “primary operating characteristics”. Features are the secondary characteristics, supporting or enhancing features that supplement the primary characteristics. Serviceability, he defined, as the speed, courtesy and competence of repair in the servicing of the product. Perceived quality recognizes the fact that customers do not possess complete information about a product's attributes, and that it may be more a function of their images and brand names.

Juran *et al.*(1988) suggested five characteristics including technological (for example, strength and hardness), psychological (for example, taste, beauty, status) time-oriented (for example, reliability and maintainability), contractual (for example guarantee provision) , and ethical (for example, courtesy of sales personnel, honesty).

Oakland (1989) defined quality as meeting customer requirements and that "*the requirements may include availability, delivery, reliability, maintainability and cost effectiveness among other features"*.

Krajewski and Ritzman (1990) summarized the product and service quality characteristics into three categories including: hardware (style and appearance of equipment or the product, ease of installation and use), product or service support (responsiveness, accuracy, truthfulness) and psychological impressions (courtesy, sympathy, knowledge and reputation).

Hill (1991), in his chapter on quality control, having defined quality as "*the totality of features and characteristics of a product or service that bear upon its ability to satisfy stated or implied needs*". He had also identified four typical aspects of a specification: function, product/service characteristics, performance and reliability.

Several authors have referred to reliability. Reliability was defined by Muhlemann *et al.*(1992) as the ability of a product to function satisfactorily over a period of time, some would argue that it is not a quality characteristic. Further, they treated reliability separately and argued that it ranks equally with quality in importance in terms of competitive criteria.

Finally, Krajewski and Ritzman (1990) had concluded that, "It should be apparent that defining quality is no easy task".

2.2.3 Quality Management

Flynn *et al.* (1994, p. 342) defined Quality management as "*an integrated approach to achieving and sustaining high quality output, focusing on the maintenance and continuous improvement of processes and defect prevention at all levels of the organization, in order to meet or exceed customer expectation*". It encompasses all activities and functions concerned with the attainment of quality (Hill, 1983). Some researchers split these activities into two: quality of design and quality of conformance.

2.2.3.1 Quality of Design

Wild (1980) espouses the traditional inward-focused view of design quality. He defined it as being "*determined by the specification of the product, for example the tolerance placed on dimensions, the composition and treatment of materials, finishes, etc.*" The main outcome of this activity is, as far as the operation is concerned, the creation of a quality specification - this describes or defines the product or service and should be a comprehensive statement of all aspects of it which must be present to meet customer requirements (Muhlemann *et al.*, 1992).

Oakland (1989), in his TQM text continued the 'meeting customer expectation' theme, and contended that the main purpose of quality of design is to ensure that the product or service will be able to achieve its intended purpose. Hill (1991) covers quality of design in more detail than most. In not quite giving up this role to marketing he asserted, "*Although the quality of a product/service is determined by the market need, (operations) management is responsible for establishing the appropriate quality levels for its product/services*".

Muhlemann *et al.* (1992), took a more outward-looking approach and explicitly recognized the inter-functionality of this task, he defined quality of design as "*an interactive process whereby the customer, and marketing, sales, product or service designers, purchasing, supplies and operations…work together to develop a service or product that meets customer expectations and can be generated or produced economically*".

This view is critical in understanding the link between the user-based approach to quality and the operational (manufacturing-based) view of quality. Discovering where an organization does not meet customer needs and expectations, and then devising strategies to deal with it are key activities for managing quality.

The operations texts, however, spend most of their time on conformance quality and, in particular, the techniques of quality control.

2.2.3.2 Quality of Conformance

Quality of conformance means producing a product to meet the specifications. When a product conforms to the specifications it is deemed by operations to be a 'quality' product, even though the quality of design may be 'low' (Schroeder, 1989). The main task of conformance quality is the control of quality. This is the task at which most operations texts concentrate.

Quality control is defined as the task of preventing poor quality products from leaving the plant (Harris and Gonzalez 1981). Schroeder (1989) takes a more long-term and proactive view, and states "*quality control is aimed at continuous improvement of a stable process*" , primarily though statistical process control which tries to separate assignable causes from random ones, and continuously removing causes of error through inspection to detect errors and find the causes of those errors.

2.2.4 Approach to Quality Management

The ways operations management has approached the task of managing quality has changed over the last few years from the “traditional” reactive approach, through a more prevention oriented or proactive approach to the more recent, strategic or total quality management, approach.

The objective of the traditional reactive or detection orientated approach see for example Wild (1980) is to support conformance quality; that is ,to check that work completed in one part of the process meets its specification, and to try to prevent any defective work being passed on to the next stage in the process.

On the other hand, the prevention approach takes a more proactive approach to quality and quality costs. It is characterized by “*getting right the first time*” (Gummesson, 1987). The prevention approach tries to move away from the notion that errors are a normal and acceptable part of everyday life.

The objective of the prevention approach is to try to allocate resources so as to more often make products or services right the first time (Hill, 1991).

2.3 Meaning of Total Quality Management

Total Quality Management (TQM) is one of the most durable management innovations of the past two decades. It has been globally recognized by the Japanese approach toward quality improvement (Mani, Murugan & Rajendran 2003a) and has been widely used as a management initiative to improve quality in an organization. It is a continuous process that aims at quality improvement in all processes and activities in the organization. The ultimate goal of TQM is to establish a management system and organizational culture that ensures customer satisfaction and continuous improvement (Kanji, 1990; Nutt and Backoff, 1993; Lake and Mohanty, 1994; Sitkin *et al.*, 1994; Spencer, 1994; Flynn *et al.*, 1995; Hackman and Wageman, 1995; Vuppalapati *et al.*, 1995; Lengnick-Hall, 1996; Westphal *et al.*, 1997; La-Hay and Noble, 1998; Senthil *et al.*, 2001; Wicks, 2001; Selladurai, 2002; Nagaprasad and Yogesha, 2009).

TQM, like the concept of quality, has many conceptual and operational definitions. Like the term quality, TQM does not have a universal definition between its users (Boaden, 1997). Even though TQM is offered as a subject in many organizations in developed societies, there has been an academic debate by researchers as to what it means and what it entails. Some researchers have attempted to define TQM, their definitions are developed from empirical evidence, through group thinking and consensus (Boaden, 1997). TQM is arguably the most significant concept that has swept across organizations over the last few years. A review of the literature reveals that TQM encompasses a vast spectrum of topics and perspectives. While TQM is widely practiced, there is little agreement on what it actually means, despite assertions that *"clear definitions are important"* (Boaden, 1997). In addition, it has been argued by Douglas & Judge (2001) that for an organization to realize the value of a TQM implementation, it must have an internal conceptual understanding of TQM in order to be capable of fully supportive TQM implementation. Eng & Yusof (2003) highlighted that TQM integrates fundamental management techniques, existing improvement efforts and technical tools in a disciplined approach. The two researchers also mentioned that TQM is a collection of principles, techniques, processes and best practices that over time have been proven to be effective.

Eriksson, Johansson & Wiklund (2003) stated that TQM brings together the constellation of productivity, ethics leadership and performance into a unique relationship. To support Eriksson, Johansson & Wiklund's (2003) statement, Steenkamp (2001) argued that TQM is not a technique that can be applied artificially to improve the efficiency of an organization, but that (1) it is a way of life, a passion, something that everybody should do, (2) it is a culture, which should be lived by everybody in an organization, and (3) it should be modeled by those in positions of leadership, but should eventually be a matter of personal leadership, that is practiced by all members of organizations. According to Dervitsiotis (2003), TQM blurs the boundaries between the organization and the environment. Entities previously regarded as outsiders (e.g. suppliers, customers) are now considered part of organizational processes.

To support the latter, Pycraft, Singh & Phihlela (2000) and Yong & Wilkinson (2001) mentioned that in recent years TQM has been one of the most prominent ideas applied in the management milieu to reengineer organizations and bring about change.

TQM is not only concerned with achieving certain levels of competitiveness and applying and developing new techniques, concepts and technologies, but also with a change in attitudes and behaviors in order to conduct business in accordance with the requirements set by customers. The management of quality, is therefore, the responsibility of each person within the organization and not just that of management.

According to Pun (2001), the following is necessary to achieve an intense understanding and transformation toward TQM: (1) a historical review of TQM based on the prescriptions of the quality gurus, (2) a historical evolution from quality to total quality, (3) the principles of TQM, (4) a definition of TQM, and (5) the importance and scope of TQM. For this reason a conceptual analysis of TQM is required, starting with a historical review in the following section.

2.3.1 Historical review of Total Quality Management

Many of the recognized quality gurus did not actually use the term TQM, though their work has subsequently been recognized as being relevant and sometimes quoted as referring to TQM.

Historically, TQM origins can be traced to 1949, when the Union of Japanese Scientists and Engineers (JUSE) formed a committee of scholars, engineers, and government officials devoted to improving Japanese productivity and to enhancing their postwar quality of life (Walton, 1986; Kanji, 1990). Through a nationwide push toward productivity improvement, along with the work of Deming and Juran, the Japanese developed a new philosophy of management, that was later entitled Total Quality Management (TQM) (Powell, 1995; Cole, 1998; Yong and Wilkinson, 2002). TQM introduced new concepts such as continuous and customer-centered improvement, quality circles, and just-in-time production (Powell, 1995; Manz and Stewart, 1997). However, TQM was not internationally recognized until the beginning of the 1980's. At that time, some US policy observers and business leaders noticed that Japanese manufacturing quality had equaled or exceeded US standards, and they warned that Japanese productivity would soon surpass that of American firms. The application of quality management practices in the US was further expanded by the trend in the European Union toward quality improvement and several approaches and standards were developed.

Hence, although the origins of TQM goes back to 1940s and 1950s as stated above, Feigenbaum first used the term formally in 1957. More recently, TQM has been developed through a number of widely recognized approaches put forward by several "quality gurus" such as Crosby (1979), Deming (1986), Feigenbaum (1991), Juran (1993) and Ishikawa (1985). The emphasis placed on various aspects of TQM varies among the authorities, but the general thrust of their arguments is similar. Therefore, to understand the origins of TQM, it is important to understand the contributions from these quality pioneers.

2.3.1.1 William Edwards Deming

Deming, a prominent consultant, teacher and author on the subject of quality, is one of the best-known early pioneers, who is credited with popularizing quality control in Japan in the early 1950s. Deming's basic belief of quality management was that quality is continuous improvement through reduced variation. The Deming philosophy of quality management focused on bringing about important improvements in product and service quality by reducing uncertainty and variability in the design and manufacturing processes (Deming, 1986; Evans and Lindsay, 1993; Saraph *et al.*, 1989; Flood, 1993). His philosophy also emphasized the systematic nature of organizations, the importance of leadership, and the need to reduce variation in organizational processes. But he maintained that an organization must adopt the fourteen points of his system at all levels (Anderson, Rungtusanatham & Schroeder 1994; Evans & Dean 2003).

Deming is widely associated with formulating a systematic and cyclic approach to problem solving called a plan, Do, Check, Action (PDCA) cycle. Some writers do, however, attribute the PDCA cycle to the credit of Shewhart. The cycle has four components: to plan, to do, to check, and to carry out action. The PDCA cycle emphasizes the need for management to become actively involved in the organization’s quality initiatives. These efforts are all concentrated in the internal functions of organizations (Schultz, 1994).

Deming emphasized that quality is management’s responsibility, and that management should embrace a philosophy that mistakes and defects are not acceptable. Deming saw quality as similar to ‘delighting the customer’. Commonly known as the ‘father of quality control’ in Japan, he argued that employees should be able to report problems without fear of blame, and that a series of tools, particularly statistical techniques, should be developed and used to control quality (Wood & Wood, 2005).

Deming’s belief was that quality improved productivity and the competitive position of an organization. He defined quality in terms of quality of design, quality of conformance and quality of service function. He further believed that quality management was everybody’s responsibility, and top management should take the lead in all stages of quality improvement. Deming confirmed that quality is to be built into the product at all stages in order to achieve a high level of excellence (Boaden 1997).

According to Dale (2003) and Helms *et al.* (2001), Deming maintains that his 14 points apply anywhere from small organizations to large ones, to the service industry as well as to manufacturing. He also stressed that it is the system of work that determines how work is performed and it is only managers that can create the system. Deming summarized his foundation work in quality by identifying 14 points for organizations to follow, namely (Anderson, Rungtusanatham & Schroeder 1994; Capezio & Morehouse 1993; Deming 1986; Dale 2003; Evans & Dean 2003; Kelada 1996; Lindsay & Petrick 1998; Neave 1990; Spigener & Angelo 2001; Sarkar 1991; Swift, Ross & Omachonu 1998; Waldman 1994; Zairi, 1991). These points are:

1. Create consistency of purpose towards improvement of product and service quality, with the aim to become competitive, stay in business and provide jobs.
2. Adopt new philosophy, we are in a new economic age.

3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.

4. End the practice of awarding business on the basis of price tag. Instead, minimize total cost, move towards a single supplier for a long lasting relationship of loyalty and trust.

5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.

6. Institute training on the job.

7. Institute leadership: the aim of supervision should be to help people, machines and gadgets to do a better job. Supervision of management, as well as supervision of production workers, is in need of overhaul.

8. Drive out fear, so that everyone may work effectively for the company.

9. Break down barriers between products.

10. Eliminate slogans, exhortations and targets for the workforce, which ask for zero defects and new levels of productivity.

11a. Eliminate work standards (quotas) on the factory floor; substitute leadership instead.

11b. Eliminate management by objectives, by numbers and by numerical goals, substitute leadership instead.

12a. Remove barriers that rob the hourly worker of his or her right to pride of workmanship.

12b. Remove barriers that rob people in management and in engineering of their right to pride of workmanship.

13. Institute a rigorous program of education and self- improvement.

14. Put everybody in the company to work to accomplish the transformation. The transformation is everybody’s job.

From all of the above, the cornerstone of Deming’s philosophy is based on statistical process control that must be implemented where corrective action can be successfully instituted. Top management’s involvement is a key requirement with proper delegation of quality responsibilities at all levels in an organization. The recognition of training and leadership skills is vital in adopting Deming’s philosophy with continuous improvements never ending (Wood & Wood, 2005).

2.3.1.2 Joseph Moses Juran

Juran, Joseph M. specializing in managing for quality, is another pioneer of sound quality management practice who advocated a trilogy of quality planning, quality control, and quality improvement (Flood, 1993). Like Deming, Juran taught quality principles to the Japanese in the 1950s, and was a driving and principal force in their quality reorganization. Juran’s basic tenet of quality management was: quality is fitness for use. Juran believed that about 80% of quality defects were caused by factors controllable by management (Flood, 1993). He believed that annual incremental improvement, hands-on management, and training were fundamental in achieving quality excellence. Juran saw quality as fitness for use or purpose (Oakland, 1989; Zairi, 1991; Schultz, 1994).

Juran also echoed Deming's conclusion that American organizations faced a major crisis in quality due to huge costs of poor quality and the loss of sales to foreign competition, particularly the Japanese. Both men thought the solution to the problem depended on a new thinking about quality that included all levels of the management hierarchy. Top management in particular required training and experience in managing for quality (Juran, 1981; Evan and Lindsay, 1993; Flood, 1993).

Moreover, Juran had identified the major problems that contributed to poor quality in organizations as (Flood, 1993) such as lack of constancy of purpose, mobility of top management, and running a company only on visible figures alone.

Unlike Deming, Juran did not propose a major cultural shift in the organization, and sought to improve quality by working within the system. He argued that employees at different levels of an organization speak in their own language. Deming, on the other hand, believed statistics should be the common language for all employees (Flood, 1993; Evans and Lindsay, 1993).

Juran also advocated the use of quality costs and their analysis to focus attention on quality problems.

According to Capezio & Morehouse (1993), Lindsay & Petrick (1998), Rao *et al*. (1996), Flood (1993) and Waldman (1994), the Juran Trilogy (a trademark of the Juran Institute, Inc) identifies three areas for quality conversion within an organization, namely:

- Financial planning becomes quality planning (developing the products and processes required to meet customer needs).
- Financial control becomes quality control (meeting product and process goals).
- Financial improvement becomes quality improvement (achieving unprecedented levels of performance).

Juran came up with a ten- point approach to quality management (Flood, 1993).

From the above Trilogy, Juran developed a ten-step approach to quality improvement, namely (Dale 2003; Swift, Ross & Omachonu 1998):

1. Build awareness for the need and opportunity for improvement.
2. Set goals for improvement.
3. Organize people to reach the goals.

4. Provide training throughout the organization.
5. Carry out projects to solve problems.
6. Report progress.
7. Give recognition.
8. Communicate results.
9. Keep score and assess overall progress.
10. Maintain momentum by making annual improvement part of the regular systems and processes of the organization.

Juran has extended his principles to consider business processes, and has recently developed a concept entitled managing business process quality, that is a technique for executing cross-functional quality improvement.

2.3.1.3 Armand V. Feigenbaum

Feigenbaum (1956, 1983) was the first recognized quality guru to use the term “total quality control.” Since then the idea has come to mean an approach to quality that is organization-wide, involving all aspects of the control or management of quality (Dale, 2003). He considered quality as a way of managing business organizations. He believed that improved quality could be achieved through the participation of the workforce who should have a clear understanding of what management is trying to achieve. Senior management’s understanding and commitment to incorporating the quality improvement goals into their management practice were found essential for the success of a total quality system and for the company’s success in the market place (Zairi, 1991). Further more, the activities from a quality standpoint, or the jobs of quality control as Feigenbaum (1986) calls it, can be grouped into four categories: new design control, incoming material control, product control and special process studies. To be successful, these activities require the cooperation of all the organizational departments with responsibilities clearly defined using elaborate matrices.

Feigenbaum (1986) promoted the concept of company-wide quality management and developed the approach that the responsibility for quality extended well beyond the manufacturing department, whereby everyone in the organization shares responsibility for quality and should seek to detect and correct errors and defects at source. Like Deming and Juran, Feigenbaum was American, and it was the Japanese who first made use of the TQM concept at the level of the individual worker. Feigenbaum’s approach to quality is a whole approach and was largely credited with the concept of Total Quality Control (Kathawala, 1989). Feigenbaum’s book, Total Quality Control, can be considered as a model for a quality management system. Feigenbaum’s philosophy, however, can be reduced to four simple steps (Capezio & Morehouse 1993; Dale 2003; Feigenbaum 1986), namely:

1. Setting a quality standard.
2. Appraising conformance to these standards.
3. Acting when standards are exceeded.
4. Planning for improvements in the standards.

Feigenbaum (1986) established nine fundamental factors affecting quality including markets, money, management, men, motivation, materials, machines and mechanization, modern information methods and mounting product requirements. Lindsay & Petrick (1998), however, reduces these factors to two distinct categories, namely (1) technological factors and (2) human factors. Of these two groupings, the human is of greater importance by far. The emphasis on management and human participation is seen as strengths in generating motivation and creativity, that are absent from Deming and Juran's approaches.

2.3.1.4 Philip B. Crosby

Crosby believed that an organization could learn, and that top management should adopt a quality management style, not because it is the right thing to do, but because it is good for the bottom line (Crosby, 1979). His basic tenet of quality management was quality as conformance to requirements (Zairi, 1991; Flood, 1993). Crosby's quality program is primarily behavioral, unlike those of Deming and Juran. He put emphasis on using management and organizational processes rather than statistical techniques to change corporate culture and attitudes.

The philosophy of Crosby focused on reducing cost through quality improvement. He believed that higher quality reduced costs and increased profit (Dean & Bowen 1994). He therefore advocated a goal of zero defect by coming up with the zero defect program, and continuous improvement to achieve quality (Zairi, 1991; Flood, 1993).

Crosby's philosophy is based on these five fundamental principles he calls absolutes (Capezio & Morehouse 1993; Crosby 1979; Evans & Dean 2003; Flood, 1993; Johnson 2001; Kelada 1996; Lindsay & Petrick 1998; Rao *et al*. 1996):

1. Quality has to be defined as conformance to requirements, not as goodness.
2. The system for causing quality is prevention, not appraisal.
3. The performance standard for quality must be zero defects, not that's close enough.
4. The measurement of quality is the process of non-conformance, not indexes.
5. There is no such thing as a quality problem.

Crosby stresses motivation and planning and does not dwell on statistical process control and the problem-solving techniques of Deming and Juran. Crosby's 14 points are action steps for organizations to help them implement TQM. Crosby takes a very pragmatic approach in making each of these points value producing for the organizations that practice them. Crosby's 14 points (Dale 2003; Swift, Ross & Omachonu, 1998) are:

1. Management commitment – Top management must be convinced of the need for quality and must clearly communicate this to the entire organization by written policy.
2. Quality improvement teams – Form a team composed of department heads to oversee improvements in their departments and in the organization as a whole.
3. Quality measurement – Establish measurements appropriate to every activity in order to identify areas in need of improvement.
4. Cost of quality – Estimate the costs of quality in order to identify areas where improvements would be profitable.
5. Quality awareness – Raise quality awareness among employees.
6. Corrective action – Take corrective action because of steps 3 and 4.
7. Zero defect planning and zero defects day (error-free work days) – Form a committee to plan a program appropriate to the organization and its culture.
8. Supervisor training – All levels of management must be trained in how to implement their part of the quality improvement plan.
9. Employee education – Define the type of training all employees need in order to carry out their role in the quality improvement process.
10. Goal setting – Establish improvement goals for individuals and their groups.
11. Error cause removal – Employees should be encouraged to inform management of any problems that prevent them from performing error-free work.
12. Recognition – Give public, non-financial appreciation to those who meet their quality goals or perform outstandingly.
13. Quality councils – Composed of quality professionals and team chairpersons, quality councils should meet regularly to share experiences, problems and ideas.
14. Do it all over again – Repeat steps 1 to 13 in order to emphasize the never ending process of quality improvement.

Crosby's approach is easier to grasp than those of Deming, Juran and Feigenbaum, for he treats quality problems as tangible issues to be solved and rejects the idea that problems are persistent and unsolvable.

2.3.1.5 Karou Ishikawa

Ishikawa, a pioneer in quality control activities in Japan, bases his work on that of Deming, Juran and Feigenbaum, and is credited with originating the concept, and introducing the practice, of quality circles (Flood, 1993; Dale, 2003). In his approach to managing quality, Ishikawa saw the need for all employees, not just professionals, to participate in quality improvement. He also came up with one of the most widely used techniques by quality circles, the fishbone or Ishikawa diagram (Oakland, 1989; Zairi, 1991; Schultz, 1994).

Ishikawa claimed that there had been a period of over-emphasis on statistical quality control (in Japan), and as a result, people disliked quality control. They saw it as something unpleasant because they were given complex and difficult tools rather than simple ones.

Ishikawa saw worker participation as the key to the successful implementation of TQM. Quality circles, he believed, were an important vehicle to achieve this (Pycraft, Singh & Phihlela, 2000). Ishikawa took the concepts proposed by people like Deming and Juran and brought them to the level of the common worker (Rao *et al*., 1996).

2.3.1.6 Common themes of the five quality gurus

All of these pioneers believed that management and the system, rather than the workers, are the cause of poor quality. These and other trailblazers have largely absorbed and synthesized each other's ideas but, generally speaking, they belong to two schools of thought: those who focus on technical processes and tools and those who focus on the managerial dimensions. Deming provides manufacturers with methods to measure the variation in a production process in order to determine the causes of poor quality. Juran emphasizes setting specific annual goals and establishing teams to work on them. Feigenbaum teaches total quality control aimed at managing by applying statistical and engineering methods throughout the organization, Crosby stresses a program of zero defects and Ishikawa stresses the use of quality circles (Djerdjour & Patel 2000; Swift, Ross & Omachonu 1998). Table 21 in Appendix-T summarizes the strengths and weaknesses of each guru's approach.

Despite the differences among these experts, a number of common themes arise:

- It is management's responsibility to provide long-term commitments, leadership, empowerment, encouragement and the appropriate support to technical and human processes.
- The strategy, policy, and firm-wide evaluation activities are emphasized.
- Quality is first and schedules are secondary.
- Quality is a system of continuous ongoing improvement.
- The benefits of quality far outweigh the costs of quality.

- The importance of employee education and training is emphasized in changing employees' beliefs, behavior, and attitudes; enhancing employees' abilities in carrying out their duties.
- Employees should be recognized and rewarded for their quality improvement efforts.
- It is very important to control the processes and improve quality system and product design.
- Their concepts are equally applicable to the service and manufacturing industry.
- Quality improvement program requires careful planning and must represent permanent, on-going activities.
- Quality is a systematic firm-wide activity from suppliers to customers.

2.3.2 Historical evolution from Quality to Total Quality

The concept of quality has always been evident in human activities for as long as human endeavor. According to Oakland (quoted by Pycraft, Singh & Phihlela 2000), TQM is a philosophy, a way of thinking and working that is concerned with meeting the needs and expectations of customers. TQM applies to all parts, departments and sections of the organization and, further, it is the responsibility of all people in an organization. Moreover, as this development of quality management had been gradual and continuous, Garvin (1988) and Zairi (1991) had identified the four stages that quality management has gone through. Dahlgaard et al (1998) supported the argument that the evolution of TQM took place in four stages, namely quality inspection, quality control, quality assurance, and total quality management. A recent research study of Yeung *et al.* (2003) also establishes four similar stages of the development of quality based on empirical data from the Hong Kong electronics industry. It is widely believed that quality concepts evolved gradually, and to substantiate this, Garvin (1988), Zairi (1991), Juran (1991) and Dale (1994,2003) went as far as describing these growth stages as follows:

2.3.2.1. Inspection

According to the seminal work of Garvin (1988), the first stage in the move toward quality is inspection. For many years, formal inspection procedures had been essential to ensure the conformance to quality of mass produced and standardized products. This stage can be first noticed back in the Middle Ages in Europe, where skilled craftsmen served both as manufacturers and inspectors, and dealt directly with the customer, instilling a lot of workmanship. Quality was in the hands of the craftsmen and building quality into a product was the aim of skilled craftsmen (Flood, 1993). Thus, the master maintained a form of quality control by inspecting the finished products before selling them (Juran, 1991).

Skilled craftsmen controlled all aspects of manufacturing, so product quality depended largely on the skills of the operator. Under a simple inspection- based system, one or more characteristics of a product were examined, measured, tested or assessed, and compared with specified requirements to assess conformity. The approach here was to inspect-in quality (Garvin, 1988) by simple inspection-based systems that were usually found in-house and did not involve customers (Dale *et al.*, 1994).

2.3.2.2 Quality Control

This era developed from the inspection activity in terms of the sophistication of methods and systems employed in controlling quality. This stage led to greater process control and fewer incidences of non-conformance. Thus, the concept of TQM has its roots in statistics. However, quality control here was limited and manufacturing-based.

The development of control charts and acceptance sampling techniques by Walter Shewhart and his colleagues of Bell Telephone Laboratories, marked the significance of this stage (Schultz, 1994). The group was responsible for developing new methods of inspection to improve and maintain quality, and quality control was applied to the design, manufacturing and installation of telephones. It was Shewhart who first introduced the idea that quality control could help in distinguishing between two process variations. He advocated making the process work reliable by separating the variation due to special causes, and therefore introduced the concept of control charts in monitoring such process variations in managing quality. The development of statistical techniques, including control charts, sampling techniques, and economic analysis techniques for quality problem-solving characterized and formed the foundation for modern quality assurance, the next stage in the evolution of TQM. The goal of using these statistical tools is to evaluate and improved quality in a scientific and economical way.

Shewhart saw the manufacturing process as a continuous process with inspection leading to new specifications, and each process and product closely related to past and successive generations (Schultz, 1994). Shewhart (1931) put quality control on the scientific map by recognizing that variability was a fact of industrial life and that it could be understood using principles of probability and statistics. He also introduced the idea of statistical process control, whereby control charts were made use of in the production process in examining whether production values fell within acceptable limits or ranges.

The basic idea of using these control charts was to detect changes in the mean or variability of the process while production is still going on rather than the time when production is finished.

2.3.2.3 Quality Assurance

During this stage, quality is no longer a narrow, manufacturing-based discipline. Instead, quality professionals recognized the need for total quality control in areas ranging from new product design to customer service with much broader implications for management.

The quality assurance stage marked a shift in the approach to managing quality from detection to prevention as more emphasis was put on problem prevention rather than detection. War-time activities were reviewed to improve future quality performance. Much attention is now placed on designing the quality products and monitoring all the production- distribution processes. All departments in the organization are now encouraged to work together for quality assurance while top management is peripherally involved in designing, planning and executing quality policies (Garvin, 1988). This stage made the large inspection-orientated organizations more efficient, as they utilized statistical tools in managing quality. The most significant contribution of the quality control system was that it provided sampling inspection rather than 100% inspection that was costly and time-consuming. However, the job being done was still basically the same inspection job (Garvin, 1988).

Aside from quality control techniques, management philosophy, emphasizing greater human contributions and higher expectations of quality begins to prevail in this stage of the progression toward quality. As quality assurance is widely known as a prevention-based system which improves product quality by placing emphasis on product and process design. The approach stressed detection of error at source. Quality planning and improvement certainly begin when top management include prevention as opposed to detection in organizational policy and objectives and start to integrate the improvement efforts of various departments (Garvin, 1988; Zairi, 1991).

During World War II, the American military department began using statistical sampling methods and procedures, and imposing stringent standards on suppliers. Thus statistical quality control became widely known and used by other industries (Garvin, 1988).

World War II saw the launching of the first national standards in the quality field to encourage industry to use control charts and acceptance sampling (Dahlgaard *et al*., 1998). By the 1960s, quality experts like Feigenbaum (1961) were expanding notions of quality control to consider its management implications in production. This view also expanded the quality expert's quality tools far beyond statistics to include things like quality systems, quality costs and quality management. In the 1990s, the ISO 9000 standards (Arumugam et al., 2008) emerged and embodied these concepts of quality (Dahlgaard *et al*., 1998). The orientation here was that of building-in quality (Zairi, 1991). This stage took on board the first two initial stages to the evolution of TQM in its endeavor to produce products or services that meet customer needs.

2.3.2.3.1 Japanese Revolution

Just after the war, two notable American consultants, William Edwards Deming and Joseph Moses Juran, introduced statistical quality control to the Japanese during the period of the Japanese nation rebuilding. Deming, since then, became a household name among companies in Japan, and the Deming Prize (Deming Prize Committee, 2000; Wood & Wood, 2005), a prestigious award in Japan, is given to individuals and organizations in recognition of his work (Baila, 1996). It took the Japanese manufacturers a long time, about two decades, for their product quality to surpass that of their western counterparts. They did, eventually, manage to excel in improving quality, leading to the Japanese ever known economic miracle that took the world by storm in the 1970s (Garvin, 1988). Following the Japanese success, activities like using comprehensive quality manuals, quality auditing, process control charts and quality costing became widely recommended and used in industry outside Japan.

Moreover, a significant growth of the Japanese quality revolution was the Deming Prize. The award stimulated the creation of quality awards in other regions of the world, commencing with the Malcolm Baldrige National Quality Award in America in 1988.

2.3.2.4 Total Quality Management

From the 1980s, there emerged a strong view of product and quality as a competitive weapon for organizations. Quality began to be seen as an important part of business strategy and its management. It was therefore viewed as a strategic management tool.

According to Garvin (1988), this radical shift to the view of quality as an aggressive competitive weapon in the West arose from a variety of external forces which linked profit and market share losses to poor quality. Amongst the most important influences were increased foreign competition, mainly from the Japanese manufacturers, and an increased awareness about consumerism.

The 1980s were a period of remarkable changes and great awareness of quality by consumers, industry, and governments in the industrialized world. This in particular gave a loud awakening to the US government in the event of the emergence of Japan as an economic power and giant. It was then recognized that the Japanese achieved economic success because they used statistical methods they learnt from Deming and Juran. However, the term TQM at this stage had not been coined. This stage was described by (Feigenbaum, 1956, p. 93) as:

> *"…Customers – both industrial and consumer – have been increasing their quality requirements very sharply in recent years. This tendency is likely to be greatly amplified by the intense competition that seems inevitable in the near future.''*

In this stage, the strategic aspects of quality are recognized and embraced by top management in the strategic planning process. Instead of viewing quality in a defensive, negative way, quality can now be used to maximize a firm's competitive opportunities. As a result, quality needs to be defined from the perspective of market competition and customer expectation, instead of in terms of predetermined internal standards or design specifications.

All the views expressed in the different stages converged and created a national movement that resulted in new concept that entered the managerial discourse and became popularly known as total quality management (TQM). TQM as it is understood in business today is the organization's focused vision for managing quality or a collective and successful quality strategy. This vision can only be achieved by a change in corporate culture, a long-term planning, and an organizational commitment to the continuous improvement of quality. TQM involves the understanding and implementation of quality management principles and concepts in every aspect of the organization's business activities. It demands that the principles of quality management must be applied at every level in the organization hierarchy, at every stage, and in every department of the organization. TQM also goes beyond the organization by recognizing the contributions made by suppliers and customers, and establishing formal and close working links and relations with them (Zairi, 1991).

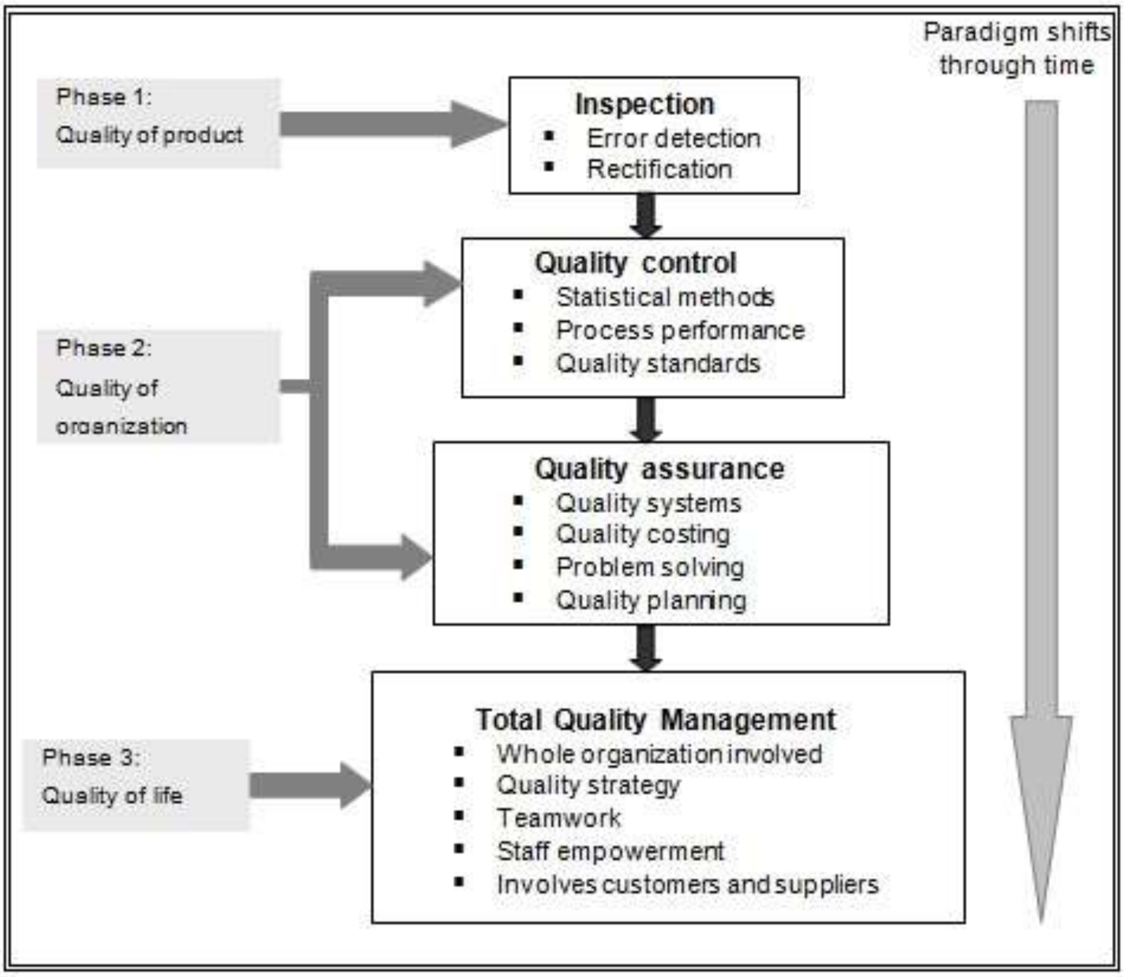
TQM involves the application of quality management principles to all aspects of the business, including suppliers and customers. TQM is a company-wide approach to quality, with improvements undertaken on a continuous basis by everyone in the organization.

This development process of TQM can be credited to Feigenbaum (1956), Crosby (1979), Juran (1974) and Deming (1986), even though they never mentioned TQM in their initial writings. These quality experts have contributed significantly to the development and growth of the subject. Although no one has introduced a formal way for classifying where firms are in total quality management stage yet the MBNQA is widely acknowledged as an excellent framework through which firms can evaluate their progress toward achieving total quality management (Lau & Xiao, 2004). A summary of these various stages of TQM development discussed above can be seen in Table 2-2 in Appendix-T.

Finally, TQM can be viewed as a logical extension of the way in which quality- related practice has progressed (see figure 2-1). Specifically TQM can be seen as being concerned with the following (Pycraft, Singh & Phihlela 2000, p. 736), namely:

- meeting the needs and expectations of customers;
- covering all parts of the organization;
- including every person in the organization;
- examining all costs which are related to quality;
- developing the systems and procedures which support quality and improvement; and
- developing a continuous process of improvement.

Figure 2-1: TQM can be viewed as a natural extension of earlier approaches to quality management.



Source: Adapted from Dale (2003) and Pycraft, Singh & Phihlela (2000)

According to Scholtz (1998), the evolutionary development of the quality conception be regarded as a continuum consisting of 3 main phases (that includes 4 stages) in the development of quality (see figure 2.2); each phase is separated by a substantial paradigm shift in the thinking approach of quality, namely (1) quality of product, (2) quality of organization and (3) quality of life. A suggestion can be made to Figure 2-1, is that a 4^{th} phase might be added here, which resembles the Six Sigma as the natural step to be taken after implementing TQM and receiving its business outcomes.

2.3.3 Principles of Total Quality Management (TQM)

Despite diverse views on what constitutes TQM, there are a number of principles that will now be summarized. According to Dean & Bowen (1994), TQM as a philosophy or an approach to management can be characterized by its principles. TQM is about continuous improvement of individuals, of groups and of organizations. To improve performance, people need to know what to do, how to do it, have the right tools to do it, to be able to measure performance and to receive feedback on current levels of achievement.

According to Kanji (1995), TQM provides this by adhering to a set of general governing principles. According to Burr (1993), TQM programs have various names, but they share similar principles. Drawing from the recent literature on TQM (Adinolfi, 2003; Boaden, 1997; Dale *et al.,* 2001; Dale, 2003; Dean & Bowen, 1994; Eng & Yusof, 2003; Ghobadian *et al.,* 1998; Ishikawa & Kano, 1993; Kanji, 1995; Kanji, 1998; Kanji, 2000; Mehta, 2000; Nwabueze, 2001; Provost & Quayle, 2001; Spencer, 1994; Vokurka & Lummus, 2003; Waldman, 1994; West, Cianfrani & Tsiakals, 2000; West, 2002; Wong, 2000; Yong & Wilkinson, 2001; Sila and Ebrahimpour, 2005; Karia and Asaari, 2006; Ju et al., 2006; Prajogo and McDermott, 2005; Antony et al., 2002; Hafeez et al., 2006 ; Arumugam et al., 2008), the following key principles underpin the TQM concept, which are common to all manifestations, as follows:

- TQM starts at top management - Top management should demonstrate understanding, commitment and be involved in the total quality improvement process from day one in order to improve quality in all areas of the organization.
- TQM requires total employee involvement – People at all levels are the essence of an organization and their full involvement enables their abilities to be used to the benefit of the organization.

- TQM's focus on the customer – The goal of satisfying customers (internal or external) is fundamental to TQM and is expressed by the organization's attempt to design and deliver products and services that fulfil customer needs.
- TQM needs strategic planning – Strategic planning is necessary to align and integrate all the efforts of the organization with the TQM concept.
- TQM's focus on the systems approach to management **–** Identifying, understanding and managing interrelated processes as a system should contribute to the organization's effectiveness and efficiency in achieving its objective.
- TQM requires ongoing education and training of employees – Training should start with educating top managers in TQM and its principles. Training should provide employees with the education required to effectively participate in quality improvements.
- TQM's focus on teamwork – Organizations should understand that employees need to participate in vertical, horizontal and cross-functional teams to be most effective.
- TQM's focus on continuous improvement – Continuous improvement should be a permanent objective of the organization. Continuous improvement means a commitment to constant examination of technical and administrative processes in search of better methods.
- TQM respects employees and their knowledge – Subordinates' inputs as improvements should be taken into accountEmployees should be actively involved in the improvement process.
- TQM focus on process improvement – The organization should be reconfigured as a set of horizontal processes that begin with the supplier and end with the customer.
- TQM requires statistical way of thinking and the use of statistical methods – Results of tests, measurements and conditions under which measurements were made should be kept meticulously
- TQM focus on prevention rather than detection – Problems are to be anticipated to prevent them from occurring. Frequent meetings should be held to discuss foreseen problems.
- TQM requires mutually beneficial supplier relationships – Suppliers should be treated in a way to ensure a win-win situation for all parties involved.
- TQM's focus on performance measures that are consistent with the goals of the organization – Feasible measures should be established to reward performance and thereby promoting positive attitudes.
- TQM's focus on product and service quality design – Quality should be built into the program as soon as possible, preferably from day one, and should be spread over the total sphere of

the program. Therefore, the advice of experts should form part of the project right from the start.

- TQM's focus on substantial culture change – All changes in the environment should be taken note of and the necessary adoptions should be made promptly.
- TQM's focus on the factual approach to decision-making – Effective decisions should be based on the analysis of data and information. Facts are necessary to manage the organization at all levels by giving the correct information to people so that decisions are based upon facts rather than 'gut feelings' which is essential to achieve continuous improvement.
- TQM requires self-assessment efforts as control mechanism to determine results – Organizations' performance should be evaluated against internationally recognized standards.
- TQM's focus on fast response - Increasingly rapid response times and ever-shorter cycles for new or improved product and service introduction are a necessity for customer satisfaction today.
- TQM provides standardization – organizations should develop and adhere to the best-known ways to perform a given task.
- TQM's focus on partnership development **-** Organizations should seek to build internal and external partnerships to better accomplish their overall goals

According to TQM experts, proper implementation of TQM in organizations is a critical determinant in enhancing organizational performance (Coff, 1999; Hendricks and Singhal, 2001; Shenaway et al., 2007; Prajogo and Sohal, 2003; Arumugam et al., 200)). According to Ghobadian *et al.* (1998) and West, Cianfrani & Tsiakals (2000), the quality management principles (QMPs), when consistently applied across an organization, should engender optimal overall performance excellence far more effectively than a series of individually optimized activities.

2.3.4 Defining Total Quality Management

Total Quality Management (TQM) has been identified as the philosophy responsible for enhancing services and production in organizations. TQM, like the concept of quality, has many conceptual and operational definitions. Like the term quality, TQM does not have a universal definition between its users (Boaden, 1997). In order to of have a clearer picture of the foundation or true meaning of the concept, it is important to decipher the terms. Hence, in this section the definition of TQM will be deciphered by examining a variety of literature sources. Moreover, there have been academic debates by researchers as to what it means and what it entails. Some authors have attempted to define TQM and their definitions are developed from empirical evidence, group thinking and consensus (Boaden ,1997). The wide and often confusing use of the term TQM in the literature warrants a clarification of its meaning. However, TQM is a multidimensional and complex term. Boaden (1997) argues that confusion about definition is not confined to the TQM field. He discusses the issue of definition related to quality costs and states firmly that: *"… without clear definitions or meaningful communication on the topic … admittedly there are difficulties in finding generic terms to describe tasks or activities having the same broad objectives in different industries.*"

Wilkinson & Witcher (1993) and Nwabueze (2001) summarize TQM as having three major requirements. These requirements are outlined below:

- Total: Participation of Everyone, an organization-wide process: "*TQM requires continuing improvement and getting things right first time. Since most quality solutions are outside the control of any one individual or function, this needs team work and the maintenance of good relationships.*"
- Quality: Meeting Customer Requirements Exactly: "*TQM requires customer agreed specifications which allow the supplier to measure performance and customer satisfaction. Individuals and teams need to use quality tools and systems to facilitate measurement and problem solving*. "
- Management: Enabling Conditions for Total Quality: "*TQM requires leadership and total commitment from senior management to quality goals. They must ensure that an appropriate infrastructure exists to support a holistic and not a compartmentalized approach to organizational management.*"

Moreover, Dahlagaard *et al.* (1998) and Kanji (1990) both observed that quality remained an important part of TQM definitions, and in this context; TQM formed a hierarchy of quality definitions that could be broken down as:

- Quality means to continuously satisfy customer expectations and requirements;
- Total Quality means to achieve quality at a low cost, and thus.
- Total Quality Management means achieving total quality through everybody's participation and daily commitment.

In order to understand TQM much better, a broad definition of the term TQM is investigated. According to Djerdjour & Patel (2000), TQM cannot be fully understood through one definition only. In support of their argument and on analyzing the various TQM definitions available in literature, TQM can be classified under the following broad headings:

- TQM as a ***culture*** (Dahlgaard *et al.*, 1998; Ghobadian & Gallear, 1996; Kanji & Wallace,2000; Kreitner & Kinicki, 1998; Sashkin & Kiser, 1993;).
- TQM as an **integrated approach** (Flynn, *et al.* 1994; Oakland, 1989)
- TQM as a ***management and organizational-wide process*** (Capezio & Morehouse 1993; Edgeman 1999; Ross 1994; Parzinger & Nath 2000; Selladurai 2002; Senthil, Devadasan, Selladurai & Baladhandayutham 2001; Stevenson 1996; Wicks 2001; Zairi and Simintiras, 1991).
- TQM as a ***management philosophy and guiding principles*** (Aksu 2003; British Standards Institute (BS 4778 Part 2 of 1991); Clauson 1995; Dale, 1994; Djerdjour & Patel 2000; Elmuti & Kathawala 1999; Elshennawy & McCarthy 1992; Eng & Yusof 2003; Hansson, 2001;Perigod 1990; Pun 2002; Yong & Wilkinson 2001).
- TQM as a ***strategy*** (Dean & Evans 1994; Jones 1994).
- TQM as a ***system*** (Evans & Dean 2003; Hansson, 2001; Lindsay & Petrick 1998; Scharitzer & Korunka 2000; Stahl 1995, p. 4; Yong & Wilkinson 2001).

Various versions of definitions of TQM can be found in the literature to validate the five headings under which TQM can be classified, of which only a few are given below:

- **TQM as a culture**
  - Kanji & Wallace (2000, p. 979) defined TQM as, "*TQM is the culture of an organization committed to customer satisfaction through continuous improvement.*"
  - Sashkin & Kiser (1993, p. 39), experts on the subject, offered this definition of TQM: "*TQM means that the organization's culture is defined by and supports the constant attainment of customer satisfaction through an integrated system of tools, techniques and training. This involves the continuous improvement of organizational processes, resulting in high quality products and services*."
  - Dahlgaard *et al.* (1998, p.19) saw TQM as: "*a corporate culture characterized by increased customer satisfaction through continuous improvement, in which all employees in the firm actively participate*."
- **TQM as an integrated approach**
  - Flynn *et al.* (1994, p.342) defined TQM as: "*An integrated approach to achieving and sustaining high quality output, focusing on the maintenance and continuous improvement of processes and defect prevention at all levels, and in all functions of the organization, in order to meet or exceed customer expectations*".

- Oakland (1989, p.14) defined TQM as: "*Total quality management (TQM) is an approach to improving effectiveness and flexibility of business as a whole. It is essentially a way of organizing and involving the whole organization; every department, every activity, every single person at every level*."

♦ **TQM as a management and organizational-wide process**

- Parzinger & Nath (2000, p. 355) defined TQM as *"…a management process and organizational-wide process to instill a culture of continuous improvement in an organization to ensure that the organization consistently meets and exceeds customer requirements*".
- Senthil *et al*. (2001, p. 682) and Selladurai (2002, p. 615) defined TQM as a continuous management process that aims at quality improvement in all processes and activities in organizations. The ultimate goal of TQM is to establish a management system and organizational culture that ensures customer satisfaction (both internal and external) and never-ending continuous improvement of all organizational processes".
- Zairi and Simintiras (1991) regard TQM as an integration of various processes in an organization, and hence defined it as: "*Total Quality Management is the combination of the socio-technical process towards doing the right things (externally), everything right (internally) first time and all the time, with economic viability considered at each stage of the process*."

♦ **TQM as a management philosophy and guiding principles**

- Djerdjour & Patel (2000, p. 26) define TQM as a management philosophy, that seeks continuous improvement in the quality of all processes, people, products and services of an organization. Continuous improvement can be achieved through internal and external quality improvements.
- Dale's (1994, p.10) definition was: "*TQM is the mutual co-operation of everyone in an organization and associated business process to produce products and services which meet the needs and expectations of customers. TQM is both a philosophy and a set of guiding principles for managing an organization*."
- Pun (2002, p. 760) defines TQM as an integrated management philosophy and set of practices that emphasize continuous improvement, meeting customers' requirements, reducing rework, long-range thinking, increased employee involvement and teamwork, process redesign, competitive benchmarking, team-

based problem-solving, constant measurement of results and closer relationships with suppliers.

- **TQM as a strategy**
  - Dean & Evans (1994, p.7) defined TQM as an integrated, systematic, organization wide strategy for improving product and service quality.
  - Jones (1994, p. 98) defines TQM as "*… a strategy for improving organizational performance through the commitment of all employees to fully satisfying agreed customer requirements at the lowest overall cost through the continuous improvement of products and services, business processes and the people involved.*"
- **TQM as a system**
  - Evans & Dean (2003, p.16) defined TQM as a total system approach (not a separate area or program) and an integral part of high-level strategy; it works horizontally and vertically across all functions and departments, involves all employees, top to bottom, and extends backward and forward to include the supply chain and the customer chain.
  - Hansson (2001, p. 990) defines TQM *"…as a management system in continuous change, which comprises values, techniques and tools and that the overall goal of the system is increased customer satisfaction with decreasing resources*".
  - Hellsten and Klefsjö (2000, p. 241) define TQM: "…*as a continuously evolving management system consisting of values, methodologies and tools, the aim of which is to increase external and internal customer satisfaction with a reduced amount of resources*."

Hence, based on the above-mentioned analysis of TQM definitions by different authors, a common definition of TQM which combines all related aspects can be phrased as:
"TQM is a ***strategy*** and ***process*** to manage organizations as an ***integrated system*** of principles, methods and best practices that provide a framework for organizations to strive for excellence in everything they do under the ***leadership and commitment of top management***, supported by strategic planning, employees' ***education and training, open communication, change management, regular self-assessment, support structures*** **and** ***systems and resources***, that ***empower employees*** through ***investing*** in them to improve their performance as ***teams and*** to deliver ***continuously improved*** quality products and services. Through this approach a corporate TQM ***culture*** will be established to ***satisfy and exceed agreed internal and external customer requirements*** at the lowest overall cost to increase organizational performance in all areas such

as service results, financial results, marketing results, operational results, society results, customer results and employee results to obtain world-class quality."
With all the benefits and importance of TQM shown and sensed in these definitions, notions of TQM are becoming popular all around the world, as organizations focus on improving the quality of their products or services and competitiveness and the value to their customers (Nagaprasad and Yogesha,2009).

Nowadays, TQM has been termed 'the new way to managing', and it is a form of management. It has thus evolved into a subject in many universities and is likened to other management themes like human resource management, Japanisation and excellence (Wilkinson, 1992).

2.3.5 The essentiality and scope of Total Quality Management

According to Mani, Murugan & Rajendran (2003a), the impact of international competition in a sanction-free world market forces organizations to follow multidimensional survival strategies in which the potential of each available resource is fully utilized. They state that for many organizations, TQM is a management strategy that firstly enhances an organizational culture embracing continuous improvement and realizing the potential of personnel in order to face known problems. Secondly, TQM enhances the integration of quality technologies within each process of the organization in order to provide products and services both economically and customer-friendly. TQM as a management strategy is applied actively by more and more organizations and considered by many in order to obtain the competitive edge. The Oil industry's organizations are some of these organizations that strive for the competitive edge. TQM is seen as a method to render better products and services linked to processes that have to be developed in order to maximize value for customers and other interest groups (Nagaprasad and Yogesha, 2009).

This statement is supported by Kanji & Moura (2003) who regards TQM as a strategy to improve organizational performance by, firstly the commitment of all employees to satisfy the needs of customers as agreed upon at the lowest cost possible, and secondly, through the continuous improvement of products and services, organizational processes and employees involved. Moreover, TQM is seen as the key strategy for maintaining competitive advantage and a way of managing organizations to improve its overall effectiveness and performance towards achieving world-class status (Zhang *et al.*, 2000; Nilsson *et al.,* 2001; Chapman; Al-Khawaldeh, 2002; and

Chan and Quazi, 2002; Hendricks and Singhal, 2001; Shenaway et al., 2007; Prajogo and Sohal, 2003; Arumugam et al., 2008).

It is hence recognized that TQM is not just a program or a group of specific techniques; rather it is "*a management approach*" and a "*culture*", which implies a shift in an organization's collective thinking and operation (Sashkin and Kiser, 1992). Selladurai (2002) also emphasizes that TQM is a philosophy and concept to manage an organization as *an integrated system and process*. Ehlers (2001) supports him and states that TQM is a management approach that applies to all processes. Such a process is the interaction between personnel and organizational resources to produce continuous improvement to satisfy the needs of all interest groups.

Hammer & Champy (2000, p. 35) regarded TQM mainly as the process of continuous and incremental improvement of existing organizational processes. Dale (2003) and Johnson (1993) emphasized the relationship between process approach and TQM by regarding the nature of TQM as a philosophy that combined all processes into an integrated system in an organization.

Following Ehlers, Hammer & Champy, Johnson and Selladurai's approach to TQM, Lindsay & Petrick (1998, p. 55) stated that the 'Total' in TQM is applicable to (1) each process, (2) each task and (3) each person. Therefore, as already mentioned, it is applicable to all processes and not only to manufacturing and production.

Cascella (2002) regards TQM as that part of the total management function and strategic planning that have to direct the organization to total quality. According to Cascella (2002), total quality must be directed on (1) establishing cultural values with integrity, (2) unlocking the potential of personnel, (3) establishing improved structures, systems and procedures, and (4) improving all processes in order to develop the ability to fully satisfy all current and future customer needs.

Ghobadian *et al.* (1998) and Korunka *et al*. (2003) argued that TQM could effectively address much of the strategic issues faced by an organization. A more detailed examination of the reasons for the introduction of TQM revealed the following points:

- It improves efficiency by driving out waste from the system.
- It increases revenue through the provision of more effective products or services.
- It increases overall competitiveness through improved process efficiency and organizational effectiveness.
- It provides a focus for the introduction of wide-ranging cultural, organizational and procedural change.
- It provides positive effects on quality of working life of the employees.

- It provides continuous improvement that can be related to improved goal setting, and therefore to an increase in job satisfaction.
- It provides increased teamwork that can be related both to increased job satisfaction and better organizational commitment.
- It provides stronger employee participation, which is positively related to job satisfaction.

Despite the above sound and logical reasons for embarking on a TQM program, many organizations fail to achieve success and their programs fail dismally. The following section looks at the reasons for this ironical situation.

2.4 Factors that influence TQM

TQM literature has progressively developed from the ideas and contributions of those previous TQM authors, identifying various elements for effective quality management. Taking the initial research as a basis, the critical factors of TQM found in the literature vary from one author to another, although there is a common core, formed by the following requirements (Claver *et al.*, 2003): customer focus, leadership, quality planning, management based on facts, continuous improvement, human resource management (involvement of all members, training, work teams and communication systems), learning, process management, cooperation with suppliers and organizational awareness and concern for the social and environmental context (Tari, 2005).

More importantly is that the transformation to a TQM program depends on the extent to which organizations successfully implement certain quality management practices. Fewer defects, reduced rework and scrap, lower inventory levels, reduced lead times, higher flexibility and increased employee satisfaction are reportedly among the benefits of a successful TQM program (Flynn *et al.*, 1994; Kanji, 1990; Nutt and Backoff, 1993; Lake and Mohanty, 1994; Sitkin *et al.*, 1994; Spencer, 1994; Sirota 1994; Rhonda, Reger, Gustafson, DeMarie & Mullane, 1994). What is critical is a thorough understanding of the barriers that can impede an effective quality transformation. There is ample evidence that quality management systems improve organizational performance if properly implemented (Oakland, *et al.*, 1994; Kanji & Tambi, 1999; Kunst & Lemmink, 2000; Quazi, Jemangin, Kit, & Lee, 1998; Salegna & Fazel 2000; Hendricks and Singhal, 2001; Shenaway et al., 2007; Prajogo and Sohal, 2003; Arumugam et al., 2008).

However, the inconsistent track record of organizations reported to have implemented TQM, has resulted in many debates about the usefulness of TQM programs. There appears to be multitude reasons according to Mani, Murugan & Rajendran (2003b) and Salegna & Fazel (2000) why organizations fail in their endeavors to implement a quality management system. However, two common problems appear to be a lack of strategic planning and a lack of an appropriate culture supportive of TQM programs.

In order to analyze TQM, it is important to understand the reasons why TQM programs fail. This may provide insight into the importance to understand the meaning of TQM. Organizations and authors have identified a variety of reasons why TQM programs fail and many surveys have been done on this subject (Grib, 1993). The following is a list of obstacles, barriers, reasons and pitfalls organizations have reported when implementing TQM (Claus, 1991; Djerdjour & Patel, 2000; Grib, 1993; Macdonald, 1992; Mani, Murugan & Rajendran, 2003a; Matherly & Lasater, 1992; Masters, 1996; Mellahi & Eyuboglu, 2001; Morrison & Rahim, 1993; Nwabueze, 2001; Tamini & Sebastianelli, 1998). Even though this is not an exhaustive list, it does include the obstacles that are frequently cited in today's literature:

- Lack of management commitment.
- Lack to establish a guiding framework for TQM.
- Inadequate knowledge or understanding of TQM.
- Lack of an organization-wide definition of quality.
- Lack of a formalized strategic plan for change.
- Lack of customer focus (internal and external customers).
- Poor inter-organizational communication.
- Lack of real employee empowerment and teamwork.
- Lack of employee trust in senior management.
- Traditional belief that TQM costs money.
- Lack of strong motivation and seeing it as the "quality people's" job.
- Lack of vision, imagination and constancy of purpose.
- Lack of leadership.
- Lack of continuous training and education.
- Lack of investment, resources allocation.
- Lack of employee involvement and commitment.

- Lack of education and training of management and employees.
- Lack or inadequacy of an improvement measurement system.
- View of quality program as a quick fix.
- Perception of TQM as an optional extra and not as a necessity for development.
- Lack of cooperation between suppliers, management and customers.

Understanding the barriers that can hinder the success of TQM initiatives is essential for the survival of TQM programs. The obstacles highlighted here can be used with other TQM frameworks (for example Deming's 14 points, Crosby's 14 steps, and Baldrige Award criteria, ISO 9000:2000) to help organizations conduct self-audits of their TQM culture (Tamini & Sebastianelli, 1998; Arumugam et al., 2008; Porter and Tanner, 2004). The answer as to which one of the above-mentioned factors causes TQM program failure would, therefore, most probably be "all of them". TQM depends on the successful, combined approach to all the previously prescriptions of the gurus (discussed in section 2.3.1), underlying principles (discussed in section 2.3.3) as well as the avoidance of all the above obstacles. What is perhaps of greatest importance is the interconnectedness and interaction between the prescriptions of the gurus' various principles, i.e. their systemic nature. They should reinforce one another and form a synergistic and comprehensive strategy towards TQM.

2.5 SUMMARY

This chapter has clearly discussed the concept of TQM as it forms an essential part of the initial foundation on which to build a framework for its implementation. The chapter has discussed the importance of the concept of quality in the context of total quality management. It also provided an overview of quality management based on the historical evolution of phenomenon. The present form of TQM is the result of the work of many people. The quality gurus contributed significantly to the initial philosophy and principles of TQM. Therefore the contributions of people like Deming, Juran, Feigenbaum, Crosby, Ishikawa were highlighted.

Following this, historical development of total quality management was explored. Also, the principles, definitions, and the scope of TQM provided in literature that is relevant to the study were discussed in this chapter. Attention was also paid to the factors that influence TQM implementation in the organizations. The next chapter explores some international self-assessment models and quality management programs. It will also explore TQM history in Middle East in general and Oil industry in Kuwait in specific.

CHAPTER 3

Quality Programs, Models, and Studies

A review of the Literature (II)

3.1 Introduction

As a continual of the TQM literature review journey, this chapter gives the chance for a more in depth review of TQM as it examines the business excellence models commonly used by organisations to perform self-assessment. Consideration is therefore given to the Deming Prize, Malcolm Baldrige National Quality Awards, and the European Quality Award models. The chapter also reviews, in brief, a group of quality programs that go hand-in-hand with TQM best practices. After that, the chapter explores some of the quality management studies done in the Middle East region. Finally, this chapter concludes with the Quality movements in the Kuwaiti Business environment and specifically the Kuwaiti Oil industry.

3.2 International Self-assessment Quality Award Models Review

The roots of self-assessment can be seen in the quality movement, that started in Japan. Due to successful Japanese efforts, United States organizations began to discover the competitive advantages that TQM could bring and how the lack of a quality system could bring an end to organizations. With customers demanding quality and competitors responding to such demands, organizations turned to TQM as the key to enhance overall performance (Vokurka, Stading & Brazeal, 2000; Hides et. al., 2004; Hendricks and Singhal, 2001; Shenaway et al., 2007; Prajogo and Sohal, 2003; Arumugam et al., 2008; Demirbag et. al. ,2006).

There is no recipe for organizational success; however, there are different business excellence (awards) models, aimed at establishing guidelines and criteria for evaluation and improvement toward organizational excellence, both at national and international levels. In which organizations can use as they promote quality awareness and also provide a framework to assess organization's quality approach. Frameworks such as the Deming Prize (1951) in Japan, The European Foundation for Quality Management (EFQM) (1992) in Europe and the Malcolm Baldrige National Quality Award (MBNQA) (1987) in United States are the most accepted domains internationally and demonstrate worldwide activities in this field. According to

Johnson (2002), most national quality awards are based on the above frameworks that will be discussed in the following subsections. For example, the Belgian Quality Award, Danish Quality Prize, Finnish Quality Award, German Quality Award, Hungarian Quality Award, and Northern Ireland Quality Award are based on European Quality Award criteria. On the other hand, the International Asia Pacific Quality Award, Mexican National Quality Award, the Brazilian National Quality Award, the Egyptian Quality Award and even Jaber Quality Award that will be discussed later in are all based on MBNQA criteria (Ettore, 1996; DeBalyo, 1999). Thus,in this section our efforts shall be concentrated around the Deming Prize, the European Foundation for Quality Management (EFQM) model, and the Malcolm Baldrige National Quality Award (MBNQA), since they are the most well-known and commonly used over the world (Johnson, 2001; Sampaio *et. al*., 2012).

Each award model is based on a perceived model of TQM. The award models do not focus solely on either product or service perfection or traditional quality management methods, but consider a wide range of management activities, behaviors and processes that influence the quality of the final offerings. Ghobadian and Woo (1996) described the broad aims of these awards as follows:

- Increased awareness of TQM because of its important contribution to superior competitiveness;
- Encourage systematic self-assessment against established criteria and market awareness simultaneously;
- Stimulate sharing and dissemination of information on successfully deployed quality strategies;
- Promote understanding of the requirements for the accomplishment of quality excellence and successful deployment of TQM;
- Encourage firms to introduce a continuous improvement process.

Hence, any organization that wants to improve its performance would be well served by selecting one of these models and conducting a self-assessment. All of these awards propagate the TQM principles through these models and stress the importance of self-assessment. Balbastre & Moreno-Luzón (2003, p. 367) *defined self-assessment as "a comprehensive, systematic and regular review of the activities and results of an organization, contrasted with an excellence model*". According to Pun (2002), self-assessment can make comprehensive, systematic and regular reviews of an organization's activities that ultimately result in planned improvement actions. The assessment process helps the organizations identify their strengths and shortcomings and best practices where they exist. The countries from which these awards are administrated represent a significant amount of the world's production and goods and services (Pycraft, Singh & Phihlela, 2000; Vokurka, Stading & Brazeal, 2000). In other words, self-assessment models are means that help analyze organizations' status quo in implementing the TQM concepts and in achieving their strategic objectives.

In their pursuit of TQM, organizations around the world began turning to quality award programs for more than just the recognition such programs offered (Pun, 2002). Organizations realized that the awards also offered models and tools for implementing a quality strategy for benchmarking best practices, performing self-assessments and, ultimately, achieving improvements (Kueng, 2000; Vokurka, Stading & Brazeal, 2000).

According to Pun (2002) these awards, based on models of business excellence, are being used increasingly by organizations as part of the performance measurement (PM) process. Integrating PM with TQM concepts becomes an imperative in the pursuit of excellence. According to Balbastre & Moreno-Luzón (2003), and Kueng (2000), self-assessment activities offer various benefits, such as:

- It produces an objective identification of current strengths and areas for improvement.
- It builds a commitment to change among the key players.
- It helps management to identify the 'vital few' areas for improvement.
- It provides a useful analysis of an organization's capability, that is of real interest to potential customers.
- Overall, self-assessment is predominantly used for strategic management and action planning, or as a basis for improvement projects.

3.2.1 Deming Prize

The Deming Prize criteria was established in 1951 to recognize quality achievements in Japanese organizations (Khoo & Tan, 2003; Deming Prize Committee , 2000). The award was named to honor Deming, the leading thinker and innovator who helped Japan to overcome the economic crisis after World War II (Garvin, 1988). The Union of Japanese Scientists and Engineers (JUSE) manage the award and it may be given in four categories: individual, companies and other operating organizations, factories, and companies located outside Japan (Baila, 1996).

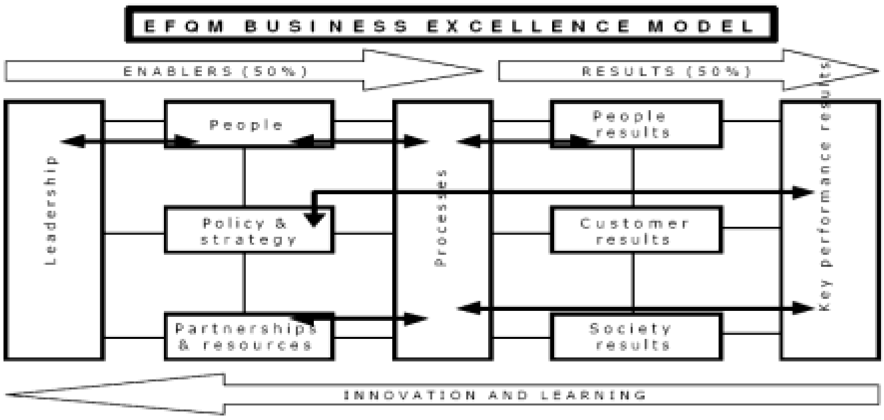
Today, the Deming Prize honors private and public organizations for the successful implementation of quality control activities. Unlike other national and regional quality awards, One of the main strengths of the Deming Prize criteria are their focus on top management leadership, process control, Kaizen improvement activities and on future planning to ensure that the gains made will be sustained. (Porter and Tanner, 2004). However, the Deming Prize does not provide a model framework for organizing and prioritizing criteria. Instead, the evaluation includes 10 equally weighted points that each applicant must address. The 10 points involve the following categories: policies, organization, information, standardization, human resources, quality assurance, maintenance, improvement, effects and future plans. Expert panel members judge performance against these points. While the Deming Prize does not provide a model per se, the categories are similar to those of the other award models (Dale, 2003; Khoo & Tan, 2003; Wood & Wood, 2005).

Finally, unlike the European Quality Award and the Baldrige Award, the Deming Prize is not competitive. Any number of companies meeting the above criteria may be awarded the prize in any one year (Porter and Tanner, 2004).

3.2.2 "European Foundation for Quality Management" (EFQM) model

Recognizing the importance of quality performance, 14 major organizations in Europe formed the European Foundation for Quality Management (EFQM). By 1991, EFQM developed the European Quality Award program to honor outstanding European organizations and to promote quality in European companies (Jacobs and Suckling, 2007; Tummala & Tang, 1996). Unlike other awards, the European Quality Award is a regional program that currently involves 16 countries in Europe (Dedhia, 2001; Hides et. al., 2004). This model was inspired by the self-assessment aspect of the Malcolm Bridge Quality Award. It is recognized as an introduction to TQM. Bou-Llusar *et al*. (2005) maintained that "*EFQM Excellence model is also useful in defining and describing TQM in a way in which management can easily understand and, thereby help to generate senior management support for TQM*". This award evaluates organizations on nine criteria including (as shown in Figure 2-1): leadership, policy and strategy, people (employee) management, resources, processes, customer satisfaction, people (employee) satisfaction, impact on society and business.

Figure 2-1: EFQM-model



Source: Dale (2003:484), and Rao *et al.* (1996:93)

The assumption behind the model is that "*Excellent results with respect to performance; customers, people and society are achieved through leadership driving policy and strategy, people, partnerships and resources and processes"*. EFQM improves its own quality model by continually analyzing applicant feedback and making the necessary adjustments (Eskildsen & Dahlgaard 2000; Seghezzi 2001; Vokurka, Stading & Brazeal 2000; Hides *et al.*, 2004).

3.2.3 Malcolm Baldrige National Quality Award (MBNQA) Criteria

The Baldrige model has been an extremely popular framework for organizational self-assessment. The NIST estimates that thousands of organizations have used its criteria for self-assessment. There is also evidence that, from a financial perspective, MBNQA winning organizations outperform other organizations (Ruben *et al.*, 2007). Similar to the Deming Prize and the European Quality Award, the U.S. government established the Malcolm Baldrige National Quality Award (MBNQA) in 1987, naming it for Malcolm Baldrige who worked to enhance US competitiveness by promoting awareness of quality excellence, encouraging U.S companies to improve quality, and recognizing these companies' quality and business excellence (Tummala & Tang, 1996; Johnson, 2001; Sampaio et. al., 2012). The Award was evolved from the means of recognizing the best quality management practices to a comprehensive framework for world class performance, where it is widely used as a model for (process) improvement (Flynn and Saladin, 2001). Despite being described as "badge of honor" (Dow *et al.*, 1999), the MBNQA is much more than quality award for an organization. Garvin

(1991) described it as "*The most important catalyst for transforming American Business*". The dual goals of the Baldrige criterion are to improve value to customers that would results in marketplace success and to improve overall financial and company performance to meet the needs of shareholders, owners, and other stakeholders (Tummala & Tang, 1996). The National Institute of Standards and Technology (NIST) manages the award and it may be given each year in six categories including manufacturing, service, small business, health care, education, and nonprofit organizations. MBNQA has been primarily used as a framework for business improvement rather than as an award for quality. The application of MBNQA is not just limited to the US. In fact, most national and international quality awards have been influenced by Malcolm Baldrige criteria (Ettore, 1996; DeBalyo, 1999) as mentioned earlier.

The MBNQA criteria are built upon the following set of core values and concepts for quality management: (1) leadership, (2) customer-driven excellence, (3) organizational and personal learning, (4) valuing employees and partners, (5) agility, (6) focus on the future, (7) managing for innovation, (8) management by fact, (9) social responsibility, (10) focus on results and creating value, and (11) systems perspective.

Baldrige administrators believe that these core principles form the framework for performance excellence – the basis of the award's criteria. The criteria (see figure 2-2), used to assess an applicant's performance, are divided into seven categories and provide the strategic direction for the entire system (Collier, Goldstein, & Wilson 2002; Evans & Dean 2003; Dale 2003). The categories are leadership, strategic planning, customer and market focus, information and analysis, human resource focus, process management and business results. Information and analysis support the Baldrige model, with the remaining categories falling under a customer and market focused strategy umbrella. One objective of the MBNQA is to provide a model that shows understanding and improvement of quality management by continuously improving the award criteria themselves (Rao *et al.* 1996; Vokurka, Stading & Brazeal 2000; Islam,2007).

Figure 2-2: The Malcolm Baldrige National Quality Award Criteria Model

Aston University

Illustration removed for copyright restrictions

Source: NIST, 2000

It is worth mentioning that this research utilizes mainly the MBNQA model in its conceptual framework. A detailed and focused explanation on this matter will be presented in the following chapter.

3.2.4 Comparison between the three Quality Award models

Three quality award models mentioned above provide a universal framework for evaluating aspects of TQM practices in a firm. Although each award has its own unique categories and emphasis yet the three quality award programs, their models and their criteria have several objectives in common. Each award model has two parts: One is TQM implementation (that is, the enablers or TQM implementation components) and the other is the overall business results. TQM implementation makes overall business results happen. All three award models emphasize the importance of leadership, human resources management, employee participation, employee education and training, process management, strategy and policy, information, supplier quality management and customer focus. They also emphasize continuous analysis and improvement and focuses on organizational quality management. The three quality award models provide firms with a means to measure their position against a set of universal criteria and to identify their strengths and weaknesses in the areas of quality management practices and business results. These models provide an insight into the practical way of applying TQM, as well as a solid foundation for this research and give the author a better understanding of the concept of TQM. According to Hackman and Wageman (1995), it is safe to assume that Baldrige Award winners actually have implemented the full TQM package.

Despite changes in customer expectations, economic pressure and management approaches, quality awards continue to offer organizations comprehensive and contemporary bodies of quality principles and practices. With the national and regional quality awards being periodically reviewed and updated, further similarities between their models and criteria have resulted as these award models continue to evolve and mature. Based on the work of Tummala and Tang (1996), Wadsworth, Stephens, and Godfrey (2002), Baila (1996), and Khoo and Tan (2003), similarities and differences between the Deming Prize, European Quality Award, and MBNQA are presented in Table 3-1 in Appendix-T.

3.2.4.1 Awards' Comparative analysis

The quality award programs, their models and their criteria have several objectives. Table 3-2 presents a set of comparative analysis between the different excellence models, analyzing the objectives, quality principles and criteria for each model. As illustrated in Table I, the business excellence models that have been analyzed do present several common purposes, with a particular emphasis placed on continuous improvement. They also do present similar evaluation criteria (Vokurka *et al.*, 2000).

Table 3-2: A Comparative analysis between the three excellence models

Aston University

Illustration removed for copyright restrictions

Source: Vokurka *et al.*, 2000

However the models differ on how each award's criteria address the seven quality areas—leadership, planning, customers, employees, processes, suppliers and results (as shown in table 3-3). Differences also exist in the point allocations placed on each criterion (see Figures 3-3 through 3-5). As is the case in the evaluation of any improvement initiative, results are the true indicator of success and are very important when implementing any quality endeavor—true TQM cannot be successful without evaluating results. The award criteria reflect this importance, as one of the greatest commonalities found between the programs is the weight that business results are given where competitive advantage is concerned. Business results have the greatest weight for the MBNQA, customer satisfaction for the European Quality Award, and all of the checkpoints in the Deming Prize are equally weighted.

Finally, while the Deming Prize is prescriptive in terms of the tools, techniques and practices that it recommends, the EFQM, and Baldrige on the other hand are prescriptive in terms of the philosophy and values which they expound. However, they do not prescribe any particular method or tool to improve total quality.

Table 3-3 : Common Award Criteria

Aston University

Illustration removed for copyright restrictions

Source: Vokurka *et al.*, 2000

Figure 3-3: Percentage Emphasis of Deming Prize Criteria

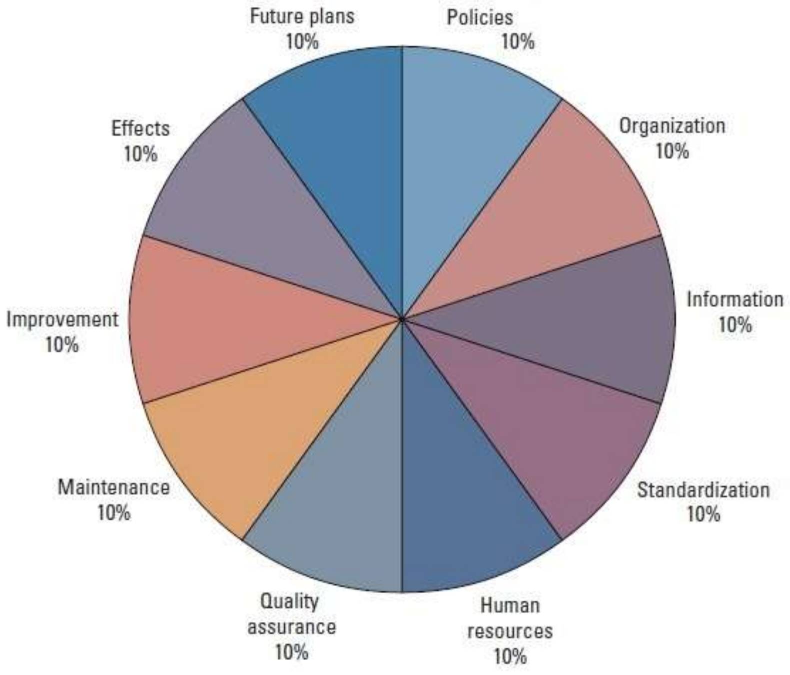


Figure 3-4: Percentage Emphasis of Baldrige Award Criteria (MBNQA)

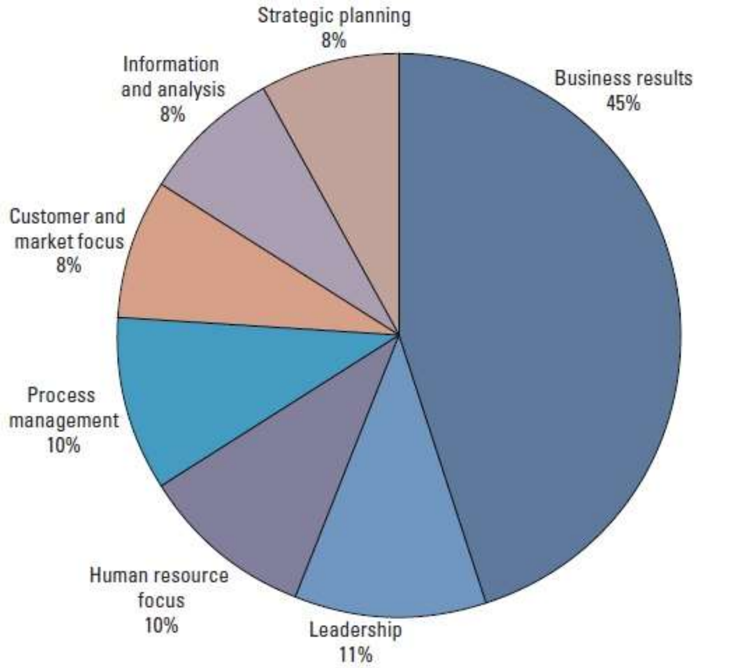
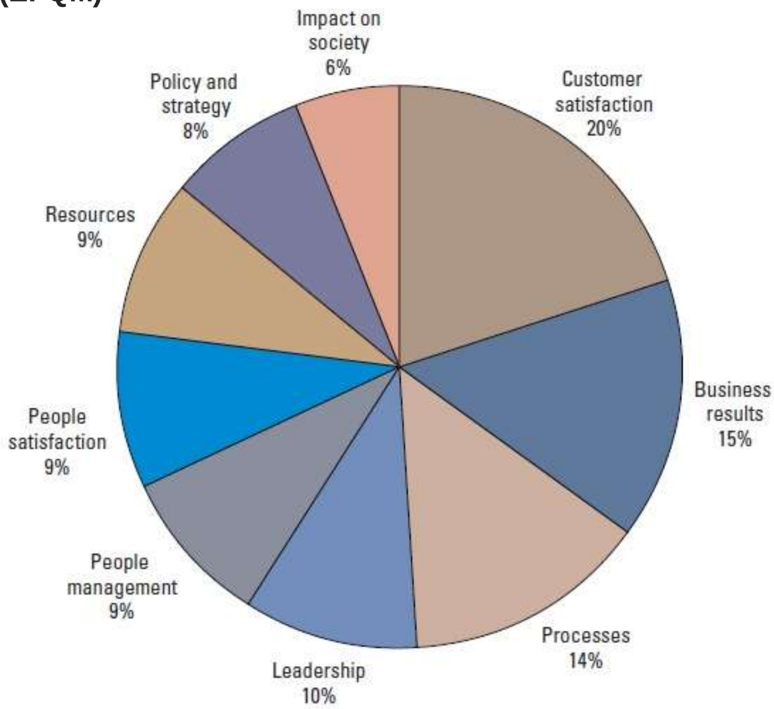


Figure 3-5: Percentage Emphasis of European Quality Award Criteria (EFQM)



3.2.4.2 Critiques of the three awards

Baldrige and, to a lesser extent, the EFQM are criticized because of their weak focus on the business results. Detractors also argue that the awards are too process oriented and place too much emphasis on TQM as a “check the box activity” and not as a path to sustainable results. They argue that more emphasis should be placed on results over time and not simply reinforce the culture of “just do it”. The EFQM, by including and examining financial results, has to some extent addressed this criticism. Quality is not an end in itself but a means to achieve an end. This end for for-profit organizations is higher profitability (Ghobadian & Woo, 1996).

The other criticisms include:

- award criteria are static and not dynamic;
- supplicants nominate themselves and are not nominated by customers;
- the EFQM, Baldrige, and Deming fail to define quality clearly which is a major shortcoming, because they are unable to help the organizations to reach a common understanding;
- awards encourage a home-grown approach to quality and this will not help them to achieve world class performance;
- companies may focus on winning the award rather than opportunities for self-examination, learning and improvement;
- pursuing the award distracts the attention of the key executives from running the business.

The models are based on a perceived model of total quality management. They do not focus solely on product, service perfection, or traditional quality control methods, but consider a wide range of management principles and factors which influence the quality of the final offerings. The models on which the awards are based implicitly recognize that the quality of the final offerings is the end result of integrated processes and employees’ effort.

Superior “quality” is considered by industrialists, politicians and trade unionists as an important contributor to improved competitiveness. This is why quality awards are here to stay for the foreseeable future. Garvin (1991) stated that “Baldrige is the most important catalyst for transforming the American Business” and that “Baldrige more than any other initiative has reshaped management’s thinking and behavior”.

Each award has its unique characteristics. However, they all attempt to propagate quality management practices. They share a set of fundamental philosophies. These include: acceptance of responsibility for quality by the top management; customer orientation; high level of employee participation; open and effective communication; fact-based management; and strategic quality planning (Ghobadian & Woo, 1996).

3.3 Other Quality Management Programs associated with TQM

TQM is the result of an evolution starting in Japan about 50 years ago, where continuous improvement gradually became the most important management principle. Because of this important principle TQM as a management philosophy has contents which are continuously are changed and enhanced with new theories, concepts, and results that are useful to use and adopt in nowadays TQM implementations processes. TQM has recently became associated with many developed management programs and concepts that go hand-in-hand with TQM, that describe issues of best management practices, and have thus gained recognition as aspects of TQM. Examples of some of these new concepts and programs are Lean management, Six Sigma, ISO 9000 series standards, Business Process Re-engineering (BPR), Kaizen, Just-in-time, Zero defects, and quality circles (Foley, 2004).

Japan and the United States have pioneered and developed most of these programs and methods, which in return have traveled across the globe and have been adopted in various countries with different industrial cultures. Internationally, differences in quality management and timing still continue. Currently in the USA, Six Sigma, Lean and TQM appear to be the best-liked concepts (McNeil & Greatbank, 2002; Charlesworth, 2000). In Europe, the ISO 9001 and TQM are still popular, and in Asia the ISO9000, Kaizen, and TQM are favorite techniques (Wheatley, 1998; Bain & Company, 2005).

These quality management programs help organizations identify areas of improvement. The context in which businesses environment is changing fast, justifies why new management concepts are being developed as a strategy to catch up with the development in the ever-changing business environment. In this section, a brief description of Lean management, Six Sigma, ISO 9000 series standards, Business Process Re-engineering (BPR), and Kaizen is briefly given respectively as examples of the various quality programs.

3.3.1 Lean Quality management Program

The Lean QM program mainly focuses on removing non-value-added activities from processes and services in an organization (C. D. Chapman, 2005). Lean production, focused at minimizing the amount of production waste. The main components of the Lean quality management system are called the 5S system: sort, set in order, shine, standardize, and sustain (C. D. Chapman). Companies used this Lean management to improve the productivity of their process (C. D. Chapman). Furthermore, Bendell (2006) sees lean as the systematic pursuit of perfect value through the elimination of wastes in all aspects of the organizations business processes. It requires a very clear focus on the value element of all products and services and a thorough understanding of the detailed operations of the business processes by which the product or service is provided.

Lean Thinking, a book written by Womack (1996) on the principles of waste reduction, inspired Lean Works Systems. The main principles of lean, according to Womack, included specifying value from the standpoint of the customer, identify the value stream for each product family, make the product flow and allow the customer to pull production in your offerings (Andersson *et al*. ,2006; Demers, 2002). Goeke and Offodile (2005) reported the key elements of Lean quality management as customer focus, process focus, management by fact, collaboration, training and benchmarking.

In addition to reducing waste generated during production, production speed and innovation are goals of many organizations and managers. Demers (2002) defined Lean management as an applied philosophy that many manufacturing, service and government organizations have adopted to acquire the flexibility needed to meet new competitive challenges – eliminating waste, enhancing production speed and pushing innovation.

Sawhney and Chason (2005) cited some of the reasons for Lean management's failure from Choi (1997) and Rother (1997) as: employee resistance, not considering the organization as a whole, lack of employee involvement and participation, lack of top management support and treating Lean management as a separate initiative.

3.3.2 Six Sigma

The Six sigma is a strategic and company-wide approach. By focusing on variation reduction, projects have the potential of simultaneously reducing cost and increasing customer satisfaction (Bendell, 2006). Similar to Lean management, Six Sigma has drawn intense interest from the business community. It is considered as a revolutionary approach to product and process quality improvement through the effective use of statistical methods (Harry and Schroeder, 2000).

Six Sigma's breakthrough strategy combines improved metrics and a new management philosophy to significantly reduce defects thereby strengthening a firm's market position and improving the profit line (Harry and Schroeder, 2000). It involves designing, improving and monitoring business activities to minimize or eliminate waste while optimizing customer satisfaction and increasing financial stability (Pande *et al.*, 2000). It is also a data-driven approach for process improvement (Holtz & Campbell, 2004). Using statistical tools and mathematical modeling in Six Sigma, one can significantly reduce the defect rate (Brewer & Eighme, 2005).

There are two major improvement methodologies in six sigma; one for already existing processes and one for new processes. The first methodology (DMAIC) used to improve an existing process can be divided into five phases including define, measure, analyze, improve and control (Pyzdek, 2003; Magnusson *et al.* 2003). The second methodology is often used when the existing processes do not satisfy the customers or are not able to achieve strategic business objectives (Eckes, 2001). This methodology can also be divided into five phases including define, measure, analyze, design and verify according to Magnusson *et al.* (2003).

The Six Sigma system and TQM are both customer focused. Prior to performing any of the other steps, Six Sigma requires that the wants and needs of the customer be defined. The approach has proved it highly effective in terms of delivering cost savings and, increased customer satisfaction.

The approach is based upon project-by-project improvement, with projects lead by full-time improvement engineers or managers termed “Black Belts” or part-time improvers often from supervision referred to as “Green Belts”. They make use of an impressive group of statistical tools within the DMAIC projects phases of define, measure, analyze, improve and control. Initial Black and Green Belt projects are selected prior to training and projects are typically not signed off, nor Black and Green Belts certified, until target financial savings are independently verified. This process ensures that the transfer of method to first application is effectively implemented (Bendell, 2006).

There are usually many different improvement tools used in a six sigma program. Magnusson *et al.* (2003) document that the six sigma toolbox contains seven design tools, seven statistical tools, seven project tools, seven lean tools, seven customer tools, seven quality control tools and seven management tools. The tools are often easy to use in both ongoing and breakthrough improvement projects but there are also some more advanced statistical tools in the toolbox (Andersson *et al.*, 2006).

Many scholars believe that good leadership (Voelkel, 2005) and cultural change (Holtz & Campbell, 2004) are essential for Six-Sigma success. Zimmerman and Weiss (2005) predicted some reasons for Six-Sigma failure as inadequate information, selecting the wrong project, faulty implementation, and neglecting the organization's culture.

3.3.3 A Debate between TQM, Six Sigma and Lean

By referring to Anderson *et al.* (2006)'s comparison among TQM, six sigma and lean, it was noted that literature studies have shown that the origin of the principles of both lean production and six sigma quality are the same – namely Japan. Both lean production and six sigma quality are results of the quality evolution process in Japan (Dahlgaard-Park, 2000).
George *et al.* (2003) claimed that the main difference between six sigma and lean was that the previous focused more on accomplishing no defects, while the latter is a better choice when one wants to improve process flow and eliminate waste. TQM also has elements of accomplishing no defects and eliminate waste but with the main objectives to increase external and internal customer satisfaction with a reduced amount of resources (Hellsten and Klefsjö, 2000).

As for the process approach, Six Sigma programs talk the top managers' language (the economical gains of the improvement). Lean, on the other hand, is a discipline that focuses on process speed and efficiency in order to increase the customer value (George *et al.*, 2003). In lean manufacturing, project groups are usually the approach to perform necessary improvements. While Six Sigma and lean focus on performing improvements mainly through projects, TQM has sometimes a different approach. TQM emphasizes the commitment and involvement of all employees (Bergman and Klefsjö , 2003). In TQM, there is also, like six sigma and lean, a strong focus on processes. The main objectives of the process work within TQM are to alternatively improve and uniform the processes (Andersson et al., 2006).

When looking at the methodologies, it was noted that there are many similarities between the methodologies used in TQM such as the improvement cycle and the methodologies of Six Sigma, where the methodologies are cyclical and consist of similar phases. However, the lean principles are different as compared to the methodologies in TQM and Six Sigma as they are not cyclical in nature and are not focused on how to perform improvements (Anderson *et al.*, 2006).

The tools used in six sigma, lean and TQM in order to find out what is wrong with the system are many and various. TQM normally consists of tools that have either a statistical or an analytical base. Among others, the seven quality control tools and the seven management tools are frequently applied in TQM. In general, six sigma programs have successfully emphasized the statistical part in quality management. While in lean, a variety of tools are available for reducing or eliminating waste. In summary, the tools in the lean concept are more analytical in nature as compared to the more statistical tools used in TQM and six sigma (Anderson *et al*., 2006).

As for the limitations, according to Magnusson *et al.* (2003), there is a difficulty in six sigma programs to exceed the customer's needs and hence increase the customer satisfaction. Klefsjö *et al.* (2001) claimed that six sigma program failed to create conditions in order to involve everyone, that is more emphasized in the TQM literature. The main limitation of lean is the lack of flexibility the concept offers (Dove, 1999), and that the concept actually can lead to delays for the customers (Cusumano, 1994). There is also a discussion going on whether lean developed for manufacturing is applicable in all industries. On the other hand, Mast (2004) argues that six sigma similar to TQM can be applied in a wide range of areas, including both manufacturing and service industries.

From the above mentioned comparison aspects, the five principles and the aim of lean production as well as the principles and tools behind the Six Sigma process are embedded in the principles, concepts and tools of the holistic management philosophy called TQM (Dahlgaard *et al.*, 1998a). Hence, the case stories related to both lean production and six sigma quality are just to be regarded as specific TQM case stories. However, the contributors of lean production and six sigma quality had provided companies with updated roadmaps to follow while embarking on the journey to excellence, and a very convincing documentation about what happens when scrapping the old Taylor designed mass production systems and building the new corporate culture called the TQM culture (Dahlgaard *et al.*, 1998a).

Finally, Anderson *et al*. (2006) recommended that there is a lot to gain if organizations are able to combine the three concepts together. Indeed, the concepts are complementary; especially

Six Sigma and lean are excellent road-maps, that could be used one by one or collectively in order to strengthen the values of TQM within an organization.

3.3.4 International Organization for Standardization: THE ISO 9000

Another system of quality is ISO 9000. ISO is an acronym standing for the International Organization for Standardization (ISO). The ISO 9000 standards are a set of international standards and guidelines developed by a technical committee composed of experts from business and other organizations round the world to promote Quality management in organizations (Guler, Guillén, & Macpherson, 2002; Tummala & Tang, 1996; Ho, 1994). There are five ISO standards: ISO 9000, ISO 9001, ISO 9002, ISO 9003, and ISO 9004. ISO 9000:2000 describes the fundamentals of quality management systems and provides a model for quality assurance in design, development, production, installation, and services; ISO 9001 specifies requirements for quality management systems; whilst ISO 9004 provides guidance on quality management systems. The intention from the beginning of ISO efforts in developing quality standards has been to integrate and harmonize similar existing quality management standards into a single body of international quality standards that could apply to world trade and commerce. The key principles of ISO 9000:2000 are customer focus, leadership, involvement of people, a process approach, a system approach to management, continual improvement, a factual approach to decision making, and mutually beneficial supplier relationships (International Standards Organization, 2005). Russell (2000, p. 657) also stated that ISO is there to assist organizations to implement and operate effective quality management systems (QMS) for the continuous improvement of organizational performance. According to Vavra (2002), the ISO standard is the incorporation of customer satisfaction data as a consequence of indicating the value of processes adopted by an organization.

ISO 9000:2000 is intended to be relevant to all types of organizations; it provides a quality system model. This set of quality system standards is applicable to all products and services. The four major areas of ISO 9000:2000 is (1) management responsibility, (2) resource management, (3) process management, and (4) measurement, analysis and improvement (Seghezzi 2001).

According to Zuckerman (1999), the ISO 9000:2000 also promotes a human/technology partnership that will produce the desired competitive results. It is also seen as interpersonal communication tool which encourages information's flow, monitoring and sharing (Evans & Dean, 2003; Hooper, 2001; Ketola & Roberts, 2001; Stahan, 2002; Zuckerman, 1999).

It is worth mentioning that although ISO 9000 has many recognized strengths in managing quality yet it also has weaknesses. Furthermore, as it has been argued that ISO 9000 offers an organized method of analyzing an organization for quality, receiving a stamp of standard approval may lead to a positive company image, leading to greater credibility and acceptability. In the long run, the system should be able to benefit the company by cutting costs. Opportunities do arise where an organization becomes competitive with respect to quality. Strategic marketing opportunities can be achieved through the prestige of an internationally recognized standard. Employee morale may improve with employees being proud to be part of a well renowned company. Thorough and good documentation is achieved which promotes knowledge transfer and improves chances of tracing causes of errors and this also saves costs. On the other hand, researchers have identified weaknesses in the way the ISO 9000 standards work. Many organizations find that the process of winning accreditation is time consuming (Wilson,2004). The process is also resource-intensive; hence, is very costly, and not all organizations can afford it. Responsiveness and flexibility to customer needs can be reduced. In some organizations, cultural resistance has affected the implementation process. It is also very difficult to be sure that the organizations consistently maintain their quality standards (Flood, 1993).

Reimann and Herz (1996) have compared the MBNQA and the ISO 9000 quality management system. The authors are of the opinion that they differ fundamentally in focus, purpose, and content. According to them, the focus of MBNQA is to enhance competitiveness, whereas the focus of ISO 9000 registration is conformity to practices specified in the registrant's own quality system. Most of the ISO 9000 requirements fall under the process management category of MBNQA. Overall, ISO 9000 registration requirements cover less than 10% of the Baldrige Award criteria (BNQP, 2005a).

3.3.5 Business Process Re-engineering (BPR)

Business process Re-engineering was started in the 1970s from research undertaken at the Massachusetts Institute of Technology (Hammer, 1990 and 2001). Hammer (1990) defined BPR as:

> *"…A fundamental rethink and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality and speed."*

BPR is known as a holistic modern management approach that seeks to bring radical changes to certain organizational processes by starting afresh on a clean slate. The approach is process-based, information technology-based, and results-focused. It also results in a change in the organizational structure and a change in culture (Williams *et al.,* 2002; Prajogo & Sohal, 2001).

BPR is a strategic decision to redesign the way a business operates. Its key principles were summarized by MacDonald (1995, p. 24) as "*Customer-driven, strategic in concept, concentrates on key business processes, cross-functional, requires senior executive involvement, needs dedicated time of the 'best people, will take time (not a quick fix), requires communication of clear vision , and should target dramatic stretch goals*".

Both incremental improvement and innovation are essential to achieve and maintain competitive advantage. Although each has a different approach, continual improvement by TQM, Six Sigma, or Lean focus on the existing system and improve its performance using a bottom-up approach, while radical change by BPR tends to start from the beginning, using top-down methods. (Hammer, 2001; Williams *et al.,* 2002)

When BPR is effective, its benefits are many and significant, and would include (MacDonald, 1995) increase in productivity as well as reduction in administrative costs, staff turnover, production development time, order cycle time, and customer call-backs.

However, having said this, there are certain contradictions that have been considered in the literature about BPR. The criticisms relate to the fact that there is nothing radical about BPR because conceptual redesign is possible but implementation is incremental. BPR is a continuous process that uses up a lot of resources and thus can be very costly. However, like TQM, BPR has its advantages. Business process re-engineering is vital for ensuring that productivity does not get neglected at the expense of innovation. It is compatible with quality management and lean management. Moreover, continuous improvement alone is in the long run not enough to meet customer expectations. This calls for a radical change in the ways in which work is done in the organization and BPR helps organizations to make this change. Effectively, BPR is complementary to TQM and not an alternative to it (MacDonald, 1995).

3.3.6 Kaizen

Kaizen is another quality management approach that primarily focuses on continuous improvement. Concept-wise, it refers to the activity of fine tuning-processes for continuous improvement. It involves the establishment of management-initiated corrective action teams. The teams are usually focused on continuous improvement of operations and processes, concentrating on identifying the causes of errors or problems and forwarding solutions (Imai, 1986).

Ortiz (2006, p. 30) argued that Kaizen is the "*…starting point and driver for all Lean initiatives*". It provides organizations the opportunity for in-depth planning and intelligent implementation which lead to focused organizational changes. Kaizen is the foundation from which organizations can build a lifetime of process improvements. Employee involvement is critical according to the Kaizen philosophy. This philosophy should be embedded into the day-to-day operations of the organizations. Although the immediate results generated through the employment of Kaizen are small, the affects are long-term.

With concluding the review of quality models and programs associated with TQM, the next section will draw the focus to quality management implementation and movement in Middle east in general and Kuwait in specific.

3.4 Quality Management in the Middle East

The pace of the implementation of quality management in Middle Eastern countries is not at the same rate as that of developed regions and countries (Al-Khalifa and Aspinwall, 2000; Chapman and Al-Khawaldeh, 2002; Al-Zamany *et al.*, 2002). However, there is increasing awareness and understanding of quality management in the Middle East region (Dedhia, 2001). Most countries in the Middle East were not aware of the impact of quality management on the productivity, efficiency and competitiveness of their organizations. In fact, two trends were considered as the driving forces of quality management practice in Middle Eastern countries: globalization and the fluctuation of oil and gas prices in the world market (Al-Khalifa and Aspinwall, 2000). The dependence of national economy of most Middle Eastern countries on the price of oil/gas and the cyclic rise and fall of petroleum products in the world market forced Middle Eastern countries to implement quality management in the oil/gas industry as well as other industries, including public, private, and manufacturing industries (Al-Khalifa and Aspinwall, 2000).

The literature on quality management has paid little attention to quality management in developing countries and little empirical research has been carried out in developing countries, especially Arab Middle Eastern countries (Al-Khalifa and Aspinwall, 2000). The First Gulf International Quality Conference held in Bahrain in 1990 was the first movement toward quality management in Middle East (Dedhia, 2001). Early studies on the implementation of quality management in the Middle Eastern countries began around 1994. Al-Suleimani and Sharad (1994), Aly (1996) and Zairi (1996) addressed the challenges and problems for organizations in Middle Eastern countries.

These studies were further enhanced by a limited amount of national empirical research. The first study was implemented in Qatar (Al-Khalifa and Aspinwall, 2000). Taking a national approach for understanding of the levels of implementation of TQM in Qatar, they found that the level of understanding of TQM was very low in the organizations. A short history of TQM implementation, lack of information, education, training and lack of understanding of TQM “know-how” were reported as the major challenges for TQM implementation in Qatar.

Some other studies have also contributed to the understanding of TQM implementation in Middle Eastern countries. Chapman and Al-Khawaldeh (2002) studied the relationship between TQM and labor productivity in Jordanian industrial companies.

They found that the productivity of employees in high-TQM companies (companies with higher degree of TQM implementation) was significantly higher than for low-TQM (companies with lower degree of TQM implementation) companies. The other study done in Yemen, addressed the level of understanding and difficulties of implementing quality management in Yemen (Al-Zamany *et al.*, 2002). Using case studies, the researchers found that governmental support, better technical understanding of TQM and changes in organizational culture were the problems for successful TQM implementation in Yemen.

The study by Curry and Kadasah (2002) had also contributed to the practice of quality management in the Middle East. Their study was conducted in Saudi Arabia and was aimed at determining the key elements of TQM in companies. They found that learning the concepts of quality management is critical for successful implementation of TQM.

Having reviewed some of the quality management studies done in Arab and Middle East region, the following section shall explore the quality management movement in Kuwait where this research had took place in the Kuwaiti Oil industry.

3.5 Quality Management movement in Kuwait

Quality management concept did not reach the mature stages in all over Kuwait as the main and basic quality initiatives had only started in the beginning of 1999’s. There were many individual efforts on private company levels to promote quality practices in their business environments and to achieve international recognitions and awards, all that to improve their organization performance levels. However, on governmental sector, no unified action or policy implemented to embed quality officially and clearly in all ministries and governmental departments. Again, some attempts can be found to quality adherence in some business practices and government departments such as health care and education institutions. Unfortunately, in the just recently approved by the government, the development plan (2011) for the coming 5 years, quality was not highlighted which shows a clear shortage from this aspect in this development plan as quality is mandatory to be adopted if development is required. Although of this quality shortage on governmental levels, quality is being recognized better in the private sector and as well as in the governmental companies at the governmental sector as many quality awards and certificates were achieved and recognized on national and international levels.

In addition to all of the above, as an attempt to encourage more and more institutions and organizations to embed quality in their business practices, the Kuwaiti government has formed the Jaber Quality Award (JQA) in 2008 which covers all business sectors in Kuwait (Jaber Quality Award, 2011). The main objectives of this award were to highlight the importance of improving the quality culture and communicating quality concepts in organizations for both government and private sectors, and to enhance competence and capabilities by applying new management concepts and techniques. Moreover; this award aims to assist organizations for a better recognition since they are distinguished and committed to quality and its concepts with service or products provided by applying international standards and best practices that are applicable for their sector. It is worth mentioning that this award adopts Malcolm Baldridge National Quality Award (MBNQA) model in its evaluation that encourages organizations to adopt such model and utilize it. Examples of similar awards which were formed in the Middle East region are Dubai Quality Award (United Arab Emirates, 1995), King Abdul Aziz Award (Saudi Arabia, 1999), and King Abdulla II Award (Jordan, 2002).

Thus, despite all these efforts to promote, develop, and implement quality management practices and concepts in Kuwait, the maturity level of quality management in Kuwait is much lower than in the West, and there is no national model still to be considered by Kuwait as the official quality model which effectively encourage and recognize the development of effective quality management practices in Kuwaiti oil industry in specific and in other business organizations in general. That's why this research will focus more on TQM and participate in developing such model as initial attempts for such a requirement.

3.5.1 Quality Management and the Kuwaiti Oil Sector

The Oil industry in Kuwait is represented by ten oil sister companies forming the oil sector, which are state-owned entities responsible for Kuwait's hydrocarbon interests throughout the world. These ten companies are specialized subsidiaries which operate under the governmental authorities in Kuwait and across the world with activities encompassing all aspects of the hydrocarbon industry. These subsidiaries are headed by the mother company Kuwait Petroleum Corporation (KPC) which fully owns these companies. As part of the global energy industry, these companies through KPC help to supply the world with its vital oil and gas needs by exploring for, producing, refining, transporting and marketing these precious natural resources both in home country and internationally. These ten subsidiaries are Kuwait Oil Company (KOC), Kuwait National Petroleum Company (KNPC), Petrochemical Industries Company (PIC), Kuwait Oil Tanker Company (KOTC), Kuwait Aviation Fuelling Company (KAFCO), Kuwait Foreign Petroleum Exploration Company (KUFPEC), Kuwait Petroleum International (Q8), Kuwait Gulf Oil Company (KGOC), Oil Services Company (OSSC), and Oil Development Company (ODC). Among these ten companies, the first three companies (KOC, KNPC, and PIC) were selected in this research as sample companies. That is because these three companies are the largest in size of operations and in number of employees as well be discussed in mode details in section 6.2.1.

Quality history and achievements in the Oil industry represented by these companies is quite interesting unlike the other industries under the governmental sector. These companies had recognized the importance and benefits of quality in enhancing work performance, providing outstanding services to their customers and accordingly had embraced quality through their business activities.

As the oil industry in Kuwait was chosen as this research context due to many important reasons which were explained in chapter 1, an overview of the current quality status in the mother company KPC and three (KOC, KNPC, and PIC) of the sister companies which are included in this research will assist in giving an overall idea of how quality is promoted and pursuit through-out the Kuwaiti Oil industry.

Kuwait Petroleum Company (KPC) for instance had made it among its objectives obtaining the ISO certificate of quality for all its departments and having the vision to provide the best services that aimed in return to upgrade its work within three years and to maintain excellence and remain at the lead. In October 2010, the Services Department in KPC was the first department who obtained the ISO 9001:2008 quality certificate which stands as a recognition of the great and sincere efforts that lead to such significant achievements which contributed to upgrade and develop the performance of the Department and maximize the use of KPC's resources that is the strategic and central objective that the company seeks. In addition, the KPC HSE department had committed for developing and implementing the integrated Management System (IMS) and obtaining the related ISO certifications (ISO 9001:2008, ISO 14001:2004, and OHSAS 18001:2007).

Kuwait Oil Company (KOC) on the other hand had obtained the ISO 9001:2008 certifications through-out all its seven directorates that consisted of 24 groups (contains 116 teams) with 6000 employees and 15000 contractor employees. Such a great achievement was done in three phases, the first phase covered 3 directorates in 2008/9, the second phase covered another 3 directorates in 2009/10 and the third phase covered 2 directorates and new groups formed in 2010/11. The ISO 9001:2008 certification was utilized at KOC in a variety of ways as a vehicle for organizations to identify systemic break-downs and close gaps or loopholes, define key interfaces between processes, departments and staff, streamline work flow and maximize resource utilization, proactively prevent problems from occurring, provide ways to detect and correct errors and problems, ensure conformance to and effectiveness of documented processes, maximize customer satisfaction and finally facilitate compliance to quality certifications, accreditation standards and regulatory requirements.

Third company is Kuwait National Petroleum Company (KNPC) that was awarded the international quality certificate ISO 9001:2008 for Kuwait Oil Production and Marketing in February 2011. KNPC was established in 1960 and was the first company in Kuwait to deal with all oil field industries including marketing of refined crude oil products. KNPC operates three refineries consisting of 4 plants and refining units for producing petroleum products. This certification was achieved after a continuous work and great efforts by the company departments and teams. And receiving such certificate proofs that KNPC is one of the leading oil refining companies and the systems, processes and Organization in KNPC meets high standard of quality. Receiving the certificate was not the end for KNPC but it was actually the start towards more achievements and Excellency. KNPC promised to work hard to maintain the certificate and reinforce its commitment to quality. The IT Department in KNPC had also received the ISO 27001: 2005 Recertification in 2011 for Information Security Management System implemented within entire IT Department at all KNPC Locations. The ISO 27001 standards provide the best practice guidance on protecting the confidentiality, integrity and availability of the information. The standard provides an ISMS model for adequate security controls to protect information assets including people, process and technology. The achievement of this certificate demonstrates KNPC's IT department's continuous commitment towards effective implementation of information security across KNPC. IT Department achieved this certification for the first time on 2007. The new certificate will last for the next 3 years. Add to that, KNPC was always committed to protecting the Environment by maintaining the highest standards for environment protection throughout its operations that made is successfully certified for ISO 14001:2004. Achieving this certificate made it mandatory for KNPC to identify, manage and streamline environmental issues at all its Operations/Sites. This standard fosters a cycle of continuous improvement and ensures that environmental strategies and standards at KNPC are aligned with national and international standards and regulations.

The fourth and last example of the Oil sector companies is the Petrochemical Industries Company (PIC) that was considered the most pro-active company among the oil sector companies when it comes to quality accomplishments. PIC had successfully obtained the ISO 9001:2000 Quality Management System (QMS) for PP Marketing and Fertilizer Manufacturing & Marketing. For PIC, obtaining the aforesaid certifications is recognition for the employee's hard work and dedication to quality. The certification process was a three-step process, which included a Documentation Review, a Pre-assessment Audit and a Final Audit. PIC had successfully completed all the three steps and got certified. The ISO 9001:2000 standard represents an international consensus on good management practices with the aim of ensuring that organizations consistently deliver products and services that meet their client's quality requirements. This accomplishment underscores the commitment of PIC to be the quality leader in the PP Marketing and Fertilizer Manufacturing and Marketing. Add to that, PIC has also implemented the ISO 14001:2004 Environmental Management System Accomplishments (EMS) under the ISO 14001 Standard that provides a company with a structured approach to handle its operational impacts on the environment which can lead to benefits that are both environmental and financial. The certification process was a three-step process, which was successfully completed by PIC and got certified to ISO 14001 Environmental Management System. The ISO 14001 standard represents an international consensus on good management practices with the aim of ensuring that organizations consistently manage the operational impact on the environment that meet the environmental requirements. This accomplishment underscores the commitment of PIC to be the environmental leader in the Fertilizer Manufacturing and Associated Services. Moreover, PIC had successfully implemented the ISO 27001:2005 Information Security Management System (ISMS) under the ISO/IEC 27001 standard and got certified for it. The ISO/IEC 27001 standard represents an international consensus on good management practices with the aim of ensuring that the organizations consistently manage the operational impact on the information security that meet the ISMS requirements. These quality achievements are a result of having the best people, training programs, tools and administrative systems; a calculated goal of PIC in Kuwait. All of these accomplishments placed PIC in a position to be World Class Competitor in providing the superior services. These standards provide an assurance to customers that PIC service commitments such as transit times & on-time performance are meaningful figures that they could rely upon.

Aside from ISO certificates, PIC got ahead of her sister oil companies by setting out its objective in the early 2007 to be transformed into the first Six Sigma company in the Kuwaiti oil industry.

In the first year, all management was trained to become Six Sigma leaders and 2 waves of employees (making up 4% of PIC employees' population) were trained as Green Belt Project Leaders. These new project leaders were assigned tactical improvement projects critical to achieve PIC's strategy. PIC's first Six Sigma project was completed in October 2007 with Lutfi Naifai becoming certified as a Green Belt Project Leader in January 2008. Soon after, KPC directed all K-companies to follow PIC example and implement Six Sigma. In 2008, PIC's Green Belt Project Leader training program was expanded to include students from KOTC and MEGlobal (one of our joint ventures with Dow Chemical). Every sector in the company is currently actively engaged with leading Six Sigma improvement projects. In 2009, PIC program was expanded to include training for Black Belts who will manage larger and more strategic projects. Expectations were made that 10% of the organization will become certified Black Belts and Green Belt Project Leaders delivering $20 million of financial benefit by 2012.

3.6 SUMMARY

This chapter has presented three most common business models which are internationally accepted as self-assessment models developed to audit organizations worldwide. The chapter also showed that the concept of TQM has gained popularity and has broadened, to the extent that it is now associated with other quality management concepts like Lean management, Six Sigma, ISO 9000 series standards, Business Process Re-engineering (BPR), and Kaizen. The chapter, also drew attention to the history of quality in the Kuwaiti business environment, specifically the Kuwaiti Oil industry, and concluded with a brief review of quality management studies done in the Middle East region.

In the next chapter, an attempt is made to develop a framework for the implementation of TQM underlying the Kuwaiti context. In particular, attention is paid to the TQM theoretical conceptual framework of this research and its main components.

CHAPTER 4

Review of Research Conceptual Framework

4.1 Introduction

In chapter 2 and 3, a conceptual overview of the TQM is provided as an aid to gain a better understanding of the concept. As mentioned earlier, one of this research's objectives is the development of a framework for the implementation of TQM in the Kuwaiti Oil industry (underlying Operations and production). Therefore, this chapter will provide a review in the need for a framework for TQM and it will mainly focus on presenting the theoretical conceptual framework of this research as well as the TQM concept adopted in this research. It will also present a summarized review of literature regarding TQM practices and various frameworks for assessment from which the study's framework will be decided. Then, the added value of selecting such framework in this study will be discussed. After that, the main components of this framework will be explored in detail starting with the TQM components that are the building blocks of the developed model, the Business results gained from such implementation, followed finally by a detailed literature review of the group of variables that could influence the implementation of TQM.

4.2 The importance of a TQM Conceptual Framework

To draw this study's literature, knowledge, and relevant concepts into sharp focus, a conceptual framework for this study needs to be developed. The conceptual framework can be defined as a diagram that depicts the variables under the study and the relationship among them. In the literature, conceptual frameworks are also referred to as Concept Maps, Conceptual Models and Research Models. Furthermore, a conceptual framework or a conceptual model is a manageable expression of a broader, more general explanation of phenomena. Quinn (1990, p. 2) defines a model as "*a representation of more complex reality*". He says that in the study of management, a model often represents a set of assumptions, for a general way of thinking about or seeing, some phenomenon. He also added that the model helps to communicate ideas and better understanding of the more complex phenomena.

In TQM implementation studies, we found that some authors have often used the term 'framework' without really defining it. According to Dale *et al*. (2001, p. 441) and Mohd Zain, Dale & Kehoe (2001, p. 605), "frameworks" seem to be popular research outputs that serve as means of presenting ideas, concepts, pointers and plans in a non-prescriptive manner. Linked to the problem statement, these conceptual frameworks set the stage for presentation of the specific research question that drives the investigation being reported.

Another contribution to the meaning of a "framework" was made by Yusof & Aspinwall (2000a, p. 284). They mentioned that a framework is a set of assumptions or fundamental principles of intellectual origin according to which discussions and actions can proceed.

Aalbregtse, Heka & McNeley (1991, p.31) provided four reasons why a framework is important and needed to implement TQM. These reasons are:

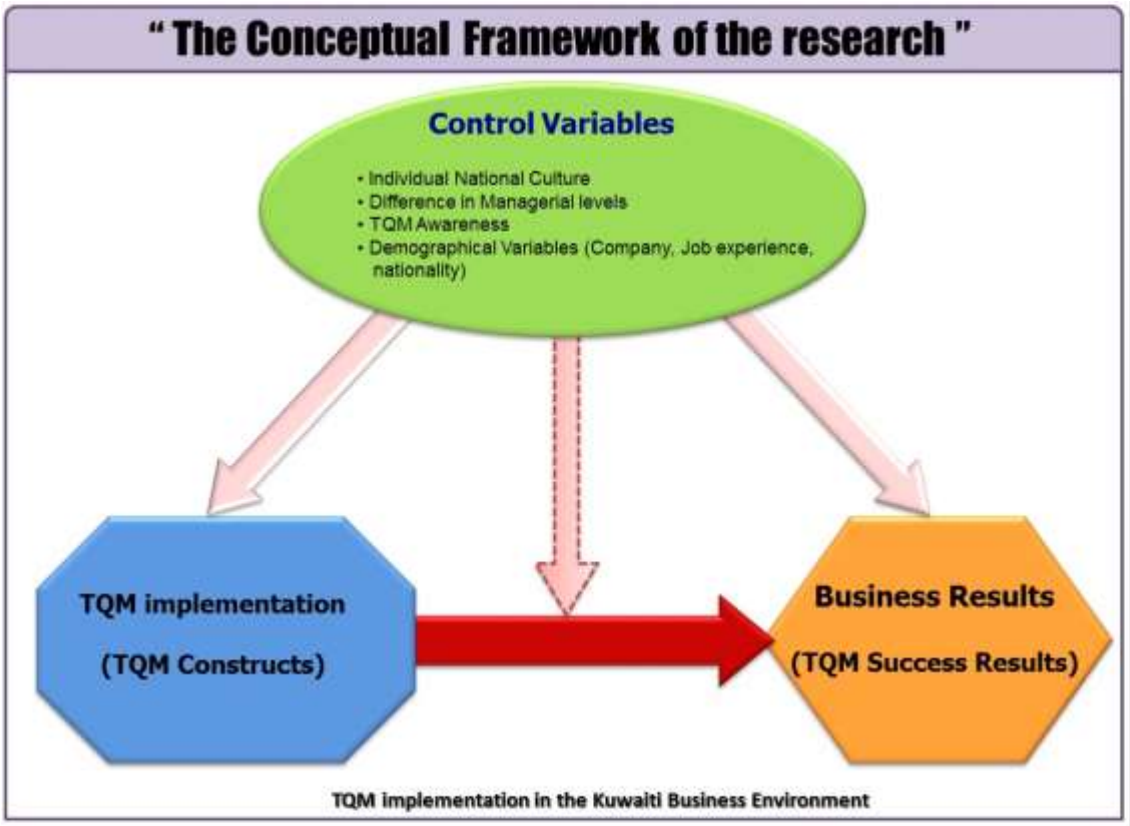
- To illustrate an overview of TQM so as to communicate a new vision of the institution;
- To force management to address a substantial list of key issues which otherwise might not be addressed;
- To provide insight into the institution's strengths and weaknesses; and
- Most importantly, to support implementation and to improve the chances that TQM adoption will be successful.

In the following section the conceptual framework of this research as a means to evaluate the TQM implementation process in oil industry (Operations and production) underlying the Kuwaiti business environment and the management's perception surrounding it, will be presented in details.

4.3 The Conceptual Framework of the research

In this section, the research conceptual framework shall be presented and explained in details. This conceptual framework can be regarded as the complete research journey, where the main components of this framework are shown Figure 4-1.

Figure 4-1: Conceptual Framework of the research

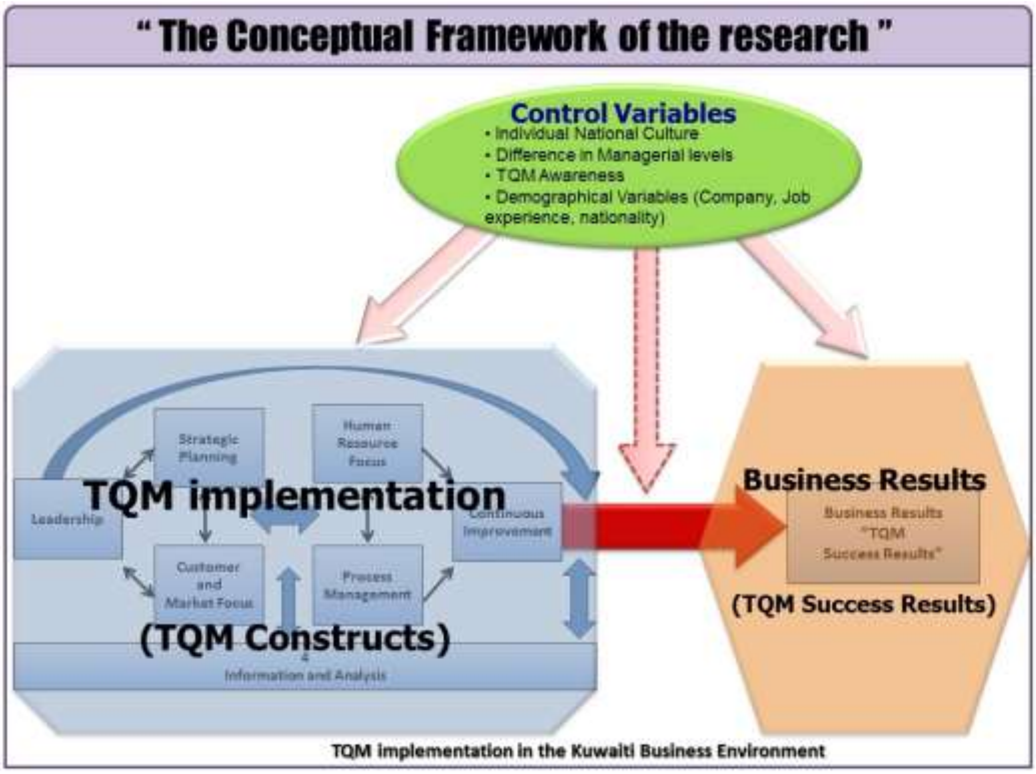


This general conceptual framework shown above summarizes this research's journey and work in shapes and arrows. As presented, the shapes in the framework represent three main groups of variables which are related to each other. These variables' groups are: the TQM practices' implementation components (i.e. TQM constructs), the outcome of a successful implementation of TQM which is the Business Results (TQM Success Results) and the third group is the Control Variables' group which consists mainly of Individual National Culture, Difference in Managerial Levels, TQM awareness and some demographical Variables of the respondents including job experience, and nationality, company.

The arrows in the conceptual framework mainly represent the relationships between the framework components which will be empirically examined in the coming chapters. Mainly, the research will examine the interrelationships between the three groups of variables mentioned above. It shall also investigate if the successfully implemented TQM constructs resulted in Business benefits and added value to the company.

Moreover, the research shall investigate if the group of control variables has any controlling or moderating effect on the level of TQM implementation, the expected Business benefits and if this group is moderating (presented in a dotted arrow in Fig. 4-1) the relationship between the constructs in the developed TQM model and the TQM success results. Figure 4-2 shown below, presents a more detailed view of the research's framework components and relationships where the literature review of each of these components will be discussed in the coming sections.. The following paragraph shall explain further what is meant by a moderating effect.

Figure 4-2: Detailed view of research's conceptual framework

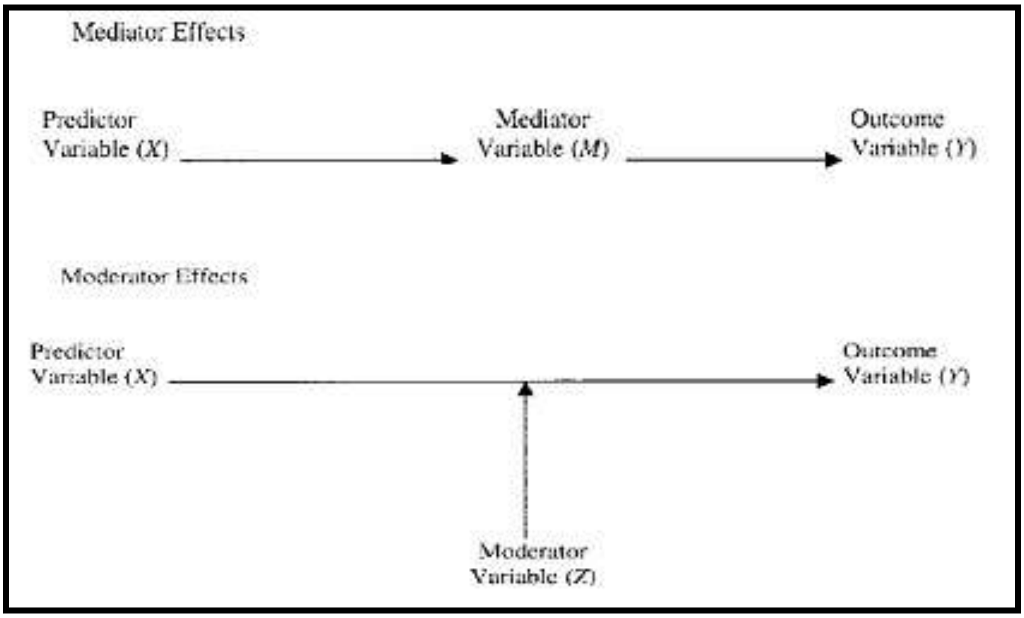


The moderating effect of Control Variables

To explain further what is meant by a moderating effect in this research, the literature states that relationships between variables are often more complex than simple bivariate relationships between a predictor and a criterion. Rather these relationships may be modified by, or informed by, the addition of a third variable in the research design. Examples of third variables are mediators, and moderators (MacKinnon et al. 2000).

Many of these third variable effects have been investigated in the research literature, and more recent research has examined the influences of more than one third variable effect in an analysis. For instance, a mediator is a variable that is in a causal sequence between two variables, whereas a moderator is not part of a causal sequence between the two variables (Kraemer et al., 2001). Figure 4-2a shows in diagrams the difference between these two effects.

Figure 4-2a: The moderation VS mediation effect



According to our research framework diagrams (Figure 4-1 & 4-2), the definition of moderator variables applies on the control variables in this research. Thus, these variables may have a moderating effect in the developed TQM implementation framework.

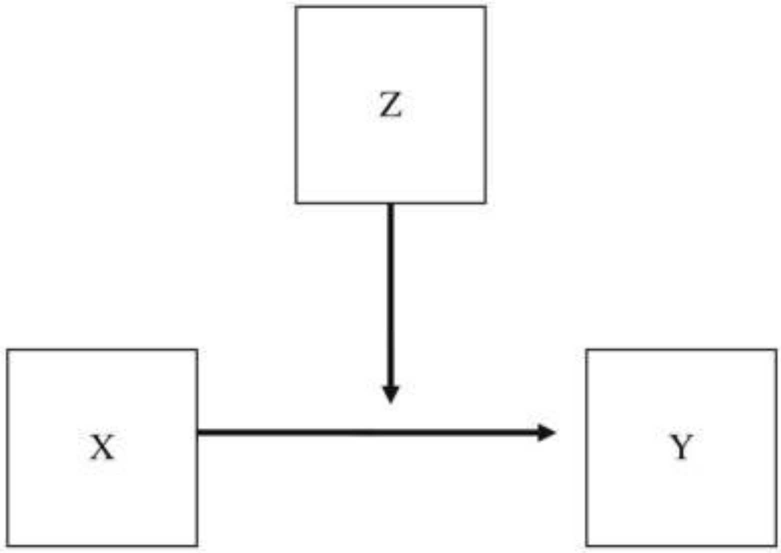
In general terms, a moderator is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between the independent or predictor variable and a dependent or outcome variable (Baron & Kenny, 1986; Donaldson, 2001).

Aiken and West (1991) also stated that the moderation effect tests whether the prediction of a dependent variable, Y, from an independent variable, X, differs across levels of a third variable, Z (See Figure 4-2b), which is the case in this research. For example, Leadership (X) effect on Business results (Y) might be change due to the TQM awareness (a moderator and one of the control variables). In addition, moderator variables affect the strength and/or direction of the relationships between a predictor and an outcome: enhancing, reducing, or changing the influence of the predictor.

Furthermore, moderation effects are typically discussed as an interaction between factors or variables, where the effects of one variable depend on levels of the other variable in analysis (Dearing and Hamilton 2006; Frazier et al. 2004; Gogineni et al. 1995; Rose et al. 2004).

Interestingly, the importance of investigating moderation effects has been recognized for some time in prevention science, but statistical methods to conduct more complex analyses were being developed recently (e.g.,Edwards and Lambert 2007; MacKinnon 2008; Muller et al. 2005; Preacher et al. 2007).

Figure 4-2b: The moderation effect



Note: X= the independent variable, Y= the dependent variable, Z= the moderator variable,

4.3.1 TQM Implementation components (TQM Constructs)

4.3.1.1 Review of TQM practices and dimensions

Kaynak (2003) provided a summary of previous research on TQM practices and organizational performance. A consistent finding among these studies is that infrastructural TQM practices, such as top management leadership, strategic planning, and employee relations, affect performance through core TQM practices such as quality data and reporting, continuous improvement, supplier quality management, product/service design, and process management. Table 4-1 in Appendix-T provides a summary of the findings.

Many studies and researches have been made to understand quality management constructs and practices in different countries. While there have been studies comparing quality management constructs among developing and developed countries, little empirical work has been done on quality management in an international context as discussed earlier in chapter one. In spite of development of instruments for quality management in different countries, there are only a handful of quality management instruments that meet the minimal standards of reliability and validity (Rao *et al.*, 1999). Saraph *et al.* (1989), Flynn *et al.* (1994), and Ahire *et al.* (1996) have developed reliable and valid instruments for quality management. However, none of these instruments were empirically tested and validated in an international context. Accordingly, development of a sound instrument for international quality management was needed.

Hence, although there are differences among scholars and practitioners on the definition of TQM frameworks and its underlying constructs, for instance, some researchers have criticized the Deming management method framework as being good for improvement, but uninspiring for creativity and innovation. Others say his approach is not effective for generating new products or penetrating new markets (Porter and Tanner, 2004). In addition, Juran (1991) - another quality guru - commented on an over-reliance on statistical methods. Other drawbacks which Deming management method has been criticized for was that it may limit an organization's flexibility and agility, it also calls for organizational change but it does not demand radical organizational reform, it delegates the determination of quality to quality experts rather than to "real" people, it focuses manager attention on internal processes rather than on external results, and finally is is less comprehensive than the MBNQA and how core concepts are linked together (Andreson et. Al. 1995; Wood et. al., 2005; Tom, 1991).

Moreover, EFQM model was credited with the fact that its diverse criteria penetrate - According to Heller (1993, p.17) every corner of the organization, focusing on the dimensions of the value chain that an organization can influence directly (Wundrer, 1998). However, the associated implementation process of EFQM is extremely resource and time-consuming (Jacobs and Suckling, 2007). Furthermore, EFQM was criticized also for being an extremely complex model, with its nine components and 32 sub-criteria, placing high demands on those wishing to apply it. Moreover, because it deals with abstract principles, each organization must complete the framework individually (Hides *et al.*, 2004).

On the other hand, most of the studies refer to Malcolm Baldrige National Quality Award (MBNQA) as the model for TQM (Dean and Bowen, 1994; Black and Porter, 1996; Flynn and Saladin, 2001; Sampaio et. al., 2012). Despite that, several criticisms had been raised against MBNQA such as: MBNQA emphasizes process more than results or achievements, high cost of application, ‘product mentality examiners don’t know how to evaluate service firms’, etc. , Collier (1992) has responded to these criticisms by saying (p. 94):

The Malcolm Baldrige National Quality Award has raised the consciousness of the United States about quality performance. It helps explain the vital role quality performance plays in creating the world’s standard of living and quality of life. Despite its critics, the MBNQA was established to achieve long-term national goals, and it is indeed achieving those goals.

Better yet, Curkovic *et al.* (2000) in his study, had assessed various frameworks and their associated constructs using a list a series of TQM traits that were identified from several TQM definitions (Evans, 1992; Logothetis, 1992; Melnyk and Denzler, 1996) to determine which framework best fits the definition of TQM as shown in Table 4-2 in Appendix-T. From this study, the authors concluded that the MBNQA criteria framework best fits the definition of TQM and does capture the core concepts of TQM. In addition, Islam (2007) pointed in his research that the criteria framework of the award is quite comprehensive and it comprises most of the basic tenets of TQM. For this reason, MBNQA has been a ‘role model’ in developing national quality awards in many other countries (Islam,2007).

Furthermore, Juran (1994) argues that the MBNQA is a helpful model for acquiring world class quality. As it is now widely publicized around the world as a standard for performance excellence, the MBNQA framework had received much attention from a wide range of academic researchers such as Evans and Jack (2003), Flynn and Saladin (2001), Wilson and Collier (2000) and many others.

MBNQA has also been used as an improvement guideline by more companies than the companies that have actually applied for the award. Over 2 million copies of the Baldrige criteria have been requested since its inception in 1988 (Kosko, 1999) and numerous organizations have used the criteria to model their quality management approaches and practices (Ettorre, 1996; Pannirselvam *et al.,* 1998; Sampaio et. al., 2012). Use for the criteria was as a source of information on achieving business excellence.

If “*imitation is the highest form of flattery*”, the Baldrige award has established quite a legacy. There are over 56 state and local awards, as well as dozens of international awards that have been closely modeled after the Baldrige award (Ettorre, 1996; DeBaylo, 1999). As mentioned earlier, there are many notable international awards heavily influenced by the Baldrige award. The recognition given to these “Baldrige clones” confirms to its strength and versatility worldwide (Townsend and Gebhardt, 1996; Johnson, 2001). Thus, the impact of changes to the Baldrige criteria and their underlying framework is far-reaching because they impact the way the elements of performance excellence are perceived by the global business community.

Despite the wide application of Baldrige criteria model in practice, there is surprisingly little theoretical or empirical evidence of their validity (Ford and Evans, 2000). Research on the Baldrige model falls into two categories (Flynn and Saladin, 2001). First, the Baldrige model has been used as a framework for operationalizing quality management (Samson and Terziovski, 1999; Dow *et al*, 1999; Handfield *et al.*, 1998; Dellana and Hauser, 1999). MBNQA was considered by Garvin (1991, p.80) as “*the most important catalyst for transforming … business*”, which provides a well-accepted framework for the constructs of quality management, and it could be applied to any organization, whether in manufacturing or services (Bell & Keys, 1998)

Initial application of the Malcolm Baldrige model as a framework for identifying quality management components was described by Steeples (1992). The universality of MBNQA and its relationship to other quality management constructs have made the Baldrige model a useful framework for studying quality management practices. Samson and Terziovski (1999) stated that:

> “*Although there are always going to be debates about how to categorize elements of a holistic process and framework like TQM, it is necessary to decompose it in some way to facilitate analysis. Since the most pervasive and universal method has been awards criteria such as the MBNQA, we have chosen to follow that framework.*”

The second set of studies examines the validity of the Baldrige framework that confirmed the validity of Baldrige framework and its components (Curkovic *et al.*, 2000; Ford and Evans, 2000; Wilson and Collier, 2000; Pannirselvam and Ferguson, 2001; Flynn and Saladin, 2001; Khanna *et al.*, 2002; Goldstein and Schweikhart, 2002;Evans and Jack, 2003; Lou *et. al.*, 2004 ; Badri *et. al.,*2006).

In short, MBNQA is a very recognized model and the most accepted framework for studying quality management practices in the world. Studies using the Baldrige award model as a framework for quality management in the global context show some convergence in quality management practices (Rao *et al.*, 1996; Rao *et al.*, 1999). MBNQA is not only used as a model for international quality management comparison, but it has been an extremely popular framework for organizational self-assessment, providing a framework for continuous business process improvement. The NIST estimates that thousands of organizations have used its criteria for self-assessment. There is also evidence that, from a financial perspective, MBNQA winning organizations outperform other organizations (Ruben *et al.*, 2007).

From all of the above, the MBNQA framework will be utilized mainly as the conceptual framework of TQM for the purposes of this study. Many other researchers (e.g. Dean and Bowen 1994, Black and Porter 1996, Capon *et al.* 1994) have also adopted the MBNQA framework as their basic model of TQM in their studies. The added value to this specific research from adopting MBNQA shall now be discussed.

4.3.1.2 The added value of using MBNQA in this research

After highlighting the overall importance and validity of MBNQA framework among other frameworks, it is very essential to explain the importance of adopting MBNQA in the Kuwaiti business environment. As mentioned in chapter 1, this research is the first attempt to study the quality management practices in the Oil industry in the developing Arab Middle East countries using MBNQA as a reference model for TQM. Although the current studies discussed in section 3.4 in quality management implementation in Middle Eastern countries (Qatar, Jordan, and Yemen) were related to TQM implementation, yet most of these studies did not use a general framework (such as Malcolm Baldrige Award Criteria or the Deming Model) for measuring or understanding TQM implementation. Therefore, the results of such studies are not comparable with the results of quality management practice in developing countries since they do not use the same framework for quality management assessment.

Furthermore, any comparison of quality management practices between developing and developed countries can explore the relevance between national culture and practice of TQM. From the national culture theory perspective, there is relevance between the practice of TQM and national culture (Katz *et al.*, 1998; Flynn and Saladin, 2002). This research shall examine the validity of such a cultural effect on quality management practices and will test it at a different culture.

This research also contributes to the understanding of quality management practices in Arab developing countries at the Middle Eastern countries. It also provides a better understanding of quality management practices in a different environment, a one having different cultural and social systems. It also tests the practicability of Malcolm Baldrige National Quality Award (MBNQA) model as a global quality management model in a developing Arab country in the Middle East such as Kuwait. Due to the accessibility to data, resources and familiarity with the industrial structure, Kuwait was selected as the representative country for the developing Arab countries in the Gulf and the Middle East countries.

Finally, using the Malcolm Baldridge National Quality Award (MBNQA) model as the framework for investigating quality management practices in operations and productions, where the Oil sector in Kuwait is chosen to run this investigation, seems very appropriate for a variety of reasons. First, MBNQA is usually considered as the global quality management model in most countries and serves as a reference for quality management (Wu *et al*., 1997; Rao, *et al.*, 1999; Islam,2007). In addition, self-assessment models are appropriate tools for assessing and evaluating quality management practice in the Middle East (Aly, 1997). It is also worth mentioning that the one and only quality award officially recognized in Kuwait The Jaber Quality Award (2008) is adopting MBNQA criteria framework in its evaluation which encouraged many organizations in Kuwait to adopt it and utilize it in its operations and services. Hence, adopting MBNQA framework in my research seems more reasonable and appropriate decision.

Finally, the generalizability of management knowledge and practices acquired in the US to the global context is called into question these daysy (Hoskisson *et al.*, 1999; Sousa and Voss, 2002). Hence, this research shall provide empirical results and tests whether US practices of quality management are applicable in other countries, while determining the effect of quality management constructs (components) on the business results and benefits. Given its importance from all of what had been discussed, we now examine the MBNQA model in detail.

4.3.1.3 The TQM implementation Model

The TQM implementation model (Constructs model) will mainly utilize the seven categories in the MBNQA Framework and an eighth construct taken from Deming Management Model.

4.3.1.3.1 TQM Implementation components (MBNQA Framework)

As stated earlier, this research will mainly adopt the Malcolm Baldrige award model (Criteria for Performance Excellence; NIST, 2000) shown in Figure 4-3 below.

Figure 4-3

Flynn and Sladin (2001) pointed that the Baldrige framework of 1997, 1998, 1999 and 2000 share the same main seven categories (Figure4-3) as they stayed fairly constant with minor reallocation of the point weightings. These categories were designed to strengthen the system's view of performance management, placing greater focus on company strategy and organizational learning. An overview of these seven categories NIST (2000) is discussed below:

The ***Leadership*** Category examines how the organization's senior leaders address values and performance expectations as well as focuses on customers and other stakeholders, empowerment, innovation, learning and organizational directions. Strong and committed leadership in an organization is essential for successful and enduring quality programs (Deming, 1982). Leadership enables an organization to engage in continuous improvement and facilitate the organization's quality management efforts (Gibson, 1990; Gryna, 1991). MNBQA defines leadership as the guidance that senior leaders provide in setting organizational values, directions and performance expectations.

The ***Strategic Planning*** Category examines the organization's strategy development process, including how the organization develops strategic objectives, action plans, and related human resource plans. Strategic quality planning stresses the organization's integration of quality improvement planning into the overall business plan (Lee and Schiederjans, 1994). In order to achieve excellence in a consistent and lasting way, quality must be integrated in the overall organizational strategy. Quality improvement is a long-term process when incorporated as a competitive strategy (Lascelles and Dale, 1989; Barclay, 1991). Strategic planning addresses both the development and deployment of action plans. It also examine are how performance is tracked.

The ***Customer and Market Focus*** Category examines how the organization determines requirements, expectations, and preferences of customers and markets. It also examined how the organization builds relationships with customers and determines their satisfaction. The organization must be knowledgeable of customer requirements and responsive to customer needs, maintain high levels of service, and measure customer satisfaction through a variety of indicators such as commitment to customers (Ishikawa, 1985; Steeples, 1992).

The ***Information and Analysis*** Category examines the organization's performance measurement system and how the organization analyzes performance data and information. Moreover, it evaluates how an organization ensures the availability of high quality, timely data and information for all key users including employees, suppliers/partners and customers.

The ***Human Resource Focus*** Category examines how the organization enables employees to develop and utilize their full potential that is aligned with the organization's objectives. Human Resource Focus plays an equally important role in successful TQM systems. Striving to maintain high levels of quality depends on the best use of the talents and abilities of an organization's entire work force (Choppin, 1991; Harber et al., 1991; Stratton, 1991). It directs toward creating and maintaining a high-performance workplace and toward developing employees so as to enable them and the organization to cope with environmental changes.

The ***Process Management*** Category examines the key aspects of the organization's process management, including customer-focused design, product and service delivery, support, and supplier and partnering processes involving all work units. Moreover, it also evaluates the organization's systematic approaches for total quality control of goods and services, based primarily on process design and control, including prevention orientation, quality test, continuous maintenance and definition of employees job (Lee and Schiederjans, 1994)

The ***Business Results*** Category examines the organization's performance and improvement in key business areas including customer satisfaction, product and service performance, financial and marketplace performance, human resource results, supplier and partner results, and operational performance of the business organizations. Also examined are performance levels relative to competitors, as the primary goal of quality management practices is to improve quality level and organizational competitiveness (Lee and Schiederjans, 1994).

Figure 4-3 illustrated earlier, provides the conceptual and theoretical framework connecting and integrating the categories. From top to bottom, the framework has three basic elements (NIST, 2000):

1. Strategy and Action Plans

Strategy and Action Plans yield the set of customer and market focused performance requirements, derived from short- and long-term strategic planning. These must be met and exceeded for an organization's strategy to succeed. Strategy and Action Plans guide overall resource decisions and drive the alignment of measures for all work units to ensure customer satisfaction and market success.

2. System

The system is comprised of the six Baldrige Categories in the center of the figure that define the organization, its operations, and its results.

Leadership (Category 1), Strategic Planning (Category 2), and Customer and Market Focus (Category 3) represent the leadership triad. These Categories are placed together to emphasize the importance of a leadership focus on strategy and customers. Senior leaders must set organizational direction and seek future opportunities for the organization. If leadership does not focus on customers the organization as a whole will lack that focus. The Baldrige theory states that "Leadership drives the system which creates results" (Steeples, 1992). Moreover, There are a group of studies examined these casual relationships in the MBNQA in certain industries which include Khanna *et al.* (2002), Goldstein and Schweikhart (2002), Flynn and Saladin (2001), Dow *et al.* (1999), Samson and Terziovski (1999), and Handfield and Ghosh (1995). The findings in these studies provided statistical also support for the Baldrige theory of performance relationships depicted in the Baldrige causal model. Most of the studies found that the Leadership dimension is classified as a driver of quality (Meyer and Collier, 2001; Wilson and Collier, 2000; Winn and Cameron, 1998; Pannirselvam and Ferguson, 2001; Flynn and Saladin, 2001).

Human Resource Focus (Category 5), Process Management (Category 6), and Business Results (Category 7) represent the results triad. An organization's employees and its key processes accomplish the work of the organization that yields business results.

All actions point toward Business Results — a composite of customer, financial, and operational performance results, including human resource results and public responsibility.

The horizontal arrow in the center of the framework links the leadership triad to the results triad, a linkage critical to organizational success. Furthermore, the arrow indicates the central relationship between Leadership (Category 1) and Business Results (Category 7). Leaders must keep their eyes on business results and must learn from them to drive improvement.

3. Information and Analysis

Information and Analysis (Category 4) is critical to the effective management of an organization and to a fact-based system for improving performance and competitiveness. Information and analysis serves as a foundation for the performance management system and serves as a moderator in a systems perspective.

Although the strategy and action plans oversee and guide the processes embodied in the categories yet they are not a formal part of the award process. Hence, this research shall adopt the seven categories of Baldrige criteria framework that has, as mentioned above a leadership/planning triad (leadership, strategic planning and customer and market focus) and a results triad (human resource focus, process management and business results). The foundation that spans the entire framework is information and analysis (Hodgetts *et al.,* 1999).

One of the direct tests of the causal model proposed in the Malcolm Baldrige Award criteria to date was by Handfield and Ghosh (1995). Their research analyzed division-level issues using manufacturers as their sampling domain. Handfield and Ghosh measured three dimensions of the Baldrige leadership construct by survey questions. Handfield et al. (1998) investigated the effects of global competition and supply chain focus on financial performance based on the same database as their 1995 study.

In addition, based on an their empirical study, Wilson and Collier (2000) suggested that: (1) the underlying theory of the MBNQA concurs that leadership drives the quality system; (2) leadership is the most important driver of system performance; (3) leadership has no direct effect on financial results but must influence overall performance through the system; (4) information and analysis is the second most important Baldrige category; (5) the process management category is twice as important when predicting customer satisfaction as when predicting financial results; and (6) a modified 'within the system (defined as process management, human resource management, strategic planning, and information and analysis)' set of Baldrige causal relationships is a good predictor of organizational performance. In this research, we adapted each of the seven Baldrige categories as building blocks of TQM implementation model similar to MBNQA 2001 model was adopted and empirically tested with testing all possible relationships among the constructs of the model rather than testing only the stated relationships by the framework, a set of hypotheses testing these relationships will be stated in section 4.3.1.3.3.

Moreover, to increase the research contribution of this study, an additional TQM construct is to be added to the research framework as discussed in the following section.

4.3.1.3.2 Additional TQM Component (Construct)

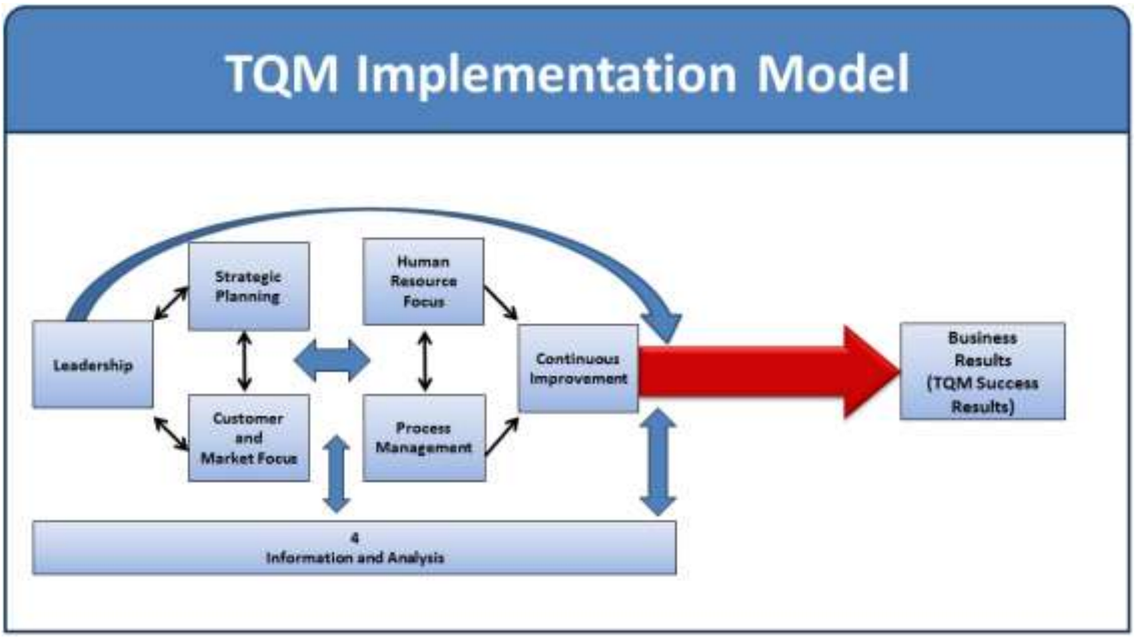
Since many academic researchers encouraged comparing different model and combining components, that were believed important to the research framework and were not covered to enrich the findings of the study and create the possibility of developing a better model.

After the extensive literature review done in previous sections and chapters and exploring different contributions from other studies of quality programs and awards, it was noted that MBNQA discussed categories had covered most of the critical quality constructs. However, by comparing MBNQA with Deming management model developed by Andreson *et. al.* (1994b), it was found that the only component not covered was continuous improvement construct. Continuous Improvement construct was defined by Anderson et. al. (1994b) as the propensity of the organization to pursue incremental and innovative improvements of its processes, products and services that is quite important factor in quality cycle. Moreover, Continuous Improvement was mentioned as a separate construct in Deming's management model, that, in return, highlights the importance of this component in the quality process as Anderson *et al.* (1994b) had noted that continuous improvement consistently means "*better and better quality, less and less variation*" (W. E. Deming, Deming seminar, December 1985), which results from process management practices that bring forth incremental improvements and innovations in processes, products and services. It's worth mentioning that all Deming's management model constructs developed by Anderson *et al.* (1994b) were tested and verified in manufacturing industries (Anderson, Rungtusanatham, Schroeder, & Devaraj, 1995; Rungtusanatham, Forza, Filippini, & Anderson, 1998). Furthermore, continuous improvement has established itself as a powerful tool in institutions (Garcia-Lorenzo & Prado, 2003). From the principles of TQM and from the writings of the three quality gurus including W.E. Deming (1989), Juran's Trilogy (1979), and Crosby (1986), it is clear that continuous improvement is one of the key success factors in the quality improvement process. The three quality gurus encouraged continuous improvement as a requirement in an internationally competitive world characterized by rapidly changing technology and customer demand for higher levels of value. Zhang (2000) also stated that TQM is a continuous improvement process, as it is a never-ending journey. Therefore, Continuous Improvement construct was included in this study's TQM practices' implementation model to increase the research's contribution and develop a more comprehensive model.

4.3.1.3.3 The developed TQM implementation Model and hypotheses

This research's developed model for TQM implementation that consists of the eight constructs is shown in below Figure 4-4. The model also shows how each component is connected to the other..

Figure 4-4



In this suggested research framework, all possible causal relationships between these main components in the TQM model shall be empirically tested and not to be limited to the relationships determined in MBNQA 2000.

As this research is validating this newly developed framework for the first time in the Oil sector underlying the Kuwaiti business environment, it naturally consists of set of hypotheses representing the relationships between the TQM components which have been tested in existing literature. However, these hypotheses shall be tested and validated in the Kuwaiti business environment which was not explored earlier by other researchers. This in return, shall enrich the literature and develop a TQM implementation model for the Oil sector in Kuwait and the formulated relationships in this developed framework my not to be limited to the relationships found in MBNQA criteria framework (2000).

That is due to the fact that this framework is being developed in a different cultural context and business environment, thus the hypotheses of the relationships between the eight constructs which have been tested in existing literature as . Therefore, the following hypotheses were being derived along with providing the supporting literature for these hypotheses:

Hypotheses Regarding Leadership (LDR)

Anwar (2003) concluded that Vodafone spectacular growth and entrepreneurial culture is attributed to its visionary leadership and senior management involvement. Based on extensive studies, researchers have concluded that leadership and top management commitment is the most critical and crucial prerequisite for institutional success when implementing TQM (Collier & Esteman, 2000; Dale 2003; Pun & Hui, 2002). Moreover, literature emphasizes on the crucial role top management plays in driving company-wide quality management efforts that has been recognized by practitioners and researchers as one of the major factors for achieving successful quality performance (Deming, 1986; Flynn *et al.*, 1994; Juran, 1986; Puffer and McCarthy, 1996). According to quality management pioneers' research (Deming 1982, 1986, Juran 1993, Sashkin and Kiser 1993, Waldman 1994), successful implementation of quality management strategies requires effective leadership from upper management. Based on the Malcolm Baldrige award criteria (2000 & 1997) and other studies' findings of many researchers (Kaynak, 2003; Lee et. al., 2003; Meyer and Collier, 2001; Wilson and Collier, 2000; Winn and Cameron, 1998; Pannirselvam and Ferguson, 2001; Flynn and Saladin, 2001; Steeples, 1992) that the Leadership dimension is classified as the most important and main driver of the quality system as it affects significantly and positively all the building blocks (constructs) of the total quality model. From these supporting findings in the literature, the following hypotheses were derived:

H_{11}: There is strong, positive and significant effect of Leadership (LDR) on Strategic Planning (SP).

H_{12}: There is strong, positive and significant effect of Leadership (LDR) on Customer & Market Focus (CSMRKT).

H_{13}: There is strong, positive and significant effect of Leadership (LDR) on Information and Analysis (INFO).

H_{14}: There is strong, positive and significant effect of Leadership (LDR) on Continuous Improvement (CI).

H_{15}: There is strong, positive and significant effect of Leadership (LDR) on Human Resource (HR).

H_{16}: There is strong, positive and significant effect of Leadership (LDR) on Process Management (PM).

H_{17}: There is strong, positive and significant effect of Leadership (LDR) on Business Results (BR).

Hypotheses Regarding Strategic Planning (SP)

In their research findings, Wilson and Collier's (2000) concluded that strategic planning is the second strongest construct after Leadership in the TQM model, their statistical test proven that SP had positive and significant effect on Human resources. Add to that, Lee *et. al*.'s (2003) stated that, in the Malcolm Baldrige model, there is a positive link between strategic planning and quality information, process management, and human resources focus. Thus, the following hypotheses were derived to validate these findings under the research's different context:

H_{21}: There is strong, positive and significant effect of Strategic Planning (SP) on Customer & Market Focus (CSMRKT).

H_{22}: There is strong, positive and significant effect of Strategic Planning (SP) on Information and Analysis (INFO).

H_{23}: There is strong, positive and significant effect of Strategic Planning (SP) on Continuous Improvement (CI).

H_{24}: There is strong, positive and significant effect of Strategic Planning (SP) on Human Resource (HR).

H_{25}: There is strong, positive and significant effect of Strategic Planning (SP) on Process Management (PM).

H_{26}: There is strong, positive and significant effect of Leadership (SP) on Business Results (BR).

Hypotheses Regarding Customer & Market Focus (CSMRKT)

As support from the literature, MBNQA (NIST, 2000) implied that customer and market management should have a positive impact on process management and business results. Moreover, Lee *et al.* (2003) found that customer orientation is positively related to process management and human resources focus. Thus, the following hypotheses were derived:

H_{31}: There is strong, positive and significant effect of Customer & Market Focus (CSMRKT) on Information and Analysis (INFO).

H_{32}: There is strong, positive and significant effect of Customer & Market Focus (CSMRKT) on Continuous Improvement (CI).

H_{33}: There is strong, positive and significant effect of Customer & Market Focus (CSMRKT) on Human Resource (HR).

H_{34}: There is strong, positive and significant effect of Customer & Market Focus (CSMRKT) on Process Management (PM).

H_{35}: There is strong, positive and significant effect of Customer & Market Focus (CSMRKT) on Business Results (BR).

Hypotheses Regarding Information and Analysis (INFO)

Information and analysis (INFO) is seen as the foundation that spans the entire MBNQA framework (Hodgetts *et al*., 1999). This finding also agrees with literature studies that found INFO has significant positive effect on process management (Lee et. al., 2003). In addition, Lee et. al. (2003) were not able to find a significant effect of INFO on HR. Moreover, since continuous improvement (CI) was added to the MBNQA, several studies ensured the important role that information and analysis plays in the process of continuous improvement of all firms' components at all levels and in all functions (Flynn *et al*.; 1994). From this literature support, the following hypotheses were derived:

H_{41}: There is strong, positive and significant effect of Information Analysis (INFO) on Continuous Improvement (CI).

H_{42}: There is strong, positive and significant effect of Information Analysis (INFO) on Human Resource (HR).

H_{43}: There is strong, positive and significant effect of Information Analysis (INFO) on Process Management (PM).

H_{44}: There is strong, positive and significant effect of Information and Analysis (INFO) on Business Results (BR).

Hypotheses Regarding Continuous Improvement (CI)

The concept of continuous improvement is receiving increased attention in part due to the inherent character of global competition that thrives upon progress of product (Garvin, 1987), service (Parasuraman, Zeithaml, & Berry, 1985), and process (Misterek, Anderson, & Dooley, 1990) quality. Anderson *et. al.* (1995) pointed to a significant relationship existed between process management Continuous Improvement. In addition, Sureshchandar *et al*. (2001) stated in their study that striving for continuous improvement is critical to the achievement of quality. In addition, Roth and Jackson (1995) found an important role for continuous improvement in the firm's ability to deliver high service quality and better business outcomes. With this support references from the litrature, the following hypotheses were derived:

H_{51}: There is strong, positive and significant effect of Continuous Improvement (CI) on Human Resource (HR).

H_{52}: There is strong, positive and significant effect of Continuous Improvement (CI) on Process Management (PM).

H_{53}: There is strong, positive and significant effect of Continuous Improvement (CI) on Business Results (BR).

Hypotheses Regarding Human Resource (HR)

Striving to maintain high levels of quality mainly depends on the best use of the talents and abilities of an organization's entire work force (Choppin, 1991; Harber *et al*., 1991; Stratton, 1991). Wilson and Collier (2000) found in their study that Human resource management had a positive significant influence on process management. The Baldrige causal model also implies that Human resource management should have a positive impact on business results (MBNQA, 1997).

H_{61}: There is strong, positive and significant effect of Human Resource (HR) on Process Management (PM).

H_{62}: There is strong, positive and significant effect of Human Resource (HR) on Business Results (BR).

Hypotheses Regarding Process Management (PM)

PM is another core TQM construct that significantly effect and get affected by other TQM components significantly (Lee et. al., 2003; Deming, 1982). Moreover, many studies in the literature has findings implying that process management had positive impact on TQM business results (Lee et. al., 2003; Ahire and Dreyfus, 2000; Pannirselvam and Ferguson, 2001; Wilson and Collier, 2000; Meyer and Collier, 2001; Flynn and Saladin, 2001). Based on such support from the literature, the following hypothesis was derived:

H_{71}: There is strong, positive and significant effect of Process Management (PM) on Business Results (BR).

As shown above these hypotheses between these main TQM constructs have been testedand validated in the existing literature in many research studies (Kaynak, 2003; Lee et. al., 2003; Meyer and Collier, 2001; Wilson and Collier, 2000; Winn and Cameron, 1998; Pannirselvam and Ferguson, 2001; Flynn and Saladin, 2001; Anderson *et. al., 1995)*. However, it is worth mentioning that none of these studies were conducted in Kuwait rather they were conducted in different countries and different cultural context. That is why these hypotheses will be tested and validated again in a new cultural context (Kuwaiti business environment) which has not been explored before by other researchers and may lead to new relationships and not to be limited only to the relationships found in MBNQA criteria framework (2000) and previous studies. This in return, shall enrich the literature and develop a TQM implementation model for the Oil sector in Kuwait.

Furthermore, the test of these hypotheses shall be conducted in chapter 8 using Structural Equation Modeling (SEM) to determine and validate this proposed TQM implementation model.
Add to that, another set of hypotheses shall be defined in section 4.3.3.5 to test the effect of the control variables group (TQM awareness and National Culture Values) on the implementing TQM practices and its outcome of Business.
It is worth mentioning that the 8th construct "Business results" in this research's TQM implementation model is very critical and important as all the seven constructs contributes (directly or indirectly) to it. In the study's conceptual framework shown earlier in section 4.3 (Figure 4-1), Business Results component has been emphasized since it presents the outcome of a successful implementation of the TQM model's seven constructs. There are key areas that Business Results (TQM Success Results) cover; they are Customer-focused results, Financial and market results, Human resource results, and Organizational effectiveness results (NIST, 2000). These Business results will be discussed in details in the following section.

4.3.2 TQM Business Results (TQM Success Results)

The benefits to companies that apply the concept of TQM lie in increased quality performance with a simultaneous decrease in costs and improvement in productivity (Crosby, 1987; Dale and Plunkett, 1995; Hendricks and Singhal, 2001; Shenaway et al., 2007; Prajogo and Sohal, 2003; Arumugam et al., 2008). A number of studies for example, Adam (1994), Adam *et al*., (1997), Easton and Jarrell (1998), Flynn *et al*., (1994), Kosko (1998), Powell (1995), Zairi *et al*., (1994) and Demirbag et. al. (2006) have analyzed the relationship between TQM and company business results and indicated that there is a positive relationship.

Unlike many previous studies that mainly focused on one or two types of business results measures, this study used a composite of key areas covered by business results category that balances the requirements of all stakeholders including customers, employees, stockholders (NIST, 2000). These key areas are the Customer-focused results, Financial and market results, Human resource results and Organizational effectiveness results.

In order to have a more detailed view of how successful implementation of TQM relates to these areas, a literature review on TQM affect on each of these areas will be presented in the following subsections.

4.3.2.1 Customer-focused results

Customer focused results refers to performance relative to measures and indicators of customers' perceptions and behaviors, and to measures and indicators of product and service performance and characteristics important to customers. Examples include customer satisfaction, loyalty, retention, complaints, customer survey results, product reliability, product quality, on-time delivery and service response time (NIST, 2000).

A company's success in the long term depends on how effectively it satisfies its customers' needs on a constant basis (Brah *et al.*, 2002). Therefore, TQM's success is determined by how willing the organization is to change and whether it uses customer satisfaction as a measure in assessing the success of its decisions and actions (Madu and Kuei, 1993). Although many companies may realize the significance of being customer-oriented yetthey usually face a challenge in monitoring and measuring their customers' expectations, experience and satisfaction with their products (Sebastianelli and Tamimi, 2002). Many companies implementing TQM attempted to meet this challenge by encouraging their employees to get actively involved in achieving customer satisfaction. For instance, they tied their employees' performance evaluations to customer care indicators (Wilkinson *et al*., 1993).

Several researchers including Filiatrault *et al.* (1996), Grandzol (1998), Parzinger and Nath (2000) and Kremetik (2004) found a positive relationship between TQM practices and customer-focused results. Most quality award models also recognize customer results as a significant TQM outcome.

By investigating the literature on TQM effect on the first portion of customer-focused results which is Customer satisfaction and behavior, it was found that there is a consistent support for a positive relationship between TQM practices and customer satisfaction (e.g., Deming, 1986; Juran, 1986; Flood, 1993; Anderson *et al.*, 1994; Dean and Bowen, 1994; ; Reeves and Bednar, 1994; Spencer, 1994;Ross, 1995). Most of the TQM programs claim to help a company to increase customer satisfaction, employee satisfaction and productivity(Wallner,1992). Both Deming (1986) and Juran (1986) promoted customer satisfaction as the ultimate goal of TQM. Deming (1982) even argued that customer satisfaction was the most important outcome of TQM practices. Further, many authors (e.g., Dew, 1994; George and Weimerskirch, 1994; Capon *et al.*, 1994; Ross, 1995; Black and Porter, 1996) implicitly suggested a positive association among TQM practices, organization performance, and customer satisfaction.

In their recent study, Nagaprasad and Yogesha (2009) stated that TQM increases customer satisfaction by boosting quality. It does so by motivating the workforce and improving the way the company operates. Thus, ccompanies should strive to attain customer focused results to achieve improved business results (Wright and Snell, 2002).

4.3.2.2 Financial and market results

Financial and marketplace results refer to performance using measures of cost and revenue, including asset utilization, asset growth, profitability and market share. Examples include profitability, returns on investments, returns on assets, cash-to-cash cycle time, and other profitability and liquidity measures (NIST, 2000).

Quality performance improves financial and market performance, and the literature offers several explanations for these effects. First, as a firm acquires a reputation for delivering high quality products and services, the elasticity of demand can decrease, that, in turn, can enable the firm to charge higher prices and earn higher profits (Shetty, 1987). Second, improving product quality by reducing waste and improving efficiency will increase the return on assets (Handfield *et al*., 1998), that will increase profitability. Third, reduced rework, less scrap, and improved productivity will lower the cost structure of a firm, which enables the firm to offer lower prices—if it is motivated to do so for products and services without denting the profit margin. Low prices can increase market share and sales (Deming, 1986; Maani *et al*., 1994; Reed *et al*., 1996). Last, improvements in quality will result in an enhanced competitive position (Aaker and Jacobson, 1994; Fornell *et al.*, 1996). The beneficial effect of product/service quality on market share (Buzzell *et al*., 1975; Craig and Douglas, 1982; Jacobson and Aaker, 1987; Philips *et al.,* 1983; Zeithaml and Fry, 1981) and profit when measured as return on investment (Craig and Douglas, 1982; Jacobson and Aaker, 1987; MacMillan *et al*., 1982; Philips *et al*., 1983; Zeithaml and Fry, 1981) is a consistent finding of research published in marketing literature.

In addition, Buzzell and Gale (1987) confirmed in their study that financial performance is an important measure of TQM outcomes. This is consistent with Deming’s (1986) argument that quality improvement leads to elimination of waste, reduction of costs, and improved financial performance. Juran (1992) contended that market share was the ultimate test of the results of TQM implementation since TQM led to higher sales. Several research studies have shown the importance of quality in achieving competitive advantage (Evans and Lindsay, 1996). When companies deliver good quality, they generate satisfied customers, thus resulting in a better competitive position and market share. Better yet, many companies claimed substantial benefits of implementing TQM in terms of financial results, operating performance, customer satisfaction, and employee satisfaction (Brah et al., 2002; Yang, 2006; Kumar et al., 2009; Fuentes et al., 2006; Sila, 2007).

However, some of the previous studies found no relationship between TQM and financial and market results measures. For instance, Curkovic *et al.* (2000b) found no relationship between leadership, employee empowerment, cross-functional quality teams and some performance measures. However, from the literature review conducted for this study indicated that most of the studies found a positive relationship between TQM practices and measures of financial and market results (Curkovic *et al.*, 2000b; Wilson and Collier,2000; Mohrman *et al.*; 1995; Anderson and Sohal, 1999).

Hansson and Eriksson (2002) also showed that a sample of quality award-winning Swedish companies that implemented TQM successfully had better financial performance than other companies of comparable size and their biggest competitors. A more recent study by York and Miree (2004) examined the relationship between TQM and financial performance, using a sample of Baldrige Award winners. York and Miree (2004) replicated a second sample of state quality award winning companies with three different sets of financial performance measures. Baldrige quality award winners generally had better financial performance than their peers after and before winning a quality award. Several other studies that indicated a positive relationship between TQM and financial results included those by Hendricks and Singhal (1997), Handfield *et al.* (1998), and Tena *et al.* (2001).

4.3.2.3 Human resource results

Human resource results refer to performance relative to measures and indicators of employee well-being, satisfaction, development and work system performance. Examples include employee satisfaction, loyalty and commitment, job involvement, absenteeism, turnover, and company rewards and benefits (NIST, 2000).

The implementation of TQM is one of the most complex undertakings for a company, as it entails changes in organizational culture and affects employees (Kanji and Barker, 1990). It is important to analyze how organizational changes brought about by TQM will affect employees simply because employees are key organizational stakeholders (Mohrman *et al.*, 1995). However, research analyzing TQM's effect on human results has been scarce (Guimaraes, 1996).

Many TQM elements are people-oriented practices such as teamwork, employee empowerment and involvement in decision-making (Guimaraes, 1996). Making such practices part of TQM contributes positively to employee results such as employee satisfaction. This is because the new processes put in place as a result of TQM are more likely to be embraced by employees if they are actively involved in developing these processes (Mohrman *et al.*,1995). Mohrman *et al*. (1995) reported that a composite of several core TQM practices such as quality improvement teams and cross-functional planning had a significant association with employee satisfaction and quality of work life. Similarly, Jun *et. al.* (2006) also confirmed that TQM people-oriented practices such as employee empowerment, teamwork and employee compensation have positive impacts on employee satisfaction. A more recent study done by Chang *et. al.* (2010) concluded that such TQM people-oriented practices are significant and positive predictors of employee satisfaction; and that employee loyalty can be enhanced through employee satisfaction.

Add to that, employee compensation systems are most frequently considered as one of the key factors influencing employee satisfaction (Britton *et al*., 1999; Carson *et al*., 1999; Karl and Sutton, 1998; Wageman, 1995 and Welbourne and Cable, 1995). A case study conducted by Cowling and Newman (1995) also indicated that TQM-oriented appraisal systems offered personal recognition and might improve employee satisfaction. Abu Bakar et. al.'s (2007) study also revealed the positive relationship between TQM practices and employees' job satisfaction within a large Malaysian organization. As claimed by some authors (e.g. Guimaraes, 1996, 1997; Noorliza and Zainal, 2000; Noorliza, 1999), TQM does have significant effects on personnel attitudes towards their job and the organization. Furthermore, Marie (1995) and Saks (1996) observed that workers who received self-regulatory training report higher levels of job satisfaction than those without such training. Later, Martensen and Gronholdt (2001) surveyed employees in Danish organizations and found that the development of competencies through various training programs has a positive impact on employee satisfaction.

Other studies also showed that TQM practices had a positive correlation with employee satisfaction (Grandzol, 1998) and annual employee turnover rate (Adam *et al.*, 1997). A case study conducted by McAdam and Bannister (2001) suggested that the implementation of TQM in a company contributed to a positive working environment. Consistent with these studies, a study by Boselie and van derWiele (2002) indicated that employee perceptions of TQM concepts led to a higher level of satisfaction and less intention to leave the organization. In addition, according to a study conducted by Guimaraes (1997), employees had higher job satisfaction, job involvement, commitment to the organization, and intentions to stay with the company as a result of TQM.

Most of the TQM literature supports strongly that employee satisfaction is positively related to employees' loyalty to their companies and negatively related to their intention to turnover

(Brown and Peterson, 1993; Guimaraes, 1997; Griffeth *et al.,* 2000; Hom and Kinicki, 2001 and Martensen and Gronholdt, 2001).

4.3.2.4 Organizational effectiveness results

Organization Effectiveness results include key operational performance results that contribute to the achievement of organizational effectiveness. The Operational performance refers to organizational performance relative to effectiveness and efficiency measures and indicators. Examples include productivity, quality, cycle time and level of inventories, waste reduction, and regulatory compliance (NIST, 2000).

The emphasis on TQM as a management philosophy implemented in order for an organization to achieve world-class status has grown considerably in the past two decades. Although, theoretically, the use of TQM practices is an important part of successfully involving employees in processes that lead to improvements in business performance (Kanji & Tambi, 1999; Kunst & Lemmink, 2000; Quazi, Jemangin, Kit, & Lee, 1998; Yeung et al., 2003), yet in reality a considerable number of organizations have fallen short in implementing their quality programs (Boyett, Kearney, & Conn, 1992; Douglas & Judge, 2001). As evidence has emerged now to show that TQM does deliver improved performance when implemented effectively (Hendrick *et al.*, 2001; Easton et al, 1998), many research studies had been conducted in recent years on the effects of TQM implementation on overall business results of the company. These studies have implied that a successful implementation of TQM practices would lead out to positive effect on the business performance of a firm (Garvin, 1991; GAO, 1991; Tornow and Wiley, 1991; Waldman, 1994; Madu *et al*., 1995, Curkovic *et al*., 2000; Black and Porter, 1996; Demirbag et. al. ,2006).

Moreover, Dow *et al.* (1999) conducted research in Australia and New Zealand and found a significant relationship between quality management practices and organizational performance. Similarly, Samson and Terziovski (1999) had investigated the link between TQM practice and organizational performance, they found that TQM was significantly related to organizational performance. Other several empirical studies results (e.g. Easton & Jarrell, 1998; Lemak *et al*., 1997; Das *et al.*, 2000; Flynn *et al*., 1995; Ho *et al.,* 2001; Zhang, 2000) provided evidence of positive, direct and indirect, influence of successful TQM implementation on the overall business performance of the organization.

Furthermore, many authors have suggested that TQM practices can have a positive impact on a firm's quality and productivity results (e.g., Goetsch and Davis, 1994; Pegels, 1995). For instance, Bounds *et al.* (1994) and George and Weimerskirch (1994) suggested that TQM practices should lead to decreased internal and external product reject rates and production downtime. Based on his experience, Thomas (1989) claimed that TQM leads to improvement in total production cycle time, level of inventories, productivity, and delivery lead time. Previous studies also pointed out that adoption of TQM concepts leads to inspiring employees to succeed and grow, improving their performance and productivity (Oakland, 1993; Ross and Omachonu, 1994; Gitlow *et al.*, 1995; Raiborn and Payne, 1996; Weinstein, 1996a; Terziovski, 1997; Van Horn, 1997; Goetsch and Davis, 2000).

A study by the US Government Accounting Office (GAO, 1991) examined the effect of TQM practices on the performance of 20 US companies that won the MBNQA. The study found that these practices had a strong relationship with quality and productivity among others. Similarly, Carter and Narasimhan (1994) argued that TQM's emphasis on process improvement contributed to productivity increases through effective utilization of people and processes.

According to Anderson *et al*. (1998), several TQM practices including training, information, and supplier management had positive relationships with ‘‘operational results’’ measured by logistics cost performance, effectiveness and efficiency of transaction processes, and order cycle time. These findings were supported by Tata et al. (2000), who found that the effect of TQM practices on operational results were positive.

From the above, it shows that many studies had supported the positive relationship between TQM implementation and Business results. However, there are some conflicting studies about how TQM practices lead to the expected performance results of a firm (Burrows, 1992; Economist, 1992; Eskildson, 1994; Broetzmann *et al.*, 1995). Sluti (1992) studied 184 manufacturing companies in New Zealand and found no conclusive evidence of such relationships between TQM practices and performance results. Some other researchers view TQM as just another management technique (Neal and Tromley 1995; Yong and Wilkinson, 2001). And others have argued that TQM has little to do with the actual improvement of performance results as no significant improvement was found (Burrows, 1992; Economist, 1992; Eskildson, 1994; Broetzmann *et al.,* 1995). Brah *et. al.* (2002) verified that reasons behind TQM's failure to improve performance include ineffective implementation, lack of suitable corporate climate, poorly defined performance measurement, lack of management support, attempting to replicate successful programs without adapting them to the unique features of their organization, failure to integrate TQM with existing managerial systems, and lack of an appropriate reward and recognition system.

Because the results from some previous studies showed inconsistent outcomes and to shed more light to this area, this study shall verify the above arguments in the Kuwaiti context and investigate the perceived effect of TQM implementation on business performance in the Kuwaiti Business environment. It shall also investigate if any of the control variables, that will be discussed in the following section, has any significant effect on the firm’s performance. Hopefully, the results gained would help providing better clues to congruent significant results across research publications.

4.3.3 Control Variables

In this section the existing literature regarding the suggested group of control variables and its relation to TQM shall be examined. This control variables group is used in this research to group these set of variables into one group and investigate if this group has any moderating and controlling effect on relationships in the TQM implementation process (how TQM components are related to each other's and to TQM business results) as discussed the beginning of this chapter in section 4.3. These control variables are the individual’s national culture, the difference in managerial levels, TQM awareness, and some demographic variables such as job experience, nationality, and company.

4.3.3.1 Individuals’ national cultural values

A number of reasons have been cited in the TQM literature for the absence of a universally accepted framework for the implementation of TQM such as variations in national cultures (Robert *et al.*, 2000). A review of the TQM literature has shown that culture influences the understanding of TQM in a country and it also affects the operationalization of TQM in this country (Kumar, 2006; Tan *et al.,* 2003). Kim & Chang (1995) stated that national culture may contribute to the failure of a TQM implementation process. Thus, Noronha (2002, p. 221) concludes that “whether a TQM program will sustain or fail will depend upon how TQM itself fuses with the quality climate that is, in turn, influenced by the national culture setting”.

In this section the Individual’s national culture shall be discussed in details and its role in TQM’s implementation, specifically in Kuwait.

4.3.3.1.1 National culture

Different nations may have a common language, climate and religion but differences in their distinctive norms and values separate them so much that a certain nation can be represented by a certain national culture (Hofstede, 2001, 2007). Elements that make up “culture” may have a significant effect on multinational companies implementing a new management practice at a particular location. An organizational culture is significantly influenced by the national culture at which it is located (Adler, 1997; Dastmalchian *et al*., 2000, Tata and Prasad, 1998). Noronha (2002) also noted that national culture operates as an influence on the organizational culture which formulates the operative codes in putting TQM into concrete actions.

Furthermore, Hofstede (1984a,1984b,1994a,1994b, 1997, 2007) describes culture as the “collective programming” of the mind that distinguishes members of one group from another, developed as a result of the shared experiences of inhabitants of a nation, including educational, governmental and legal systems, family structure, religious patterns, literature, architecture and scientific theories (Hofstede, 1994a, and 1994b). For example, Americans believe they can have a strong impact on their immediate circumstances, while members of other national cultures believe that their circumstances are more strongly determined by fate, a deity, luck, government and social class or history (Boyacigiller and Adler, 1991). National culture changes very slowly because what is in the minds of the people of a nation becomes crystallized in its organizations; although practices may be changed relatively easily, underlying values are enduring, visible only in their effects on people's behavior (Hofstede, 1999; and Murphy, 1999). Because of this, national culture can be critical in determining the success or failure of management practices as stated earlier.

The seminal work on national culture was performed by Hofstede (1980a, 1983a, 1983b, 1997), who identified the major dimensions of national culture. According to Hofstede (2007), a national culture can be defined in five dimensions of power distance, individualism, masculinity, uncertainty avoidance, and long-term orientation. Each element is described briefly:

(1) Power distance dimension measures the degree to which a less powerful member accepts inequality in power and considers it more normal. Inequality among members Organizational culture that make up a society exists in all societies. However, the degree of inequality among members being tolerated varies from one culture to another. In a society with high power distance, less powerful members can better tolerate that other members have more power. At the same time, power distance also measures the degree to which members seek guidance from

their superiors. In a high power distance society, members seek more guidance and direction from their superiors.

(2) Individualism dimension measures the main interest to which a member is primarily looking after. In a high individualistic society, members mainly look after their own and their immediate family members' interests. On the contrary, more interest is assumed for the group made up of members in a collectivistic (low individualistic) society. At the same time, members from a collectivistic society seek more loyalty and favor in return from the group.

(3) Masculinity dimension measures the degree of difference in the social role between different genders. In a high masculine society, female members tend to care for the non-materialistic needs, while male members are expected to obtain materialistic needs. Collectivistic societies tend to have more masculinity present, in which the differences in social role in gender are more distinctive.

(4) Uncertainty avoidance dimension measures the extent to which members are made uneasy when faced with situations that are unstructured, unclear, or unpredictable. A society with high uncertainty avoidance tends to be more security-seeking, intolerant to changes, and less aggressive. Conversely, a society with low uncertainty avoidance tends to be more risk taking, more tolerant to changes, and more aggressive.

(5) Long-term orientation dimension measures the degree to which members embrace planning and investing for the future. This dimension indicates a society's time perspective and an attitude of persevering; that is, overcoming obstacles with time, if not with will and strength (Hofstede, 2007). In a society with long-term orientation, traditions are valued and making changes can be more difficult.

Hofstede's work on national culture is widely used as a theoretical framework for guiding cross-cultural comparisons (Randall, 1993 and Shane, 1994). Moreover, These dimensions form the most widely adopted starting point in research studying management in different nations (Peterson *et al*., 1995), finding widespread use as a paradigm for classifying and explaining the influence of national culture on various research topics (Murphy, 1999 and Randall, 1993).

Hofstede (1984 , 1994 ,1997 ,2001,2007) studies in national culture are very well established and widely accepted. Within national culture literature, studies had identified the dimensions of national culture that greatly influence the implementation of TQM (Tata & Prasad, 1998; Jung *et al.,* 2008; Al-Khalifa and Aspinwall, 2001). These dimensions included high collectivism, low power distance (i.e. low hierarchy) and low uncertainty avoidance (Chin and Pun, 2002; Tata and Prasad, 1998; Saha and Hardie, 2005; Yen *et al.,* 2002). Tata & Prasad (1998) considered them as the most important supporters and facilitators for TQM implementation and must be dominant in any organization to achieve successful TQM implementation. Therefore, this research shall utilize these three dimensions (collectivism, power distance, and uncertainty avoidance) under national culture values which influence TQM implementation more than the others dimensions. In addition to these three dimension, quality performance orientation and quality ethical values were also utilizedas these values might differ from one national culture to another and can impact the TQM implementation process as well. More details about these two values will be discussed after discussing in further details the Hofstede's (2007) selected dimensions.

4.3.3.1.2 TQM and individual national culture values

Although organizations have universal characteristics yet they are not culture-free (Hofstede, 1996). With regard to TQM programs, cultural differences have been identified as one of the significant contributors to the failure of TQM applications (Galperin, 1995; Katz *et al.,* 1998; Nasierowski & Coleman, 1997; Tata & Prasad, 1998). This is not quite shocking as TQM is generally known as a management approach in which the application of practices such as teamwork, internal customer relationship, and supplier partnership involve a major cultural change in the organization (Entrekin & Pearson, 1995). This includes the transformation of the organization's culture, processes, and beliefs, among employees; as a result, cultural change is seen as the essential aspect of the successful introduction of TQM (Brown, 1995). It is, therefore, not surprising that individual's national culture, that is a set of shared beliefs and values that govern how people think and behave (Hofstede, 1984b; Naylor, 1996), will have a tremendous effect on the successful TQM implementation or other organizational innovations such as reengineering (De Cock, 1998). Roney (1997) had pointed out that the influence of national culture is most powerful and TQM must work within the context of the greater society, in addition to the organization into which it is implemented.

In the past, management studies usually limited their attention only to TQM implementation and its effect on organizational culture. Since then TQM and its principles have been recognized and widely adopted by numerous managers, the internationalization of the firms has created a new dimension of TQM worth considering: the national boundary (Katz *et al*., 1998). Furthermore, many scholars, such as Galperin (1995), Katz *et al.* (1998), Nasierowski and Coleman (1997) and Tata and Prasad (1998) had investigated the links between culture and TQM implementation. The findings of these studies have increased the level of understanding about national differences relating to TQM implementation. Other researchers had considered that the national culture acts as a main driver (Kujala and Lillrank, 2004; Kekale and Kekale, 1995; Al-Khalifa and Aspinwall, 2001; Deming, 1993; Al-Khalifa and Aspinwall, 2000; Saha and Hardie, 2005) and a barrier (Mellahi and Eyuboglu, 2001) for successful TQM implementation. Moreover, in European study, Lagrosen (2002) found out that two dimensions of culture (i.e. power distance and uncertainty avoidance) affected the approach taken for implementation of TQM.

Because TQM de-emphasizes status distinctions and empowers employees to make decisions and use their own intelligence, cultures which are high on “power distance” and “uncertainty avoidance” may not be conducive for TQM implementation (Tata and Prasad, 1998; Chin and Pun, 2002). Since this study is conducted in a developing Arabic country in the Middle East such as Kuwait, Arab culture is dominated by high-power distance and employees perceive benefits of a system such as TQM programs and use them with high frequency only when top management is engaged in this process and provided support (Jreisat, 1990; Atiyyah, 1993). Unlike the USA (which ranked 40), Arab societies are high on power distance (Kuwait ranked 80). Hence, such high power distance societies (e.g. Kuwait) might impact the implementation process of TQM.

Another cultural dimension that moderates positively in TQM implementation is collectivism (Kumar, 2006). It has been said that individualistic cultural dimension may not fit into the group orientation aspects of TQM (Yen *et al.,* 2002). Collectivists emphasize co-operation, endurance, persistence and obedience. They tend to have long-term orientation, leading to long-term commitment to the organization (Walumbwa and Lawler, 2003) and a requirement critical for success of TQM in an organization (Yen *et al.,* 2002).

In their study on TQM implementation in Canada and Mexico where there are two different national cultures, Galprin and Lituchy (1999) found that a firm in a collectivistic culture, such as Mexico, will be more successful at implementing TQM than a firm in an individualistic culture, such as Canada. Firms in collectivistic cultures will have an easier time implementing TQM than firms in individualistic cultures because their national cultures are more congruent with the TQM philosophy. Such findings can be particularly useful to developing countries such as Kuwait since research had shown that most developing cultures are characterized as highly collective (Jaeger & Kanungo, 1990). If firms in developing countries implement TQM, they will be more likely to improve the quality of their products and services and, therefore, be competitive in the global marketplace.

After evaluating the literature addressing TQM, there has been limited prior research examining whether quality should be managed differently in different national cultures, despite the fact that national traits are viewed as an important field of study in most business disciplines (Lagrosen, 2002). Furthermore, it was found that the majority of studies examining TQM practices and implementation, barriers, and relationship with culture were conducted in developed countries. However, few empirical studies had been conducted on TQM and systematically confirmed its relationship with national culture in developing and Arab countries (Al-Khalifa and Aspinwal, 2000, Djerdjour & Patel, 2000). In the proposed research, this research will investigate the influence of national culture on TQM implementation in the Kuwaiti Oil industry which is one of the developing Arab countries.

More importantly, there is insufficient evidence to support the idea that the application of TQM that works well for companies located in one country will work in others. In particular, a TQM implementation model developed from the Western society may not suit other societies due to the differences in social structure, economy, and way of life, specifically cultural values. Individuals from different countries have different values, beliefs, and attitudes that are influenced by their cultural background. And to support that, a case study done in Spain by Martinez-Lorente *et al.* (1998) found that nationality did influence the degree of TQM application. This thinking can be extended from the effect of these national cultural values on the level of implementing TQM to their specific effect on the TQM implementation of the new developed model underlying the Kuwaiti Business environment, where this Oil industry's environment is known for its richness of individuals from different national cultures and backgrounds. This selected sample of companies consists of employees coming from different national cultures and backgrounds coming from Kuwait, Arab countries, Western (European & U.S.) countries, and Asian countries. These employees all work in the same organization with the same policies, practices, and rules. However, each of these individuals will deal with these practices in a different aspect than the other due to each one's culture, values, beliefs, and attitudes.

As mentioned earlier, until recently most TQM information, especially the impact of cultural differences on the successful TQM implementation has relied predominantly on theory, case studies and anecdotes. Only few empirical studies have been available. These cultural differences are potentially important variables overlooked in prior studies. Therefore, as an attempt to help in filling in this gap, this research shall examine the role that individual national culture has on the

TQM implementation and the gained business results. It shall also investigate if this variable has any effect on the relationship between the components of the new developed TQM model and company's business results.

In the following section, the additional national culture values included in this research which is the quality performance orientation and quality ethical values shall be discussed in details.

4.3.3.1.3 Additional national culture values

In this research, Quality ethical values and quality performance orientations are additional values added under the national culture umbrella to increase the richness of the findings by exploring areas related to the Kuwaiti business environment that was not highlighted much in earlier studies.

4.3.3.1.3.1 Quality Ethical values

The Kuwaiti Islamic environment is rich in values and principles that stimulate and support the improvement of productivity and quality at work. Better yet, it obligatory requires the availability of these principles to accept one's work as worship that he shall be rewarded for (Al-Qarthawi, 1995). Hence, to increase the richness of this research and relate it more to the Kuwaiti contextual environment, Islamic culture values is integrated with the national culture values in a specific common area that is ethical business values related to quality practices. This research had utilized a group of quality ethical principles and practices (Al-Qarthawi, 1995) mainly taken from Islamic teachings and is investigating its relationship to TQM implementation. It is worth mentioning that the origins of these Islamic ethical values are mainly the Quran and Ahadith (sayings and practices of Prophet Mohammed). Quran instructs the human-being to pursue work persistently in whatever form, whenever it is available. Prophet Mohammed preached that hard work caused sins to be absolved and that "*no one eats better food than that which he eats out of his work*". Prophet Mohammad (peace and blessings be upon him) also said: "*Allah loves if someone did a job to do it very well (i.e. with proficiency)*". This Hadeeth (Prophet's Sayings) shows clearly the mutual rhythm both Islamic ethical values and TQM practices share. Moreover, that there are several Ahadith (sayings of Prophet Muhammad P.B.U.H.) relating to 'selling of goods,' which highlight the responsibility of the seller to explain all the shortcomings of the product explicitly so as to adjust the buyer's expectations to the appropriate level. After a clear understanding of all the weaknesses of the product, when the buyer experiences the actual product, he would, at the minimum, be satisfied if not delighted. Islamic norms of business transactions insist on ensuring customer satisfaction that is also the core component of the TQM philosophy.

Similarly, Imam Ali, stated, "*Persist in your action with a noble end in mind… Failure to perfect your work while you are sure of the reward is injustice to yourself*", and that "*poverty almost amounts to impiety*"(Abbas, 1996). Islamic management has a longer than 1400 years background (Hanifi, 2001) and in the Quran there is much more focus on management rather than economics (Fard, 1986). Islam believes that management is a necessary feature for leading the society. The Islamic approach to business ethics is centered on criteria that are in common with stakeholder theory such as justice and balance, and includes unique additional criteria such as trust and beneficence (Beekun & Badawi, 2005). The main driver and motive behind pertaining to these ethical values in daily life practices is: First, to get rewarded from Allah (The creator) as following such values is part of worshipping Allah, second, to prosper one's life and benefit his society (Al-Qarthawi, 1995).

In addition, Al-Zamaney *et. al*. (2002) emphasized that there is no contradiction between the quality practices proposed by TQM and the Islamic teachings. He stated that TQM practices and principles are not only similar to Islamic teachings and principles but also TQM is seen as a part of Islamic teachings from thousands of years. That is why the characteristics, attributes, and values of the culture in low power distance and uncertainty avoidance countries, that are considered as the most supporters and facilitators for TQM implementation, are mentioned and emphasized in the main sources of Islamic teaching; (Holy Q'uran and Sunnah "Prophet Mohammad's sayings and guidance").

It is worth mentioning that the poor record of modernization and low level of quality management practices in most of the Arab countries is not due to Islam religion shortages but as a result of Muslims being far away from Islam basic teachings that had incorporated the core concepts of TQM into its concepts thousands of years ago (Al-Zamaney *et. al.* ,20002). As not all the sample employees in the three companies are Muslims, the ethical values grasped basically from the Islamic teachings and practices were basically addressed in a general ethical pattern.

From the above, the ethical values related to quality and work, which is taken from Islamic teachings, might have a positive impact on the TQM implementation process. And due to the very rare research studies found on the literature related to this issue, this research shall attempt to reduce this gap and investigate the relationship between these quality ethical values and TQM implementation, it will also investigate if these values effects the business results, and if such values plays any controlling and moderating role on the relationship between TQM implementation constructs the business results component.

4.3.3.1.3.2 Quality Performance Orientation

In addition to the above cultural dimensions, a fifth dimension is added in this study which is Performance Orientation that is considered as one of House *et al*.'s (2004) important dimensions of culture which were revealed in their study of 62 cultures. Performance orientation refers to the extent to which an organization or society encourages and rewards group members for innovation, high standards, excellence and performance improvement (House *et al.*, 2004). A few of the characteristics of societies that have high and low performance orientation taken from House *et al.'s* (2004) study are described in Table 4-3 in Appendix-T.

Moreover, performance orientation relates to issues of both external adaptation and internal integration in terms of the practices and values that have an impact on the way a society or a company defines success in adapting to external challenges and the way the company manages interrelationships among its people (Javidan, 2004). A key element of performance orientation as a cultural dimension is the nature of the individual's relationship with the outside world (Javidan, 2004). As shown Table4-3 ,high performance oriented societies tend to value those individuals and groups that produce results and accomplish their assignments (Javidan, 2004). That is similar to the characteristics of the society in the Kuwaiti oil sector companies as they are pretty much assigned to the high performance orientation behavior. The GLOBE project found that performance oriented societies are more economically prosperous and have high national competitiveness (Javidan, 2004). In high performance countries, people prefer a direct and explicit style of communication. In contrast, low performance orientation countries view feedback as discomforting and pay attention to one's family and background rather than performance. Therefore, high levels of performance orientation values and practices are expected to lower the level of corruption.

Innovation is one of the areas which this quality performance orientation is related to, one of the most comprehensive definitions which is widely adopted by the research studies states that, "*innovation is defined as an internally generated or purchased device, system, policy, program, process, products or services that is new to adopting organizations* (Damanpour and Evan, 1984)". Innovation and TQM, both are regarded as key competitive factors that are deeply embedded into organizational structures products, processes, and services. TQM-Innovation literature reveals both positive and negative views of the scholars on the relation between Total Quality Management and innovation. While some researchers argue that TQM can be positively related to increase innovation capacity of TQM practicing firms (Singh and Smith, 2004), others develop an argument on the negative relationship between TQM implementation and innovative performance of firms (Prajogo and Sohal, 2001).

In addition, Samson and Terziovski (1999) found support for the relationship between some non-financial measures (i.e. innovation growth, market share growth, cost of quality, etc.) and implementation of TQM practices.

While financial performance is the ultimate aim of any business organization, other indicators such as innovation performance (Llorens *et al.,* 2003) may be equally important in implementing TQM principles. Further, implementation of TQM principles may not have direct but indirect impact on financial performance (Kaynak, 2003) by increasing innovation (Singh and Smith, 2004),

Another area relays under performance orientation is business excellence. As an attempt to define excellence, Koch and Cebula (1994) stated "*no argument exists on what constitutes management excellence, excellent managers depends upon a diverse set of competencies and values*". It was not until 1982 when Peters and Waterman published their text: "*In search of excellence*" that the word became directly associated with levels of business performance (Castle, 1996). Savolainen (2000) argued that excellence is a status to be achieved using total quality approaches. Moreover, McAdam (2000) stated that the literature suggests that organizational business excellence is a key stage on the TQM journey. It is often applied to TQM enabling actions as an effectiveness measure, that clearly implies of a positive relation between business excellence and implementing TQM.

Generally, one of the major goals of TQM is to stimulate continuous improvement in organization processes and activities. Therefore, TQM stimulate training and development (e.g., via continuous professional education) and view feedback (e.g., via internal and/or external quality assessment) as necessary for continuous improvement. These arguments suggest that performance-oriented societies such as the Kuwaiti oil sector societies may be positively associated with perceived use of TQM practices.

From the above, the literature review requires more support regarding the positive relation between quality performance orientation areas and TQM implementation process along with the business results gained from such implementation. This study shall fulfills this requirements as it shall investigate this relation and verify if quality performance orientation plays any moderating and controlling role on the relationship between TQM implementation components the business results component.

4.3.3.2 Difference in Managerial Levels

Managerial levels, defined as managers' position in the organizational hierarchy, have been the focus of much discussion in the management literature in the past two decades (Frucot *et al.*, 2006). This focus on levels led to a new emphasis on examining differences between managerial levels both in terms of their attitudes and behavior in organizations which includes attitudes towards TQM implementation levels.

Gaining management support in an organization is quite vital for successful TQM implementation. Several studies had found that difficulties in winning top managements' commitment have a significant impact on TQM failure (Choi and Behling, 1997; Waldman *et al.*, 1998; Wilkinson *et al*., 1997, 1998; Soltani *et al*., 2005; Riehl, 1988; Tregoe *et al*., 1990; Godfrey *et al.*, 1997; Schweizer, 2004; Soltani, 2005a, b; Knights and McCabe, 1999; Redman and Grieves, 1999). Weltgen (2004) had also highlighted that the management level (all leadership positions) plays a key role in the introduction and development of TQM. In their study, Prajogo and McDermott (2005) also pointed that the company’s hierarchical managerial levels have a significant relationship with TQM practices and implementation.

Moreover, the importance of studying hierarchical managerial levels was emphasized by studies which found that position in the hierarchy is associated with different perceptions or views of the organization, that, in turn, affect acceptable behavior, norms, and attitudes (Carlopio and Gardner, 1995; Cooke and Rousseau, 1988; Kreiner, 1989; Nelson *et al.*, 1995; Spybey, 1989; Vancouver and Schmitt, 1991; Zaleznik, 1989). These diverging views are considered a natural product of the differentiation made by the managerial level (Cooke and Rousseau, 1988).

In general, Frucot *et al*. (2006) had emphasized in his study that hierarchical levels have been positively associated with favorable attitudes toward the organization (Kossek, 1989; Tannenbaum, 1992). From a specific TQM perspective, there have been several studies ensuring that managers at middle and supervisory levels might be seen to be less than fully supportive of the introduction of TQM (Rees, 1995; Marchington *et al.,* 1992; Hill, 1991). For the sake of parsimony, Wilkinson *et al.* (1994) summarized the general malaise surrounding the state of middle managers in the context of TQM by arguing that middle and junior managers feel pressure from above and below by its introduction – an indication or symptom of resistance to TQM as the most widely used strategic change program. These findings, however, do not draw any definite conclusions with regard to the way middle managers might get by in such a context. Soltani and Wilkinson (2010) also found in their recent study that the degree of incongruence between senior and middle managers' orientations towards TQM can have serious effect on its success.

Despite the frequent previous calls for exploring the dynamics of managerial relationship and its implications for TQM effectiveness (Wilkinson *et al*., 1998; Shiba *et al*., 1993; Dean and Bowen, 1994; Soltani *et al*., 2008; Choi and Behling, 1997; Waldman *et al*., 1998; Knights and McCabe, 1998, 1999; Balogun and Johnson, 2004; Willmott, 1993; Maitlis and Lawrence, 2003), so far little has been done. In his recent study, Sit *et al*. (2009) also mentioned that further research is needed to study employees at different hierarchical managerial levels that consist of top executives, middle and lower management employees. This is because TQM is an organization-wide process and it involves the total participation of all levels of employees (Mohanty and Behera, 1996).

Taken all of the above collectively, the literature suggests that managers at the same organizational level share perceptions and attitudes towards TQM practices that differ from those of managers at different levels. Hence, such differences perceptions and attitudes may impact TQM implementation in an organization. The literature also had frequently called to explore this issue as it had not been tackled a lot nor supported by many empirical research and case studies. Hence, this study attempted to reduce this gap by empirically examining the impact of different managerial levels' perceptions and attitudes on TQM implementation levels, and business results gained from such implementation. Add to that, the study shall investigate if this variable (difference in managerial levels) plays any moderating role in the relationship between the constructs of the new developed TQM model and TQM Business results in the generic conceptual framework of this study.

4.3.3.3 TQM Awareness

In recent decades, the level of awareness towards TQM has increased drastically (Arumugam *et al.*, 2008; Yusof and Aspinwall, 1999) due to intense global competition, increasing consumer consciousness of quality, rapid technology transfer and towards achieving world-class status. Clayton (1995) stresses on quality first in the quality awareness. Statt (1981) stated defined awareness as "*knowing that you are experiencing something, a part from strict behaviorists most psychologists would call this consciousness*". Bhagi and Sharma (1992) defined awareness as "*a subjective state of being alert or conscious: cognizant of information received from the immediate environment*". Johnson (1993) stated "*that there are four specific steps that can identify an organization's progress on the TQM journey. The first step is awareness. All employees in the* *organization must be aware of where they currently stand, where they are going, why they are going there, how they are going to get there, and who is leading the charge*". According to Hunt (1992), *"building awareness based of what 'Quality First' is and why it is important to you and your organization is one of the first perhaps most important steps in implementing 'Quality First' ".*

People's awareness of quality is central to TQM's implementation process. For Crosby (1984), quality awareness is not just promoting quality within an organization, but it is also spreading information around. Thus, quality awareness begins from management and spreads throughout the entire organization. Furthermore; an organization will not commence to execute TQM until it is fully aware of its basic concepts and their importance in enhancing an organization's business results.

According to Juran (1989) lack of top management understanding has contributed to the failure of some well-intentioned effort to institute annual quality improvement. Crosby's Quality Management Maturity Grid comments that the management understanding and attitude are important (Crosby, 1979). "*Nothing is more important than that true understanding and nothing is harder to come by*" (Crosby, 1979, p.125). Hence, the importance of the top management awareness of TQM is undeniable.

In their recent study, G.A. and C.V. (2007) confirmed that there is evidence that TQM has affected managers' perceptions on several aspects of their day-to-day work. However, this effect came mainly from their awareness and familiarity with management practices. This fact suggests that managers posses a realistic view of TQM.

Moreover, Farooqi *et. al*. (2008) found a wide gap has been observed in TQM implementation among company's stakeholders due to the different level of knowledge and awareness about TQM. Hence, to implement TQM successfully, it requires total involvement, support and commitment from all levels of an organization and more so from the top management. Awareness of TQM is measured based on the understanding of the importance of the principles on which TQM is founded (Sadgrove, 1995).

4.3.3.4 The Demographical Variables

The demographical variables used in this research are respondent's demographic variables such as job experience, Respondent's company and nationality. In this research gender was discarded as one of the sample companies (PIC) all its respondents were males. So, for the sake of fair comparison the gender variable was not highlighted. In addition, age variable was replaced with the years of job experience which is somehow related to the age but more related as a controlling variable to work and TQM implementation.

These selected demographical traits can have effects on respondent's perception of TQM implementation level and business results. In this research, these effects shall be investigated and shall also investigate if such demographical variables truly control and moderate the relationship between TQM implementation and its Business results.

The nationality variable which is often related to the national culture has been discussed in previous section. As for the job experience, a very recent study done by Paksoy *et. al.* (2010) confirmed that there is a significant effect of job experience on TQM. They further explained that job experience contributes to TQM efforts in a positive way and more experienced employees appreciate TQM efforts than low-experienced ones.

Regarding the company as there are three companies involved of different sizes, there is a debate in the literature about the influence of size of firm on TQM implementation. Welsh and White (1981) observed that small businesses were not 'little' large businesses and the differences in structures, policy making procedures and utilization of resources were such that "*the application of large business concepts directly to small businesses may border on the ridiculous*". Similarly, Ahire and Golhar (1996) observed that there were no operational differences in TQM implementation attributable to firm size, with the exception that small firms in their sample displayed a better customer focus.

Powell (1995) reported some evidence to the contrary, i.e. that size of firm was significantly and negatively associated with TQM success. In other words, a firm's size impedes successful TQM implementation. This view has been supported by Hendricks and Singhal (2001) who suggested that maintaining an effective TQM implementation is likely to be more difficult for larger firms than smaller firms. Their results supported this hypothesis, showing that while TQM had a positive impact on profitability for both smaller and larger firms, the former tended to benefit more. As all the three companies are selected to represent the Oil industry as one sample, then the size each firm will not be focused on in this study. However, the company name is used in order to be able to address basic comparisons analysis between the three companies.

In general view of the demographical traits, Jennifer *et al.* (1998) highlighted that research generated from a variety of fields predicts that important benefits will accrue from demographic heterogeneity in organizations by increasing the variance in perspectives and approaches to work that members of different identity groups can bring (Thomas and Ely, 1996).

For example, work units composed of diverse members can tap into broad networks of contacts, making it likely that useful new information will be incorporated into decisions that can increase commitment to choices and enhance responsiveness to rapidly changing organizational environments (Hoffman and Maier, 1961;Tushman, 1977; Donnelion, 1993).

According to some researchers, demographic heterogeneity seems to be beneficial, supporting a "value-in-diversity" hypothesis (Cox, Lobel, and McLeod, 1991, p. 827); but others have found diversity to be detrimental to work effectiveness (Williams and O'Reilly, 1998). For example, heterogeneous work groups have been found to be less socially integrated and to have experienced more communication problems, more conflict and higher turnover rates than homogeneous groups (O'Reilly, Caldwell, and Barnett, 1989; Zenger and Lawrence, 1989). Further, people who were more different from their coworkers in terms of job experience, tenure, education, nationality and race have reported feeling more uncomfortable and less attached to their employing organization (Tsui, Egan, and O'Reilly, 1992).

From the above debate regarding respondents’ demographics and diversity, there shall be investigation in this research if there is any moderating effect of these demographical variables on the level of implementing TQM as well as on gained TQM Business results. Add to that, it shall be examined if these variables play any moderating and controlling role in the relationship between the components of the new developed TQM model and the TQM Business results.

4.3.3.5 Hypothesis of Control variables group

From the previous extensive literature review on the control variables effect on TQM done by various researchers in different countries, it was clear that such studies were not conducted in the Oil sector underlying the Kuwaiti environment. Hence, the below hypotheses are derived to enable this study to investigate empirically these variables' moderating role on TQM implementation process and framework developed in this specific context as outcomes might differ, and to fulfill these gaps found in the literature as highlighted respectively in the previous section (4.3.3) . As well as providing answers to the raised research questions related to the control variables (4, and 5) in chapter 1 (section 1.6). These main hypotheses are given below with a summarized support from the literature to each hypothesis respectively:

- Many researchers emphasized on the significant effect that TQM familiarity and awareness plays in TQM implementation process (Hunt, 1992; Crosby, 1984; Juran, 1989; Farooqi *et. al.*;

2008) as mentioned in details in section 4.3.3.3. Hence, this hypothesis has been driven in order to validate this effect in the Kuwaiti business environment:

H_9: There is strong, positive and significant effect of TQM familiarity (TQMFM) on TQM implementation process.

- Within national culture literature, studies had identified the dimensions of national culture that influence the implementation of TQM (Tata & Prasad, 1998; Jung *et al.,* 2008; Al-Khalifa and Aspinwall, 2001). These dimensions included high collectivism, low power distance (i.e. low hierarchy) and low uncertainty avoidance (Chin and Pun, 2002; Tata and Prasad, 1998; Saha and Hardie, 2005; Yen *et al.,* 2002) as discussed in details in section 4.3.3.1.2. Hence, the following hypotheses were derived to investigate these influences on TQM implementation process in this research:

  H_{10}: There is strong, positive and significant effect of Power distance (PWR) on TQM implementation process.

  H_{11}: There is strong, positive and significant effect of Uncertainty Avoidance (UNC) on TQM implementation process.

  H_{12}: There is strong, positive and significant effect of Collectivism (COL) on TQM implementation process.

- Since many researchers (Javidan,2004; House et. al.,2004) has pointed to Quality performance orientation importance in TQM implementation process, where high performance orientation societies are more supportive to TQM implementation such as the Kuwaiti society (section 4.3.3.1.3.2) , this hypothesis has been derived:

H_{13}: There is strong, positive and significant effect of Quality Performance Orientation (QPRF) on TQM implementation process.

- A set of quality ethical values captured from Islamic teachings and principles (Al-Qarthawi, 1995) has been utilized in this research (4.3.3.1.3.1) to investigate their effect on TQM implementation process as Al-Zamaney *et. al*. (2002) emphasized that there is no contradiction between the quality practices proposed by TQM and the Islamic teachings. He stated that TQM practices and principles are not only similar to Islamic teachings and principles but also TQM is seen as a part of Islamic teachings from thousands of years. Hence, the following hypothesis is derived:

H_{14}: There is strong, positive and significant effect of Quality Ethical Values on TQM implementation process.

These hypotheses will be empirically tested to confirm literature findings where adding these set of variables into the TQM implementation framework actually effects the TQM implementation process and how its components are related to each other or not.

4.4 Summary

This chapter has discussed the meaning and importance of a TQM framework. Then, it presented the general conceptual framework of the research and its three main groups inclujding the TQM implementation components, the TQM business results, and the control variables. After that, a review of TQM practices and dimensions were summarized and presented, followed by an assessment of various TQM frameworks which showed that MNBQA framework best fits the definition of TQM. Further evidence was drawn from the previous studies and researches to support MBNQA's credibility and validity. The added value of utilizing MBNQA model in this specific research was then discussed in details. After that,
an illustration of MBNQA seven categories (Leadership, Strategic Planning, Customer and Market Focus, Information and Analysis, Human Resource Focus, Process management) and an additional component 'continuous improvement' was presented. These eight components form the building blocks of the TQM implementation model in this research. TQM Business Results; the second component of the conceptual framework, was then reviewed in details discussing its four areas including customer focused results, financial and market results, human resource results and organizational effectiveness results and how TQM practices effects each of these four areas.
Moving to the group of controlling variables, examination and detailed review to the literature related to each variable under the Control variables component and its relation to TQM implementation and results was presented. Starting with reviewing the concept of individual national culture values and how various studies discussed that it can act as a driver or a barrier for a successful TQM implementation. Then, additional values to the national culture were presented which are quality ethical values and performance orientation. Studies showed that quality ethical values taken from Islamic teachings and performance orientation might positively impact the TQM implementation process. After national culture, the second control variable was reviewed which is the difference in managerial levels and its effect on successful implementation of TQM through past and current research studies. TQM awareness, the third control variable, was proven for its importance through literature in successful implementation of TQM processes. Finally, the demographical variables utilized in this research and their effect on TQM implementation process and results gained were reviewed. Not to forget that all discussed

relations between these control variables and TQM implementation process and the resulted Business gains shall be all investigated through the research’s empirical analysis.

Turning to the empirical part of the thesis, the next chapter will discuss the research and data collection methodology used in order to fulfill the stated aims of the research in greater detail. The focus will be on the method utilized for data collection, questionnaire, design and application; as well as the reliability analysis and validity of the research’s instruments.

CHAPTER 5
Research Design and Methodology

5.1 Introduction

The main purpose of this chapter is to provide an outline of the research methods used and to explain the procedures employed to collect the data. It also discusses the theory underlying the methods used to help understanding the reasons for undertaking certain activities. The discussion has to address the issues within the context of the research setting introduced in Chapter One and guided by the review of the literature in Chapters Two and Three).

This chapter will be divided into two main parts. The first part focuses briefly on the literature of research methodology and design; the second part covers the nature of research, its types in terms of approach and design, quantitative and qualitative researches, triangulation as a combination of both methods and the data collection methods. The second part also concentrates on the processes employed in the design and execution of this research in order to obtain data that achieve the research objectives. It explains the research methodology of the study, starting with justification of research methods and data collection adopted. It also explains the literature review, the questionnaire design, the pilot study, the questionnaire sample, questionnaire data collection and response rate. Furthermore, the second stage of data collection which consists of focusing on interview questions and the selected sample of the interview are covered. Finally, the research instrument measurement will be identified.

5.2 Definitions and Purpose of Research

Hussey and Hussey (2003) advocate that in spite of the significance of research activity, there is no agreed definition in the current literature on how the term should be defined. Research stands on the intent to create new knowledge, and any attempt to increase the sum of what is known, usually referred to as ‘a body of knowledge’ (Macleod-Clark and Hockey, 1989). Nachmias and Nachmias (1996) describe the role of research as “*An attempt to increase the sum of what is known, usually referred to as “a body of knowledge*”, by the discovery of new facts or relationship through a process of systemic scientific inquiry, the research process.” Therefore, the researcher needs to be able to argue convincingly that new knowledge that is valuable has been added to the body of knowledge. Another important aim of this study is to propose a model for the effective implementation of TQM in the oil industry at Kuwait.

However, according to Sekaran (2003) research can be defined as, *“an organized, systemic, data-based, critical, scientific inquiry or investigation into a specific problem, undertaken with the objective of finding answers or solutions to it*”.

A definition for research from the *Oxford Advanced Learner’s Dictionary of English* (Hornby, 1995) is broadly stated as “*a careful study or investigation, especially in order to discover new facts or information*”.

Having said that, research, consequently, covers the process of inquiry, investigation, examination, and experimentation. These processes have to be carried out systematically, diligently, critically, objectively, and logically. The expected end results would be to discover new facts that will help to deal with the problem situation

The specific aims of any research usually depend on being investigated. However, in general, it can be argued that research is carried out for some of the following reasons (Aaker *et al.*, 1995):

- To find out things
- To find a solution to a given dilemma or problem
- To change the world by influencing people’s way of thinking by providing alternative solutions to investigated problems
- To expand knowledge of a particular topic by disseminating widely the knowledge gained.

5.3 Research Strategies

There are various research strategies classified under different taxonomies. One of the most commonly used differentiates research into theoretical or empirical studies. Aaker *et al.* (1995), May (1997), Nachmias and Nachmias (2000) and Remenyi *et al.* (1998) stated that scientific research comprises two major elements both theoretical and empirical. They stated that a system link between these two elements can improve the role of social science through deduction and induction. This link leads to two kinds of research strategies, theory-then-research and research-then-theory. These approaches have been covered by other terms like deduction and induction or grand and grounded (May, 1997; Nachmias and Nachmias, 2000).

The theory-then-research (the research empiricists) strategy adopts a hypothesis-testing approach to research. It builds hypotheses from theory, and uses collected data to accept or reject them. This includes developing a model for testing, building up a number of propositions that describe relationships between its constituents and designing research instruments (i.e. questionnaire) to examine the model, testing the propositions using the collected data, and refining the model and its associated theories (Reynolds, 1979).

On the other hand, Research-then-theory (the research theorists) believe that empirical research should not be limited to improving theories through testing hypotheses but should find out new theories (Benbasat *et al.*, 1987; Merton; 1968; Strauss and Corbin, 1990). The research theorists start with determining the phenomenon's attributes and seek data to build theories around them (Reynolds, 1979). Strauss and Corbin (1990, p.24) in describing grounded theory, a research approach based on the research-then-theory strategy, stated that:

> *"The grounded theory approach is a qualitative research method that uses a systematic set of procedures to develop an inductively derived founded theory about a phenomenon. The research findings constitute a theoretical formulation of the reality under investigation, rather than consisting of a set of numbers, or a group of loosely related themes. Through this methodology, the concepts and relationships among them are not only generated but they are also provisionally tested"*

Although there is argument about these two strategies, yet both regard theory as appearance of scientific progress, and there is no rigid commitment to either strategy as a precursor for conducting the research. Thus empirical research should be essentially rooted in theory, and it is not possible to conduct such research in a meaningful way without the researcher taking a specific theoretical standpoint. On the other hand, as Remenyi *et al*. (1998) pointed out that theoretical research relies on ideas that have at some earlier time been based on specific observations or original data collected by means of empirical research. Indeed, theoretical research does not occur in a void, it is rather the result of thinking about the findings of previous empirical research and of debating the different theoretical interpretations that others have made.

However, they believe that it is impossible to be an empiricist without having a total understanding of the theoretical issues surrounding the subject to be studied, and about which data will be collected. They stated that (Remenyi *et al.,* 1998, p. 32):

> *"In practice there is a dialectical relationship between these two aspects of research that reinforce each other. There are always theoretical assumptions associated with the collection of evidence and there is always evidence that underpins theory. Far too much is made of the distinction between empirical and theoretical research as both are central to any significant research activity and both are required to make any real scientific progress."*

5.4 Research methodologies

Data can be collected from numerous sources, using different methodologies. It then follows that research methodology is a set of techniques used in a particular area of research activities (Nachmias and Nachmias, 2000). There is no right or wrong methodology, but the researcher should look for the most suitable and beneficial methods available. According to Huberman and Miles (2002) and Blaxter *et al.*, (2001), data collected can be classified as qualitative if they come in word form and describe situations, individuals, or circumstances surrounding a phenomenon, while they are viewed as quantitative if they are in the form of numbers and often counts or measurements to attempt to give precision to a set of observations. Consequently, the most fundamental classification has been between quantitative and qualitative approaches.

Denzin and Lincoln (1994) argue that both qualitative and quantitative approaches can be used appropriately with any research philosophy (e.g. positivist or interpretivist). They provided evidence using the same data-gathering technique for both positivists and interpretivists. In theory, the choice of methods depends on the nature of the research problem. In practice, there are certain constraints, such as time and funding, that influence the researcher's choice.

Gable (1994) argues that the literature on methodology seems to draw a clear distinction between these approaches. However, they are not mutually exclusive, and researchers as well as scientists will often apply both. Therefore, quantitative and qualitative research techniques are sometimes viewed as the end of a continuum (Gable, 1994).

5.4.1 Quantitative method

Quantitative research design is concerned with the creation of empirical tests, that are meant to support or refute a knowledge claim (Walter and Gall, 1989), and can take the form of descriptive studies, that are primarily concerned with finding out 'what is'. The components of quantitative research are based on the positivist paradigm. Quantitative research techniques share a language and logic form of positivism that separate them from research techniques based on other approaches (Neuman, 1997). Quantitative research is concerned with discovering a causal relationship, prediction or explanation of a relationship comparing or relating several variables under investigation (Creswell, 1994; Churchill, 1995).

The quantitative approach places considerable emphasis on statistical generalization of findings that seeks to explain and predict events in the social world by searching for regularities and causal relationship between constituent variables. Remenyi et al. (1998) claim that for quantitative research it is usually clear what evidence is required, and this evidence may usually be collected within a tight structure. Therefore, in the social sciences in general, and marketing research in particular, data collection usually involves the use of a questionnaire. The quantitative techniques provide researchers with narrow, but hard and generalizable results (McClintock *et al*., 1979). Using statistical data analysis, quantitative methods provide objective and precise measurements for social actions by explaining the causal relationships related to specific events (Nettleton and Taylor, 1990). However, quantitative methods overlook social processes and focuses solely on social structure by isolating the problem from its setting. This approach has been quite popular with researchers until recently, when it was heavily criticized for these reasons by those who prefer qualitative research (Hussey and Hussey, 2003).

5.4.2 Qualitative method

Qualitative research is a methodology rooted in the phenomenological paradigm that involves some kind of interaction between the researcher and the people or the situation being researched (Hussey and Hussey, 2003). Qualitative methods are often small-scale and aim to elicit richness of detail rather than statistical generalizations. They also aim for detailed description and understanding of the phenomenon under investigation by way of observation and involvement (Van Maanen, 1979; Bryman, 1994). Miles and Huberman (1994) state:

> *"Qualitative data, usually in the form of words rather than numbers, have always been the staple of some fields in social sciences, notably anthropology, history, and political*

science. In the past decade, however, more researchers in basic disciplines and applied fields (psychology, sociology, linguistics, public administration, organizational studies, business studies, health care, urban planning, educational research, family studies, program evaluation, and policy analysis) have shifted to a more qualitative paradigm."

Morgan and Smircich (1980) argue that qualitative research is an approach rather than a particular set of techniques, and its appropriateness, like that of quantitative research, is contingent on the nature of the phenomena to be studied. In this respect, Bryman (1994) states that qualitative research is an approach to the study of the social world, which looks to explain and analyze the culture and behavior of humans and their groups from the subjects' viewpoints. Remenyi (1998) believes that qualitative methodology reflects "*a theoretical point of view that advocates the study of direct experience taken at face value; and which sees behavior as determined by the phenomena of experience rather than by external, objective and physically described reality*". From a positivist point of view, qualitative projects are mostly designed for exploratory studies leading into more structured or quantitative studies (Deshpande, 1983; Tashakkori and Teddlie, 1998).

Hakim (2000) indicates that the great strength of qualitative research is the validity of the data collected: data are normally gathered in sufficient detail for the results to be taken as true, correct, complete and believable reports of participants' views and experiences. However, despite its strengths, qualitative research has its problems. A main drawback of this approach is the problem of the sample size, since qualitative projects normally have small numbers of participants and small numbers of participant cannot really be taken as representative portion (Hakim, 2000). This operates even if great care is taken to choose a fair cross-section of the type of people who are the subjects of the study. Other difficulties in the practice of qualitative research include access the problem of interpretation (Bryman, 1995) and data analysis (Miles and Huberman, 1994). Bryman (1994) and Van Maanen (1979) argue that subjectivity, flexibility, lack of rigorous experimental control and determinism are mostly associated with qualitative data collection and analysis, which result in limiting their application to certain types of research (Kaplan and Duchon, 1988; Sykes and Warren, 1991).

Qualitative research may be used as a first step in the design of structured interview surveys (Hakim, 2000). Qualitative research also has the benefit of being associated more with qualitative analysis and discussion. These also, allow non-specialists to understand the outcome more easily. Methods of qualitative design include focus group discussion, which allows the researcher to bring together a number of informants who serve the issue of investigation; in-depth interviews in the form of structured or unstructured questioning design; case studies, either single-case or multiple-case designs, which provide descriptive data of the subject under study; meta-analysis, which can be designed to use statistical results from previous research; and research analysis of administrative records, which has the feature of access to knowledge which is not normally found elsewhere (Silverman, 2000; Kruger, 2001).

5.4.3 Combined quantitative and qualitative methods – Triangulation

Triangulation is defined as "*the combination of different methods, study groups, local and temporal settings and different theoretical perspectives in dealing with a phenomenon*" (Flick, 2002). There are many benefits of including many sources of evidence and methods of analysis; it allows the researcher to address a broader range of historical and behavioral issues, and it also leads to the case study becoming more convincing and accurate (Yin, 2003). It also leads to strengthening the study's usefulness for other settings (Marshall and Rossman, 1989) as one of the challenges the researchers face is to ensure that the data being collected are valid and reliable (Remenyi *et al.* 1998). Therefore, many researchers use triangulation to validate their results, that leads the researcher to be more confident of the data (Brannen, 1995). Furthermore, Patton (1990) argued that studies that use only one method were more susceptible to error linked to that particular method. In addition, Neuman (1997) advocated multiple methods to address the same problems, on the basis that different methodological weaknesses will be cancelled out to produce more convincing findings.

According to Jick (1979), the concept of triangulation was based on the assumption that any bias inherent in a particular data source, investigator, and method would be neutralized when in conjunction with other data sources, investigators and methods. He argues that these methods can be drawn from 'within methods', to utilize qualitative and quantitative data collection procedures (e.g. a questionnaire survey and in-depth interviews).

Bryman (1995) claimed that both qualitative and quantitative methods have several features that can be classified as advantages or disadvantages (Table 5-1, Appendix-T). Using triangulation, the researchers claim that the validity of conclusions is enhanced if they can be shown to provide mutual confirmation (Bryman, 1995).

However, the use of only one method is more vulnerable to error linked to that particular method (Patton, 1990). Therefore, although triangulation entails a commitment to greater amounts of money and time yetit has the advantage of removing the bias that is often associated with the use of a single technique. Consequently, it is best whenever possible to undertake research using a variety of data collection methods. This action will overcome the disadvantages, which may be caused by the selected methods.

5.4.4 Data collection

In an attempt to know what are the most known techniques and methods used to collect the qualitative and quantitative data, an overview of case studies, interviews, and questionnaire surveys will be presented in the following sections.

5.4.4.1 Case studies

Case studies are typical research methods widely used for qualitative data collection in management research. A clear definition for the case study may be difficult to obtain, because case studies were used in different disciplines, with different uses. Hussey and Hussey (2003) refer to case studies as "*an extensive examination of a single instance of a phenomenon*". Silverman (2000) defines case study as "*a general approach to studying a research topic*".

In case study-based research, the researcher's aim is to discover the research problem context through the eyes of the people being investigated (Wong, 1992), based on a predefined framework and categories. Case study, therefore, is a preferred research method when 'who', 'why' and 'how' questions are being examined, when the researcher has little control over events, and when the focus is on a contemporary phenomenon within some real-life context (Remenyi *et al.,* 1998).

Generally, the strength of case study is that it offers a more holistic, context-based approach, and the aim should be analytical generalization and not statistical generalization (Yin, 2003; Bryman, 1995).

A case study, on the other hand, may have some problems such as the accusation of limited generalizability, i.e., the question of external validity, whether findings from a case study are generalizable beyond the immediate case (Yin, 2003). Another concern about case study design involves its lack of rigor where biased views of the researcher have been allowed to influence the findings.

Therefore, while the case study approach provides a comprehensive coverage and realistic description of the sample being studied, it has the limitation of being unsuitable for research that seeks statistical generalizations or assessment (Cohen and Manion, 1994; Yin, 2003).

5.4.4.2 Interviews

Interviews are widely used in qualitative data collection as it allows the researcher to control the interview situation and results in a higher response rate than the mail questionnaire. It also allows the interviewer to play effective role in enhancing respondent participation, guiding the questioning, answering the respondent's questions, clarifying the meaning of responses and also probing for additional and detailed data (Nachmias and Nachmias, 1996; Hussey and Hussey, 2003). Finally, the interview is preferable when asking longer, difficult and open-ended questions (Warwick and Lininger, 1975; Hoinville and Jowell, 1985).

However, interviews might not be preferable in some studies as they are usually more expensive, permit the interviewer's personal influence and bias to intrude and may minimize the ability to maintain anonymity that can be particularly important when sensitive issues are being researched.

There are three types of interviews: structured, semi-structured and unstructured. In the structured interview, questions are closed-ended, and the sequence in which they are asked is the same in every interview. This type of interview is more objective and easy to analyze, but is not flexible (Nachmias and Nachmias, 1996). The unstructured interview contains open-ended questions. Although it takes more effort and time and is difficult to analyze yet it is flexible and may be used to explore answers in greater depth. The semi-structured interview contains both open-ended and close-ended questions and possesses.

5.4.4.3 Questionnaire Survey

A questionnaire is a highly structured quantitative data collection technique whereby each respondent is asked written questions. Questionnaire survey, as defined by McDaniel and Gates (2002), is a set of questions designed to generate the evidence necessary to accomplish the objectives of the research study. Remenyi *et al.* (1998) stated that a survey involves the collection of data from a large group of people or a population. It is more often used as the sole or primary source of quantitative data in management research. It can be used for description, explanation, and/or hypothesis testing. However, in the social sciences survey research is conventionally associated with questionnaires and interviewing, though it can incorporate other methods of data collection, such as structured observation, in-depth interviews and content analysis (Bryman, 1989; March, 1982).

Questionnaire survey has many advantages (Hussey and Hussey, 2003) including:

- It is cheaper than the interview, particularly when the sample number is large and respondents are widely spread over a large geographic area.
- It guarantees respondent anonymity, particularly important when the survey deals with sensitive issues.
- It minimizes bias errors that might result from interviewer influence.
- The respondent is given time to considered his/her answers, consult other people, and look into records before answering.

However, questionnaire survey has the following disadvantages (Nachmias and Nachmias, 1996):

- The biggest problem with the postal questionnaire is the low response rate.
- It is difficult to control who completes the questionnaire.
- The researcher has no opportunity to check the accuracy of the information received, interpret ambiguous questions, clarify ambiguous answers, or to appraise the non-verbal behavior of respondents.
- The questionnaire survey requires simple and clear questions; hence the researcher will be unable to collect in-depth data.

5.5 The Chosen Research Methodology

As mentioned earlier, there is no one 'ideal' methodology to fit all research situations. Each research methodology has its own strengths and weaknesses. Also, the question of the appropriate research methodology depends to a great extent on a study’s research questions and objectives. However, there are many factors to be considered when choosing an appropriate research methodology.

This study required knowledge about the ‘what’, ‘how’ and ‘why’ of TQM implementation in the Kuwaiti oil sector organizations. The ‘what’ was best answered by using quantitative methods such as questionnaire surveys, while the ‘how’ and ‘why’ were best answered using qualitative methods such as interviews.

An exploratory survey is required here to achieve the context for the research (Tornatzky and Klein, 1982) that provides an additional richness and raises some key issues involved TQM implementation. Given the nature of the topic, this type of inquiry favors the use of an exploratory structured questionnaire survey (Eisenhardt, 1989; Yin, 1989) that seeks to elicit the opinions of specific employees regarding the TQM practices and implementation. This clearly called for targeting a large sample of employees in different oil organizations that could easily be reached using the questionnaire survey method. This is why the survey questionnaire method was chosen for this study to address the 'what' questions, as they sought to gather factual information that could be easily analyzed using numbers. (More details in the next sections).

In addition, an interview based on the qualitative method has been chosen because the sole reliance on the questionnaire survey does not help answer the questions of 'how' and 'why' in relation to the process aspects of using the TQM approach. The complexity of the context being investigated and the diversity of the issues related to TQM implementation make the utilization of interviews of particular usefulness.

From what is stated above, this study would clearly employ a triangulation strategy in which both quantitative and qualitative research techniques are implemented at different phases of the research. A multi-method approach will be used here to address the important questions for this study that will use a methodological triangulation approach combining a questionnaire survey (the quantitative data collection method), and interviews (the qualitative data collection method). The two methods are viewed as complementary to each other, and the strengths and weaknesses of each method are also considered.

As mentioned earlier, combining quantitative and qualitative approaches in this study has many added values. First, it strengthens the overall research process and the likely validity of the resulting findings and interpretations. Second, this combination also allows the utilization of the strengths of each, as well as providing some remedy for their respective deficiencies (Brewer and Hunter, 1989). Finally, using such combination of research techniques will provide robust and richer findings.

5.6 Research design

The role of research design is to connect the questions to data. Design sits between the two, showing how the research questions will be connected to the data, and the tools and procedures to use in answering them. Research design must follow from the questions and fit them with data. The design is the basic plan for a piece of empirical research, and includes main ideas such as strategy, sample, and the tools and procedures to be used for collecting and analyzing empirical data (Punch, 2000).

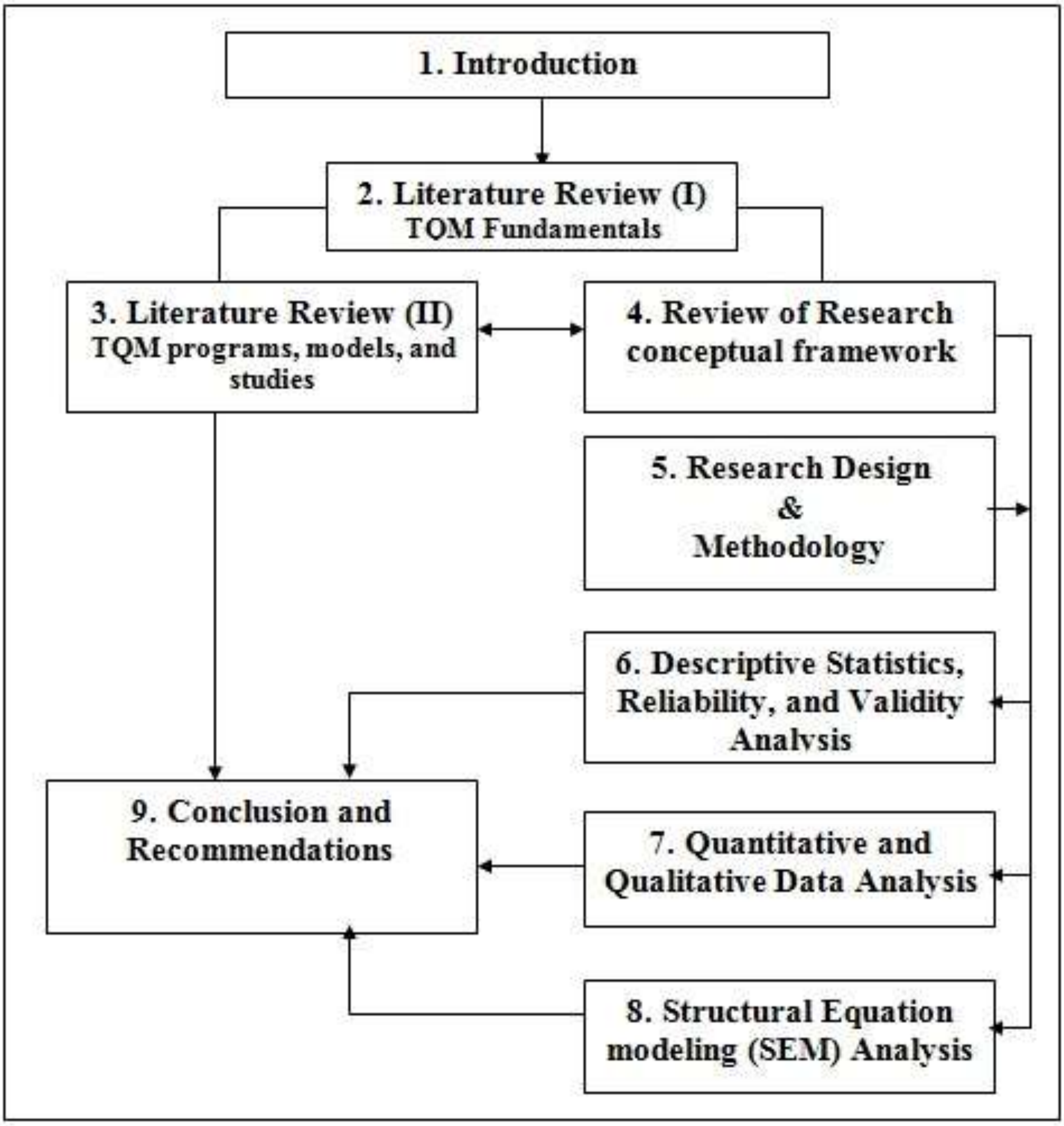
Yin (1989, p.28) gives a refreshingly simple definition of a research design as,

> *" The logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions. Colloquially, a research design is an action plan for getting from here to there, where "here" may be defined as the initial sets of questions to be answered, and "there" is some set of conclusions (answers) about these questions. Between "here" and "there" may be found a number of major steps, including the collection and analysis of relevant data".*

This study represents exploratory research that intends to enhance existing theories and practices of TQM implementation from a holistic perspective. The entire research approach includes literature review, questionnaire survey and interview. The next sections provide detailed discussions of the research design phases outlined in Figure 5-1. These phases contain the following:

1. Introduction and Review of Existing Literature on TQM.
2. TQM Fundamentals (Literature review I).
3. TQM programs, models, studies.
4. Review of Research conceptual framework.
5. Research Design and Methodology.
6. Descriptive Statistics, Reliability, and Validity Analysis.
7. Quantitative and Qualitative Data Analysis
8. Structural Equation modeling (SEM) Analysis.
9. Conclusion and Recommendations

Figure 5-1: Research Design Overview



5.6.1 Literature Review

This study starts with a comprehensive review of relevant literature on Total Quality Management. This includes all possible references available including textbooks, academic papers, professional magazines and reports, and newspapers. The review is divided into three parts. The first part (Chapter 2) included literature on TQM Fundamentals. The second part (Chapter 3) reviewed various TQM programs, models, and previous TQM studies done in developing countries. The third part (Chapter 4) provided a literature review of the proposed research conceptual framework and its components.

Consequently, the literature research accomplishes several purposes (Tuckman, 1998):

- Provides the researcher with many general perspectives;
- Provides the historical context of the phenomenon being studied;
- Helps to draw conclusions that can be made available to subsequent researchers and practitioners;
- Provides results of other studies that are closely related to the current study, and relates this research to the ongoing dialogue in the literature about the topic (filling the gap and extending prior study).
- Provides a basis for establishing the significance of the problem.
- Provides a framework for establishing the importance of the study (Cooper and Emory, 1995).

5.6.2 Questionnaire Design

Based on the literature review, a standardized questionnaire was developed to collect data from employees in different managerial levels in oil companies in order to elicit their experience regarding practices of TQM and its implementation (see Appendix 1-B).

Initially, the questionnaire survey was an attempt to:

- Assess the perceived level of implementing TQM practices and principles.
- Asses the type of business results and benefits commonly reported by users of TQM.
- Assess the degree of effectiveness of current use of the TQM in the oil industry.
- Assess the effect of control variables on TQM implementation and business results (e.g. different managerial levels, national culture values, and TQM awareness and familiarity).

The questionnaire has two types of questions:

- Closed-ended: questions that require the respondent to choose from a list of answers. (utilized in Section 1-Demographical variables)
- Scaled-response: closed-ended questions in which the response choices are measured by rating scale (5-point Likert scale- utilized in Sections 2, 3, and 4 of the questionnaire). More detailed description of the measurement will be mentioned in section 5.7.

The questionnaire was done in two languages English and Arabic as these two languages were the official language in the oil sector companies. Two versions of the questionnaire reflecting both languages English and Arabic are attached in Appendix 1-B and Appendix 1-C respectively.

The questionnaire distribution was done electronically using two main techniques. The first technique was preparing an electronic copy of the survey and publish it through SharePoint survey template into the companies' (KOC, KNPC) internal Portal site (intranet) to make it accessible to the employees to respond and then an electronic mail was prepared and sent to all involved employees to invite them to participate in the survey. A copy of the email is attached in Appendix 1-A. Follow ups were done mainly by sending Reminder emails to all company employees at different managerial levels once a week for three months to ensure a sufficient number of response rates are collected. Due to technical limitations on the third sample company's (PIC) web infrastructure, the first technique were not applicable; hence another technique was utilized via preparing an electronic copy of the survey in excel sheets and distributing it via emails to the selected respondents. Follow ups for this technique was harder as it involved individual phone calls, email reminders for each employee who did not send back the filled questionnaire.

An electronic survey is an appropriate strategy due to the fact that the aim is to answer who, where, how many or how much questions. There is no faster and more affordable way to conduct a survey irrespective of size (Bentley, 2004). The advantages of using online survey are cost effectiveness, quicker deployment and can provide a good breadth of responses.

The latent variables in behavioral science cannot be observed directly. Thus, the researcher has to use scales to measure the theoretical constructs. The theoretical phenomena that scales intend to measure are called latent variables, while the measured behavior scores are called scales or observed variables (Byrne, 2001). There are three groups of latent variables in this study including the TQM constructs, the TQM familiarity, and the National culture values.

The questionnaire contained four separate sections, each addressing one or more dimensions of interest. Section 1 addresses the overall employees' demographics such as organization's name, group name, job title, Job experience which consisted of four choices, Nationality which had 5 selections, and Grade range which was divided into three ranges to reflect top, middle, and low managerial levels.

Section 2 consisted of TQM awareness and familiarity questions which measures the level of familiarity and knowledge with TQM basic elements and principles.

In section 3 and 4, widely used, valid and reliable instruments in the questionnaire which fit and serve the aim and objectives of the current study were adopted and used. Moreover, Section 3 focused on measuring the level of TQM constructs implementation covering the eight constructs as discussed in chapter 4. The set of questions in the questionnaire instrument based on MBNQA criteria developed by Lou *et al.* (2004) were used (all scale variables were tested for reliability and internal consistency before they were used), with adding the questions of the Continuous improvement construct from the operationalized measurements statements developed by Anderson *et al.* (1995) and were tested and validated in manufacturing industries (Anderson *et al.*, 1995; Rungtusanatham *et al.*, 1998). Add to that, Section 4 is concerned with assessing the perceived national culture values would enhance company performance and business results. The three national culture values which were identified earlier in chapter 4 as values that could influence TQM implementation are power distance, uncertainty avoidance, and collectivism values. CVSCALE questionnaire instrument based on Hofstede's (2001) national culture elements developed by Boonghee *et al*. (2011) was used to cover the three values questions (CVSCALE variables were tested for reliability and were validated (Boonghee *et al.*, 2011). Two additional values were added according to the need of the study as mentioned earlier in chapter 4, these values were the Quality performance orientation value which was based on House *et al*. (2004) framework and Quality ethical values which were based on Al-Qarthawi's (1995) defined Islamic ethical principles and practices.

In this research, it is not the aim to develop new instrument to measure the level of TQM practices and to measure the national culture. This is because the above mentioned instruments are useful scientific tools that have the twin advantages of reliability and predictability that are capable of clarifying the concepts under consideration of this research, a position that is backed up by the view of Fink (2006). According to him, replicating standard questionnaires is very useful because they have been checked for validity and reliability. Also, he mentioned to another justification for using a valid established instrument or questionnaire by stating that someone else has prepared, is that it will be easy for future research to compare new findings with others that have utilized similar instruments (Fink 2006).

The questionnaire (see Appendix 1-B) has been compressed into seven pages. At the beginning of the first page is an instructional part containing short statements explaining the purpose of the study and the principles that it is based upon. Each section has a separate and clear title making it easy for the respondent to answer. All questions have been set out in tables. At the front of the questionnaire, a cover sheet and a letter providing explanation on the aim of the study and the procedures for completing and returning the survey were attached.

To encourage maximum response, all questions were carefully worded and several revisions of them were carried out to ensure clarity of sentence structure. An instructional question statement explaining what was required and the meaning of each scale point used to give answers to questions preceded each group of questions. Respondents were carefully targeted by position to minimize the aspects of no control over respondents to the study. To overcome response rate problems, electronic and online survey were utilized along with a series of follow-up telephone calls and several reminder emails were sent, making the response task itself easy (no open-ended questions were included), and making the task clear and the questions easy to read. Respondents were also allowed to remain anonymous.

5.6.3 Pilot study

Before the final form of the survey or questionnaire is constructed, it is useful to conduct a pilot study to determine if the items are yielding the kind of information that is needed. The term pilot study is used in two different ways in social science research. It can refer to so-called fessibility studies, which are "small scale version or trial run in preparation for a major study" (Pilot, Beck, & Hungler, 2001, p.467). It is also used to refer the pretesting, or trying out, of a particular research instrument or research procedures (Baker, 1994). In addition, Nachmias and Nachmias (1996) also emphasized the need to conduct a pilot test, consider the findings and act upon them. By doing so, the questionnaire will be favorably received by the respondents as well as offering the researcher the necessary accurate information. Having developed the questionnaire survey, it was important to validate the overall developed instrument (as some parts of the instrument were already tested and validated) to make certain that it measured what was intended, and gave the respondent clear and understandable questions that would evoke clear and understandable answers. This would more affirm that the questionnaire was a reliable vehicle to solicit opinions on the issues under study. Another advantage doing the pilot study is that it can give advance warning regarding weaknesses in a proposed study. These include: where research protocols might not be followed, or whether proposed methods are in appropriate or too complicated (Pilot, Beck, & Hungler, 2001).

In this regard, the questionnaire was reviewed first by a number of academic researchers experienced in questionnaire design in a couple of questionnaire design workshop sessions. They were asked to provide feedback on the overall design, particularly the measurement scales and the overall clarity of the questions and statements. The questionnaire in both languages versions was piloted, in order to ensure that both versions of the questionnaires were well designed and clearly addressed. The academic researchers provided their inputs (e.g. categorizing the questions into sections according to the content of these questions, use of tables to have user friendly layout, etc..) through couple of design workshops which were considered in enhancing and improving the design. By the end of the 3rd questionnaire design workshop session, the questionnaire's layout and design was finalized for both versions.

After getting the overall questionnaire structure and layout well designed, the next step was to be piloted with two TQM experts known to the researcher. The pilot took the form of an interview where the participant was first handed a copy of the questionnaire and asked to complete it, and then discuss any comments or questions they had (clarify some unclear statements, rephrase some statements to suit the Oil sector business environment, do modifications to the Arabic translations of the English statements to ensure they hold the same meaning in both languages…etc) . The objective of this pilot was to assess time required to complete the questionnaire, remove any ambiguities, ease of responding, clarity of instructions, simplicity, consistency of questions, clear language, and comprehensiveness. As a result of this pilot, amendments to revise the questions and improve the questionnaire statements were mode throughout eleven versions to satisfy with the 11th version of the modified questionnaire and decide that the questionnaire can now be used properly and distributed.

5.6.4 Population and Sample

5.6.4.1 Relevant Population

The population is the set of all objects that have some common set of predetermined characteristics with respect to some research problems (Kumar, 2000). The aim was to select a population of employees in the oil sector organizations to measure the level of TQM implementation in it. The three largest companies in the oil industry were chosen which are KOC, KNPC and PIC. A meeting with the chairman of each company was conducted to get his/her full support to conduct this research study in his company. All selected companies chairmen gave full support to this research and assigned key people to facilitate all study activities and requirements such as human resource information, organization hierarchy, managerial information, quality activities and achievements of each company, Information technology department cooperation to host the survey on their internal portal site and interviews with selected sample of employees for qualitative data. The researcher ensured that all collected information will be utilized for the study and a copy of the executive report of the study will be delivered to each company's chairman. Before hosting the questionnaire survey on the internal portal site or send electronic copies to employees, the researcher was asked to give a copy of the questionnaire to be reviewed and approved. After having been approved, electronic copies were sent via email to the selected sample of employees in PIC and an online copy of the questionnaire survey was uploaded on each of KOC's and KNPC's intranet portal site for respondents to access and fill the surveys online.

5.6.4.1.1 Sample Size

To ensure that the data collected will provide a reliable basis for drawing inferences, making recommendations and supportive decision (Bryman and Cramer, 1998; De Vaus, 1996), a large and adequate sample size should be taken to remove bias and to meet the criteria required by the analytical methods used. According to Grossnickle & Raskin (2001), the larger the sample size, the smaller the sampling error and the more likely the sample is representative of the target population.

However, Bryman and Cramer (1998) emphasize that the size of the sample has to be related to the size of the population. They also believe that the larger the sample, the greater the accuracy. The alternative is to collect information from only some people in the group in such a way that their responses and characteristics reflect those of the group from which they are drawn. This procedure is much cheaper, faster and easier than surveying all members of a group and common practice in research.

One of the most frequently asked questions in the context of sampling is "How large should a sample be? The required sample size depends on two key factors: the degree of accuracy required for the sample and the extent to which there is variation in the population in regard to the key characteristics of the study (De Vaus, 1996, p.70). Michael and Beck (1995, p.3) argued that simple random sampling (SRS) yielded a sampling fraction of 1/10. De Vaus (1996, p.79) also considered that the efficiency and accuracy depend on the type of sample used. Also, he suggested that having a population of 50 using the sample of 10, the sampling fraction would be 1/5 (De Vaus, 1996, p.64). Emory and Cooper (1991) suggested that the absolute size of a sample is much more important than its size relative to the population: "*How large a sample should be is a function of the population parameters under study and the estimating precision needed by the researcher*". In this respect, distribution of the sample in terms of industry is an important element of variation in the population that can affect sampling size.

As far as this study is concerned, it was conducted in three oil companies (KOC, KNPC, and PIC) which were chosen from the ten oil companies in the Kuwaiti oil sector since they are the largest in size of operations and in number of employees (as discussed in section 3.5.1). Thus, the information collected from the intended population was gathered. This number of companies represents about47% of the whole population. The sample size chosen was expected to fulfill the requirements of all the statistical techniques used, as well as to justify the cost and time limitations of the researcher.

5.6.4.1.2 Respondents and Unit of Analysis

A unit of analysis is the unit from which information is obtained: it is the unit whose characteristics we describe (De Vaus, 1991). The subjects should be those for whom the instrument is intended (Nunnally, 1978). To sum up, it refers to the entities about which the theory poses concepts and relationship, and it can be individuals, groups, organizations, or society.

However, since the main objective of this study is to measure the level of TQM implementation perceived by employees in different managerial levels and factors affecting it the unit of analysis is conducted at the managerial individuals' level. Therefore, these employees' perceptions are measured. They are regarded as the main source of the information because they are highly involved in implementing TQM practices and principles in their work environment (Dale and Cooper, 1994). Hence, by collecting information from the human resource department in each company, it was recorded that total of 4225 employees in the three companies were in different managerial levels (top, middle, low). 60% of these employees were located in KOC, 34.4% in KNPC, and 5.4% in PIC. Furthermore, 11.29% were in top management levels, 33.2% were in middle management levels, and 55.5% were in low management levels (see Appendix 1-D).

5.6.5 Data Collection and Analysis

Once the sample selection was complete, the questionnaires were either emailed or posted online to the selected companies' employees. After three months of sending email reminders and follow up phone calls and excluding that 8 questionnaires were discarded due to missing fields (5 from KOC, and 3 from KNPC), a total of 937 questionnaires were collected from these three companies with a total response rate of 22.2%. In more detailed view, 581 questionnaires was collected from KOC with a response rate of 22.9%, 248 questionnaires from KNPC with a response rate of 17.1%, and 108 questionnaires from PIC with a response rate of 47.4%. Table 5-2 shown below provides a summary of the responses' distribution and rate, a more detailed table can be seen in Appendix 1-D.

Table 5-1: Questionnaire survey response summary

Total number of employees in managerial levels	4225
Number of questionnaires collected	945
Unreachable groups	none
Declined participation	8
Response rate	22.2%

According to De Vaus (1991, p. 99), a common way of computing the response rate is to use the following formula: Response rate = Number of completed and returned / [N in sample-(Ineligible+ Unreachable)]. Therefore the response rate= 945/ [4225 – (8+0)] = 22.2%

This low 22.2 % response rate may be explained on the basis of uploading the survey questionnaire on company's portal. Had they surveys been distributed via email, a higher response rate were received (47.4%), while the ones posted on the intranet scored much lower response rate. This might point to the fact that many employees at managerial levels do not access their intranet portal site and might not often check their emails sent from the company post master for general events and news. Although the survey was posted for three months and 9 email reminders were sent via company's postmaster with follow up calls yet after the 11th week and due to no new survey entries were recorded, the survey was closed and responses were collected. In Kuwaiti business culture, it is quite known that using emails was not frequently used by most employees as most do their work through paper work until recently when the oil companies made the email an official communication channel and all processes through it are recognized, users began slowly to use emails in their daily work tasks and activities. This might explain the low response rate faced in online survey which was announced through a post master email sent to all employees with a link to access it versus an email sent individually to each person with an attached electronic copy of the survey to be filled and sent back accompanied with follow up calls to ensure the return of these sent surveys.

Based on the above, the answers of each respondent were coded into the Statistical Package for Social Science (SPSS) that Cramer (1998) described as one of the most widely used analytical tools to achieve the research objectives. Frequency analysis was used for data reduction purposes and to develop an overall understanding of the survey responses and a general picture of how the sample group responded. The initial analysis used descriptive analysis for the whole sample. Furthermore, a number of statistical techniques have been used to study the research variables and their relationships which will be discussed in the next chapter.

5.6.6 Interviews

In this study empirical cross sectional interviews in multiple organizations were conducted as a qualitative method to validate and support the findings collected from the quantitative method (the questionnaire survey). The interviews' type used was a semi-structured interview which was mixture of structured and unstructured interviews and possessed the advantage of both interviews (Kidder *et al.,* 1986). The questions in the questionnaire developed with closed-ended answers (5-likert scale answers) were used to form the structured interview which is more objective and easy to analyze, but is not flexible (Nachmias and Nachmias, 1996). However, by adding the additional feedback given by the interviewee to answer these questions a flavor of open-ended questions is seen here as the interviewee answers the questionnaire question and explains his thoughts and views about his given answer. Open-ended questions also allow flexibility into the interview situation through deeper probing of answers, a more in-depth understanding to the questionnaire's answers, clarification of misunderstandings, testing of what the respondent truly believes and the possibility that previously unthought-of relationships may be exposed (Cohen and Mannion, 1994).

More over, another research objective in selecting semi-structured interviews with open-ended questions was mainly to validate the findings of the questionnaire analysis results and to adjust more with the time constraints in conducting these interviews. As these open-ended interviews took one hour up to one hour and half with the interviewees who were all in managerial levels and time was not a luxury given to them. Hence they requested not to exceed one hour and half as an interview's duration. Semi-structured interviewees with open-ended questions would clearly consume less time than un-structured interviews with open questions which consume more time with interviewees as it grants them the chance to discuss any topic or issues they might have in mind related to our research topic. This, in return, would require definitely more than one hour and a half session which was not accepted by our interviewees due to their busy time schedules. Hence, this format of semi-structured interview with open-ended questions was selected as being most appropriate and suitable for our interviewees.

5.6.6.1 Sample Selection

Gummesson (2000) describes gaining access as "*the ability to get close to the object of study, to really be able to find out what is happening*". As supported by Yin (2003), this study is exploratory in nature, and the sampling of the interviews is not representative of a particular population. This part of study was seen as a 'complementary' study to further support and validate the findings found from the questionnaire analysis as a way of utilizing the triangulation method to add more credibility and richness to the research outcomes.

The interviewees were selected in such a way that the percentages of the demographics of the interviewees were relatively close to those of the questionnaire survey. This was done mainly to maintain similar sample demographics for both quantitative and qualitative methods and hence would add credibility to the validation of this triangulation process as both quantitative and qualitative samples maintain relatively similar percentages of the sample's demographics. Further details of the interviewees' descriptive statistics will be presented in details in the following chapter. The criteria for selecting the interviewees to participate:

- Employees should be in managerial level (top, middle, low) with maintaining same percentage portion of each level as in the survey's respondents.
- Selected from the three different companies (KOC, KNPC, PIC), again similar percentage portion to the survey sample is highly preferred.
- Had already used or were in the process of using the TQM.
- Selected from different nationalities (maintaining relatively similar nationalities' parentages of those in the survey's sample).

Several employees were contacted, of which 30 employees expressed interest and met the criteria. The decision was taken to meet with all 30 employees.

The diversity of issues represented by the 30 interviewees has the advantage of enriching the data collected (Yin, 1989). This richness of data facilitated comparative analysis between the interviews and, therefore, led to theory improvement.

5.6.6.2 Data Collection and Analysis

As discussed, the technique chosen for data collection was face-to-face semi-structured interviews. This was seen to be the most suitable approach, mainly due to the 'exploratory' nature of the study. This would provide the opportunity for interaction rather than answering specific closed-ended questions.

As the time spent for conducting and completing these interviews was quite long as it took two months to coordinate with interviewees and set the suitable appointments with them to conduct the interviews. Due to the fact that our interviewees were mainly in managerial levels, most of them were over-loaded with work and does not have that much time to spare since they work in a very critical and major industry in the country. In addition, in most interviews, a difficulty was faced in setting a fixed date of the interview due to the frequent needs to reschedule the interview date by many interviewees because of non-expected urgent work tasks assigned to them on urgent basis.

In order to give an introduction to the interview, some guidelines were prepared and documented and were attached in an email sent to each interviewee to confirm the interview's time and location. These were based on the study outcomes and aimed to achieve the study objective. Despite the time limits, interviewees were encouraged to answer the open-ended questions freely and to talk about any issues that they felt were important to ensure that the various elements of TQM were addressed. In addition, there was flexibility to rephrase or reframe questions according to the context of a particular interview.

The interviews were recorded by hand writing and note-taking during the interview due to some conservative reaction and reluctance found in answering from the interviewee when using a tape recorder and interviews were then transcribed. A summarized version of interviewees' feedback was presented in Appendix 3-A.. These transcripts were computerized as a database and analyzed. Then the findings of this analysis were compared with the questionnaire findings for validation and support.

5.7 Measurement

In this study, multiple-item Likert scales were used to measure the variables because Likert is an appropriate interval scale that measures behavioral variables. However, marketers are much better served with multiple-item than with single-item measures of their constructs and they should take the time to develop them (Churchill, 1979).

Undoubtedly, in multiple-items scales, the reliability and validity of the scales tend to improve as the number of items increases (Peter, 1979). Besides, a Likert scale is very common in TQM studies.

There are no general rules in deciding on the type and number of scale points. The scale could be odd or even numbers and it normally ranges between five and ten categories. Parasuraman (1986) suggests that it would be better to examine the existing literature on the related studies.

The scale points in this study are restricted to five, for two reasons; first, it is consistent with previous studies in TQM that use the five-point scale. Second, it is much better for the respondents to answer using five-point scales.

5.8 Summary

This chapter reviewed and discussed some of the research design and methodology issues that researchers need to deal with. Perspectives of research design were elaborated to draw respective assumptions that underlie the methodology. The choice of methodology was justified and subsequent procedures have been highlighted to provide an integrated discussion and conclusive statements that would guide the next phase of the research process. In addition, the chapter attempted to briefly clarify the debate on quantitative and qualitative research and concluded that neither is superior to the other. Consequently, the triangulation approach has been adopted for combining the quantitative and qualitative approaches used to collect and analyze data. The researcher has chosen to apply an electronic questionnaire survey as well as empirical cross-sectional interviews. This has allowed richness of data and comprehensive treatment of implementation elements which constitute the holistic approach to employees' perception toward TQM implementation. Finally, the chapter justified the use of multiple-item Likert scales to measure the variables.

To sum up, this chapter has set the foundation for data collection. The next chapters discuss analysis of data collected from the questionnaire and the interviews.

CHAPTER 6

Descriptive Statistics, reliability and validity Analysis

6.1 Introduction

This chapter is based on the survey and interviews results collected from employees (937 employees for survey and 30 employees for interviews) at different managerial levels in three major organizations in the Kuwaiti Oil Industry that have already implemented or are in the process of implementing Quality concepts and practices in their business environment. As mentioned in Chapter Five, the survey questionnaire was distributed among the employees of these organizations using two methods including Electronic Online surveys and Electronic Mail surveys. 937 questionnaires were collected with an overall response rate of 22.2%. As for the interviews, there were 30 interviews conducted face-to-face with open-ended questions. The data collected from the questionnaires and interviews will be analyzed and discussed in parallel in this chapter and following chapters as well in order to provide more straight forward comparison and validation of results obtained in quantitative techniques (e.g. surveys) with those obtained from qualitative techniques (e.g. interviews), thus utilizing the triangulation method as mentioned earlier. Descriptive statistics, such as frequencies, mean and percentages are used in this chapter to present the data systematically and meaningfully in order to highlight any trends and characteristics of the selected sample, whilst simultaneously providing adequate statistical support to the findings. Basic reliability and validity assessments tools and techniques were applied to the data collected to support its credibility.

It is important to note that this chapter and chapter 7 are aimed specifically to present and discuss the obtained results from the quantitative and qualitative analysis. Chapter 8 will test and analyze the proposed research framework through the structural equation modelling (SEM) techniques and tools. Moreover, these three chapters (6, 7, and 8) will be mainly presenting and analyzing the collected data with basic and general conclusions being drawn and comparing results to those of other researchers and to the context of the literature discussed in Chapters 2, 3 and 4. The overall conclusion, research implications and limitations, managerial recommendations of these results will be all discussed in the final chapter (Chapter 9).

6.2 Descriptive Analysis of Questionnaire Demographics

6.2.1 Participating Organizations

As mentioned in chapter 3, three companies, that are major companies in the Kuwaiti Oil industry and largest in size of operations and number of employees comparing to other oil companies, were selected to participate in this research study. These companies are Kuwait Oil Company (KOC), Kuwait National Petroleum Company (KNPC) and Petrochemical Industries Company (PIC). Table 6-a provides the profile of these three companies. The size of respondents (employees in top, middle and low management levels) in each of the three companies will differ according to the size of these participants in the three managerial levels of each company. As KOC is actually the larger in size of employees followed by KNPC then PIC; therefore, it is logical to find that the respondents of KOC will be higher than KNPC followed by PIC. Respectively, the number of respondents (in different managerial levels) in KOC was 581 employees (62%) followed by KNPC's respondents of 248 employees (26.5%) and then PIC's respondents of 108 employees (11.5%). Table 6-1 in Appendix-T shows these frequencies and their percentages.

Company	KOC	KNPC	PIC
No. of Employees	7,094	5,562	612
Capital	2,160,073 KD'000	391,412 KD'000	600,000 KD'000
Sales	28,459,121 KD'000	13,358,300 KD'000	713,800 KD'000
Net Profit	1,173,314 KD'000	283,700 KD'000	261,600 KD'000
Main Operations	Responsible for Oil and Natural Gas exploration and production operations, on-shore and off-shore surveys, drilling of test wells, and developing of producing fields in addition to crude and natural gas exploration.	Responsible for Oil Refining and Gas liquefaction, Providing the Local Market with its requirements of high quality petroleum through a chain of filling stations.	Responsible for the production of ammonia and nitrogen fertilizers in Kuwait. PIC also has establishing external affiliates for the production of a wider range of chemical fertilizers. The location of such affiliates in various geographical regions makes it easier for PIC to supply its markets.

*Above details were taken from Annual report 2011-12 for the three companies.

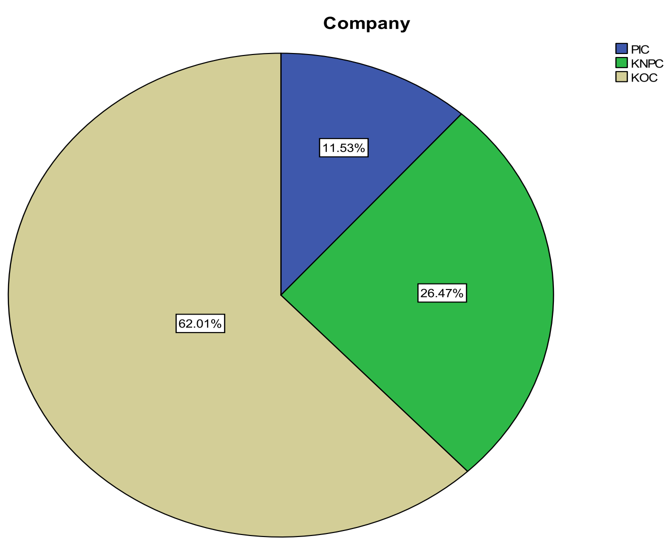


Figure. 6-1 Ratio of Participants from selected companies

6.2.2 Different Managerial Levels

The three managerial levels (Top, Middle, and low) were divided according to the job grade. Employees at Grade 19 or 18 were sorted in the top managerial level while employees at Grade 17 or 16 were sorted in the middle managerial level. And employees at Grade 15 or 14 were categorized in the low managerial level. From the frequency Table 6-2 in Appendix-T and Pie chart, it is evident that employees at low managerial levels present the highest portion (76.4%) of the respondents as compared to employees in the top and middle managerial levels. It is logical as employees' portion in each levels increase as you move vertically down the management hierarchy of any organization.

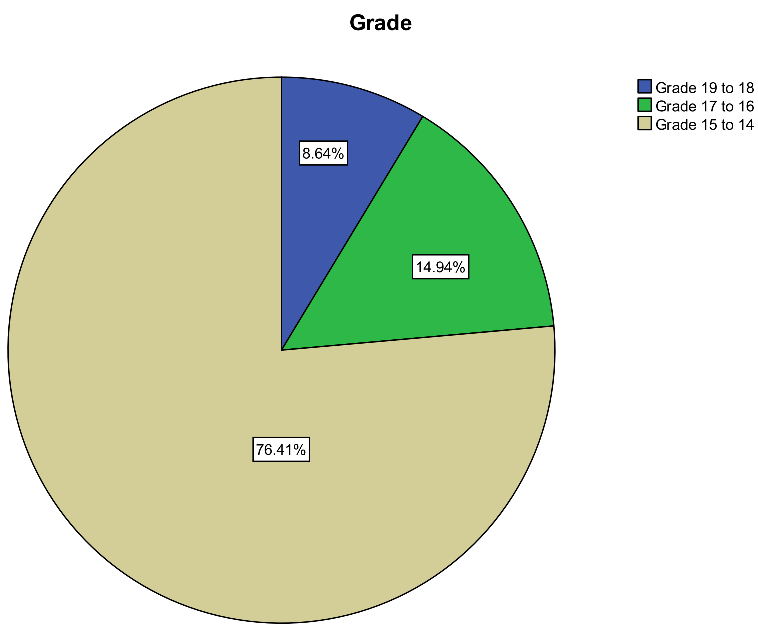


Figure. 6-2 Grade

6.2.3 Respondents' Years of Experience

In this research, years of experience were categorized into four categories; starting from less than 5 years, then 5 to 10 years, followed by 11 to 15 years, and finally more than 15 years. Using such demographic variable assisted the researcher in data interpretation and analysis and helped in understanding the outcomes better. Below frequency Table 6-3 in Appendix-T and chart, shows that most respondents (53.9%) were in the "More than 15 years" of experience category, followed by 5 to 10 years, then less than 5 years, and finally 11 to 15 years.

Figure. 6-3 Years of Experience

6.2.4 Respondents' Nationality

Another demographical variables utilized in this study is the Nationality variable of the respondents in different managerial levels. Nationality was categorized into mainly five categories: Kuwaitis, Arabs (Arabs other than Kuwaitis), Western (European & US), Asians (Indians, Pakistani, etc..) and Others (Includes all other nationalities that were not included in the earlier four categories). As this study was conducted in Kuwait, naturally the size of respondents of Kuwaiti nationality will present the highest 65.3% (as shown in frequency Table 6-4 in Appendix-T and Pie chart). While 22.7% of the respondents where Asians, 4.5% of the respondents were Arabs, 4.1% were from Others (other countries than specified ones), and only 3.4% were from Western nationalities.

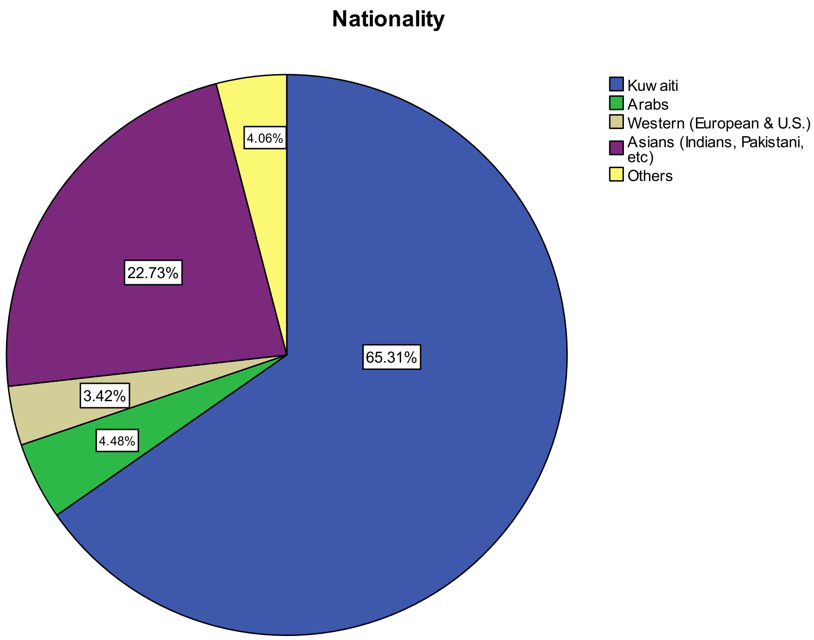


Figure 6-4 Nationality

In summary, the following had scored the highest percentages of the demographics in Table 6-5:

Variable	Highest Frequency	Percentage
Company	KOC	50.6%
Grade	Grade (15-14) "Low Managerial level"	76.4%
Years of Experience	More than 15 years	53.9%
Nationality	Kuwaitis	65.3%

Table 6-5 Summary of respondents' demographics

6.3 Descriptive Analysis of Interviewees' Demographics

Thirty interviewees participated in this interview process with varied managerial levels, nationalities and years of experience. As mentioned earlier, the interviewees were selected in a way that the percentages of the demographics of the respondents were relatively close to those of the questionnaire survey. This was done to create similar sample demographics for both methods and hence would have enforced the validation process of the outcomes coming from similar distribution of the sample's demographics. For example, KOC formed 62% of the questionnaire respondents because nineteen people from thirty were selected from KOC (63.3%) while six employees were selected from KNPC (20%) and five from PIC (16.7%). Similarly, the other demographics percentages were maintained as possible as shown in the following Table 6-6. For further details, pls. refer to Appendix 3-1.

Table 6-6: Descriptive statistics of the interviews' and questionnaires' respondents

Demographics	Questionnaire Respondents (In Percentage)	Interview Respondents (In Percentage)
Company		
KOC	62%	63.3%
KNPC	26%	20%
PIC	12%	16.7%
Managerial levels		
Top	9%	10%
Middle	15%	16.7%
Low	76%	73.3%
Nationality		
Kuwaitis	65%	66.7% (19)
Western	3.4%	3.3% (1)
Asians	23%	20% (6)
Arabs	4.5%	6.7% (2)
Others	4%	3.3% (1)

6.4 Descriptive Analysis of survey respondents' Awareness and familiarity with TQM Basic Principles

The awareness and familiarity with TQM principles and concepts was measured to ensure that the research sample has a basic understanding of what TQM is. From the summarized Table 6-7 shown below, the majority of the respondents' responses of different managerial levels were in the "Very familiar" range. Detailed Tables and Pie charts are attached in Appendix 2-A-1.

Table 6-7

TQM Basic elements & Principles "Variables"	Highest Frequency	Percentage
Leadership and Long-term planning	Very Familiar	39.27 %
Process Management (Design, Product, Manufacture)	Very Familiar	32.1 %
Continuous Improvement (learning, training)	Very Familiar	38.4%
Decision making involvement (teamwork, problem solving)	Very Familiar	37.5%
Customer Satisfaction	Fully Familiar	33.4%

6.5 Descriptive Survey Analysis of TQM Constructs

6.5.1 Leadership

From the below summarized Table 6-8, it can be noted that the responses regarding the quality practices related to Leadership construct are seen above the average implementation as they scored high percentages in "frequently" and "fully" implementations. Detailed Tables and Pie charts attached in Appendix 2-A-2.

Variable	Highest Frequency	Percentage
Leadership1	Frequently Implemented	31.7%
Leadership2	Frequently Implemented	35.1%
Leadership3	Frequently Implemented	32.8%
Leadership4	Fully Implemented	33.2%
Leadership5	Fully Implemented	31.7%

Table 6-8

6.5.2 Strategic Planning

From the below summarized Table 6-9,it is evident that the responses regarding the quality practices related to Strategic Planning construct lies within the "average" and "frequently" implementation.

Variable	Highest Frequency	Percentage
Strategic Planning1	Frequently Implemented	34.3%
Strategic Planning 2	Frequently Implemented	35.8%
Strategic Planning 3	Average Implemented	34.5%
Strategic Planning 4	Average Implemented	35.4%
Strategic Planning 5	Average Implemented	28%

Table 6-9

6.5.3 Customer and Market Focus

The below given summarized Table 6-10 shows that all responses regarding the quality practices related to Customer and Market Focus construct lies within the "frequently" implementation.

Variable	Highest Frequency	Percentage
CustmrMrktFocus 1	Frequently Implemented	35.97%
CustmrMrktFocus 2	Frequently Implemented	32.76%
CustmrMrktFocus 3	Frequently Implemented	27.64%
CustmrMrktFocus 4	Frequently Implemented	31.7%
CustmrMrktFocus 5	Frequently Implemented	30.10%

Table 6-10

6.5.4 Information and Analysis

The summarized table 6-11 illustrates that the responses regarding the quality practices related to Information Analysis construct lies within the "average" and "frequently" implemented categories.

Variable	Highest Frequency	Percentage
InfoAnlysis 1	Frequently Implemented	28.9%
InfoAnlysis 2	Average Implemented	28.9%
InfoAnlysis 3	Average Implemented	32.23%
InfoAnlysis 4	Frequently Implemented	29.9%
InfoAnlysis 5	Frequently Implemented	30.10%

Table 6-11

6.5.5 Human Resources

The summarized table 6-12 shown below clearly displays that the responses regarding the quality practices related to Human Resources construct lies within the “average” and “frequently” implemented categories.

Variable	Highest Frequency	Percentage
HumanRes 1	Average Implemented	31.9%
HumanRes 2	Frequently Implemented	27.3%
HumanRes 3	Frequently Implemented	35.8%
HumanRes 4	Frequently Implemented	28.4%
HumanRes 5	Frequently Implemented	29.8%
HumanRes 6	Frequently Implemented	32.7%

Table 6-12

6.5.6 Process Management

From the below summarized table 6-13, it can be reported that all responses regarding the quality practices related to Process Management construct lies within “frequently” implemented categories.

Variable	Highest Frequency	Percentage
PrcMngmt 1	Frequently Implemented	38%
PrcMngmt 2	Frequently Implemented	30.1%
PrcMngmt 3	Frequently Implemented	34.5%
PrcMngmt 4	Frequently Implemented	34.15%
PrcMngmt 5	Frequently Implemented	34.4%
PrcMngmt 6	Frequently Implemented	34.2%

Table 6-13

6.5.7 Continuous Improvement

From the below summarized table 6-14, all responses regarding the quality practices related to Continuous Improvement construct lie within “frequently” implemented options.

Variable	Highest Frequency	Percentage
Contimprv 1	Frequently Implemented	30.3%
Contimprv 2	Frequently Implemented	32.8%
Contimprv 3	Frequently Implemented	37.2%
Contimprv 4	Frequently Implemented	34.2%
Contimprv 5	Frequently Implemented	32.8%

Table 6-14

6.5.8 Business Result

From the below summarized table 6-15, it is evident that all responses regarding the quality practices related to Business Result construct lies within "Average" and "frequently" implementation.

Variable	Highest Frequency	Percentage
BusReslt 1	Frequently Implemented	34.6%
BusReslt 2	Frequently Implemented	34.6%
BusReslt 3	Frequently Implemented	33.7%
BusReslt 4	Average Implemented	32%
BusReslt 5	Frequently Implemented	32.9%
BusReslt 6	Frequently Implemented	35.6%
BusReslt 7	Frequently Implemented	37.2%
BusReslt 8	Frequently Implemented	33.1%

Table 6-15

6.6 Descriptive Survey Analysis of National Culture Values

6.6.1 Power Distance

From the below summarized table 6-16, it is obvious that most of the responses related to Power Distance values were within "Agree in a low degree".

Variable	Highest Frequency	Percentage
NCPwrdstnc 1	Agree in a low degree	40.77%
NCPwrdstnc 2	Agree in a low degree	46.7%
NCPwrdstnc 3	Agree in a low degree	41.41%

Table 6-16

Full detailed tables and Pie charts for the whole questions under each of the National Culture values are attached in Appendix 2-A-3.

6.6.2 Uncertainty

From the below summarized table 6-17, it is obvious that most of the responses related to Uncertainty values were within “Fully Agree”.

Variable	Highest Frequency	Percentage
NCUncrtnty 1	Fully Agree	47%
NCUncrtnty 2	Fully Agree	53.1%
NCUncrtnty 3	Fully Agree	57.2%
NCUncrtnty 4	Fully Agree	54%

Table 6-17

6.6.3 Collectivism

From the below summarized table 6-18, it is obvious that most of the responses related to collectivism values were within “Fully Agree”.

Variable	Highest Frequency	Percentage
NCcollctvsm 1	Fully Agree	50.8%
NCcollctvsm 2	Fully Agree	51.1%
NCcollctvsm 3	Fully Agree	44.5%

Table 6-18

6.6.4 Quality Performance

From the below summarized table 6-19, it is clear that most of the responses related to Quality Performance values were within “Agree to Medium degree”.

Variable	Highest Frequency	Percentage
NCQPerfm 1	Agree to Medium degree	23.7%
NCQPerfm 2	Agree to Medium degree	27.4%
NCQPerfm 3	Agree to Medium degree	24.4%
NCQPerfm 4	Agree to Medium degree	26.3%

Table 6-19

6.6.5 Quality Ethics

From the below summarized table 6-20, it is clear that the responses related to Quality Ethics values were mainly within "Fully Agree" and only two values were in "Agree to some extent".

Variable	Highest Frequency	Percentage
NCQEthcs 1	Fully Agree	37.4%
NCQEthcs 2	Fully Agree	49.7%
NCQEthcs 3	Fully Agree	49.8%
NCQEthcs 4	Fully Agree	49.7%
NCQEthcs 5	Fully Agree	45%
NCQEthcs 6	Fully Agree	34.8%
NCQEthcs 7	Fully Agree	28.5%
NCQEthcs 8	Agree to some extent	26.4%
NCQEthcs 9	Agree to some extent	27.9%
NCQEthcs 10	Fully Agree	34.9%

Table 6-20

6.7 Questionnaire's Data Preparation and purification of Measures

According to Nachmias and Nachmias (1996), after collecting the data researchers must undertake several steps in order to obtain meaningful results from the analysis stage. The following sections will discuss these steps in detail.

6.7.1 Data Preparation

The first step in preparing the data for analysis was the process of data editing, coding and data entry to SPSS. Firstly, raw data were edited for the purpose of detecting any errors and omissions, correcting them where possible and certifying that minimum data quality standards were achieved. Secondly, the study variables were coded into formats for the Statistical Package for the Social Sciences (SPSS), version 17.0 that was used in data analysis. The variables were given unique labels.

Finally, SPSS was used to enter the data. Each questionnaire received was first checked for errors and omissions, then answers were entered manually into the computer and the data were ready to subject to statistical analysis.

6.7.2 Purification of Measures

After the entry and recording processes had been completed, all measures were then purified by assessing their reliability and validity. There are a number of reasons for the emphasis on the validity and reliability of the measurements. One, a reliable and valid measuring instrument enhances the methodological rigour of the research. Two, it permits a co-operative research effort and provides support for triangulation of results. Three, it provides a more meaningful explanation of the phenomena that are being investigated. Moreover, Peter (1979) also stated that assessing measurement is crucial because;

> "…. *Behavioural measures are seldom if ever totally reliable and valid, but the degree of their validity and reliability must be assessed if research is to be truly scientific*."

The key concepts of reliability and validity will be discussed in section 6.9 and 6.10 respectively.

6.8 Questionnaire Data's Reliability

In order to scientific inferences to be valid, one must first determine the reliability of the research instrument. Thus, prior to data analysis the research instrument was assessed for its reliability as well as construct validity. Reliability refers to the stability and consistency with which the instrument is measuring the concept; it helps to assess the 'goodness' of a measure (Sekaran, 2003). Price and Muller (1986) stated that reliability is "*the consistency of a measure", because it focuses on the items forming the scale*. Bernard (2000) saw that reliability could refer to whether you get the same answer by using an instrument to measure something more than once. In other words, reliability analysis allows the researcher to study the properties of measurement scales and the items that make them up. Bell (2005) believes that reliability is the extent to which a test or procedure produces similar results under constant conditions on all occasions. The reliability analysis procedure calculates a number of commonly used measures of scale reliability and also provides information about the relationships between individual items in the scale that determine the extent to which the items in the questionnaire are related to each other.

In general, there are five methods commonly used for assessing reliability, namely, (1) the test-retest method, (2) the alternate-form method, (3) the splithalves method, (4) the internal consistency method, and (5) composite reliability method (Nunnally, 1967; Davis and Cosenza, 1993; Fornell and Larcker, 1981; Hair et al., 1998). However, the basic differences among them are the scale to compute the reliability coefficient (Peter, 1979).

Test-retest reliability is measured by having the same set of respondents complete a survey at two different times to see how the responses are, and the correlation between the two sets of observations is computed. These correlation coefficients are collectively referred to as the survey instrument's test-retest reliability. In general, if correlation coefficients equal or exceed 0.70, it is considered that the test-retest reliability is good. (Litwin, 1995). Although this method provides useful information about the stability of measure yet it leads to higher data gathering costs and often reduces the number of usable responses due to a respondent's unwillingness to engage in another test (McDaniel and Gates, 1996). Besides, using this approach may lead to different results due to the time intervals between the two tests (Churchill, 1979). Based on the above, test-retest is not favourable approach to be used as a sole method in reliability assessment.

Alternate-form reliability is a method of evaluating the reliability of a survey instrument. It involves employing two sets of items to the same subject and then the score results of the two scales are correlated. In other words, two measures with a high degree of similarity, but with enough difference that ensures that the first measurement will not affect re-measurement (Peter, 1979; Litwin, 1995). However, to develop similar but not identical items that exactly measure the same construct is difficult. Therefore, this approach was also ruled out in this research.

The split-halves method is a way to evaluate the reliability of the survey instrument. To use the split-halves method, the sample should be large enough to be divided in half and each alternate form administered to half of the group. Results from the two halves are then compared. When the split-halves method is used, the half-samples should be randomly selected. By doing so, it can be ensured that no group differences exist (Litwin, 1995). Due to sample size obtained I the current study that is not large enough to do such evaluation, this approach was not be applied in this research.

Internal consistency reliability is a commonly used psychometric measure in assessing survey instruments and scales. Internal consistency is an indicator of how well the different items measure the same concept. This is important because a group of items that purports to measure one variable should indeed be clearly focused on that variable. Internal consistency is measured by calculating a statistic known as Cronbach's coefficient alpha (Cronbach, 1951; Nunnally, 1967; Peter, 1979). Cronbach's alpha measures internal consistency reliability among a group of items combined to form a single scale. It is a statistic that reflects the homogeneity of the scale i.e., it reflects how well each of the items correlates with the entire scale or sub-scale. The value of Cronbach's alpha is between 0 and 1 and a higher level of alpha indicates a higher reliability of the scale. Although some researchers suggest 0.7 as the accepted cut-off (Hair *et al.,* 2002), but as a rule of thumb Nunnally (1978) states than alpha levels as low as 0.6 are acceptable for reliability scales and regarded as satisfactory (Nunnally, 1978). As Hughes *et al.* (1986) noted, it would be difficult to justify a proposed indicator of a scale variable even in exploratory research if its reliability measures were less than 0.5.

Composite reliability is the extent to which a variable or a set of variables is consistent with what it is intended to measure. It is similar to item reliability in the Cronbach's alpha method but differs in what it considers for assessing the reliability (Fornell & Larcker, 1981; Hair *et al*., 1998). Hair *et al.* (1998) recommended 0.50 and above as evidence of composite reliability. Detailed discussion will be presented in chapter 8 as this type of reliability analysis was utilized to assess the reliability and validity of the data collected during this research.

From the discussion of five methods mentioned of assessing reliability given above, it became clear that the first three have some limitations, particularly for field studies. These limitations include, for example, requiring two independent administrations of the instrument on the same group of people and requiring two alternate forms of the measuring instrument. In contrast, the internal consistency method with Cronbach's alpha does not require either the splitting or repeating of items. Instead, it requires only a single test administration and provides a unique estimation of reliability for the given test administration. It is the most general form of reliability estimation (Nunnally, 1967), and better yet it is by far the most common test for measurement of reliability (Cooper and Emory, 1995). Furthermore, the internal consistency method is relevant to this study because Likert scales are used to measure the variables. Churchill (1979) stated that this method is relevant to a multiple-item scale which consists of at least three items.

Since a research measurement is considered reliable if it yields the same result every time it is repeatedly applied to the same object (Babbie, 1998). Hair *et al.* (1998) defined reliability as the extent to which a variable or set of variables is consistent in what it is intended to measure. Hence, the reliability was measured in this research by the item reliability i.e. internal consistency method with Cronbach's alpha using SPSS statistics tool and the composite reliability assessing the reliability of the model developed using different statistic tool (LISREL) that will be discussed thoroughly in chapter 8.

Consequently, the corrected item-total correlation was utilised. In other words, this study examined the correlations of each item's score with the total scale score in order to investigate whether the items measured the same construct. This method usually subtracts each item score from the total score to eliminate a false part-whole correlation. Each item's score is then compared with the corrected total score. Although there is no universally agreed cut-off point, the most widely adopted threshold is 0.03 (Nunnally and Bernstein, 1994). Moreover, if an item has a negative 'corrected item-total correlation coefficient' the item is eliminated from further consideration.

The following section will proceed the discussion on the process of computing reliability. This reliability analysis has been conducted for all the measuring instruments in the questionnaire covering the three groups of latent variables TQM familiarity and awareness, TQM constructs, and National culture values.

6.8.1 Reliability Analysis

The analysis for the employees interception regarding the level of implementing quality practices was based on the questionnaire (survey) collected from 937 employees in top, middle, and low management levels. TQM familiarity of the participants was measured by 5 items of basic TQM elements and principles that depended on five-point Likert scales where 1 represented very low familiar and 5 fully familiar with Not applicable used for cases the item is not applied. This measure was done in order to be able to know the level of awareness and familiarity of TQM basic concepts in those employees of different managerial levels. More importantly, the main research questions related to employees' interception at different managerial levels towards the level of implementing quality practices and concepts in their companies were measured by 45 items under eight main TQM constructs variables (latent variables). All of these 45 items were measured on five-point Likert scales, where 1 represented rarely implemented and 5 represented fully implemented with Not applicable used for cases where the item is not applied. Adding to that, national culture values (latent variables) were measured in terms of the extent to which those employees believe that these values would enhance the performance in their company. The five values under national culture were measure by 24 items on five-point Likert scales where 1 represented agree in low degree and 5 represented fully agree with Not applicable.

Accordingly, the reliability analysis using internal consistency method (Cronbach's alpha) was made on each of these variables to validate the developed research questionnaire and confirm the internal consistency of its variables.

As can be seen from Table 6-21 given below of TQM familiarity, all of the scales had high alpha scores ranging from 0.823 to 0.863, with a high score of the overall alpha at 0.865 (86.5%) and thus all the scale variables of TQM familiarity demonstrated a high level of internal consistency and reliability as they were all above the generally accepted lower limit of 0.7 (Hair *et al*., 2002).

Moreover, Table 6-22 for TQM constructs demonstrated also a very high alpha scores ranging from 0.814 to 0.944 with an overall alpha score 0.978 (97.8%) which is a very high score, and with these scores a high level of internal consistency and reliability was confirmed for all the scale variables of the TQM constructs as they were all above the generally accepted lower limit of 0.7 (Hair *et al.*, 2002).

In addition, the respondents' national culture values illustrated in Table 6-23 showed also a relatively high alpha scores ranging from 0.718 to 0.899 with a high overall alpha score of 0.802 (80.2%). Thus as these scores for the scale variables under national culture values were all above the generally accepted lower limit of 0.7 (Hair *et al*., 2002), the internal consistency and reliability were confirmed for all variables under the national culture values.

Furthermore, item-total correlation values for all items except one sub-factor were greater than 0.3 which is a very satisfactory outcome as recommended by Nunnally and Bernstein (1994). This one sub-factor Quality Ethics10 labelled as NCQethcs10 which falls under national culture values had an item-total correlation value of 0.206 which is lower than the acceptable level (i.e. 0.3). Therefore, this item was deleted and the reliability was recalculated.

From all of the above findings, it can be concluded that all of the questionnaire latent variables (TQM familiarity variables, TQM constructs and national culture value variables) are deemed to have adequate reliability and internal consistency for the next stage of validity analysis. Full detailed results for Reliability analysis done to TQM familiarity, TQM practices and concepts (TQM constructs), and National culture values are found in Appendix 2-B1, 2-B-2, 2-B-3 respectively.

Table 6-21 Item-Total correlations and Cronbach's alphas for TQM Familiarity variables

Coding	Items	Item-total correlation	Cronbach's alpha
TQMFmlrty	**TQM Familiarity "Overall"**		**.865**
TQMFmlrtyq1	1. Leadership and Long-term planning.	.750	.823
TQMFmlrtyq2	2. Process Management (Design, Product, Manufacture…)	.596	.863
TQMFmlrtyq3	3. Continuous Improvement (learning,training)	.719	.829
TQMFmlrtyq4	4. Decision making involvement (teamwork, problem solving)	.733	.826
TQMFmlrtyq5	5. Customer Satisfaction	.654	.845

Table 6-22 Item-Total correlations and Cronbach's alphas for Quality practices and concepts (TQM Constructs)

Coding	Items	Item-total correlation	Cronbach's alpha
	Quality Practices and concepts "Overall"		**.978**
Leadership	**1. Leadership**		**.862**
Leadership1	1.1 Senior executives always emphasize the importance of customer orientation.	.632	.847
Leadership2	1.2 Senior executives take product and service quality seriously.	.752	.816
Leadership3	1.3 Senior executives adapt their business strategies to market trends.	.738	.819
Leadership4	1.4 The company always uses ethical business practices.	.683	.833
Leadership5	1.5 The company participates enthusiastically in social and community services (Kuwaitization policy)	.610	.852
StrtgicPlanning	**2. Strategic planning**		**.868**
StrtgicPlanning1	2.1 The company considered various factors such as market trends and competitive environment, when it defines its clear strategic objectives.	.654	.847
StrtgicPlanning2	2.2 The company develops realistic short-term and long-term plans and corresponding actions.	.724	.836
StrtgicPlanning3	2.3 Every employee in the organization is clear about the strategic objective and its action plans.	.684	.842
StrtgicPlanning4	2.4 Every employee in the organization supports the strategic objective and action plans.	.689	.842
StrtgicPlanning5	2.5 The suppliers' capability to meet company's quality requirements is essential in suppliers selection process.	.633	.853
StrtgicPlanning6	2.6 Capital project selection decision has direct link with the strategic intent of the company.	.623	.853
CustmrMrktFocus	**3. Customer and Market focus**		**.915**

Coding	Items	Item-total correlation	Cronbach's alpha
CustmrMrktFocus1	3.1 The company understands its customers, and market segments well.	.803	.894
CustmrMrktFocus2	3.2 The company takes its customers' suggestions seriously.	.775	.898
CustmrMrktFocus3	3.3 The company closely monitors its competitor's actions	.744	.907
CustmrMrktFocus4	3.4 The company is fully aware of market trends.	.815	.890
CustmrMrktFocus5	3.5 The company designs products and services using customer-focused approach.	.796	.984
InfoAnlysis	**4. Information and analysis**		**.871**
InfoAnlysis1	4.1 The company has an effective system to assess its business performance.	.764	.819
InfoAnlysis2	4.2 The company has a clear appraisal system for every one that is *according to the internal and external business environment*.	.775	.814
InfoAnlysis3	4.3 All employees understand their performance indicators well and take them seriously.	.705	.843
InfoAnlysis4	4.4 Senior executives adjust policy and strategy by analyzing information.	.659	.862
HumanRes	**5. Human resource focus**		**.904**
HumanRes1	5.1 The company involves its employees in decision making.	.673	.896
HumanRes2	5.2 The company recognizes employees' efforts *and rewards accordingly.*	.768	.882
HumanRes3	5.3 The company stresses teamwork.	.731	.888
HumanRes4	5.4 The management motivates employees and fully develops their potential.	.830	.872
HumanRes5	5. ٥The company provides training for employees to improve their competency (quality, customer...)	.726	.888
HumanRes6	5. ٦The company provides a safe and healthy work environment.	.694	.893

Coding	Items	Item-total correlation	Cronbach's alpha
PrcMngmt	**6. Process Management**		**.946**
PrcMngmt1	6.1 The company considers various factors when designing business processes.	.815	.939
PrcMngmt2	6.2 The company conducts comprehensive tests to assure its quality, before applying a new production or delivery process.	.830	.937
PrcMngmt3	6.3 The company has appropriate management measures to control and improve the production or delivery processes.	.874	.932
PrcMngmt4	6.4 The company continuously improves its process through appropriate management measures.	.880	.931
PrcMngmt5	6.5 The company shares its business processes with experts to achieve better performance.	.849	.935
PrcMngmt6	6. ٦The company closely cooperates with its suppliers.	.771	.944
Contimprv	**7. Continuous Improvement**		**.869**
Contimprv1	7.1 All company employees believe that quality improvement is their individual responsibility.	.672	.846
Contimprv2	7.2 Your employees are aware of in support for) continuous improvement to the business.	.602	.865
Contimprv3	7.3 The leadership in my organization encourages continuous improvement.	.680	.844
Contimprv4	7.4 Continuous quality improvement gains importance in all commissioned operations everywhere in the company.	.741	.829
Contimprv5	7.5 Quality improvement is a team's responsibility.	.777	.819
BusReslt	**8. Business results**		**.910**
BusReslt1	8.1 Customers satisfied with our products and/or services.	.659	.903
BusReslt2	8.2 The company's financial performance is acceptable.	.669	.902
BusReslt3	٨.3 Company's overall benefits are quite good.	.634	.904
BusReslt4	٨.3 Company's overall benefits are quite good.	.668	.902
BusReslt5	8.5 The company's business has been growing steadily.	.750	.895

Coding	Items	Item-total correlation	Cronbach's alpha
BusReslt6	8.6 Company's product quality has been improving steadily.	.798	.890
BusReslt7	8.7 Company's productivity has been rising steadily.	.763	.894
BusReslt8	8.8 Customer evaluation of company's performance has been improving.	.732	.896

Table 6-23 Item-Total correlations and Cronbach's alphas for National Culture variables

Coding	Items	Item-total correlation	Cronbach's alpha
	National Culture Values "Overall"		**.802**
NCPwrdstnc	**4.1 Power Distance Values**		**.835**
NCPwrdstnc1	1. Supervisors should make most decisions without consulting subordinates.	.649	.815
NCPwrdstnc2	2. Supervisors should avoid social interaction with subordinates.	.747	.718
NCPwrdstnc3	3. Supervisors should not delegate important tasks to subordinates.	.696	.771
NCUncrtnty	**4.2 Uncertainty Avoidance Values**		**.887**
NCUncrtnty1	1. Having detailed instructions helps to know what is expected to do.	.695	.879
NCUncrtnty2	2. following instructions and procedures closely is important.	.823	.828
NCUncrtnty3	3. Rules and regulations are helpful.	.773	.848
NCUncrtnty4	4. Standardized work procedures are helpful.	.731	.863
NCCollctvsm	**4.3 Collectivism Values**		**.843**
NCCollctvsm1	1. Individuals should stick with the group even through difficulties.	.658	.828
NCCollctvsm2	2. Group well-being is more important than individual rewards.	.766	.728
NCCollctvsm3	3. Group loyalty should be encouraged even if individual goals suffer.	.709	.785

Coding	Items	Item-total correlation	Cronbach's alpha
	National Culture Values "Overall"		**.802**
NCPwrdstnc	**4.1 Power Distance Values**		**.835**
NCQPerfm	**4.4 Quality Performance Orientation**		**.919**
NCQPerfm1	1. Our company encourages and rewards innovation.	.804	.899
NCQPerfm2	2. Our company encourages and maintains high quality standards.	.802	.899
NCQPerfm3	3. Our company encourages and rewards excellence.	.842	.885
NCQPerfm4	4. Our company encourages and maintains continuous improvement (or performance).	.811	.896
NCQEthcs	**4.5 Quality Ethical Values**		**.797**
NCQEthcs1	1. Ensuring always that my work practices are according to religious and ethical standards.	.372	.790
NCQEthcs2	2. Working hard and serious will lead me to self recognition.	.511	.776
NCQEthcs3	3. Achieving the benefits to my organizations is part of my moral culture.	.540	.773
NCQEthcs4	4. Being punctual at work is one of my moral principles.	.536	.774
NCQEthcs5	٥. My work practices are derived by the intention to be rewarded by God in addition to social rewards.	.424	.785
NCQEthcs6	٦. Protecting privacy and confidentiality is crucial.	.464	.781
NCQEthcs7	٧. Having ethical competency helps me in solving conflicts.	.596	.763
NCQEthcs8	٨. Ethical understanding is needed to identify conflicts and solve them.	.573	.766
NCQEthcs9	٩. Ethical decision-making is stemmed on employees' Commitment to common ethical standard of the company.	.545	.770
NCQEthcs10	1٠. Fostering attention to individual ethical behavior enhances performance in the company.	.206	.814

6.9 Validity

Reliability does not ensure validity. Validity is concerned with the relationship between the concept and the indicator. One does not assess validity of the indicator but rather the application of the indicator (Carmines & Zeller, 1979). Hair *et al*. (1998) defined validity as the extent to which a measure or set of measures correctly represents the concept of the study "measure what they are supposed to measure". In other words, validity is defined as the extent to which it is a reflection of the underlying variable it is attempting to measure (Parasuraman, 1986; Cooper and Schindler, 2003). Researchers can use several types of approaches to test how valid the measures are, including content validity, criterion-related validity, and construct validity (Carmines and Zeller, 1979). However, due to limitations of some instruments that are known to be valid, many researchers did not evaluate the criterion-related validity of their instruments (e.g., De Jong, 1999; Kemp, 1999). In this study, content validity and construct validity were mainly utilized to asses the validity of the measurement instruments.

6.9.1 Content Validity

Content validity depends on the extent to which an empirical measurement reflects a specific domain of content. A measure has content validity if there is a general agreement among the subjects and researchers that the instrument has measurement items that cover all the content domain of the variables being measured (Nunnally and Bernstein, 1994). The researcher can satisfy content validity through careful definition of the research problem, the items to be scaled and the scale to be used. This logical process is somewhat intuitive and is unique to each researcher (Emory and Cooper, 1991). Moreover, the evaluation of content validity typically involves an organized review of the survey's contents to ensure that it includes everything it should and does not include anything it should not. Strictly speaking, content validity is not a highly scientific measure of a survey instrument's accuracy. Nevertheless, it provides a solid foundation on which to build a methodologically rigorous assessment of a survey instrument's validity.

In this research, as highlighted in section 5.6.2, the content validity of the quality management constructs' instrument utilized in this research which is mainly based on MBNQA had been validated as mentioned earlier in various studies (e.g., Curkovic *et al*., 2000; Flynn and Saladin, 2001; Lou *et al*., 2004; Anderson *et al*., 1995; Rungtusanatham *et al.*, 1998). As for National Culture values measurement which is based on CVSCALE questionnaire instrument based on Hofstede's (2001) national culture elements developed by Boonghee *et al.* (2011), the content validity of the used CVSCALE had been proven and validated in multiple studies across different samples (Boonghee et al., 2011; Yoo *et al.*, 2001; Yoo and Donthu, 2002; Kwok and Uncles, 2005). Thus, there is strong evidence to support the content validity of this scale in this study. Moreover, the Quality performance orientation and Quality Ethical values had content validity from House *et al*. (2004) and Al-Qarthawi (1995) respectively.

6.9.2 Criterion-Related Validity

This refers to the extent to which the measurement instrument is able to predict a variable, an assigned criterion. Criterion-related validity is the degree of correspondence between measures and some other accepted measured measure. Bagozzi (1994) discusses this as "… *the degree of connectedness of a focal measure with other measures*".

Establishing concurrent validity or predictive validity can show criterion-related validity. The former concerns the extent to which a measure is related to another measure (the criterion) when both are measured at the same point in time, while the latter examines the extent to which current scores on a given measure can predict future scores of another measure (the criterion) (Diamantopoulos and Schlegelmilch, 1997).

However, criterion-related validity is not widely used in marketing research for the reasons of difficulties and lack of criterion measures (Diamantopoulos and Schlegelmilch, 1997). Therefore, the study has not made use of it. Instead, it relies more on the construct validity measure.

6.9.3 Construct Validity

Construct validity is the most common cited validity assessment in the field of social science. It measures the extent to which the items in a scale all measure the same construct (Flynn *et al*., 1994;

Nachmias and Nachmias, 1996). It is significant because it can identify the unobservable dimensions of the construct being measured.

Construct validity can be divided into two categories discriminant and convergent validity. Discriminant validity is concerned with demonstrating that a measure does not correlate with another measure from which it is supposed to be different. Convergent validity, on the other hand, aims at measuring the degree of association among scale items developed to measure the same concept (Churchill, 1979). In this chapter, factor analysis will be used to test initially both types of construct validity. This is for two reasons (McDaniel and Gates, 1996); first, it identifies the underlying constructs in the data, and second, it reduces the number of original variables into a smaller set of variants (factors). Furthermore, factor analysis refers to a wide array of statistical techniques used to examine relationships between items and latent factors with which items associate (Comrey & Lee, 1992; Crocker & Algina, 1986; Gorsuch, 1983; Loehlin, 1992). Moreover, it addresses the issue of analyzing the interrelationships among a large number of items and then explaining these items in terms of their common underlying dimensions (factors). In fact, the general purpose of factor analysis is to find a way of condensing or summarizing the information into a smaller set of new composite dimensions (factors) with a minimum loss of information (Hair et al., 1998). However, in chapter 8, a more in-depth convergent and discriminant validity tests will be conducted through the Structural Equation Modelling (SEM) technique.

There are two forms of factor analysis, namely, exploratory factor analysis and confirmatory factor analysis. According to Hair *et al.* (1998), there is continued debate concerning the appropriate role of factor analysis. Many researchers consider it only exploratory, useful in searching for structure among a set of variables or as a data reduction method. In this research, both factor analysis will be used, exploratory factor analysis will be used in this section for data reduction method while confirmatory factor analysis will be used to assess the validity and adequacy and the fit of the measurement model's goodness of fit to the sample data details of this analysis will be explored in chapter 8.

However, before the factor analysis can be successfully employed, there are certain requirements need to be fulfilled. One of the important requirements is to measure the variables by using interval scales. Using the 5-point Likert scale in this research's survey questionnaire fulfilled this requirement. A number of reasons account for this use of Likert scales. Firstly, they communicate interval properties to the respondent, and therefore produce data that can be assumed to be internally scaled (Schertzer and Kernan, 1985; Madsen, 1989). Secondly, in the literature, Likert scales are almost always treated as interval scales (see for example, Tansuhaj *et al*., 1989; Kohli and Jaworski, 1990; Nerver and Slater, 1990; Bagozzi, 1994; Aaker *et al*., 1995).

Another important criterion is that the sample size should be more than 100 since the researcher generally cannot use factor analysis with fewer than 50 observations (Hair *et al*., 1998). However, this requirement has been fulfilled, because there were 937 observations in this research which is more than 100. Hence, as the above requirements were fulfilled in this study, the exploratory factor analysis tests were successfully employed and their results are briefly discussed in the following sections.

6.9.4 Exploratory Factor Analysis

Factor analysis (FA) is a generic name given to a class of multivariate statistical methods whose primary purpose is to define the underlying structure in a data matrix (Hair *et al.,* 1998). It addresses the problem of analysing the structure of the interrelationship (correlation) among a large number of variables by defining a set of common underlying dimensions, known as factors. Factor analysis is used also to check whether indicators bunch in the ways proposed by a priori specifications of the specified dimensions (Bryman and Cramer, 2001).

Factor analysis is a procedure that relies on the use of correlations between data variables. In this study each of the eight TQM factors was individually tested for construct validity. As the eight TQM constructs have been already operationalized and validated as eight factors mentioned in section

6.9.1, this approach is used in here to factor analyze the set of items underlying each construct separately to check for “unifactoriality” or “unidimensionality”. A factor is “unifactorial” if all its items estimate only one construct (Edari, 2004). Hence, the factor analysis was conducted in this matter in order to give an indication of the construct validity of these eight TQM factors. In addition, the analysis was undertaken using the factor analytic procedure in the SPSS statistical software program. The Kaiser-Myer-Oklin (KMO) Measure of Sampling Adequacy and Bartlett’s Test of Sphericity (Field, 2000), that is acknowledged as one of the best measures of determining the suitability and the effectiveness of a set of data sample for the subsequent factor analysis (Stewart, 1981). Hence, this measure was used to examine the data in order to determine whether a factor analysis should be undertaken. According to Field (2000), the value of KMO should be 0.5 or greater for a satisfactory factor analysis.

According to Hair *et al*. (1998), there were two methods of exploratory factor analysis: Principal component analysis and common factor analysis. Principal component analysis is appropriate when researchers are primarily concerned about the minimum number of factors needed to account for the maximum portion of the variance represented in the original set of items. In contrast, common factor analysis is appropriate when the primary objective is to identify the latent dimensions or constructs represented in the original items. According to the aim of conducting factor analysis in this study, principal components factor analysis (PCFA) procedure with varimax rotation was used in all cases to provide the ‘simple structure’ needed for interpretation and to determine how and to what extent items are linked to their underlying factors (Byrne, 1998). In keeping with the usual principal components approach, only factors with Eigenvalues greater than one were returned (Hair *et al.,* 2002).

Principal component analysis can help to identify whether selected items cluster on one or more than one factor. Particularly, three or more items are selected for measuring a latent construct. Factor loadings are used to present these relations. Factor loadings greater than 0.30 are considered significant; loadings of 0.40 are considered more important (Hair et. al, 1998). To determine the minimum loading necessary to include an item in its respective construct, Hair *et al*. (2002) suggested that variables with factor loadings of 0.50 or greater are considered practically significant. Hence, in this study, a factor loading of 0.50 was used as the usual cut-off point. The following sections present the results of each factor analysis in detail.

6.9.4.1 Exploratory Factor Analysis: TQM Familiarity

1. Bartlett's Test of Sphericity

The result for Bartlett's Test of Sphericity (BTS) was large at 2187.875 as shown in Table 6-24 in Appendix-T and the associated significance value was very small (p=0.000). This shows that the data were appropriate for factor analysis (Field, 2000).

2. Kaiser-Meyer-Olkin Measure of Sampling Adequacy

The Kaiser-Meyer-Olkin (KMO) for measurement of sample adequacy (MSA) gives the computed KMO as 0.855 as shown in Table 6-24 in Appendix-T, which is adequate, and above acceptable level (Field, 2000).

As the above requirements were met, the researcher concluded that Factor Analysis was appropriate for this data set, so the procedures for factor analysis could be performed.

3. Results of Principal Component Analysis Extraction

Factor extraction results using Principal Component Analysis (PCA) are given in Table 6-25 in Appendix-T. It should be noted that an Eigenvalue of 1.0 is used as the benchmark in deciding the number of factors (Norusis, 1993; Hair *et al*., 1998).

An initial (un-rotated) solution identified 5 items and one factor with Eigen value of more than one, accounting for 65.655% of the total variance (Table 6-25 in Appendix-T) in order to increase the percentage of the explained variance, TQMfmlrty2 that is related to "Process Management (Design, Product, Manufacture…)" was removed (Appendix 1-C) as it had scored the lowest communality among the rest variable as shown in Table 6-26 in Appendix-T. Full details of the above factor reduction process are found in Appendix 2-C-2 and the reliability analysis redone in Appendix 2-C-4.

The new solution had identified 4 items and one factor with Eigen value of more than one, accounting for 70.97% of the total variance (Table 6-27 in Appendix-T) that is higher than the earlier result obtained and in return ensured practical significance for this derived factor (Hair *et al*., 2002). As Table 6-28 in Appendix-T shows, all five variables scored high communalities that range from 0.636 to 0.756. Therefore, it was concluded that a degree of confidence in the factor solution has been achieved.

4. Factor Rotation and Factor Loading

On being satisfied with the one chosen factor, factor loading of all the items within one factor was examined. The Varimax technique for rotated component analysis was used. The cut-off point for interpretation of the factors was maintained at 0.50 or greater. The results are shown in Table 6-29 in Appendix-T:

5. Factor Naming and Interpretation

The interpretation of the one-factor solution was accomplished by relating it to the theoretical concepts of TQM Familiarity. However, the SPSS eliminates the need for rotation because all variables were accommodated by one component 'TQM Familiarity'. By calculating the reliability again to ensure the four variables reliability, it can be seen from Table 6-30 given below that still a high Cronbach's alpha score (0.863) was maintained and that there are now 4 variables contributing to the one unified factor which we can name it as 'TQM Familiarity'.

Table 6-30 Factor loading and Cronbach's Alpha Analysis

Coding	Items	Item-total correlation	Cronbach's alpha
TQMFmlrty	**TQM Familiarity "Overall"**		**.863**
TQMFmlrtyq1	1. Leadership and Long-term planning.	.706	.827
TQMFmlrtyq3	3. Continuous Improvement (learning,training)	.735	.814
TQMFmlrtyq4	4. Decision making involvement (teamwork, problem solving)	.751	.808
TQMFmlrtyq5	5. Customer Satisfaction	.651	.850

6. Qualitative validation "Interviewees feedback"

Ref. to interviewees' feedback (Appendix 3-A), several requests for clarifications during the interview towards "TQMFmlrty2" as most of the interviewees considered this item misleading and need to be rephrased in order for respondents to understand properly and respond accurately. This supports the above quantitative finding as according to the factor analysis technique TQMfmlrty2 was eliminated due to its low extracted communality.

6.9.4.2 Exploratory Factor Analysis: Quality Practices and Concepts (TQM Constructs)

1. Leadership

1. Bartlett's Test of Sphericity

The result for Bartlett's Test of Sphericity (BTS) was large at 2276.659 (Table 6-31 in Appendix-T) and the associated significance value was very small (p=0.000). This shows that the data were appropriate for factor analysis (Field, 2000).

2. Kaiser-Meyer-Olkin Measure of Sampling Adequacy

The Kaiser-Meyer-Olkin (KMO) for measurement of sample adequacy (MSA) gives the computed KMO as 0.817 as seen in Table 6-31 in Appendix-T, which is adequate, and above acceptable level (Field, 2000).

As the above requirements were met, the researcher concluded that Factor Analysis was appropriate for this data set, so the procedures for factor analysis could be performed.

3. Results of Principal Component Analysis Extraction

Factor extraction results using Principal Component Analysis (PCA) are given in Table 6-32 in Appendix-T. It should be noted that an eigenvalue of 1.0 is used as the benchmark in deciding the number of factors (Norusis, 1993; Hair *et al.*, 1998). An initial (un-rotated) solution identified 5 items and one factor with Eigen value of more than one, accounting for 64.837% of the total variance. Similarly, to increase the percentage of variance explained variables with low communalities was removed until a higher and acceptable percentage 77.057 % of the total variance was reached as shown in Table 6-33 in Appendix-T which ensured practical significance for this derived factor (Hair *et al.*, 2002), see Table 6-33 in Appendix-T.Full detailed all variables reduction analysis with detailed Tables can be seen in Appendix 2-C-3. As Table 6-34 in Appendix-T shows , all three variables score high communalities that range from 0.724 to 0.829. Therefore, it could be concluded that a degree of confidence in the factor solution has been achieved.

4. Factor Rotation and Factor Loading

On being satisfied with the one chosen factors, factor loading of all the items within one factor was examined. The Varimax technique for rotated component analysis was used, with a cut-off point for interpretation of the factors at 0.50 or greater. The results are shown in Table 6-35 in Appendix-T.

5. Factor Naming and Interpretation

The interpretation of the one-factor solution was accomplished by relating it to the theoretical practices under the TQM construct of Leadership. However, the SPSS eliminates the need for rotation because all variables were accommodated by one component 'Leadership'.Table 6-36 Factor loading and Cronbach's Alpha Analysis

Coding	Items	Item-total correlation	Cronbach's alpha
	Quality Practices and concepts "Overall"		**.971**
Leadership	**1. Leadership**		**.850**
Leadership1	1.1 Senior executives always emphasize the importance of customer orientation.	.674	.833
Leadership2	1.2 Senior executives take product and service quality seriously.	.780	.733
Leadership3	1.3 Senior executives adapt their business strategies to market trends.	.705	.803

From Table 6-36 shown above, it can be seen that still a high Cronbach's alpha score (0.850) is maintained and that there are now three variables contributing to the one unified factor which we can name it as 'Leadership'.

2. Strategic Planning

1. Bartlett's Test of Sphericity

The result for Bartlett's Test of Sphericity (BTS) was large at 2675.318 (Table 6-37 in Appendix-T), and the associated significance value was very small (p=0.000). This shows that the data were appropriate for factor analysis (Field, 2000).

2. Kaiser-Meyer-Olkin Measure of Sampling Adequacy

The Kaiser-Meyer-Olkin (KMO) for measurement of sample adequacy (MSA) gives the computed KMO as 0.844 as shown in Table 6-37 in Appendix-T, which is adequate, and above acceptable level (Field, 2000).

As the above requirements were met, the researcher concluded that Factor Analysis was appropriate for this data set, so the procedures for factor analysis could be performed.

3. Results of Principal Component Analysis Extraction

Factor extraction results using Principal Component Analysis (PCA) are given in Table 6-38 in Appendix-T. It should be noted that an eigenvalue of 1.0 is used as the benchmark in deciding the number of factors (Norusis, 1993; Hair *et al*., 1998).
An initial (un-rotated) solution identified 6 items (variables) and one factor with Eigen value of more than one, accounting for 60.70% (see Table 6-38 in Appendix-T), several variables reduction steps were done (details in Appendix 2-C-3) until a higher and acceptable percentage 73.327% of the total variance was reached (Table 6-39 in Appendix-T) which ensured practical significance for this derived factor (Hair *et al*., 2002).

As Table 6-40 in Appendix-T shows, three variables score high communalities that range from 0.629 to 0.793. Therefore, it could be concluded that a degree of confidence in the factor solution has been achieved.

4. Factor Rotation and Factor Loading

On being satisfied with the one chosen factors, factor loading of all the items within one factor was examined. The Varimax technique for rotated component analysis was used with a cut-off point for interpretation of the factors at 0.50 or greater. The results are summarised in Table 6-41 in Appendix-T.

5. Factor Naming and Interpretation

The interpretation of the one-factor solution was accomplished by relating it to the theoretical practices under the TQM construct of Strategic Planning. However, the SPSS eliminated the need for rotation because all variables were accommodated by only one component 'Strategic Planning'.

Table 6-42 Factor loading and Cronbach's Alpha Analysis

Coding	Items	Item-total correlation	Cronbach's alpha
	Quality Practices and concepts "Overall"		**.971**
StrtgicPlanning	**2. Strategic planning**		**.817**
StrtgicPlanning2	2.2 The company develops realistic short-term and long-term plans and corresponding actions.	.579	.837
StrtgicPlanning3	2.3 Every employee in the organization is clear about the strategic objective and its action plans.	.725	.690
StrtgicPlanning4	2.4 Every employee in the organization supports the strategic objective and action plans.	.711	.706

From Table 6-42 given above, it can be seen a still high Cronbach's alpha score (0.817) is maintained and that there are three variables contributing to the one unified factor which we can name it as 'Strategic Planning'.

3. Remaining TQM constructs

The remaining TQM constructs (Customer and Market focus, Information and analysis, Human Resource focus, Process Management, Continuous Improvement, and Business Results) with their 34 items (variables) have been gone through the similar test analysis steps. Hence, a summarized table will be presented below and for a more detailed results see Appendix 2-C-3.

1. Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin Measure of Sampling Adequacy

The Bartlett Test of Sphericity (BTS) and Kaiser-Meyer-Olkin (KMO) test of appropriateness were carried out accordingly in order to assure the validity of factor analysis test (see below Table 6-43). The results (the BTS ranged from 1931.503 to 5244.335, and the level of significance was at p=0.000) indicated that the data were appropriate for factor analysis. Statistically, this means that there are significant relationships between the variables and that they can be appropriately included in the analysis (Bryman, 1989). As shown, the result of sampling adequacy ranged from 0.796 to 0.920 that, following the KMO measure, reflected a very high level of sampling adequacy.

Table 6-23 KMO and Bartlett's Test

		Bartlett's Test		
	KMO	Chi-Square	df	Sig.
Customer and Market Focus	0.883	3243.114	10	.000
Information and Analysis	0.796	1931.503	6	.000
Human Resource Focus	0.902	3317.288	15	.000
Process Management	0.920	5244.335	15	.000
Continuous Improvement	0.824	2368.533	10	.000
Business Results	0.900	4586.412	28	.000

2. Factor Analysis results

With the final factor analysis result done for each TQM constructs (Customer and Market focus, Information and analysis, Human Resource focus, Process Management, Continuous Improvement, and Business Results), all items 'variables' were included under each construct were loaded onto one factor only using an Eigenvalue greater than 1 (see Table 6-44) as Eigen values were used to determine the number of factors to be extracted ensuring that these respective variables contributed to the one unified factor which is the predetermined value it self. And the extracted factors account for a range from 73.327% to 78.949% of the total variance, using a Varimax rotation. This in return ensured practical significance for the derived factors of all constructs respectively. All factors loading were higher than 0.5 since, as Hair *et al*. (1998) observe, a factor loading higher than 0.35 is considered. Moreover, the reliability of all constructs was assessed by the Cronbach's alpha reliability coefficient and exceeded Nunnally (1978) standards for research. Full details of above factor reduction process are found in Appendix 2-C-3 and the reliability analysis redone in Appendix 2-C-4.

Table 6-24 Principal Component Analysis Extraction -Total Variance Explained

Construct (variables maintained)	**No. of Extracted factor(s)**	**Initial Eigenvalues**		**"Extraction Sums of Squared Loadings**		**Reliability** (Cronbach's Alpha)
		Total	% of Variance	Total	% of Variance "same as Cumulative %"	
Leadership (1,2,3)	1	2.312	77.057%	2.312	77.057%	0.850
Strategic Planning (SP 2,3,4)	1	2.200	73.327	2.200	73.327	0.817
Customer and Market Focus (CSTMRK 1,2,3,4,5)	1	3.759	75.180	3.759	75.180	0.915
Information and Analysis (1,2,3)	1	2.352	78.394	2.352	78.394	0.862
Human Resource Focus (HR 2,3,4,5)	1	2.982	74.554	2.982	74.554	0.886
Process Management (PM 1,2,3,4,5,6)	1	4.737	78.949	4.737	78.949	0.946
Continuous Improvement (CI 3,4,5)	1	2.268	75.584	2.268	75.584	0.850
Business Results (BR 5,6,7,8)	1	3.006	75.145	3.006	75.145	0.887

4. Qualitative validation "Interviewees feedback"

Ref. to interviewees' feedback (3-A), many interviewees had raised clarification queries during the interview towards the eliminated questions underlying the TQM constructs. Most comments were highlighting that the confusion and ambiguity found in these questions were mainly due to various reasons including the respondents' unawareness of some practices stated in the questions in which they were not involved in though these practices are being deployed in the company, lack of understanding the question which might make respondents reluctant to answer properly; some questions need to be rephrased to reflect the objective of the question in a more explanatory way. Hence, this qualitative finding supports the above quantitative findings of the factor analysis technique done to the TQM constructs.

6.9.4.3 Exploratory Factor Analysis: National Culture Values

The five National Culture values (Power Distance, Uncertainty avoidance, Collectivism, Quality Performance Orientation, and Quality ethical values) with their 24 items (variables) have been tested with each value separately. As a way to sum up similar to TQM constructs analysis, the results of these tests will be shown on summarized in following Tables and discussed. For more detailed results, see Appendix2-C-4.

1. Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin Measure of Sampling Adequacy

The Bartlett Test of Sphericity (BTS) and Kaiser-Meyer-Olkin (KMO) test of appropriateness were carried out accordingly in order to assure the validity of factor analysis test (see Table 6-45). The results (the BTS ranged from 1123.221 to 2887.829, and the level of significance was at p=0.000) indicated that the data were appropriate for factor analysis. Statistically, this means that there are significant relationships between the variables and that they can be appropriately included in the analysis (Bryman, 1989). As shown, the result of sampling adequacy ranged from 0.709 to 0.795 which, following the KMO measure, reflected a high level of sampling adequacy.

Table 6-45 KMO and Bartlett's Test

	KMO	Bartlett's Test		
		Chi-Square	df	Sig.
Power Distance	0.709	1123.221	3	0.000
Uncertainty avoidance	0.790	2264.335	6	0.000
Collectivism	0.710	1208.117	3	0.000
Quality Performance Orientation	0.795	2887.829	6	0.000
Quality ethical values	0.726	2103.387	15	0.000

2. Factor Analysis results

For each National Culture value (Power Distance, Uncertainty avoidance, Collectivism, Quality Performance Orientation, and Quality ethical values), all items ‘variables’ included under each cultural value except the Quality ethical values’ variables were loaded onto one factor as Eigen values were used to determine the number of factors to be extracted as shown in Table 6-46 in Appendix-T, ensuring that these respective variables contributed to the one unified factor that is the predetermined value it self. And the extracted factors account for a range from 72.757% to 80.582%

of the total variance, using a Varimax rotation. This, in return, ensured practical significance for the derived factors of all values respectively. All factors loading were higher than 0.5 since, as Hair *et al*. (1998) observe, a factor loading higher than 0.35 is considered. Moreover, the reliability of all constructs was assessed by the Cronbach's alpha reliability coefficient and exceeded Nunnally (1978) standards for research. Full details of the above factor reduction process are found in Appendix 2-C-2 and the reliability analysis redone in Appendix 2-C-4.

Table 6-25 Principal Component Analysis Extraction -Total Variance Explained

Construct (variables maintained)	**No. of Extracted factor(s)**	**Initial Eigen values**		**"Extraction Sums of Squared Loadings**		**Reliability**
		Total	% of Variance	Total	% of Variance "same as Cumulative %"	
Power Distance (PWR 1,2,3)	1	2.255	75.181	3.642	60.700	.835
Uncertainty avoidance (UNC 1,2,3,4)	1	3.004	75.107	3.759	75.180	.887
Collectivism (COL 1,2,3)	1	2.290	76.337	2.892	72.289	.843
Quality Performance Orientation (QPRF 1,2,3,4)	1	3.223	80.582	4.064	67.740	.919
Quality ethical values (QETHIC 3,4,5,7,8,9)	2	2.814 1.551	46.901 25.856	2.814 1.551	46.901 25.856 Cumulative %: 46.901 72.757	.797

As For the Quality ethical values, the variables underlying it were mainly loaded onto two factors explaining 60.70% of the total variance as shown in Table 6-47 in Appendix-T.

From the rotated component matrix shown in Table 6-48 in Appendix-T, variables NCQEthcs 7, 8, and 9 were grouped into group 1, and NCQEthcs 3, 4, and 5 were grouped into group 2. Such findings point that quality ethical values should not be looked at as one factor effecting the model rather than two separate factors. Furthermore, by examining the questionnaire and checking the contents of these values, it was found that for each group a common criterion between the grouped dimensions is found. To illustrate further, NCQEthcs 3, 4, and 5 shared in their contents the ethics related to personal/self ethic which can be called as "Personal-related quality ethical values"; while NCQEthcs 7,8, and 9 shared in its contents ethics related to work and organization which can be called "Work-related ethical quality values". From the percentage of the variance, group 1 "Work-related quality ethical values" (37.739%) explains more than the "Personal-related quality ethical values" (35.017%).

3. Qualitative validation "Interviewees feedback"

Referring to interviewees' feedback (Appendix 3-A) related to the national culture values, most queries to clarify were mainly related to three questions underlying Quality ethical values which were eliminated by factor analysis technique (NQEthcs1, NQEthcs2, NQEthcs6). Interviewees pointed that NQEthcs1 was referring to pure religious standards which might have caused confusions by some respondents as different religions had different standards and many are not doing their work according to their religion. As for NQEthcs2, many interviewees explained the confusion caused by this question as employees get rewarded usually according to the budget system quota rather than just according to hard-work. This fact might lead many employees to answer these questions correctly which might have resulted in reduction of reliability of this question and hence it was eliminated. Finally, NQEthcs6 was seen by most interviewees as a vague question and not clear as it consists of confidentiality which employees link to company and see it is not critical, and privacy which is linked to the employee him self and is seen as very critical. Thus, according to the interviewed employees' feedback, combining two different issues in one statement would seem confusing for them to provide the proper and accurate answer. From the above, the quantitative finding as according to the factor analysis technique NQEthcs 1, 2, and 6 was eliminated is supported by this qualitative feedback. Moreover, to validate the above quantitative findings where two groups were divided from the quality ethical values as one group covered the personal related quality ethical values while the other covered work related quality ethical values, a factor analysis was applied to the interviewees' feedback related to the quality ethical values. Similar to the quantitative findings, two groups were resulted from the factor analysis applied on the qualitative data (Appendix 3-4b), where group 1 was consisted of NCQEthcs 3, 4, and 5; while group 2 was consisted of NCQEthcs 7, 8, and 9; which is exactly similar to the finding of the factor analysis done to the quantitative data (survey responses). This again supports and validates the separation of these groups which was concluded in the quantitative analysis above.

6.10 Summary

This chapter had first began with presenting descriptive analysis results of the questionnaire survey involving 937 employees in different managerial levels in three major and largest organizations at Kuwait's Oil Industry, and of the interviewees that were conducted for 30 employees from the same sector. Descriptive tools such as frequencies, mean and percentages, were used to systematically and meaningfully display data for purposes of reporting the characteristics of the respondents/interviewees and their surveyed companies and, simultaneously, provide adequate statistical support to the findings. SPSS software was used in order to interpret the results. Figures were used to demonstrate the findings, as well as numerical summaries of specific aspects of the data for more complete descriptions.

Then, data preparation and purification of the measurement used were discussed. Followed by exploring the literature of the two major assessment tools that are reliability and validity and how these measures were utilized in this study. Furthermore, the corrected item-total correlations and Cronbach's alpha were employed to test the reliability of the research variables and constructs, using variables obtained from the analysis of the model test survey data. The results of both corrected item-total correlations and Cronbach's alpha demonstrate that the instruments were found reliable and internally consistent for the items considered in this study and had a good content and construct reliability. A further reliability and validity test through composite reliability and discriminant validity results will be presented in chapter 8.

Moreover, the validity of the research instrument was then tested by running a series of factor analyses (including KMO, Bartlett's test, component analysis, and communalities) to all questionnaire latent variables covering TQM awareness and familiarity (5 scale variables), TQM constructs (scale 44 variables), and National culture values (scale 24 variables). Certain scale variables were eliminated and reduced to increase the validity of the variables under each latent variable. Moreover, the results obtained showed that TQM awareness and familiarity variables were reduced to 4, TQM constructs variables were reduced to 31, and National culture values were reduced to 21. These quantitative findings were supported and validated by the qualitative findings of the interviewees' feedback who expressed their feedback towards the questions which were eliminated and verified the need for eliminating them. After these sets of factor reductions, each group of questionnaire variables under each latent variable had been loaded into one factor and grouped into their own predetermined value explaining high and acceptable percentage of the total variance, except for Quality ethical values under National culture values which had been loaded onto two separated factors. These two factors were given names which reflect their contents, the first factor was called “Personal-related quality ethical values” and the second one was called “Work-related quality ethical values”, and it was noted that Work-related quality ethical values explained higher percentage of the total variance than the Personal-related quality ethical values. Again, this quantitative finding was supported and successfully validated by the qualitative finding as explained earlier.

The next chapter will investigate the surveys respondents’ and interviewees’ inferences towards the research raised questions and proposed hypothesis. Such investigation will be carried out using various inference analysis tools and techniques.

CHAPTER 7

Quantitative and Qualitative Data Analysis

(Research Questions and Hypotheses Analysis)

7.1 Introduction

In the previous chapter, the descriptive results of the questionnaires and interviews were outlined, whilst the reliability and validity of the survey scales were tested and confirmed using Cronbach's alpha and factor analysis respectively. Further reliability and validity testing of the data will be examined in the next chapter. This chapter describes the second phase of the quantitative and qualitative data analysis as it focuses on the analysis of the validated and reduced variables formulated in Chapter 6 and interviews conducted. Furthermore, the questionnaire survey developed and used to obtain empirical data from Kuwaiti Oil sector companies will be utilized in this Chapter to test the research questions inferences using inferential statistics and analysis techniques to investigate if the control variables (Difference in managerial levels, Demographical variables, TQM familiarity, power distace values, uncertainity avoidance values, collectivisim values, Quality performance orientation, Personal-related quality ethic values, and work-related quality ethical values) have any significant effect on employees' perceptions towards implemented TQM practices was investigated. Moreover, interviews were conducted based on open-ended questions of the research questionnaire as mentioned earlier, with the space given to the interviewee to explain his thoughts and opinions freely and justifications for the answers given. This gives more in-depth analysis to explain the findings of the questionnaire analysis. Thus, the outcomes of this quantitative inferences analysis and hypotheses testing will be compared with the outcomes of the interviews analysis, in order to validate and provide more support to these quantitative findings and utilize the triangulation methodology in this study's inferential analysis.

7.2 Normality T-test

A normality T-test was conducted to determine whether or not the questionnaire collected data is normally distributed. This test is useful in order to find out which of analytical test parametric or non-parametric tests are appropriate for it in order to investigate the respondents' inferences regarding the research questions and hypotheses.

The Hypothesis being tested under the Kolmogorov-Smirnov test is defined by:

H_0: The data follow a specified distribution *"i.e. Data is normally distributed"*

Vs.
H_a: The data do not follow the specified distribution

If P value < 0.05 then Ho is rejected, Ha is valid.

The normality test was done to to each of TQM constructs factors, TQM Familiarity, and National Culture Values where the dimensions under each item were reduced to only one factor i.e. unidimensionality of scales (Carmines and Zeller, 1979), which could be treated as single entities representing each scale. After a careful examination of each scale variable, unidimensionality of the scales was supported and the reduced factors were calculated. This exercise was done inorder to conduct the required normality test and t-test needed in this chapter to investigate the respondents' infrences towards the research questions.

Hence, by performing the normality test for these calculated group of variables through One-Sample Kolmogorov-Smirnov Test, it was found that the two-tailed significance of the test statistic was very small (where the p-value for all is less than 0.05 (P-value < 0.05) as shown in tables 7-1, 7-2, and 7-3 (given in Appendix-T), detailed tables can be found in Appendix 2-D-1. For all results obtained for each group of variables, this indicates that it is significant. A confirmation of significance, as here, means Ho is rejected and the collected data is not normal.

From the obtained result test, Non-parametric tests will be used for testing the collected data to investigate respondent's inferences toward the proposed research questions and hypotheses.

7.3 Inference regarding the research questions

In this section, the employees' (survey's participants) perceptions and perceptions towards the research questions will be tested and then compared with the qualitative interviews feedback to validate the quantitative findings accordingly. The inquiries raised here to test the surveys' respondents' perception are as follow:

7.3.1 General Hypothesis of control Variables:

In order to answer the research question: "What are the roles played by some control variables (Individual national culture, the difference in managerial levels, TQM awareness, and a group of demographical variables) in affecting the perceived level of implementing quality practices underlying TQM constructs in Kuwait Business Environment?"

The below inquiry was phrased:

Inquiry: Do employees (under the control variables) differ regarding their perceptions towards the level of implementing quality practices underlying the TQM constructs?

To answer this inquiry, the following hypothesis will be tested:

Ho (*The null hypothesis)***:** There is no significant difference between the employees (under the control variable levels) and their perceptions towards the level of implementing quality practices underlying TQM constructs.

VS

Ha *(The alternative hypothesis)***:** There is a significant difference between the employees (under the control variable levels) and their perceptions towards the level of implementing quality practices underlying TQM constructs.

Because of the non-normality of the data (verification from Kolmogorov-Srnirnov tests), the appropriate statistical procedure to analyze the above equality of participants' perceptions or attitudes and TQM constructs is the distribution free (non-parametric) Kruskal-Wallis (K-W) test (Hollander and Wolfe, 1973). The K-W test is, in essence, a procedure to handle one-way analysis of variance problems. A significant K-W test indicates that differences exist among participants' perceptions towards TQM constructs, Further analysis by Duncan's Multiple Range test is necessary to determine the nature of differences.

From the above, Kruskal-Wallis test followed by Duncan's multiple Range test were utilized to test whether there are significant differences between employees in each demographic variable level and their perceptions towards the level of implementing quality practices underlying TQM constructs.

7.3.1.1 Difference in Managerial Levels

The First Hypothesis states that:

Ho: There is no significant difference between employees in different managerial levels and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference between employees in different managerial levels and their perception towards the level of implementing quality practices underlying TQM constructs.

It is important to know that the managerial levels were determined according to Grade levels as follows:

- Top Management level : Grade 19 to 18.
- Middle Management level: Grade 17 to 16.
- Lower Management level: Grade 15 to 14.

K-W test is used to test the above hypothesis for the collected survey data (quantitative data).

7.3.1.2 Kruskal-Wallis Test

From K-W test table 7-5 in Appendix-T (detailed table in Appendix 2-E-1), the p-value is less than 0.05 for all TQM constructs, which means that the above Ho is rejected and the alternative hypothesis Ha is accepted. Hence, this indicates that there is a significant difference among employees' in different managerial levels (top management, middle management, lower management) and their perceptions towards implementing the quality practices underlying the following TQM constructs:

leadership, strategic planning, customer and market focus, information and analysis, human resource focus, process management, continuous improvement, and business results.

Moreover, Duncan's multiple Range test was conducted through the Post Hoc Tests for these constructs (detailed table results in Appendix 2-E-2) with significant p-values showing that there is significant differences among employees in different managerial levels and their perceptions towards the level of implementing the quality practices of these construct. This test assisted in explaining the significant difference among the three different levels more clearly.

7.3.1.3 Post Hoc Tests

Homogeneous Subsets

1. Leadership:

From the Duncan's test in Table7-6 in Appendix-T, Top management (Grade 19 to 18) falls in both subsets 1 and 2. However, by comparing the p-value of both subsets, we find that p-value of subset 1 is higher than p-value of subset 2. Hence, Top Management level will fall in subset 1 (with the higher p-value). This means that employees in both Top and lower management levels have similar perceptions towards level of implementing quality practices underlying leadership construct, while employees in middle management (Grade 17 to 16) differ from them by having a more positive perception (higher Mean rank from K-W test's table 7-4) about leadership role when it comes to implementing quality practices. However, by examining the Duncan's test values, we can be stated clearly that the difference between the three level's perceptions is very minor as low management has scored 3.786, top scored 3.914, and middle scored 4.09. As all of three levels have positive perceptions (values close to 4 out of a 5-lickert scale, where 5 is most positive perception). Hence, although there were significance differences shown in the K-W test between the three levels, yet by examining the scores closely, it was found that those scores were very close to each other that the difference between them is not to the level of significance that needs to be considered. From this, it was concluded that the three levels of management share high and positive perception towards quality practices related to leadership construct.

2.Strategic Planning:

From Duncan's test in table 7-7 in Appendix-T, both top and low management falls in subsets 1 while middle management falls in subset 2. This means that employees in both Top and low management levels have similar but towards the implemented quality practices related to strategic planning construct. However, by comparing the means rank rating, middle management (highest mean rank-table 7-4) has a more positive perception than top and low management. However, by examining the Duncan's test values, we can see clearly that the difference between the three level's perceptions is very close as low management has scored 3.27, top scored 3.368, and middle scored 3.54. As all of three levels have positive perceptions (all above of 3 out of a 5-lickert scale, where 5 is most positive perception). Hence, although there were significance differences shown in the K-W test between the three levels, yet by examining the scores closely it was found that those scores were very close to each other that the difference between them is not to the level of significance that needs to be considered. From this, it was concluded that the three levels of managerial levels all share high and positive perception towards quality practices related to leadership construct.

3.Customer & Market Focus:

From Duncan's test table 7-8 in Appendix-T, top, Middle and low management falls in one subset. This means that the three managerial levels have similar perceptions towards the implemented quality practices related to the customer and market focus construct.

4. Information and Analysis:

From Duncan's test given in table 7-9 in Appendix-T, top and lower management falls in subset 1 while middle management falls in subset 2. This could mean that top and low management have similar perception towards information and analysis construct. However, as the scores were very close to each other similar to Leadership and Strategic planning, , it was concluded that the three managerial levels share high and positive perception towards quality practices related to information and analysis construct.

5. Human Resource Focus:

From the given Duncan's test table 7-10 in Appendix-T, all top, middle and low management falls in one subset. This means that employees in all management levels share similar perceptions towards the implemented quality practices related to Human Resources Focus construct.

6. Process Management:

From Duncan's test table 7-11 given in Appendix-T, Top, Middle, and lower management falls in one subset. This means that the three levels share similar perceptions towards the quality practices implemented related to process management construct.

7. Continous Improvement

From Duncan's test table 7-12 given in Appendix-T, Top, Middle, and lower management falls in one subset. This means that the three levels share similar perceptions towards the quality practices implemented related to continuous improvements construct.

8. Business Results:

From Duncan's test table 7-13 given in Appendix-T, Top management (Grade 19 to 18) falls in both subsets 1 and 2. However, by comparing the p-value of both subsets, it was found that p-vale of subset 1 is higher than p-value of subset 2. Hence, Top Management level will fall in subset 1. However, as the scores were very close to each other and similar to Leadership and Strategic planning, , it was concluded that the three levels of managerial levels share high and positive perception towards quality practices related to information and analysis construct.

In conclusion, although both top and low management share the same positive perception and less than middle management perception towards LDR, SP, INFO, and BR, yet, this difference is quite small and not to the level of significance that needs to be considered. From this, it was concluded that all three managerial levels share a high and positive perception towards TQM implemented practices.

7.3.1.4 Qualitative validation "Interviewees feedback"

Overall, Reference to the interviewees feedback collected and analyzed in Appendix 3-3 (interviewees' managerial levels vs. TQM constructs) regarding their perception towards the impact of the different managerial levels on implementing TQM constructs, most of the interviewees had confirmed the same results obtained from the surveys. As all three managerial levels did share a high and positive perception towards TQM implemented practices and constructs, a more positive perception was noted in the middle level management (scoring higher means ratings) than top and low managements towards TQM constructs. Yet, similar to the quantitative results, this slight difference is not at a significant level statistically (as their means ratings were quite close to each others) which would again support the above quantitative findings that all three managerial levels share a high and positive perception towards implemented TQM practices.

Furthermore, interviewees verified the slight difference noted between middle management with top and low management due to that middle management maybe more aware of what action plans are and how they are achieved as compared to the employees in other managerial levels. In addition, middle management might be more satisfied in their jobs than those in top and low management as some interviewee said "*company is good to us*" which reflects their satisfaction that resulted in a more optimistic and positive perception recorded in the interviews conducted.

7.3.1.5 Demographical Variables

The second hypothesis states that:

Ho: There is no significant difference among employees of different demographical variables and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among employees of different demographical variables of the employees and their perception towards the level of implementing quality practices underlying TQM constructs.

7.3.1.6 Company group

The first Sub Hypothesis states that:

Ho: There is no significant difference among the employees in the three companies and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among the employees in the three companies and their perception towards the level of implementing quality practices underlying TQM constructs.

K-W test is used to test the above hypothesis for the collected survey data (quantitative data).

7.3.1.2.1.1 Kruskal-Wallis Test

From K-W test table 7-15 in Appendix-T (detailed table results in Appendix 2-E-1), the p-value is less than 0.05 for all TQM constructs, which means that the above Ho is rejected and the alternative hypothesis Ha is accepted. Hence, this indicates that there is a significant difference among employees' of different companies (PIC, KNPC, KOC) and their perceptions towards the implementing the quality practices underlying the following TQM constructs: leadership, strategic planning, Customer and Market focus, Information and analysis, Human Resource focus, Process Management, continuous improvement, and Business results. Similar to previous analysis, Duncan's multiple range test was conducted for the constructs with significant p-values.

7.3.1.2.1.2 Post Hoc Tests

Homogeneous Subsets

1. Leadership

From Duncan's test table 7-16 in Appendix-T, employees from KNPC and KOC companies falls in the same subset 1, while employees from PIC company falls in subset 2. This means that employees from both KNPC and KOC share similar perception towards the implemented quality practices related to leadership. Further more, from K-W test table 7-14 in Appendix-T, mean rank rating of PIC is the highest which shows that PIC employees have more positive perception towards implemented quality practices related to leadership construct than those employees in KNPC and KOC.

2.Strategic Planning:

From Duncan's test table 7-17 in Appendix-T, employees from KNPC and KOC companies falls in the same subset 1, while employees from PIC company falls in subset 2. This means that employees from both KNPC and KOC share similar perceptions towards the implemented quality practices related to strategic planning construct. However, by comparing the mean rank ratings of the three companies in K-W test table 7-14, we find that employees from PIC have more positive perception towards quality practices underlying strategic planning than employees in the other two companies.

3. Human Resource

From Duncan's test table 7-18 in Appendix-T, employees from PIC and KOC companies falls in the same subset 2, while employees from KNPC company falls in subset 1. This means that employees from both PIC and KOC have similar and more positive perceptions towards the implemented quality practices related to Human Resources Focus construct than those in KNPC. From K-W test 7-14 mean rank rating of KOC is the highest which shows that KOC employees have more positive perception towards quality practices implemented underlying human resource construct than those in other two companies.

Furthermore table 7-19 shown below a summarized output of the Duncan's test and K-W test results for the remaining TQM constructs. For all TQM constructs, KOC and KNPC are grouped into subset 1 while PIC is grouped into subset2. By checking the mean ranks ratings, PIC had the highest ranks which showed that PIC employees have more positive perception towards the quality practices implemented underlying these TQM constructs than employees in KOC and KNPC. For the detailed Duncan's tests and K-W tests results for the below TQM constructs, pls. refer to Appendix 2-E-3.

Table 7-19: Summarized Duncan's test and K-W test results for TQM constructs vs. Company

TQM Construct Name	Grouping (Duncan's test)		Company of higher Mean rank (K-W test)
	Subset 1	**Subset 2**	
Customer & Market Focus	KOC & KNPC	PIC	PIC (552.16)
Information Analysis	KOC & KNPC	PIC	PIC (546.94)
Process Management	KOC & KNPC	PIC	PIC (558.00)
Continuous Improvement	KOC & KNPC	PIC	PIC (563.82)
Business Results	KOC & KNPC	PIC	PIC (539.47)

7.3.1.6.1.3 Qualitative validation "Interviewees feedback"

The above quantitative results were supported by qualitative analysis of the data gathered through interviews (qualitative) means ratings comparison results in Appendix 3-3 (interviewees' companies vs. TQM constructs), as it showed that PIC employees whom were interviewed had expressed a more positive perception towards the concept of TQM and its constructs than those in KOC and KNPC. According to their feedback, this can be verified as their company "PIC" had started an earlier journey in adopting quality concept, practices, and programs in its departments and operations than KOC and KNPC, which made its' employees more mature, aware, and optimistic towards these practices and constructs than other interviewees in KOC and KNPC. This point has also been confirmed in companies' profile and background presented in chapter 3.

7.3.1.7 Nationality

The second Sub hypothesis states that:

Ho: There is no significant difference among the employees of different nationalities and their perception towards the level of implementing quality practices underlying TQM constructs.
VS
Ha: There is a significant difference among the employees of different nationalities and their perception towards the level of implementing quality practices underlying TQM constructs.

K-W test is used to test the above hypothesis for the collected survey data (quantitative data).

7.3.1.7.1.1 Kruskal-Wallis Test

From K-W test table 7-20 in Appendix-T (detailed table results in Appendix 2-E-1), the p-values for all TQM constructs is less than 0.05. This indicates, that the above Ho, is rejected and the alternative hypothesis Ha is accepted, that means that there is a significant difference among employees' of different nationalities (Kuwaitis, Arabs, Western "European & U.S.", Asians "Indians, Pakistani, etc", and Others) and their perceptions towards the implemented quality practices underlying the following TQM constructs: leadership, strategic planning, Customer and Market focus, Information and analysis, Human Resource focus, Process Management, Continuous Improvement, and Business results.

Similar to previous analysis conducted, Duncan's multiple range test was conducted for TQM constructs with p-values less than 0.05, i.e. it's conducted for all TQM constructs, the results gained from these tests is summarized and presented in table 7-21-A and 7-21-B given below. For the detailed Duncan's tests and K-W tests results, pls. refer to Appendix 2-E-4.

Table 7-21-A: Summarized Duncan's test and K-W test results for TQM constructs vs. Nationality

TQM Construct Name	Grouping (Duncan's test)		The Subset consisting Nationalities of higher Mean ranks (K-W test)
	Subset 1	Subset 2	
Strategic Planning	Western & Kuwaiti	Arabs, Asians, & Others	Subset 2
Customer & Market Focus	Western & Kuwaiti	Arabs, Asians, & Others	Subset 2
Information Analysis	Western & Kuwaiti	Arabs, Asians, & Others	Subset 2
Process Management	Western & Kuwaiti	Arabs, Asians, & Others	Subset 2
Business Results	Western & Kuwaiti	Arabs, Asians, & Others	Subset 2

Table 7-21-B: Summarized Duncan's test and K-W test results for TQM constructs vs. Nationality

TQM Construct Name	Grouping (Duncan's test)			The Subset consisting Nationalities of higher Mean ranks (K-W test)
	Subset 1	Subset 2	Subset 3	
Leadership	Western & Kuwaiti	Asians	Arabs & Others	Subset 3 then Subset 2
Human Resource Focus	Western & Kuwaiti	Arabs & Asians	Others	Subset 3 then Subset 2
Continuous Improvement	Western & Kuwaiti	Arabs & Asians	Others	Subset 3 then Subset 2

By referring to above given table 7-21-A and 7-21-B, we can see that both Kuwaitis and Western (European & US) share the same perception towards implementing quality practices related to all TQM constructs, where their perception seems less positive than the other nationalities whom shared a more positive perception in most TQM constructs. Moreover, other nationalities (Arabs, Asians, & Others) have the same perception as they joined one Subset (Subset 2) with more positive perceptions towards the implemented quality practices related to TQM constructs of table 7-21-A. While in table 7-12-B, we found that Arabs and Asians joined one subset (subset 2) and Others joined subset 3 in Human Resources and Continuous Improvement, and Others had a more positive perception towards quality practices implemented related to those two constructs. As for the remaining TQM construct, Arabs joined Others in subset 3 and have more positive perception towards quality practices implemented related to leadership than the Asians in subset 2. Moreover, even with this slight difference between Arabs and Asian from one side and Others from the other side, the three groups of nationalities still recorded higher Mean Ranks ratings than Kuwaitis and

Western nationalities in all TQM constructs, which means in return that Arabs, Asians, and Others have more positive perception towards quality practices being implemented underlying TQM constructs.

7.3.1.7.1.2 Qualitative validation "Interviewees feedback"

According to interviewees feedback collected and analyzed in Appendix 3-3 (interviewees' nationalities vs. TQM constructs); Arabs, Asians, and Others shared a more positive perception (higher means' ratings scores) towards implemented TQM practices (constructs) than Kuwaitis and Western that, in returns, supports the above quantitative finding. Such finding was verified by the interviewees as Western employees come from Western business environment culture with higher expectations where constructive criticism is expressed clearly and quality practices at work are more acknowledged and appreciated long time ago and are seen as a must for companies nowadays in order to have competitive advantage at the market and be able to have better financial and operational performance.

Hence, we can see their perception towards the quality practices implemented at their Kuwaiti Oil sector companies might be less than their standards used to be in their Western business communities and what they look up or hope for, that could be the reason why they are less positive than other nationalities. As for Kuwaitis, the interviewees saw the reason that can be interpreted for having same less positive perception as western nationalities might be due to the fact that Kuwaitis at the managerial levels are more aware of the benefits of quality over the operational and financial performance of their company. Moreover, loyalty to their country as citizens would oblige them to express more frankly towards the quality practices implemented at their companies as their ambition for better business performance drives them to look up for higher quality standards and practices than the existed ones in their companies. Other interviewees verified the less positive perception by Kuwaitis was because some Kuwaitis in the oil industry might feel that they are less privileged than previous generation of employees as life became harder with fewer jobs and opportunities which also lead to a less positive perception than other nationalities. From that, we can understand why both Kuwaitis and Western have less positive perceptions towards the quality practices and measures being implemented. On the other hand, interviewees verified the more positive perception recorded by Arabs, Asians (Pakistani, Indians, ..etc) and other nationalities might be due to the fact that these nationalities did not come from same Western Business environment culture with the high quality standards and more restricted measures. Hence their responses reflected more positive perceptions towards the quality practices underlying TQM constructs. Other interviewees added that most Asians and Arabs are more satisfied and happy as they live a high style life in Kuwait (no tax is forced in Kuwait) compared with their life style at home countries were taxes are forced, hence they were able to save more money and become more satisfied and happy. In addition, for Asians and Arabs as they reach management level in the oil sector they acquire a higher maturity, enthusiasm, and satisfactory manner which leads to a more positive oriented perception towards their responses in both their interviews and surveys.

7.3.1.8 Job experience

The third Sub hypothesis states that:

Ho: There is no significant difference among the employees in different job experience levels and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among the employees in different job experience levels and their perception towards the level of implementing quality practices underlying TQM constructs.

K-W test was done to the collected survey data (quantitative data) to test the above hypothesis. The results of the analysis are illustrated in Table 7-22 in Appendix-T

7.3.1.8.1.1 Kruskal-Wallis Test

From K-W test table 7-22 given in Appendix-T (detaied test tables are in appendix 2-E-1), only the p-values of Business Results construct is less than 0.05. This indicates that for this construct, the above Ho is rejected and the alternative hypothesis Ha is accepted, which means that there is a significant difference among employees' of different job experiences (Less than 5 years, 5 to 10 years, 11 to 15 years, more than 15 years) and their perceptions towards the implementing the quality practices underlying Business results. However, there is no significance difference between these employees in their perceptions towards the remaining TQM constructs.

Similar to previous analysis, Duncan's multiple range test was conducted for Business Results construct, the results gained from this test is shown in table 7-23 in Appendix-T. Full test results and tables are shown in Appendix 2-E-5.

From table 7-23, we can see that all employees' of all groups of job experiences share the same positive perception (very close from each other ranging from 3.527 to 3.768) towards implementing quality practices related to business results construct.

7.3.1.8.1.2 Qualitative validation "Interviewees feedback"

According to interviewees feedback collected and analyzed in Appendix 3-3 (interviewees' jobs experience vs. TQM constructs), all interviewees of different job experience shared a positive perception (all scored high means ranks ratings) towards the all implemented TQM practices including Business results (BR). This in returns supports the above quantitative result and confirms its validity.

7.3.2 TQM Familiarity and awareness

To test if TQM familiarity and awareness of employees effects their perception toward the implemented quality practices of TQM constructs, the below hypotheses are set and tested similar to previous hypotheses using the K-W test and Duncan's test.

Ho: There is no significant difference among the employees of different Familiarity levels with TQM concepts and practices and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among the employees of different Familiarity levels with TQM concepts and practices and their perception towards the level of implementing quality practices underlying TQM constructs.

It is important to know that in order to test TQM familiarity and awareness levels against TQM constructs, additional analytical steps were made as descriptive statistics and tansfer compute calcultaions were done to convert TQM familiarity data from continous type into categorical type (details of this transforming data type analysis tables in Appendix 2-F-1). The output of this statistics processes was a recalculated categorical TQM familiarity with four levels of familiarty and awareness of TQM practices and principles, these levels are as follows:

- Very low familiar: 1.
- Moderately familiar: 2.
- Very familiar: 3.
- Fully familiar: 4.

The above statistical steps were conducted to both quantitative and qualitative data collected from surveys and interviews respectively. Similar to previous hypothese test, in order to test the above hypothese, K-W test and Duncan’s test were done to the collected survey data (quantitative data).

7.3.2.1 Kruskal-Wallis Test

From K-W test table 7-24 in Appendix-T (detailed table results in Appendix 2-E-6), the p-value is less than 0.05 for all TQM constructs, which means that the above Ho is rejected and the alternative hypothesis Ha is accepted. Hence, this indicates that there is a significant difference among employees’ with different levels of TQM familiarity and their perceptions towards the implementing the quality practices underlying the following TQM constructs: leadership, strategic planning, Customer and Market focus, Information and analysis, Human Resource focus, Process Management, Continuous Improvement, and Business results.

Moreover, Duncan’s multiple Range test were conducted through the Post Hoc Tests for these constructs (detailed table results in Appendix 2-E-7) with significant p-values showing that there is significant differences among employees with different TQM familiarity and their perceptions towards the level of implementing the quality practices of these construct.

Duncan’s multiple range test was conducted for leadership construct, the results gained from this tests is shown in table 7-25 in Appendix-T. Full test results and tables are shown in Appendix 2-E-7.

From Duncan's test table 7-25 in Appendix-T, 4 subsets were formulated to host the four levels of TQM familiarity and awareness separately. This, in returns, means that each group of employees sharing the same level of TQM familiarity and awareness differs in than the other groups its perception towards the implemented quality practices related to leadership construct. From K-W test table 7-24, the mean rank rating of employees group with Full familiarity level was the highest which means that they have a more positive perception towards quality practices implemented underlying leadership construct, followed by the group of employees with very familiar level, then moderately familiar level, and ending up with very low familiar level.

For the remaining TQM constructs, Duncan's test was conducted and the results were summarized in below table 7-26 (Full test results and tables are shown in Appendix 2-E-7).

Table 7-26: Summarized Duncan's test and K-W test results for TQM constructs vs. TQM familiarity and awareness

TQM Construct Name	Grouping (Duncan's test)			The Subset consisting higher Mean ranks (K-W test)
	Subset 1	Subset 2	Subset 3	
Strategic Planning	Very low familiar	Moderately familiar	Very familiar Fully familiar	Subset 3 then Subset 2 then Subset 1
Customer & Market Focus	Very low familiar	Moderately familiar	Very familiar Fully familiar	Subset 3 then Subset 2 then Subset 1
Information Analysis	Very low familiar	Moderately familiar	Very familiar Fully familiar	Subset 3 then Subset 2 then Subset 1
Human Resource Focus	Very low familiar	Moderately familiar Very familiar	Fully familiar	Subset 3 then Subset 2 then Subset 1
Process Management	Very low familiar	Moderately familiar	Very familiar Fully familiar	Subset 3 then Subset 2 then Subset 1
Continuous Improvement	Very low familiar	Moderately familiar	Very familiar Fully familiar	Subset 3 then Subset 2 then Subset 1
Business Results	Very low familiar	Moderately familiar	Very familiar Fully familiar	Subset 3 then Subset 2 then Subset 1

From table 7-26 shown above, we can see that employees with fully familiarity of TQM practices and principles and very familiar levels are grouped into one group (Subset 3). This means that these two levels share the same perception towards implementing quality practices related to the above TQM constructs except Human resource, and their perception seems more positive than the other two levels of familiarity (very low familiar and moderately familiar) as each of these level was grouped separately into different group subset 1 and subset 2 respectively. For Human resources construct, employees with very familiar and moderately familiar levels were grouped into one group Subset 2, while fully familiar and very low familiar were each grouped into subset 3 and subset 1 respectively. By comparing the means rank ratings, employees with full familiarity (subset 3) had more positive perception towards quality practices implemented related to human resource construct than those in subset 2 and 1.

7.3.2.2 Qualitative validation "Interviewees feedback"

Reference to interviewees' feedback analysis (Appendix 3-3), most interviewees with fully and very familiar levels shared a higher and more positive perception towards TQM implemented basic practices and principles. This, in return, supports the quantitative result obtained above as well as the literature findings related to the positive relationship between TQM awareness level of employees and their perceptions of TQM implementation (G.A. and C.V. 2007; Crosby, 1984; Juran, 1989) that were discussed in section 4.3.3.3. When the interviewees were asked for the possible reasons behind such finding; they verified that when employees become more aware and knowledge of TQM practices and principles, their input and feedback would be more realistic, accurate and positive towards these TQM practices. That is why these employees who are fully and very well aware and knowledgeable would naturally have a more positive perception towards the implemented TQM practices and concepts than those employees of very low and moderately low familiarity.

7.3.3 National Culture values

To test if National culture values of employees effects their perception toward the implemented quality practices of TQM constructs, the below hypotheses are set and tested similar to previous hypotheses using the K-W test and Duncan's test.

Ho: There is no significant difference among the employees of different national culture values and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among the employees of different national culture values and their perception towards the level of implementing quality practices underlying TQM constructs.

As there are five groups of national culture values utilized in this study's questionnaire including power distace values, uncertainity avoidance values, collectivisim values, Quality performance orientation, Personal-related quality ethic values, and work-related quality ethical values, by applying the similar TQM Familiarity's additional analysis statistical steps mentioned in section 7.3.2 , the national culture values were then converted into categorical values (Appendix 3-4a, 3-4b, & 3-4c) of four category levels each in order to measure it against TQM constructs and test the hypotheses proposed. These above additonal statistical steps were conducted to both quantitative and qualitative data collected from surveys and interviews respectively.

7.3.3.1 Power Distance values

The first subset Hypotheses related to Power Distance values is as follows:

Ho: There is no significant difference among the employees of different power distance values and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among the employees of different power distance values and their perception towards the level of implementing quality practices underlying TQM constructs.

The four levels of Power distance values are as follows:

- Low power distance: 1.
- Moderate power distance: 2.
- High power distance: 3.
- Very high power distance: 4.

Similar to previous hypothese test, in order to test the above hypothese, K-W test and Duncan's test were done to the collected survey data (quantitative data).

7.3.3.1.1 Kruskal-Wallis Test

From K-W test table 7-27 in Appendix-T (detailed table results in Appendix 2-E-10), the p-values for some TQM constructs is less than 0.05. This indicates that the above Ho is rejected and the alternative hypothesis Ha is accepted, which means that there is a significant difference among employees' of different power distance values and their perceptions towards the implemented quality practices underlying the following TQM constructs: leadership, strategic planning, and continuous Improvement.

Duncan's multiple range test was conducted for these constructs, and the results gained from this tests is shown below in the 7-28 and table 7-29 given in Appendix-T. Full test results and tables are shown in Appendix 2-E-11.

Table 7-28: Summarized Duncan's test and K-W test results for TQM constructs vs. Power distances values

TQM Construct Name	Grouping (Duncan's test)		The Subset consisting higher Mean ranks (K-W test)
	Subset 1	Subset 2	
Leadership	Low power distance Moderate power distance High power distance	Very high power distance	Subset 2 then Subset 1
Strategic planning	Low power distance Moderate power distance High power distance	Very high power distance	Subset 2 then Subset 1

From table 7-28, employees with very high power distance values were grouped into one group "subset 2" while employees with low, moderate and high power distance values were all grouped into one group "subset 1". This means that the employees in subset 1 share the same perception towards the implemented quality practices related to leadership and strategic planning. By checking the mean ranks ratings in table 7-27, employees in subset2, those with very high power distance, had a more positive perception towards these quality practices than those in subset 1.

From table 7-29 given in Appendix-T, employees with moderate and high power distance values were grouped into one subset "subset 2" meaning that they share the same perception towards quality practices implemented related to Continuous improvement. While employees with low power distance values were grouped into subset 1 and those with very high power distance were in subset 3. By checking the mean ranks ratings in table 7-27, employees with very high power distance (subset 3) had more positive perception than those in subset 2 and 1. In general, employees with very high power distance had more positive perception towards TQM constructs and practices followed by high power distance.

7.3.3.1.2 Qualitative validation "Interviewees feedback"

By analyzing the collected interviewees feedback and analyzed in Appendix 3-5 (power distance vs. TQM constructs), interviewees with higher power distance (very high and high) always scored higher means ratings than the other levels of power distance, which implied of a more positive perception towards the implemented TQM practices than those of moderate and low power distance levels. This qualitative finding in return supports the above quantitative finding and validates it clearly.

Better yet, this finding as employees with different levels of power distance have positive perception towards the implemented TQM practices, this in return supports the literature presented in section 4.3.3.1.2; where it has been argued that in power distance might influence the TQM implementation process (Tata & Prasad, 1998; Jung et al., 2008; Al-Khalifa and Aspinwall, 2001).

7.3.3.2 Uncertainty Avoidance values

The second subset Hypotheses related to uncertainty avoidance values is as follows:

Ho: There is no significant difference among the employees of different uncertainty avoidance values and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among the employees of different uncertainty avoidance values and their perception towards the level of implementing quality practices underlying TQM constructs.

Similar to previous hypothese test, in order to test the above hypothese, K-W test and Duncan's test were done to the collected survey data (quantitative data).

7.3.3.2.1 Kruskal-Wallis Test

From K-W test table 7-30 given in Appendix-T (detailed table results in Appendix 2-E-10) the p-values for all TQM constructs is less than 0.05. This indicates, that the above Ho, is rejected and the alternative hypothesis Ha is accepted, which means that there is a significant difference among employees' of different uncertainty avoidance values and their perceptions towards the implemented quality practices underlying all TQM constructs.

Duncan's multiple range test was conducted for these constructs, and the results gained from this tests is shown in table 7-33 and table 7-32 in Appendix-T. Full test results and tables are shown in Appendix 2-E-11.

Table 7-31: Summarized Duncan's test and K-W test results for group of TQM constructs vs. uncertainty avoidance values

TQM Construct Name	**Grouping (Duncan's test)**		The Subset consisting higher Mean ranks (K-W test)
	Subset 1	Subset 2	
Leadership	Low uncertainty avoidance	Moderate uncertainty avoidance High uncertainty avoidance Very high uncertainty avoidance	Subset 2 then Subset 1
Customer & Market Focus	Low uncertainty avoidance	Moderate uncertainty avoidance High uncertainty avoidance Very high uncertainty avoidance	Subset 2 then Subset 1
Business results	Low uncertainty avoidance	Moderate uncertainty avoidance High uncertainty avoidance Very high uncertainty avoidance	Subset 2 then Subset 1

From above table 7-31, employees with very low uncertainty avoidance values were grouped into one group "subset 1" while employees with moderate, high and very high uncertainty avoidance values were all grouped into one group "subset 2". This means that the employees in subset 2 share the same perception towards the implemented quality practices related to leadership, customer and market focus, and business results. By checking the mean ranks ratings in table 7-30, employees in subset2, those with very high, high and moderate uncertainty avoidance values had a more positive perception towards these implemented quality practices than those in subset 1.

Table 7-32: Summarized Duncan's test and K-W test results for group of TQM constructs vs. uncertainty avoidance values

TQM Construct Name	Grouping (Duncan's test)			The Subset consisting higher Mean ranks (K-W test)
	Subset 1	Subset 2	Subset 3	
Strategic Planning	Low uncertainty avoidance	Moderate uncertainty avoidance High uncertainty avoidance	Very high uncertainty avoidance	Subset 3 then Subset 2 then Subset 1
Information Analysis	Low uncertainty avoidance	Moderate uncertainty avoidance High uncertainty avoidance	Very high uncertainty avoidance	Subset 3 then Subset 2 then Subset 1
Human Resource Focus	Low uncertainty avoidance	Moderate uncertainty avoidance High uncertainty avoidance	Very high uncertainty avoidance	Subset 3 then Subset 2 then Subset 1
Process Management	Low uncertainty avoidance	Moderate uncertainty avoidance High uncertainty avoidance	Very high uncertainty avoidance	Subset 3 then Subset 2 then Subset 1
Continuous Improvement	Low uncertainty avoidance	Moderate uncertainty avoidance High uncertainty avoidance	Very high uncertainty avoidance	Subset 3 then Subset 2 then Subset 1
Business Results	Low uncertainty avoidance	Moderate uncertainty avoidance High uncertainty avoidance	Very high uncertainty avoidance	Subset 3 then Subset 2 then Subset 1

From table 7-32 given above, its shows that employees with moderate and high uncertainty avoidance values were grouped into subset 2 which means that they share the same perceptions towards implemented quality practices related to these TQM constructs. On the other hand, employees with very high uncertainty avoidance were in subset 3 and those with low uncertainty avoidance values were in subset 1. By checking the means rank ratings, it was noted that employees in subset 3 i.e. those with very high uncertainty avoidance had more positive perception toward implemented quality practices than those in subset 2 and 1.

To sum up, employees with very high uncertainty avoidance (highest means ratings scores) had more positive perception towards the implemented TQM practices followed by those with high uncertainty avoidance.

7.3.3.2.2 Qualitative validation "Interviewees feedback"

By analyzing the collected interviewees feedback and analyzed in Appendix 3-5 (uncertainty avoidance vs. TQM constructs), interviewees with very high uncertainty avoidance followed by those with high uncertainty avoidance always scored higher means than the employees with lower levels of uncertainty avoidance, which implied of a more positive perception towards the implemented TQM practices than those of moderate and low levels. This qualitative finding supports clearly the above quantitative finding and validates it. Moreover, this finding supports the literature presented in section 4.3.3.1.2; where Lagrosen (2002) stated that two dimensions of culture power distance and uncertainty avoidance affect the approach taken for implementation of TQM.

7.3.3.3 Collectivisim values

The third subset Hypotheses related to Collectivism values is as follows:

Ho: There is no significant difference among the employees of different Collectivism values and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among the employees of different Collectivism values and their perception towards the level of implementing quality practices underlying TQM constructs.

Similar to previous hypothese test, in order to test the above hypothese, K-W test and Duncan's test were done to the collected survey data (quantitative data).

7.3.3.3.1 Kruskal-Wallis Test

From K-W test table 7-33 in Appendix-T (detailed table results in Appendix 2-E-10), the p-values for all TQM constructs is less than 0.05. This indicates that the above Ho is rejected and the alternative hypothesis Ha is accepted, which means that there is a significant difference among employees' of different collectivism values and their perceptions towards the implemented quality practices underlying the TQM constructs.

Duncan's multiple range test was conducted for these constructs, and the results gained from this tests is shown in tables 7-34 and 7-35 in Appendix-T. Full test results and tables are shown in Appendix 2-E-11.

From table 7-34 given in Appendix-T, it shows that employees with moderate, high, and very high collectivism values are joined into one subset "subset 2" which means that these employees share the same perception towards the implemented quality practices related to strategic planning.

Moreover, those employees in subset 2, have a more positive perception than those employees with low collectivism values “subset 1”.

For the remaining TQM constructs, table 7-35 given below clearly shows that employees with moderate and high collectivism values were grouped into one subeset “subset2” implieing that they share the same perception towards the implemented quality practices related to these TQM constructs. Each of low and very high collectivism values were joined into seperate groups “subset 1” and “subset 3” respectively. Moreover, by checking the mean ranks ratings, employees with very high collectivism values “subset 3” had more positive perception towards implemented quality practices than those in subset 1 and 2.

Table 7-35 Summarized Duncan’s test and K-W test results for group of TQM constructs vs. collectivism values

TQM Construct Name	Grouping (Duncan’s test)			The Subset consisting higher Mean ranks (K-W test)
	Subset 1	Subset 2	Subset 3	
Leadership	Low collectivism	Moderate collectivism High collectivism	Very high collectivism	Subset 3 then 2 then 1
Information Analysis	Low collectivism	Moderate collectivism High collectivism	Very high collectivism	Subset 3 then 2 then 1
Customer & Market Focus	Low collectivism	Moderate collectivism High collectivism	Very high collectivism	Subset 3 then 2 then 1
Human Resource Focus	Low collectivism	Moderate collectivism High collectivism	Very high collectivism	Subset 3 then 2 then 1
Process Management	Low collectivism	Moderate collectivism High collectivism	Very high collectivism	Subset 3 then 2 then 1
Continuous Improvement	Low collectivism	Moderate collectivism High collectivism	Very high collectivism	Subset 3 then 2 then 1
Business Results	Low collectivism	Moderate collectivism High collectivism	Very high collectivism	Subset 3 then 2 then 1

In summary, employees with very high and high collectivism values always scored higher means ratings than employees with the other levels of collectivism. It implied that these employees with higher levels of collectivism (very high and high) have a more positive perception towards the implemented TQM practices and constrcuts than those employees with lower levels of collectivism.

7.3.3.3.2 Qualitative validation "Interviewees feedback"

By analyzing the collected interviewees' feedback and analyzed in Appendix 3-5 (collectivism vs. TQM constructs), interviewees with higher collectivism (very high and high) always scored higher means ratings than the other levels of collectivism, which implied of a more positive perception towards the implemented TQM practices than those of moderate and low collectivism levels. Thus, this qualitative finding again supports the above quantitative finding and validates it clearly. In addition, such findings are also supported by the literature (as mentioned in section 4.3.3.1.2) where collectivism mediates positively TQM implementation and a critical requirement for successful TQM implementation as it promotes co-operation, endurance, persistence, and obedience(Kumar, 2006; Walumbwa and Lawler, 2003; Yen et al., 2002).

7.3.3.4 Quality performance Orientation values

The fourth subset Hypotheses related to quality performance orientation value is as follows:

Ho: There is no significant difference among the employees of different quality performance orientation values and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among the employees of different quality performance orientation values and their perception towards the level of implementing quality practices underlying TQM constructs.

Similar to previous hypothese test, in order to test the above hypothese, K-W test and Duncan's test were done.

7.3.3.4.1 Kruskal-Wallis Test

From K-W test table 7-36 in Appendix-T (detailed table results in Appendix 2-E-10), the p-values for all TQM constructs is less than 0.05. This indicates that the above Ho is rejected and the alternative hypothesis Ha is accepted, which means that there is a significant difference among employees' of different quality performance orientation values and their perceptions towards the implemented quality practices underlying the TQM constructs.

Duncan's multiple range test was conducted for these constructs, and the results gained from this tests is shown in the summarized table 7-37 in Appendix-T. Full test results and tables are shown in Appendix 2-E-11.

Table 7-37 Summarized Duncan's test and K-W test results for group of TQM constructs vs. Quality performance orientation values

TQM Construct Name	Grouping (Duncan's test) for "Quality Performance Oriented Level"				The Subset consisting higher Mean ranks (K-W test)
	Subset 1	Subset 2	Subset 3	Subset 4	
Leadership	Low	Moderate	High	Very high	Subset 4 then 3 then 2 then 1
Strategic Planning	Low	Moderate	High	Very high	Subset 4 then 3 then 2 then 1
Customer & Market Focus	Low	Moderate	High	Very high	Subset 4 then 3 then 2 then 1
Information Analysis	Low	Moderate	High	Very high	Subset 4 then 3 then 2 then 1
Human Resource Focus	Low	Moderate	High	Very high	Subset 4 then 3 then 2 then 1
Process Management	Low	Moderate	High	Very high	Subset 4 then 3 then 2 then 1
Continuous Improvement	Low	Moderate	High	Very high	Subset 4 then 3 then 2 then 1
Business Results	Low	Moderate	High	Very high	Subset 4 then 3 then 2 then 1

From table 7-37 given above, it shows that employees falling within each level of quality performance orientation i.e. low, moderate, high, and very high quality performance oriented were joined to a separate subset 1, 2, 3, and 4 respectively. It points that these employees of different subsets differs in their perceptions towards the implemented practices related to TQM constructs. Moreover, by checking the means ratings in table 7-36, it showed that employees very high quality performance orientation (subset 4) had the most positive perception towards the implemented quality practices, followed by those in high, then moderate, then low quality performance orientation values respectively.

7.3.3.4.2 Qualitative validation "Interviewees feedback"

By analyzing the collected interviewees' feedback and analyzed in Appendix 3-5 (Quality performance orientation values vs. TQM constructs), interviewees with very high quality performance orientation values always scored higher means ratings followed by high then moderate then low quality performance orientation values, which implied of a more positive perception of these employees (very high quality performance orientation) towards the implemented TQM practices followed by those of high, moderate, and low quality performance orientation values. Hence, this qualitative finding again supports the above quantitative finding and validates it strongly. Moreover, this finding supports the literature (as mentioned in section 4.3.3.1.3.2.) which suggested that performance-oriented societies may be positively associated with perceived use of TQM practices (Javidan, 2004; McAdam, 2000).

7.3.3.5 Personal-related quality ethical values

The fifth subset Hypotheses related to personal-related quality ethical value is as follows:

Ho: There is no significant difference among the employees of different personal-related quality ethical values and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among the employees of different personal-related quality ethical values and their perception towards the level of implementing quality practices underlying TQM constructs.

Similar to previous hypothese test, in order to test the above hypothese, K-W test and Duncan’s test were done.

7.3.3.5.1 Kruskal-Wallis Test

From K-W test table 7-38 in Appendix-T (detailed table results in Appendix 2-E-10), only the p-values for leadership constructs is less than 0.05. This indicates that the above Ho is rejected in case of leadership construct and the alternative hypothesis Ha is accepted, which means that there is a significant difference among employees’ of different quality performance orientation values and their perceptions towards the implemented quality practices underlying the leadership constructs.

Duncan’s multiple range test was conducted for this construct, and the results gained from this test is shown in table 7-39 in Appendix-T. Full test results and tables are shown in Appendix 2-E-11.

From table 7-39 in Appendix-T, it shows that employees with low, moderate, high, and very high personal quality ethical values fall in the same subset “1”, that, in return, means that they share the same perceptions towards the implemented quality practices related to leadership construct.

From the above findings, it shows that employees with different personal related quality ethical values had no significance difference in their perceptions towards implementing all TQM constructs’ practices. However, by further comparing means ratings (Table 7-38), it was found that employees with high and very high personal related quality ethical values have more positive perceptions towards implemented TQM practices related to leadership than other levels of personal quality ethical values.

7.3.3.5.2 Qualitative validation “Interviewees feedback”

From collected interviewees’ feedback and analyzed in Appendix 3-5 (Personal-related quality ethical values vs. TQM constructs), there was difference among interviewees with different personal related quality ethical values and their perception towatds implemented TQM practices underlying all constructs. Moreover, by examing the means’ ratings of employees’ quality ethical values related to leadership, it was found that employees with high and very high personal quality ethical values had higher means ratings than the others levels towards most TQM constructs and practices. This qualitative finding in return supports the quantitative finding above and validates it clearly. Moreover, this finidng is supported by the literature presented in section 4.3.3.1.3.1, where these ethical values were seen as a main supporter of the TQM implementation process that would impact it positively (Al-Zamaney *et. al*., 2002).

7.3.3.6 Work-related quality ethical values

The sixth subset Hypotheses related to work-related quality ethical value is as follows:

Ho: There is no significant difference among the employees of different work-related quality ethical values and their perception towards the level of implementing quality practices underlying TQM constructs.

VS

Ha: There is a significant difference among the employees of different work-related quality ethical values and their perception towards the level of implementing quality practices underlying TQM constructs.

Similar to previous hypothese test, in order to test the above hypothese, K-W test and Duncan's test were done.

7.3.3.6.1 Kruskal-Wallis Test

From K-W test table 7-38 in Appendix-T (detailed table results in Appendix 2-E-10), there were no p-values that is less than 0.05 for all TQM constructs. This indicates that the above Ho is accepted and the alternative hypothesis Ha is rejected, which means that there is no significant difference among employees' of different work related quality ethical values and their perceptions towards the implemented quality practices underlying all TQM constructs. Hence, no further Duncan's post-hoc test analysis is required in this case.

However, by comparing the means' ratings in table 7-40, it shows that employees with high and very high work related quality ethical values had more positive perception toward most of the implemented TQM practices than those of other levels.

7.3.3.6.2 Qualitative validation "Interviewees feedback"

Reference to interviewees' feedback collected and analyzed in appendix 3-5 (Work-related quality ethical values vs. TQM constructs), there are no significant difference (as differences were small and not upto signficance level) employees of different work realted quality ethical values and thier perceptions towards all implemented practices underlying TQM conatructs except those underyling Customer and Market focus contsruct. Thus; this qualitative finding supports the quantiative findings of no significance difference among employees' with different work related ethical values and their perception towards the implemented practices underlying most TQM constructs. The significance found in interviewees' feedback related to customer and market focus construct where employees with moderate work quality ethical values socred higher means' rating than other levels and it might be verified to the small sample size (30 interviews) of interview where a one person's feedback (related to the quality ethicl values quesitons) affects highly in the results obtained than results obtained in the surveys collected (937 surveys), where one person's feedback would not cause a huge and significant difference in the results obtained.

To sum up, the qualitative findings above confirms that there are no significance difference among employees with different work related quality ethical values and their perception towards implemented practices underlying most TQM constructs. This supports the quantitative finding stated above and validate it clearly. Moreover, this findings is supported by the literature as mentioned earlier in section 7.3.3.5.2 and also 4.3.3.1.3.1, where literature supports the positive impact of such ethical values on TQM implementation process and is seen as a vital supporter for its success.

7.4 Summary

This chapter reported on inferential statistics that enabled the researcher to come to the conclusions that extend beyond the immediate data as it presents the quantitative analysis outcomes supported and validated by the qualitative analysis outcomes. Hence, these inferential statistic tools were utilized to investigate if the control variables (Difference in managerial levels, Demographical variables, TQM familiarity, power distace values, uncertainity avoidance values, collectivisim values, Quality performance orientation, Personal-related quality ethic values, and work-related quality ethical values) are affecting significantly employee's perceptions towards implemented TQM practices was investigated. In addition, this chapter also presented the procedures and series of analysis applied to both quantitative and qualitative data along with their findings and outcomes highlighted.

For the quantitative data collected (surveys responses), Normality test was utilized through using One-sample Kolmogorov-Smirnov test to determine if the data collected is distributed normally or not in order to decide which type of parametric or non-parametric tests is applicable. As the data were found not normal, non-parametric tests were used to investigate the respondents' inferences towards the proposed research questions and hypotheses.

After that, the proposed sets of research hypotheses were tested and verified through both quantitative and qualitative data collected during this research using the appropriate testing analysis tools and techniques, such as the Kruskal-Wallis test which was used to verify if there was any significance difference in employees perception (under a specific set of control variables i.e. difference managerial levels, demographical variables, TQM familiarity,and national culture values) towards implemented quality practices related to TQM constructs. If significance was found (p-value

< 0.05), a further step of analysis was done, utilizing Post Hoc multiple comparison tests (Duncan's test) to verify which group of employees share the same perceptions towards the implemented quality practices and which one had more positive perceptions than the others. The findings of these tests showed that difference in managerial levels, job experience, and both personal and work related quality ethical values do not have any significant effect in employee's perception towards implemented TQM practices. As for TQM familiarity, power distance, uncertainity avoidance, collectivisim, and quality performance orientation values, it was found that the higher is the level of this value within the employee, the more positive perception towards implemented TQM practices. Moreover, PIC employees had more positive perceptions than KOC and KNPC employees towards the implemented TQM practices. Finally, employees with Arabic (non Kuwaitis), Asian, and other nationalities had more positive perceptions towards implemented TQM practices than Kuwaitis and Western employees.

As seen in this chapter, all inference questions and hypothesis proposed were tested with quantitative data (questionnaires responses) and these quantitative findings were all validated successfully by the qualitative data (interviews). This ensures the validity of the results obtained and supports it clearly.

The next chapter will present the structural equation modeling (SEM) analysis, that is mainly utilized to build the proposed research conceptual framework and test the relationship between each of these framework's components.

CHAPTER 8

Structural Equation Modeling (SEM) Analysis

8.1 Introduction

In the previous chapters, the qualitative and quantitative analysis results of the collected questionnaires and interviews conducted were outlined, whilst the reliability and validity of the variables were tested and confirmed using Cronbach's alpha and factor analysis respectively. This chapter describes the second phase of the research data analysis as it focuses on the analysis of the validated and reduced variables formulated in Chapter 6. Furthermore, the obtained empirical data from the distributed questionnaire survey will be utilized in this Chapter to test the set of proposed hypotheses related to the proposed research conceptual framework and test the relationship between all building blocks of this study's framework. Moreover, Structural equation modeling (SEM) Analysis technique was be utilized to perform this framework's testing and investigation. Finally, a detailed discussion of the empirical findings obtained from this SEM analysis is presented at the end of this chapter.

8.2 Structural Equation Modeling (SEM)

SEM is a widely used analysis technique in many academic research and empirical studies (Hair *et al.,* 1998; Schmacker and Lomax, 2004; ayasinghe et. al., 2012; Henson and Traill, 2000; Nakamura et al., 2001) with great success.
SEM has two basic advantages: (1) it allows for the estimation of a series, but independent, multiple regression equations simultaneously, and (2) it has the ability to incorporate latent variables into the analysis and accounts for measurement errors in the estimation process (Hair *et al.,* 1998).

Structural equation modeling (SEM) is a statistical methodology with a confirmatory approach to analyze multivariate data. Others define SEM as a sophisticated form of path analysis providing greater theoretical validity and statistical precision clarifying the direct or indirect interrelationships among variables relative to a given variable(Schreiber *et. al.;* 2006~~)~~

The general SEM model is composed of two sub-models including: a measure model and a structural model. The measurement model identifies relations between the observed and latent variables. By means of confirmatory factor analysis, the measurement model provides the link between scores on an instrument and the constructs that they are designed to measure.

One of the strengths of the SEM technique is that it estimates a system of equations that specify all possible causal linkages and relationships among a set of variables (Lleras,2005).. It specifies that particular latent variables directly or indirectly influence certain other latent variables in the model (Byrne, 2001). Direct causal effects are effects that go directly from one variable to another. Indirect effects occur when the relationship between two variables is moderated by one or more variables (Lleras,2005). The total effect is represented by the sum of these direct and indirect effects (Kim & Kang, 2001). In addition, SEM technique permits the measurement of several variables and their interrelationships simultaneously and. Thus, it is more versatile than other multivariate techniques because it allows for simultaneous, multiple dependent relationships between variables (Hoe,2008). The main benefit in segregating the total effect into direct and indirect effects is to enables researchers to break down or decompose correlations among variables into direct and indirect components and thus helping researchers to disentangle the complex of interrelationships among variables and identify the most significant pathways involved in predicting an outcome (Lleras,2005). Moreover, such segregation will also enable researchers to deal with multiple and inter-related dependence relationships, while providing statistical efficiency and to assess directly unobservable concepts for which respondents possess subjective assessments in terms of a number of observable components (Hair et al., 1998).

The structural model also tests for the significance, strength and directionality of the paths as guided by theory. Thus, the structural model allows for certain relationships among the latent variables depicted by the direction of the arrow (Schumacker & Lomax, 2004).

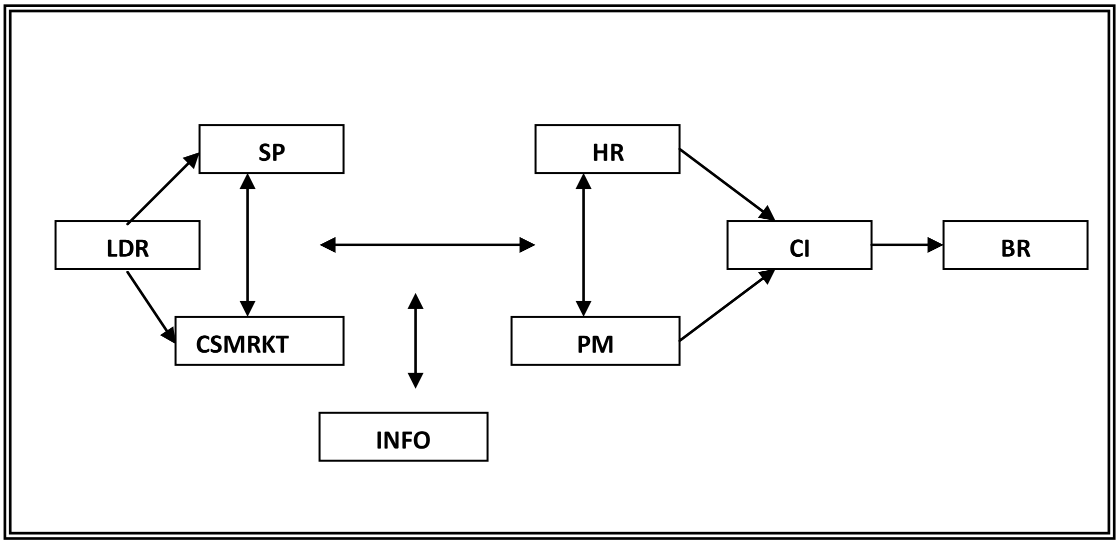
Structural equation modeling procedure required a large sample size because the estimation procedure and the estimation for the model fit are based on the assumption of a large sample size (Hair *et al*., 1998). Kline (1998) argued that “sample sizes that exceed 200 cases could be considered large” (p. 12). Hoelter (1983) asserted that a sample size of 200 was a critical sample size. Kelloway (1998) suggested that a sample size of at least 200 observations would be an appropriate minimum for structural equation modeling. Hair *et al.* (1998) also recommended that a size ranging from 100 to 200 is an appropriate size for model estimation. As the sample size in this research is 937, it meets the requirements for utilizing the structural equation modeling technique.

For this research, two Structural equation modeling were constructed to build this research framework in two phases. The main objective of these two phases is to be able to compare the difference in relationships among these framework components before and after introducing the control variables into the research framework. The first phase will be utilized to build the TQM implementation components (constructs) model and test the relationship among these constructs how they are affecting each other's before introducing any controlling variables into the model. The second phase was utilized to build the full conceptual framework of this study where the control variables were introduced into the TQM components model developed to test the effect of these control variables on the relationship between these components, and most importantly highlight how the relationship is effected between these implemented TQM practices and the business results gained from implementing such practices and see if these control variables are actually controlling these relationships or has no significant impact on it.

8.2.1 Phase I: TQM implementation Model Buildings

The proposed conceptual structural model depicted in Figure 8-1a is a replication of the TQM implementation framework presented in Figure 4-4 that was utilized as the Phase-I proposed structural equation model.

Figure 8-1a: Proposed Structural Equation Model



There are eight variables in this model including Leadership (LDR) – ξ_1, Strategic Planning (SP) - η_1, Customer Market Focus (CSMRKT) – η_2, Information and Analysis (INFO) – η_3, Human Resource (HR) – η_4, Process Management (PM) – η_5, Continuous Improvement (CI) – η_6, and Business Results (BR) – η_7.

LDR is regarded as independent (exogenous) variables, while CSMK, INFO, HR, PM, CI, and BR are dependent (endogenous) variables. Endogenous latent variables are affected by exogenous variables in the model, either directly or indirectly. They are explained by the model because their causal antecedents are specified within the model under consideration.

The general structural equation model relating the above latent exogenous and endogenous variables is as follows:

$$\eta = \beta\eta + \tau\xi + \zeta$$

Where η is a (7 ×1) vector of latent endogenous variables, ξ is a (1×1) vector of the latent exogenous variables; τ is a (7×1) vector of coefficients relating the 1 exogenous variable to 7 endogenous variables; β is a (7 × 7) matrix of coefficients of relating 7 endogenous variables to one another. ς is a (7× 1) vector of errors in the structural equations.

Moreover, having fitted the model in previous section, the 28 main hypotheses proposed in Chapter 4, mainly, Hypothesis 1 through 7 that are represented by the 28 causal relationships in the model and are tested in following section.

A further step is taken here not only to investigate the direct effects between these components/construct but a more in-depth investigation in these relationship by analyzing the indirect relationships as well. As highlighted earlier in section 8.2, this is done to capture all possible effects in order to detect the deficiencies in the interrelationships between these different construct so they can be revised and enhanced accordingly (Hoe, 2008; Schumacker & Lomax, 2004). These effects, the direct and indirect effect ,are tested through a group of 49 sub-hypotheses as stated in the below Table 8-1a to address these main hypotheses respectively.

Table 8-1a: Sub-Hypotheses to be tested in Phase-I model

Sub-Hypotheses	**Relationships** **“between variables”**
H11a: Leadership (LDR) will positively & directly affect Strategic Planning (SP)	LDR → SP
H12a: Leadership (LDR) will positively & directly affect Customer & Market Focus (CSMRKT)	LDR → CSMRKT
H12b: Leadership (LDR) will positively & indirectly affect Customer & Market Focus (CSMRKT)	LDR → CSMRKT
H13a: Leadership (LDR) will positively & directly affect Information Analysis (INFO)	LDR → INFO
H13b: Leadership (LDR) will positively & indirectly affect Information Analysis (INFO)	LDR → INFO

H14a: Leadership (LDR) will positively & directly affect Continuous Improvement (CI)	LDR → CI
H14b: Leadership (LDR) will positively & indirectly affect Continuous Improvement (CI)	LDR → CI
H15a: Leadership (LDR) will positively & directly affect Human Resource (HR)	LDR → HR
H15b: Leadership (LDR) will positively & indirectly affect Human Resource (HR)	LDR → HR
H16a: Leadership (LDR) will positively & directly affect Process Management (PM)	LDR → PM
H16b: Leadership (LDR) will positively & indirectly affect Process Management (PM)	LDR → PM
H17a: Leadership (LDR) will positively & directly affect (BR)	LDR → BR
H17b: Leadership (LDR) will positively & indirectly affect (BR)	LDR → BR
H21a: Strategic Planning (SP) will positively & directly affect Customer & Market Focus (CSMRKT)	SP → CSMRKT
H22a: Strategic Planning (SP) will positively & directly affect Information Analysis (INFO)	SP → INFO
H22b: Strategic Planning (SP) will positively & indirectly affect Information Analysis (INFO)	SP → INFO
H23a: Strategic Planning (SP) will positively & directly affect Continuous Improvement (CI)	SP → CI
H23b: Strategic Planning (SP) will positively & indirectly affect Continuous Improvement (CI)	SP → CI
H24a: Strategic Planning (SP) will positively &directly affect Human Resource (HR)	SP → HR
H24b: Strategic Planning (SP) will positively & indirectly affect Human Resource (HR)	SP → HR
H25a: Strategic Planning (SP) will positively &directly affect Process Management (PM)	SP → PM
H25b: Strategic Planning (SP) will positively & indirectly affect Process Management (PM)	SP → PM
H26a: Strategic Planning (SP) will positively & directly affect Business Results (BR)	SP → BR

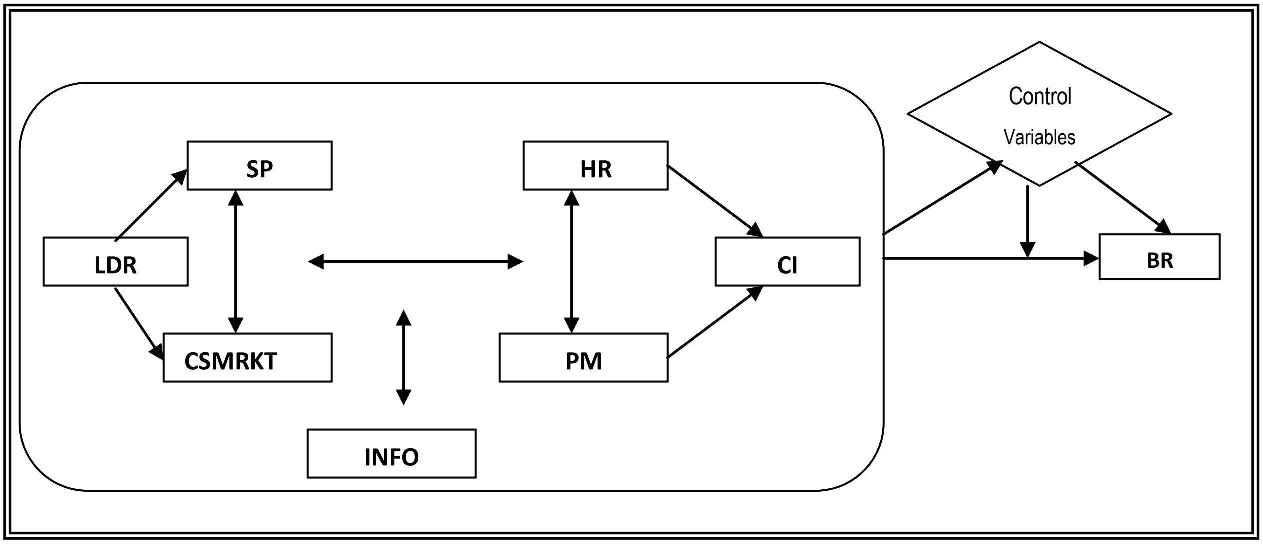
H26b: Strategic Planning (SP) will positively & indirectly affect Business Results (BR)	SP → BR
H31a: Customer & Market Focus (CSMRKT) will positively & directly affect Information Analysis (INFO)	CSMRKT → INFO
H32a: Customer & Market Focus (CSMRKT) will positively & directly affect Continuous Improvement (CI)	CSMRKT → CI
H32b: Customer & Market Focus (CSMRKT) will positively & indirectly affect Continuous Improvement (CI)	CSMRKT → CI
H33a: Customer & Market Focus (CSMRKT) will positively & directly affect Human Resource (HR)	CSMRKT → HR
H33b: Customer & Market Focus (CSMRKT) will positively & indirectly affect Human Resource (HR)	CSMRKT → HR
H34a: Customer & Market Focus (CSMRKT) will positively & directly affect Process Management (PM)	CSMRKT → PM
H34b: Customer & Market Focus (CSMRKT) will positively & indirectly affect Process Management (PM)	CSMRKT → PM
H35a: Customer & Market Focus (CSMRKT) will positively & directly affect Business Results (BR)	CSMRKT → BR
H35b: Customer & Market Focus (CSMRKT) will positively & indirectly affect Business Results (BR)	CSMRKT → BR
H41a: Information Analysis (INFO) will positively & directly affect Continuous Improvement (CI)	INFO → CI
H42a: Information Analysis (INFO) will positively & directly affect Human Resource (HR)	INFO → HR
H42b: Information Analysis (INFO) will positively & indirectly affect Human Resource (HR)	INFO → HR
H43a: Information Analysis (INFO) will positively & directly affect Process Management (PM)	INFO → PM
H43b: Information Analysis (INFO) will positively & indirectly affect Process Management (PM)	INFO → PM
H44a: Information Analysis (INFO) will positively & directly affect Business Results (BR)	INFO → BR
H44b: Information Analysis (INFO) will positively & indirectly affect Business Results (BR)	INFO → BR

H51a: Continuous Improvement (CI) will positively, & directly affect Human Resource (HR)	CI → HR
H52a: Continuous Improvement (CI) will positively & directly affect Process Management (PM)	CI → PM
H52b: Continuous Improvement (CI) will positively & indirectly affect Process Management (PM)	CI → PM
H53a: Continuous Improvement (CI) will positively & directly affect Business Results (BR)	CI → BR
H53b: Continuous Improvement (CI) will positively & indirectly affect Business Results (BR)	CI → BR
H61a: Human Resource (HR) will positively & directly affect Process Management (PM)	HR → PM
H62a: Human Resource (HR) will positively & directly affect Business Results (BR)	HR → BR
H62b: Human Resource (HR) will positively & indirectly affect Business Results (BR)	HR → BR
H71a: Process Management (PM) will positively & directly affect Business Results (BR)	PM → BR

8.2.2 Phase II: TQM Conceptual Model Buildings with Control Variables

The Phase-II model presents the study's full conceptual framework that consisted of all research components that are in the proposed conceptual structural model depicted in Figure 8-2a. This figure is a replication of the TQM implementation framework presented in Figure 4-1 that was utilized as the Phase-II proposed structural Equation model.

Figure 8-2a: Proposed Structural Equation Phase-II Model



In this phase: this model consists of the TQM implementation model (TQM components with TQM business results) and the set of control variables (TQM familiarity, national culture values). Both managerial levels variables and demographical variables were not included within the set of control variables included in this model.

Although both difference in managerial levels variable and some demographical variables might have significant effects with major variables in the framework, yet their significant effects were studied away from the mode and not included in the SEM analysis. That is because these variables are non-stochastic (categorical) type of measurements and certain analysis techniques different from SEM are used to analyze such type of measurements. However, by using other analysis techniques, their effects were studied in the previous chapter (chapter 7, sections 7.3.1.1 and 7.3.1.5). Moreover, their role was also investigated in effecting the employees' perceptions towards the implemented quality practices.

Hence, there are fifteen variables in this model including: Leadership (LDR) – ξ_1, Strategic Planning (SP) - η_1, Customer Market Focus (CSMRKT) – η_2, Information and Analysis (INFO) – η_3, Human Resource (HR) – η_4, Process Management (PM) – η_5, Continuous Improvement (CI) – η_6, and Business Results (BR) – η_7, the set of Control Variables (TQM Familiarity (TQMFM)– η_8, Power Distance (PWR) – η_9, Uncertainty Avoidance (UNC) – η_{10}, Collectivism (COL) – η_{11},Quality Performance Orientation (QPRF) - η_{12}, Personal related quality ethical values (PETHC) – η_{13}, and Work related quality ethical values (WETHC) – η_{14}).

LDR is regarded as independent (exogenous) variable, while CSMK, INFO, HR, PM, CI, BR, TQMFM, PWR, UNC, COL, QPRF, PETHC, and WETHC are dependent (endogenous) variables. Endogenous latent variables are affected by exogenous variables in the model, either directly or indirectly. They are explained by the model because their causal antecedents are specified within the model under consideration.

Similar to Phase-I model, the general structural equation model relating the above latent exogenous and endogenous variables is as follows:

$$\eta = \beta\eta + \tau\xi + \zeta$$

Where η is a (14 ×1) vector of latent endogenous variables, ξ is a (1×1) vector of the latent exogenous variables; τ is a (14 × 1) vector of coefficients relating the 1 exogenous variable to the 7 endogenous variables; β is a (14 × 14) matrix of coefficients of relating the 14 endogenous variables to one another. ς is a (14× 1) vector of errors in the structural equations.

Moreover, the main hypotheses proposed in Chapter 4, mainly, Hypothesis 1 through 15 that are represented along with their sub-hypotheses (testing the direct and indirect effect of these main hypotheses) in Tables 8-9 and Tables 8-10 were all tested to see the impact of introducing the control variables into the model (Phase-II model) . In addition, the main hypotheses presented in chapter 4 that were related to control variables and their relationship with TQM constructs shall be all tested and verified as well in these tables.

8.3 The Measurement Model

A prior step to applying the structural equation model (SEM) analysis technique, a step of assessing the model adequacy and validity is done through convergent and discriminant validity test. This step is a further extension to the process of measurement initial validation done in chapter 6.

8.3.1 Convergent validity

Convergent validity is measured by reliability (Cronbach's alpha) that was addressed already in chapter 6, composite reliability, and average variance extracted (AVE). Once the final model is obtained, the composite reliability and extracted variance of each construct can be assessed. Composite reliability is the extent to which a variable or a set of variables is consistent in what it is intended to measure. The reason for further computing the composite reliability (Fornell & Larcker; Hair *et al.,* 1998) is due to the fact that although it is similar to Cronbach's alpha reliability yet it considers the actual factor loadings instead of assessing that each item is equally weighted, whereas Cronbach's alpha does not ensure unidimensionality of the construct but contrarily assumes it exists (Hair *et. al.*, 1998). Therefore composite reliability that is a measure of internal consistency is a more reliable alternative measure and it was calculated for each construct by the following formula:

$$\text{Composite Reliability} = (\Sigma\text{Standardized loadings})^2 / [(\Sigma\text{Standardized loadings})^2 + \Sigma|\text{error}|]$$

$$= (\sum \lambda i)^2 / [(\sum \lambda i)^2 + \sum |\delta i|]$$

Where, standardized loadings and associated errors are calculated from the structure equation technique among LISREL output.

Hair *et al.* (1998) recommended 0.50 and above as evidence of composite reliability. Table 8-2a in Appendix-T shows a high composite reliability for Phase-I model of all constructs varying from 0.871 to 0.955 ensuring a high internal consistency and are, therefore, within the range of the recommendations. Similar situation in Phase-II model as Table 8-2b in Appendix-T showed a high composite reliability of all variables varying from 0.758 to 0.948 ensuring a high internal consistency and within the range of the recommendations. By a basic comparison between the results of both models, composite reliability values of TQM components (constructs) in Phase-II model are higher than in Phase-I model.

Another measure of reliability of constructs is the average variance extracted (AVE) (Hair *et al*., 1998; Sharma, 1996; Fornell and Larcker, 1981). It reflects the overall amount of explained variations accounted for by the original components (constructs) and is computed by the following formula:

Average Variance Extracted (AVE)

$$= \Sigma(\text{Standardized loadings})^2 \,/\, [\Sigma(\text{Standardized loadings}^2)+\Sigma|\text{error}|]$$

$$= \sum\lambda^2 i \,/\, [\sum\lambda^2 i + \sum|\delta i|]$$

A high-AVE reflects a good representation of the original scale variable of the corresponding latent constructs. As a guideline, an AVE above or equal to 0.50 is considered acceptable (Hair *et al.*, 1998) and all AVEs for Phase-I model shown in Table 8-2a given below shows high AVE ranging from 0.6299 to 0.752 and meet the recommendation. This ensures that each construct (latent variable) reflected a quite good presentation of the scale variables underlying these constructs. In addition, Phase-II model AVE values are shown below in Table 8-2b ranging from 0.515 to 0.859 and meet the recommendation. Similar to composite reliability remark, AVE values of TQM components in Phase-II model has increased generally than in Phase-I model.

Table 8-2a: Reliability and AVE of TQM constructs (Phase I Model)

Constructs Name	Construct Composite (Reliability [a])	Variance Extracted (AVE [b])
1. Leadership	0.871	0.693
2. SP	0.836	0.6299
3. CSMRKT	0.933	0.735
4. INFO	0.881	0.712
5. HR	0.901	0.694
6. PM	0.955	0.752
7. CI	0.858	0.672
8. BR	0.909	0.716

Notes:
[a] Composite reliability = Sum of standardized loading^2/(Sum of standardized loading)^2+Sum of indicator measurement error =
$(\sum \lambda i)^2 / [(\sum \lambda i)^2 + \sum|\delta_i|]$;

[b] AVE (Average Variance Extracted) = Sum of squared standardized loadings / Sum of squared standardized loadings + Sum of indictor measurement error = $\sum \lambda i^2 / \sum \lambda i + \sum|\delta_i|$.

Table 8-2b: Reliability and AVE of TQM constructs (Phase II Model)

Constructs Name	Construct Composite (Reliability [a])	Variance Extracted (AVE [b])
1. Leadership	0.901	0.753
2. SP	0.830	0.620
3. CSMRKT	0.911	0.774
4. HR	0.916	0.784
5. PM	0.943	0.847
6. INFO	0.907	0.766
7. CI	0.889	0.731
8. BR	0.939	0.836
9. TQMFM	0.892	0.734
10. PWR	0.758	0.515
11. UNC	0.917	0.787
12.COL	0.903	0.756
13. QPRF	0.948	0.859
14. PETHC	0.853	0.661
15. WETHC	0.888	0.726

8.3.2 Correlation Structure among TQM constructs

Tables 8-3a and Table 8-3b shown below represents the pair wise correlations between each pair of TQM constructs of each Model (Phase-I and phase II) with its p-value to determine whether the correlation is strong/weak, positive/negative, and significant/ Insignificant correlation.

Table 8-3a: Correlation structure between research constructs (Phase-I Model)

	SP	CSMRKT	INFO	CI	HR	PM	BR	LDR
SP	1.00							
CSMRKT	0.74 [a] 0.55 [b] 0.00 [c]	1.00						
INFO	0.80 [a] 0.64 [b] 0.00 [c]	0.69 0.48 0.00	1.00					
CI	0.81 [a] 0.66 [b] 0.00 [c]	0.67 0.45 0.00	0.78 0.61 0.00	1.00				
HR	0.78 [a] 0.61 [b] 0.00 [c]	0.59 0.35 0.00	0.76 0.58 0.00	0.83 0.69 0.00	1.00			
PM	0.78 [a] 0.61 [b] 0.00 [c]	0.77 0.59 0.00	0.78 0.61 0.00	0.80 0.64 0.00	0.70 0.49 0.00	1.00		
BR	0.74 [a] 0.55 [b] 0.00 [c]	0.79 0.62 0.00	0.73 0.53 0.00	0.79 0.62 0.00	0.67 0.45 0.00	0.79 0.62 0.00	1.00	
LDR	0.78 [a] 0.61 [b] 0.00 [c]	0.74 0.55 0.00	0.65 0.42 0.00	0.71 0.50 0.00	0.69 0.48 0.00	0.68 0.46 0.00	0.69 0.48 0.00	1.00

Notes:

[a] Correlation

[b] Correlation square (R^2 = coefficient of determination)

[c] P-value of the correlation.

Table 8-3b: Correlation structure between research constructs (Phase-II Model)

	SP	CSMRK T	HR	PM	INFO	CI	BR	TQMF M	PWR	UNC	COL	QPR F	PETH C	WETH C	LD R
SP	1.00														
CSMRK T	0.82[a] 0.67[b] 0.00[c]	1.00													
HR	0.84[a] 0.71[b] 0.00[c]	0.68 0.46 0.00	1.00												
PM	0.92[a] 0.85[b] 0.00[c]	0.82 0.67 0.00	0.81 0.66 0.00	1.00											
INFO	0.91[a] 0.83[b] 0.00[c]	0.78 0.61 0.00	0.75 0.56 0.00	0.85 0.72 0.00	1.00										
CI	0.93[a] 0.86[b] 0.00[c]	0.80 0.64 0.00	0.86 0.74 0.00	0.85 0.72 0.00	0.82 0.67 0.00	1.00									
BR	0.86[a] 0.74[b] 0.00[c]	0.75 0.56 0.00	0.72 0.52 0.00	0.85 0.72 0.00	0.79 0.62 0.00	0.83 0.69 0.00	1.00								
TQMFM	0.56[a] 0.31[b] 0.00[c]	0.50 0.25 0.00	0.49 0.24 0.00	0.52 0.27 0.00	0.49 0.24 0.00	0.52 0.27 0.00	0.50 0.25 0.00	1.00							
PWR	0.10[a] 0.01[b] 0.001[c]	0.08 0.006 0.007	0.10 0.01 0.001	0.08 0.006 0.007	0.10 0.01 0.001	0.13 0.02 0.00	0.07 0.005 0.02	0.03 0.0009 0.18*	1.00						
UNC	0.42[a] 0.18[b] 0.00[c]	0.37 0.14 0.00	0.37 0.14 0.00	0.41 0.17 0.00	0.35 0.12 0.00	0.41 0.17 0.00	0.39 0.15 0.00	0.27 0.073 0.00	-0.08 0.006 0.007	1.00					
COL	0.38[a] 0.14[b] 0.00[c]	0.34 0.12 0.00	0.35 0.12 0.00	0.33 0.11 0.00	0.32 0.10 0.00	0.40 0.16 0.00	0.35 0.12 0.00	0.26 0.07 0.00	-0.05 0.003 0.063 *	0.65 0.42 0.00	1.00				
QPRF	0.73 0.53 0.00	0.62 0.38 0.00	0.68 0.46 0.00	0.67 0.45 0.00	0.64 0.41 0.00	0.79 0.62 0.00	0.69 0.48 0.00	0.4 0.16 0.00	0.16 0.03 0.00	0.38 0.14 0.00	0.35 0.122 0.00	1.00			
PETHC	0.05 0.002 0.06*	0.05 0.002 0.062*	0.04 0.002 0.110 *	0.05 0.003 0.063 *	0.05 0.003 0.062 *	0.05 0.003 0.063 *	0.06 0.004 0.03	0.03 0.0009 0.18*	0.05 0.002 5 0.063 *	0.03 0.000 9 0.179 *	-0.01 0.000 1 0.38*	0.04 0.002 0.11*	1.00		
WETHC	0.03 0.000 9 0.179	0.03 0.0009 0.179*	0.01 0.000 1	0.03 0.001 0.18*	0.03 0.001 0.179	0.01 0.000 1	0.02 0.000 4 0.270	0.03 0.0009 0.18*	0.02 0.000 4 0.270	0.06 0.004 0.03	0.04 0.002 0.11*	0.01 0.0001 0.38*	0 0 0.50*	1.00	

	*		0.38*		*	0.38*	*		*						
LDR	0.86 0.74 0.00	0.77 0.59 0.00	0.70 0.49 0.00	0.77 0.59 0.00	0.77 0.59 0.00	0.77 0.59 0.00	0.72 0.52 0.00	0.63 0.4 0.00	0.05 0.002 5 0.063 *	0.41 0.17 0.00	0.41 0.17 0.00	0.60 0.36 0.00	0.05 0.0025 0.063*	0.05 0.0025 0.063*	1.00

Notes:

[a] Correlation

[b] Correlation square (R^2 = coefficient of determination)

[c] P-value of the correlation.
* Correlation is not significant as the P-value> 0.05

As indicated in the given Table 8-3a, Customer & Market Focus (CSMRKT) has strong positive and significant correlation (0.74, P-value = 0.000) with Strategic Planning (SP). Information and Analysis (INFO) has also strong positive and significant correlation (0.80, p-value = 0.000) with Strategic Planning (SP). Along the same pattern, Continuous Improvement (CI) has strong positive and significant correlation (0.81, P-value = 0.000) with Strategic Planning (SP). While both Human Resources (HR) and Process Management (PM) has strong positive and significant correlations with Strategic Planning (SP) (78%, P-value = 0.000). Information and Analysis (INFO) has strong positive and significant correlation (69%, P-value = 0.000) with Customer & Market Focus (CSMRKT). Continuous Improvement (CI) has strong positive and significant correlation (67%, P-value = 0.000) with Customer & Market Focus (CSMRKT). Both Human Resources (HR) and Process Management (PM) have strong positive and significant correlations (59%, P-value = 0.000) and (77%, P-value = 0.000), respectively, with Customer & Market Focus (CSMRKT). Continuous Improvement (CI) has strong positive and significant correlation (78%, P-value = 0.000) with Information and analysis (INFO). Similarly, both Human Resources (HR) and Process Management (PM) have strong positive and significant correlations (59%, P-value = 0.000) and (77%, P-value = 0.000), respectively, with Information and analysis (INFO). Continuous Improvement (CI) has strong positive and significant relationship with both Human Resources (HR) (83%, P-value = 0.000) and Process Management (PM) (80%, P-value = 0.000). Human Resources (HR) has a strong positive and significant correlation (70%, P-value = 0.000) with Process Management (PM).

Similar to the correlation between TQM constructs of Phase-I model, TQM constructs in Phase-II model showed also positive and significant correlation between these constructs as shown in Table 8-3b. It is worth mentioning that the correlation among these constructs was stronger than those in model Phase-I as it scored higher that confirmed the added value of introducing the control variables into the model.

Furthermore, by examining the correlation of the control variables in Table 8-3b, it mostly showed a positive and significant correlation among the control variables and TQM components. Moreover, although the correlation among these variables was not as strong as the correlation with TQM constructs yet the correlation among the control variables themselves scored mainly a positive and significant correlation with one significant but negative correlation that was found between each of PWR and UNC (8%, P-value = 0.007). Moreover, non-significant correlations (the P-value was not less than 0.05) were found between TQMFM and PWR, PWR and COL, PWR and LDR; PETHC and LDR; WETHC and LDR; each of (SP, CSMRKT, HR, PM, INFO, CI, TQMFM, PWR, UNC, COL,QPRF) with PETHC; and each of (SP, CSMRKT, HR, PM, INFO, CI, BR, TQMFM, PWR, COL, QPRF, PETHC) with WETHC.

8.3.3 Discriminant validity

Discriminant validity DV_{xy} describes the degree to which two sets of measurements are able to discriminate between two different concepts. Furthermore, it is applied to assess the inter-correlation between the measures of the model. If the items associated with a measure correlate more highly with each other than with items associated with other measures in the model, the measure is determined to have adequate discriminant validity. One way to measure it is by comparing the shared variance (R^2) among variables, obtained by squaring the correlations (r) (table 8-2a) with the values of AVE. if R^2 is less than AVE, then it would suggest that each model's components are distinct and unidirectional and ensure a discriminant validity of both models. However, a more precise measure of Discriminant validity that is more reliable is the measure introduced by Campbell and Fiske(1959) who were the first ones to introduce the concept of discriminant validity and measured it by calculating the degree to which two scales X and Y are overlapped. Using the following formula

$DV_{xy} = \frac{r_{xy}}{\sqrt{r_x \ r_y}}$, where $r_{x\,y}$ is the correlation between the two scales and r_x is the reliability of the scale x and r_y is the reliability of the scale y, one can assess the extent to which the two scales are overlapped. Table 8-4a shown below gives the discriminant validities between constructs for Phase-I model and Table8-4b shown below for Phase-II model. Discriminant validity around 0.85 or less signifies existence of discriminant validity between the two scales of.

Table 8-4a: Discriminant Validity of the Scale of Measurements (Phase-I Model)

Constructs	**SP**	**CSMRKT**	**INFO**	**CI**	**HR**	**PM**	**BR**
CSMRKT	0.838						
INFO	0.932*	0.761					
CI	0.957*	0.749	0.897*				
HR	0.899*	0.644	0.853*	0.944*			
PM	0.874*	0.816	0.850	0.884*	0.755		
BR	0.849	0.858	0.816	0.895*	0.741	0.848	
LDR	0.915*	0.821	0.742	0.821	0.779	0.746	0.775

Note: * Lack of discriminant validity (DV_{xy}> 0.85)

Table 8-4b: Discriminant Validity of the Scale of Measurements (Phase-II Model)

	SP	CSMRKT	HR	PM	INFO	CI	BR	TQMFM	PWR	UNC	COL	QPRF	PETHC	WETHC
CSMRKT	0.943*													
HR	0.963*	0.744												
PM	1.04*	0.885*	0.872*											
INFO	1.05*	0.858	0.823	0.919*										
CI	1.08*	0.889	0.953*	0.928*	0.913*									
BR	0.974*	0.811	0.776	0.903*	0.856*	0.908*								
TQMFM	0.651	0.581	0.542	0.567	0.545	0.584	0.546							
PWR	0.126	0.096	0.120	0.095	0.121	0.158	0.083	0.036						
UNC	0.481	0.405	0.404	0.441	0.384	0.454	0.420	0.299	0.096					
COL	0.439	0.375	0.384	0.358	0.353	0.446	0.380	0.29	0.060	0.714				
QPRF	0.822	0.667	0.729	0.709	0.690	0.860	0.731	0.435	0.189	0.408	0.378			
PETHC	0.059	0.057	0.045	0.056	0.057	0.057	0.067	0.034	0.062	0.034	0.011	0.044		
WETHC	0.035	0.033	0.011	0.033	0.033	0.011	0.022	0.033	0.024	0.066	0.045	0.011	0	
LDR	0.994*	0.85	0.771	0.835	0.852	0.860*	0.783	0.703	0.061	0.451	0.455	0.649	0.057	0.056

From 8-4a Table showing discriminant validity of Phase-I model, apparently some constructs are overlapped in measuring two different concepts that suggest lack of discriminant validities (discriminant validity>0.85) between the corresponding pairs of concepts. As indicated in the Table Strategic Planning (SP) is overlapped with almost all other concepts except for the Customer & Market focus (CSMRKT) and Business Results (BR). Information and analysis (INFO) is overlapped with SP, CI, and HR. Continuous Improvement (CI) is overlapped with SP, INFO, HR, PM, and BR. Human resources (HR) is overlapped with SP, INFO, and CI. Process Management (PM) is overlapped with SP and CI. Finally, Business Results (BR) is only overlapped with CI. While in Table 8-4b, after adding the control variables into the model, it showed that none of the TQM constructs had any overlap with

any of the control variables that are TQM Familiarity (TQMFM), Power distance (PWR), Uncertainty Avoidance (UNC), Collectivism (COL), Quality performance orientation (QPRF), Personal quality ethical values (PETHC), and Work quality ethical values (WETHC). Moreover, no overlap between any of the control variables were found that signified existence of discriminant validity between these variables (all values of discriminant validity < 0.85). On the other hand, by examining the TQM constructs' discriminant validity in this model, more overlaps were found as SP had become now overlapped with all the TQM constructs. Also, CSMRKT became overlapped with PM as it was not overlapped with any variable in the Phase-I model. In addition, HR overlap with INFO was not found in this model; however the overlap with SP and CI still exists. PM in this model became overlapped with all TQM constructs except LDR. INFO overlap with HR that was found in Phase-I model was not found, but an overlap with PM and BR was found instead. CI in this model had similar overlap results in Phase-I model as it overlapped with most of TQM constructs and with LDR as well. The last construct BR was only overlapping with CI in Phase-I model, while in Phase-II model BR was found overlapping with SP, PM, INFO, and CI as well.

Finally, it was noted that in Phase-II model, more overlaps were found among TQM constructs except with LDR. However, no overlap was found with TQM constructs and control variables and within control variables themselves. As discriminant validity of the instrument in relation to TQM constructs relations with each others found to be low (discriminant validity>0.85), this in return means that the items (instruments) used in a given construct do overlap with other constructs. Therefore, respondents in the oil industry might have faced a challenge to differentiate between the concepts of different TQM components. However, no difficulty was faced by these respondents in differentiating between TQM components and the control variables and between the control variables themselves since the respective discriminant validity values were all less than 0.85 that signifies existence of discriminant validity between the scales.

8.3.4 Assessing the goodness-of-fit of the structural model

Once the convergent and discriminant validity of the model were achieved, both models (Phase-I and phase II) were tested for its goodness-of-fit (GFI). Goodness-of-fit measures the correspondence of the actual or observed input (covariance or correlation) matrix with that predicted from the proposed model.

Confirmatory factory analysis (CFA) was used to determine the adequacy of the measurement model's goodness of fit to the sample data. Due to the robustness and flexibility of structural equation modeling (SEM) in establishing CFA, this research used confirmatory factor analysis (CFA) in LISREL to evaluate and test the measurement model-data fitting. LISREL by Joreskog and Sorbom (1989) is one of the most widely used software for SEM analysis. Model-data fitting was evaluated based on multiple goodness-of-fit indexes. Goodness-of-fit measures the correspondence of the actual or observed input (correlation) matrix with that predicted from the proposed model.

Goodness-of-fit measures are of three types: (1) absolute fit measures assess only the overall model fit (both measurement and structural models collectively); (2) Incremental fit measures compare the proposed model to other competitive models, most often referred to as the null model; and (3) Parsimonious fit measures relate the goodness-of-fit of the model to the number of estimated coefficients required to achieve this model fit. The purpose of the test is to determine the amount of fit achieved by each estimated coefficient.

Chi-square Fit Index is perhaps the most common fit test. It measures the difference between the sample covariance and the fitted covariance. The chi-square value should not be significant if there is a good model fit. However, one problem with this test is that the larger the sample size, the more likely the rejection of the model (Type I error).

The chi-square fit index is also very sensitive to violations of the assumption of multivariate normality. Therefore, Joreskog and Sorbom (1989) suggested that the test must be interpreted with caution. For that reason, chi-square/degree of freedom ($\chi 2 / df$) is used with values less than 3.0 indicate good fit (Carmines and McIver, 1981).

LISREL also reports several other measures of overall model fit: goodness of fit index (GFI), adjusted goodness of fit index (AGFI), comparative fit index (CFI), normed fit index (NFI), root mean square residual (RMSR), and root mean square error of approximation (RMSEA). Goodness of fit index (GFI) indicated the relative amount of variance and covariance jointly explained by the model. It can vary from 0 to 1 but theoretically may yield meaningless negative values. Adjusted goodness of fit index (AGFI) is similar to GFI but adjusts for the degree of freedom in the model. NFI is a relative comparison of proposed model to the null model. Comparative fit index (CFI) compares the absolute fit of specified model to the absolute fit of the independence model. The greater the discrepancy between the overall fit of the two models the larger the values of CFI. CFI avoids underestimation of fit by NFI often noted in models with small sample size. Many researchers interpret these index scores (GFI, AGFI, CFI, NFI) in the range of 0.80-0.89 as representing reasonable fit; scores of .90 or higher are considered as evidence of good fit (Hair *et al.*, 1998; Joreskog and Sorbom, 1998; Bentler

and Bonett, 1980). Root mean square residual (RMSR) indicates the average discrepancy between the elements in the sample covariance matrix and the model-generated covariance matrix. The value varies from 0 to 1, with smaller values indicating better model and less than 0.10 indicates good fit (Hair *et. al.,* 1998). Root mean square error of approximation (RMSEA) has only recently been recognized as one of the most informative criteria in covariance structure modeling. It takes into account the error of approximation in the population and is expressed per degree of freedom, thus making the index sensitive to the number of estimated parameters in the model. Values below .05 signify good fit and the most acceptable value is .08 (Hair *et. al.,* 1998; Browne and Cudeck, 1993; Byrne. 1989).

All of these indices were used as measures for GFI. The data were fitted to several competing models as recommended by Joreskog and Sorbom (1989). Only one item was allowed to be altered at a time to avoid over-modification of the model. Thus, iterative modifications were made for the factors of the model by examining modification indices along with coefficients to improve key model fit statistics. The deletion of an item must be on the basis of enough evidence, both theoretically and empirically. This iterative process continued until all model parameters and key fit indices met recommended criteria.

To test the goodness of fit of the Phase-I structural model, several criteria were computed (Hair *et al.,* 1998; Taylor & Todd 1995a,b). The model parameters estimate showed the following (detailed output in Appendix 5): $\chi 2$=2318.04; degree of freedom (DF) = 406; χ 2/DF=5.71; GFI = 0.86; AGFI = 0.83; NFI= 0.98; NNFI = 0.98; CFI = 0.99; RMSR = 0.042; RMSEA=0.071 and SRMR = 0.042. Despite the degrees of freedom is larger than 3, all the important parameters that were focused by most recent studies are within the admissible standards, hence the study's results provide evidence of the relatively strong model fit to the observed data.

While for Phase-II model, the measures of GFI were obtained as follows (detailed output in Appendix 6): $\chi 2$=4257.48; degree of freedom (DF) = 883; χ 2/DF = 4.82; GFI = 0.83; AGFI = 0.80; NFI = 0.97; NNFI = 0.98; CFI = 0.98; RMSR = 0.048; RMSEA=0.064 and SRMR = 0.048. Despite the degrees of freedom are slightly more than 3, all the important parameters (focused on by most recent studies) are still within the admissible standards even after introducing the control variables into the model, hence the study's results provide evidence of the relatively strong model fit to the observed data.

8.4 Test of the Structural Model

SEM technique was employed in two steps to explore the causal interrelationship between variables of the model (Phase-I Model and Phase-II Model) and to verify the effect of each construct variable on other variables whether this variable has any total, direct, and indirect effects. The results of the multivariate test of the structural model are presented in for Phase-I model in Figure 8-1b and Tables 8-5, 8-6, and 8-7, while for Phase-II model in figure 8-2b and Tables 8-8, 8-9, and 8-10. The full and detailed SEM (LISREL) output files of Phase-I and Phase-II. Moreover, both figures 8-1b and 8-2b in Appendix-T show the validated direct effect (its p-value is less than or equal 0.05) of one construct on another by the arrow joining the two constructs. Indirect effects of constructs can be determined by following a series of forward-pointing arrows. For example, while the model does not include a direct effect of leadership (LDR) on process management (PM), we can trace any indirect effect it might have by following the direct effects of LDR on SP and CSMRKT which then effect directly PM. The path coefficients (γ from external variable to latent and β from latent to latent) were examined. Parameters whose t-values are greater than or equal to $\pm$ 1.96 are considered to be significantly different from 0 (Hair *et al.,* 1998).

Figure 8-1b: The LISREL model solution of Phase-I model with the significant direct effects of the TQM model in Kuwaiti business environment

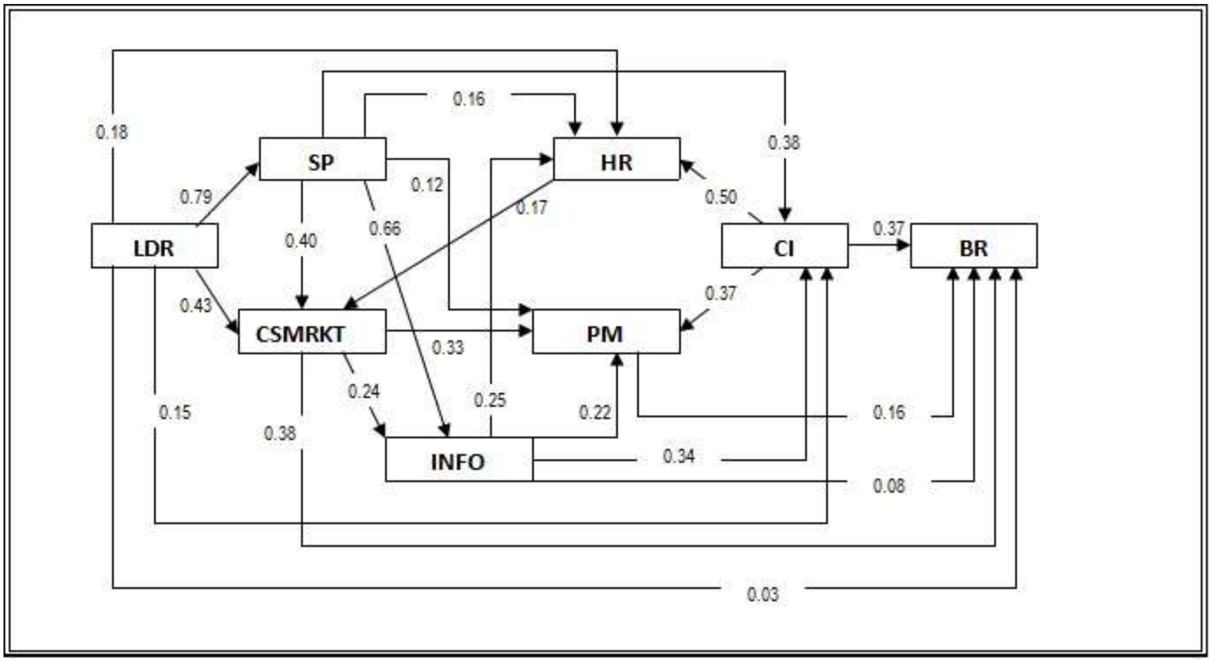
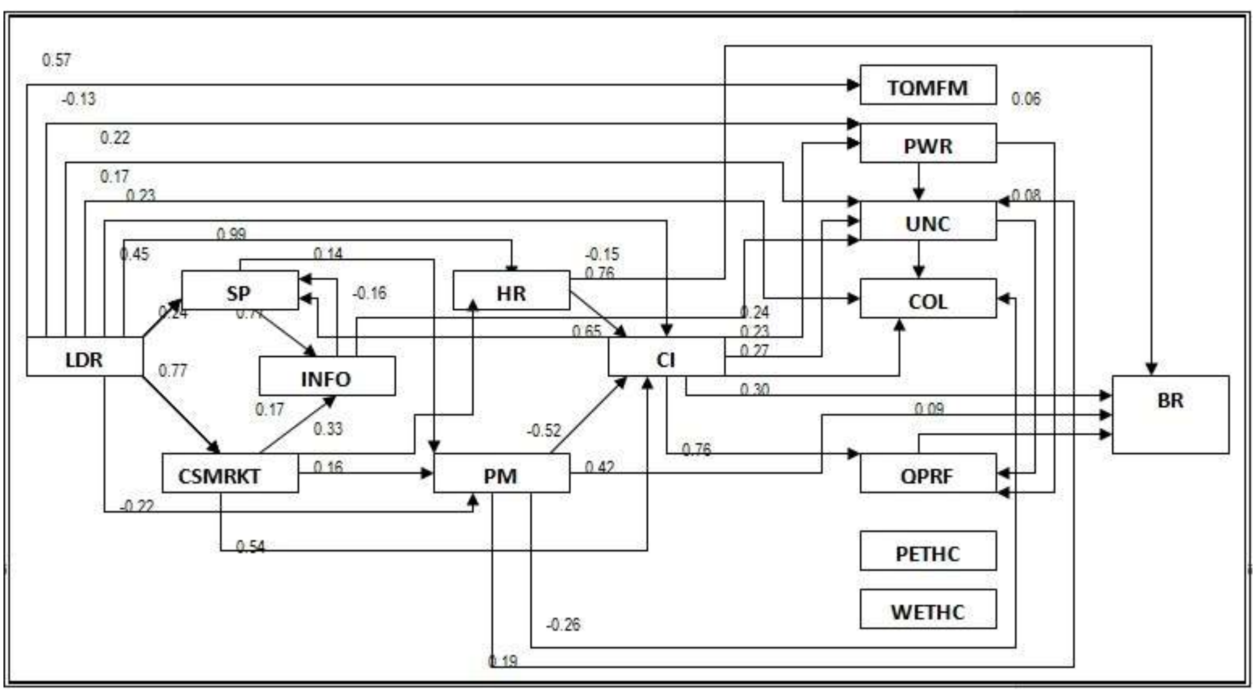


Figure 8-2b: The LISREL model solution of Phase-II model with sig. direct effects



8-5: Path Analysis and Verification of Proposed Hypotheses (Total Effect) - Phase-I Model

Paths	Path Coefficient	Standardized Estimate	t-value	P-value	Significant?	Hypotheses
Total Effects of Constructs						
LDR → SP	0.79	0.04	21.24	0.000	Yes	H_{11}
LDR → CSMRKT	0.74	0.03	22.54	0.000	Yes	H_{12}
SP → CSMRKT	0.40	0.05	7.85	0.000	Yes	H_{21}
LDR → INFO	0.65	0.03	18.95	0.000	Yes	H_{13}
SP → INFO	0.76	0.06	12.86	0.000	Yes	H_{22}
CSMRKT → INFO	0.24	0.05	5.27	0.000	Yes	H_{31}
LDR → CI	0.70	0.04	17.53	0.000	Yes	H_{14}
SP → CI	0.66	0.06	11.16	0.000	Yes	H_{23}
CSMRKT → CI	0.12	0.04	2.63	0.004	Yes	H_{32}
INFO → CI	0.34	0.05	6.67	0.000	Yes	H_{41}
LDR → HR	0.70	0.04	19.76	0.000	Yes	H_{15}
SP → HR	0.61	0.06	10.96	0.000	Yes	H_{24}
CSMRKT → HR	-0.50	0.05	-1.15	0.125	No	H_{33}
INFO → HR	0.42	0.05	8.10	0.000	Yes	H_{42}
CI → HR	0.50	0.05	9.25	0.000	Yes	H_{51}
LDR → PM	0.68	0.03	20.45	0.000	Yes	H_{16}
SP → PM	0.64	0.05	11.99	0.000	Yes	H_{25}
CSMRKT → PM	0.43	0.04	10.61	0.000	Yes	H_{34}
INFO → PM	0.34	0.04	7.61	0.000	Yes	H_{43}
CI → PM	0.36	0.05	7.69	0.000	Yes	H_{52}
HR → PM	-0.03	0.05	-0.64	0.261	No	H_{61}
LDR → BR	0.69	0.03	19.88	0.000	Yes	H_{17}

SP → BR	0.50	0.05	9.22	0.000	Yes	H_{26}
CSMRKT → BR	0.51	0.04	12.00	0.000	Yes	H_{35}
INFO → BR	0.25	0.05	5.33	0.000	Yes	H_{44}
CI → BR	0.41	0.05	7.96	0.000	Yes	H_{53}
HR → BR	-0.03	0.05	-0.66	0.255	No	H_{62}
PM → BR	0.16	0.05	3.37	0.0004	Yes	H_{71}

Table 8-6: Path Analysis and Verification of Proposed Hypotheses (Direct Effect) - Phase-I Model

Paths	Path Coefficient	Standardized Estimate	t-value	P-value	Significant?	Hypotheses
Direct Effects of Constructs						
LDR → SP	0.79	0.04	21.24	0.000	Yes	H_{11a}
LDR → CSMRKT	0.43	0.05	8.65	0.000	Yes	H_{12a}
SP → CSMRKT	0.40	0.05	7.85	0.000	Yes	H_{21a}
LDR → INFO	-0.05	0.05	-0.89	0.187	No	H_{13a}
SP → INFO	0.66	0.06	11.05	0.000	Yes	H_{22a}
CSMRKT → INFO	0.24	0.05	5.27	0.000	Yes	H_{31a}
LDR → CI	0.15	0.05	3.03	0.001	Yes	H_{14a}
SP → CI	0.38	0.07	5.61	0.000	Yes	H_{23a}
CSMRKT → CI	0.04	0.04	0.84	0.2005	No	H_{32a}
INFO → CI	0.34	0.05	6.67	0.000	Yes	H_{41a}
LDR → HR	0.18	0.05	3.84	0.00006	Yes	H_{15a}
SP → HR	0.16	0.07	2.46	0.007	Yes	H_{24a}
CSMRKT → HR	-0.17	0.04	-4.32	0.00001	Yes	H_{33a}
INFO → HR	0.25	0.05	5.01	0.000	Yes	H_{42a}
CI → HR	0.50	0.05	9.25	0.000	Yes	H_{51a}

LDR → PM	-0.05	0.04	-1.14	0.127	No	H_{16a}
SP → PM	0.12	0.06	2.05	0.200	Yes	H_{25a}
CSMRKT → PM	0.33	0.04	8.87	0.000	Yes	H_{34a}
INFO → PM	0.22	0.05	4.89	0.000	Yes	H_{43a}
CI → PM	0.37	0.05	6.83	0.000	Yes	H_{52a}
HR → PM	-0.03	0.05	-0.64	0.261	No	H_{61a}
LDR → BR	0.03	0.05	.075	0.227	No	H_{17a}
SP → BR	-0.04	0.06	-0.60	0.274	No	H_{26a}
CSMRKT → BR	0.38	0.04	8.77	0.000	Yes	H_{35a}
INFO → BR	0.08	0.05	1.73	0.042	Yes	H_{44a}
CI → BR	0.37	0.06	5.85	0.000	Yes	H_{53a}
HR → BR	-0.03	0.05	-0.58	0.281	No	H_{62a}
PM → BR	0.16	0.05	3.37	0.0004	Yes	H_{71a}

Table 8-7: Path Analysis and Verification of Proposed Hypotheses (Indirect Effect) - Phase-I Model

Paths	Path Coefficient	Standardized Estimate	t-value	P-value	Significant?	Hypotheses
Indirect Effects of Constructs						
LDR → CSMRKT	0.31	0.04	7.71	0.000	Yes	H_{12b}
LDR → INFO	0.70	0.05	13.19	0.000	Yes	H_{13b}
SP → INFO	0.10	0.02	4.96	0.000	Yes	H_{22b}
LDR → CI	0.55	0.05	11.16	0.000	Yes	H_{14b}
SP → CI	0.27	0.04	6.57	0.000	Yes	H_{23b}
CSMRKT → CI	0.08	0.02	4.0	0.00003	Yes	H_{32b}
LDR → HR	0.52	0.05	11.34	0.000	Yes	H_{15b}
SP → HR	0.45	0.05	8.34	0.000	Yes	H_{24b}

CSMRKT → HR	0.12	0.03	3.78	0.00008	Yes	H_{33b}
INFO → HR	0.17	0.03	5.68	0.000	Yes	H_{42b}
LDR → PM	0.73	0.05	15.9	0.000	Yes	H_{16b}
SP → PM	0.52	0.05	10.18	0.000	Yes	H_{25b}
CSMRKT → PM	0.10	0.02	3.93	0.00004	Yes	H_{34b}
INFO → PM	0.11	0.03	4.50	0.000003	Yes	H_{43b}
CI → PM	-0.01	0.02	-0.63	0.264	No	H_{52b}
LDR → BR	0.66	0.05	14.05	0.000	Yes	H_{17b}
SP → BR	0.54	0.06	9.36	0.000	Yes	H_{26b}
CSMRKT → BR	0.13	0.03	4.63	0.000002	Yes	H_{35b}
INFO → BR	0.17	0.03	5.48	0.000	Yes	H_{44b}
CI → BR	0.36	0.03	7.69	0.000	Yes	H_{53b}
HR → BR	0	0.01	-0.63	0.264	No	H_{62b}

Table 8-8: Path Analysis and Verification of Proposed Hypotheses (Total Effect) - Phase-II Model

Paths	Path Coefficient	Standardized Estimate	t-value	P-value	Significant?	Hypotheses
Total Effects of Constructs						
LDR → SP	0.86	0.03	25.68	0.000	Yes	H_{11}
LDR → CSMRKT	0.77	0.03	23.02	0.000	Yes	H_{12}
LDR → HR	0.71	0.03	21.22	0.000	Yes	H_{15}
LDR → PM	0.79	0.03	25.05	0.000	Yes	H_{16}
LDR → INFO	0.79	0.03	25.43	0.000	Yes	H_{13}
LDR → CI	0.78	0.04	19.97	0.000	Yes	H_{14}
LDR → BR	0.73	0.03	22.88	0.000	Yes	H_{17}
LDR → TQMFM	0.63	0.04	18.03	0.000	Yes	H_{18}
LDR → PWR	0.05	0.04	1.22	0.1112	No	H_{19}
LDR → UNC	0.42	0.04	11.91	0.000	Yes	H_{110}
LDR → COL	0.42	0.04	11.44	0.000	Yes	H_{111}
LDR → QPRF	0.60	0.03	18.48	0.000	Yes	H_{112}
LDR → PETHC	0.05	0.04	1.35	0.089	No	H_{113}
LDR → WETHC	0.05	0.04	1.30	0.097	No	H_{114}
SP → SP	-0.20	0.06	-3.04	0.001	Yes	H_{27}
SP → PM	0.84	0.06	13.04	0.000	Yes	H_{25}
SP → INFO	0.62	0.06	10.83	0.000	Yes	H_{22}
SP → CI	-0.43	0.07	-5.96	0.000	Yes	H_{23}
SP → BR	0.37	0.12	2.97	0.001	Yes	H_{26}
SP → TQMFM	0.01	0.06	0.12	0.452	No	H_{28}

SP → PWR	-0.13	0.11	-1.19	0.117	No	H_{29}
SP → UNC	-0.02	0.09	-0.25	0.401	No	H_{210}
SP → COL	-0.35	0.09	-3.67	0.0001	Yes	H_{211}
SP → QPRF	-0.34	0.06	-5.75	0.000	Yes	H_{212}
SP→ PETHC	0.04	0.10	0.37	0.356	No	H_{213}
SP → WETHC	0.11	0.10	1.10	0.136	No	H_{214}
CSMRKT → SP	0.39	0.03	11.84	0.000	Yes	H_{36}
CSMRKT → HR	0.33	0.05	7.38	0.000	Yes	H_{33}
CSMRKT → PM	0.56	0.04	14.67	0.000	Yes	H_{34}
CSMRKT → INFO	0.47	0.04	12.27	0.000	Yes	H_{31}
CSMRKT → CI	0.50	0.04	11.85	0.000	Yes	H_{32}
CSMRKT → BR	0.47	0.04	12.85	0.000	Yes	H_{35}
CSMRKT → TQMFM	0.04	0.03	1.21	0.113	No	H_{37}
CSMRKT → PWR	0.11	0.04	2.75	0.003	Yes	H_{38}
CSMRKT → UNC	0.13	0.03	3.93	0.000	Yes	H_{39}
CSMRKT → COL	0.06	0.04	1.78	0.038	Yes	H_{310}
CSMRKT → QPRF	0.40	0.04	10.96	0.000	Yes	H_{311}
CSMRKT → PETHC	0.02	0.04	0.55	0.291	No	H_{312}
CSMRKT → WETHC	-0.02	0.04	-0.58	0.280	No	H_{313}
HR → SP	0.40	0.03	15.70	0.000	Yes	H_{63}
HR → PM	0.41	0.03	14.09	0.000	Yes	H_{61}
HR → INFO	0.31	0.02	12.59	0.000	Yes	H_{64}
HR → CI	0.54	0.03	15.87	0.000	Yes	H_{65}
HR → BR	0.32	0.03	9.35	0.000	Yes	H_{62}
HR → TQMFM	0.10	0.05	2.11	0.017	Yes	H_{67}
HR → PWR	0.12	0.04	3.24	0.001	Yes	H_{68}

HR → UNC	0.14	0.03	4.49	0.000	Yes	H_{69}
HR → COL	0.12	0.03	3.57	0.000	Yes	H_{610}
HR → QPRF	0.43	0.03	13.85	0.000	Yes	H_{611}
HR → PETHC	0.01	0.03	0.40	0.345	No	H_{612}
HR → WETHC	-0.03	0.03	-1.05	0.147	No	H_{613}
PM → SP	-0.27	0.04	-6.69	0.000	Yes	H_{72}
PM → PM	-0.28	0.05	-5.69	0.000	Yes	H_{73}
PM → INFO	-0.21	0.03	-6.10	0.000	Yes	H_{74}
PM → CI	-0.37	0.05	-7.71	0.000	Yes	H_{75}
PM → BR	0.11	0.08	1.32	0.093	No	H_{71}
PM → TQMFM	0.06	0.07	0.77	0.221	No	H_{76}
PM → PWR	-0.17	0.10	-1.71	0.044	Yes	H_{77}
PM → UNC	0.10	0.08	1.24	0.107	No	H_{78}
PM → COL	-0.22	0.08	-2.78	0.003	Yes	H_{79}
PM → QPRF	-0.29	0.04	-7.01	0.000	Yes	H_{710}
PM → PETHC	0.03	0.08	0.36	0.359	No	H_{711}
PM → WETHC	0.10	0.08	1.17	0.121	No	H_{712}
INFO → SP	0.11	0.04	2.60	0.005	Yes	H_{45}
INFO → PM	0.11	0.04	2.59	0.005	Yes	H_{43}
INFO → INFO	0.09	0.03	2.62	0.004	Yes	H_{46}
INFO → CI	-0.06	0.02	-2.47	0.007	Yes	H_{41}
INFO → BR	0.10	0.06	1.57	0.058	No	H_{44}
INFO → TQMFM	-0.07	0.08	-1.00	0.159	No	H_{47}
INFO → PWR	0.06	0.10	0.63	0.264	No	H_{48}
INFO → UNC	-0.17	0.08	-2.05	0.020	Yes	H_{49}
INFO → COL	-0.15	0.05	-2.78	0.003	Yes	H_{410}

INFO → QPRF	-0.06	0.02	-2.63	0.004	Yes	H_{411}
INFO → PETHC	0.01	0.02	0.40	0.345	No	H_{412}
INFO → WETHC	0.01	0.02	0.40	0.345	No	H_{413}
CI → SP	0.53	0.04	13.83	0.000	Yes	H_{54}
CI → PM	0.55	0.03	18.01	0.000	Yes	H_{52}
CI → INFO	0.41	0.03	12.27	0.000	Yes	H_{55}
CI → CI	-0.28	0.05	-5.69	0.000	Yes	H_{56}
CI → BR	0.62	0.05	11.86	0.000	Yes	H_{53}
CI → TQMFM	0.02	0.05	0.33	0.371	No	H_{57}
CI → PWR	0.16	0.05	3.16	0.001	Yes	H_{58}
CI → UNC	0.19	0.04	4.43	0.000	Yes	H_{59}
CI → COL	0.15	0.05	3.43	0.000	Yes	H_{510}
CI → QPRF	0.57	0.05	10.77	0.000	Yes	H_{511}
CI → PETHC	0.02	0.04	0.40	0.345	No	H_{512}
CI → WETHC	-0.05	0.04	-1.05	0.147	No	H_{511}
BR → BR	0.00	0.00	0.38	0.352	No	H_{81}
BR → TQMFM	0.03	0.14	0.21	0.417	No	H_{82}
TQMFM → BR	0.02	0.06	0.37	0.356	No	H_{91}
TQMFM → TQMFM	0.00	0.00	0.38	0.351	No	H_{92}
PWR → BR	-0.02	0.02	-1.09	0.138	No	H_{101}
PWR → TQMFM	0.00	0.00	-0.20	0.420	No	H_{102}
PWR → UNC	-0.12	0.04	-3.30	0.000	Yes	H_{103}
PWR → COL	-0.09	0.04	-2.51	0.006	Yes	H_{104}
PWR → QPRF	0.05	0.03	2.09	0.018	Yes	H_{105}
PWR → PETHC	0.05	0.04	1.18	0.119	No	H_{106}
PWR→ WETHC	0.03	0.04	0.80	0.212	No	H_{107}

UNC → BR	0.02	0.02	0.92	0.179	No	H_{111}
UNC → TQMFM	0.00	0.00	0.20	0.420	No	H_{112}
UNC → COL	0.58	0.04	16.13	0.000	Yes	H_{113}
UNC → QPRF	0.08	0.03	3.15	0.008	Yes	H_{114}
UNC → PETHC	0.01	0.04	0.35	0.363	No	H_{115}
UNC→ WETHC	0.06	0.04	1.64	0.051	No	H_{116}
COL → BR	0.01	0.03	0.34	0.367	No	H_{121}
COL → TQMFM	0.00	0.00	0.17	0.433	No	H_{122}
COL → PETHC	-0.05	0.05	-1.03	0.152	No	H_{123}
COL → WETHC	0.01	0.05	0.23	0.409	No	H_{124}
QPRF → BR	0.09	0.03	2.79	0.003	Yes	H_{131}
QPRF → TQMFM	0.00	0.01	0.21	0.417	No	H_{132}
PETHC → BR	0.02	0.02	0.85	0.198	No	H_{141}
PETHC → TQMFM	0.00	0.00	0.20	0.421	No	H_{142}
WETHC → BR	-0.01	0.02	-0.27	0.394	No	H_{151}
WETHC → TQMFM	0.00	0.00	-0.17	0.433	No	H_{152}

Table 8-9: Path Analysis and Verification of Proposed Hypotheses (Direct Effect) - Phase-II Model

Paths	Path Coefficient	Standardized Estimate	t-value	P-value	Significant?	Hypotheses
Direct Effects of Constructs						
LDR → SP	0.24	0.03	7.08	0.000	Yes	H_{11a}
LDR → CSMRKT	0.77	0.03	23.02	0.000	Yes	H_{12a}
LDR → HR	0.45	0.05	9.72	0.000	Yes	H_{15a}
LDR → PM	-0.22	0.05	-4.62	0.000	Yes	H_{16a}

LDR → CI	0.23	0.05	4.95	0.000	Yes	H_{14a}
LDR → TQMFM	0.57	0.06	9.34	0.000	Yes	H_{18a}
LDR → PWR	-0.13	0.07	-1.83	0.034	Yes	H_{19a}
LDR → UNC	0.22	0.06	3.54	0.000	Yes	H_{110a}
LDR → COL	0.17	0.05	3.20	0.000	Yes	H_{111a}
LDR → QPRF	-0.03	0.04	-0.65	0.258	No	H_{112a}
LDR → PETHC	0.03	0.07	0.50	0.309	No	H_{113a}
LDR → WETHC	0.07	0.07	1.09	0.138	No	H_{114a}
SP → PM	0.99	0.06	16.20	0.000	Yes	H_{25a}
SP → INFO	0.77	0.04	17.87	0.000	Yes	H_{22a}
SP → BR	0.18	0.18	1.03	0.152	No	H_{26a}
CSMRKT → HR	0.33	0.05	9.72	0.000	Yes	H_{33a}
CSMRKT → PM	0.16	0.04	3.88	0.000	Yes	H_{34a}
CSMRKT → INFO	0.17	0.04	4.29	0.000	Yes	H_{31a}
CSMRKT → CI	0.54	0.06	8.68	0.000	Yes	H_{32a}
HR → CI	0.76	0.06	12.72	0.000	Yes	H_{65a}
HR → BR	-0.15	0.05	-3.24	0.001	Yes	H_{62a}
HR → TQMFM	0.09	0.06	1.55	0.061	No	H_{67a}
PM → CI	-0.52	0.10	-5.14	0.000	Yes	H_{75a}
PM → BR	0.42	0.07	5.95	0.000	Yes	H_{71a}
PM → TQMFM	0.05	0.11	0.48	0.316	No	H_{76a}
PM → PWR	-0.09	0.10	-0.89	0.187	No	H_{77a}
PM → UNC	0.19	0.08	2.29	0.011	Yes	H_{78a}
PM → COL	-0.26	0.07	-4.04	0.000	Yes	H_{79a}
PM → PETHC	0.03	0.08	0.32	0.374	No	H_{711a}
PM → WETHC	0.07	0.08	0.80	0.212	No	H_{712a}

INFO → SP	0.14	0.05	2.98	0.001	Yes	H_{45a}
INFO → BR	0.05	0.07	0.78	0.218	No	H_{44a}
INFO → TQMFM	-0.08	0.07	-1.04	0.149	No	H_{47a}
INFO → PWR	0.08	0.09	0.85	0.198	No	H_{48a}
INFO → UNC	-0.16	0.08	-2.02	0.022	Yes	H_{49a}
CI → SP	0.65	0.05	13.16	0.000	Yes	H_{54a}
CI → BR	0.30	0.10	3.11	0.001	Yes	H_{53a}
CI → PWR	0.24	0.09	2.59	0.005	Yes	H_{58a}
CI → UNC	0.23	0.08	2.90	0.002	Yes	H_{59a}
CI → COL	0.27	0.07	3.99	0.000	Yes	H_{510a}
CI → QPRF	0.76	0.05	15.39	0.000	Yes	H_{511a}
CI → PETHC	-0.01	0.09	-0.07	0.472	No	H_{512a}
CI → WETHC	-0.14	0.09	-1.64	0.051	No	H_{513a}
BR → TQMFM	0.03	0.14	0.21	0.417	No	H_{82a}
TQMFM→ BR	0.02	0.06	0.37	0.356	No	H_{91a}
PWR → BR	-0.03	0.02	-1.27	0.102	No	H_{101a}
UNC → BR	0.01	0.03	0.24	0.405	No	H_{111a}
UNC → COL	0.58	0.04	16.13	0.000	Yes	H_{113a}
UNC → QPRF	0.08	0.03	3.15	0.001	Yes	H_{114a}
UNC → PETHC	0.04	0.05	0.88	0.189	No	H_{115a}
UNC → WETHC	0.06	0.05	1.16	0.123	No	H_{116a}
COL → BR	0.01	0.03	0.37	0.356	No	H_{121a}
COL → PETHC	-0.05	0.05	-1.03	0.152	No	H_{123a}
COL → WETHC	0.01	0.05	0.23	0.409	No	H_{124a}
PWR → UNC	-0.12	0.04	-3.30	0.000	Yes	H_{103a}
PWR → COL	-0.02	0.03	-0.77	0.221	No	H_{104a}

PWR → QPRF	0.06	0.03	2.45	0.007	Yes	H_{105a}
PWR → PETHC	0.05	0.04	1.18	0.119	No	H_{106a}
PWR → WETHC	0.04	0.04	0.99	0.161	No	H_{107a}
QPRF → BR	0.09	0.03	2.79	0.003	Yes	H_{131a}
PETHC → BR	0.02	0.02	0.85	0.198	No	H_{141a}
WETHC → BR	-0.01	0.02	-0.27	0.394	No	H_{151a}

Table 8-10: Path Analysis and Verification of Proposed Hypotheses (Indirect Effect) - Phase-II Model

Paths	Path Coefficient	Standardized Estimate	t-value	P-value	Significant?	Hypotheses
Indirect Effects of Constructs						
LDR → SP	0.62	0.04	16.93	0.000	Yes	$H_{11\ b}$
LDR → HR	0.26	0.04	7.23	0.000	Yes	$H_{15\ b}$
LDR → PM	0.99	0.06	17.91	0.000	Yes	$H_{16\ b}$
LDR → INFO	0.79	0.03	25.43	0.000	Yes	$H_{13\ b}$
LDR → CI	0.54	0.05	11.21	0.000	Yes	$H_{14\ b}$
LDR → BR	0.73	0.03	22.88	0.000	Yes	$H_{17\ b}$
LDR → TQMFM	0.06	0.05	1.38	0.084	No	$H_{18\ b}$
LDR → PWR	0.18	0.06	3.05	0.001	Yes	$H_{19\ b}$
LDR → UNC	0.20	0.05	3.93	0.000	Yes	$H_{110\ b}$
LDR → COL	0.25	0.05	5.21	0.000	Yes	$H_{111\ b}$
LDR → QPRF	0.63	0.04	15.07	0.000	Yes	$H_{112\ b}$
LDR → PETHC	0.02	0.05	0.28	0.389	No	$H_{113\ b}$
LDR → WETHC	-0.03	0.05	-0.50	0.309	No	$H_{114\ b}$

SP → SP	-0.20	0.06	-3.04	0.001	Yes	$H_{27\ b}$
SP → PM	-0.21	0.07	-2.77	0.003	Yes	$H_{25\ b}$
SP → INFO	-0.15	0.05	-2.93	0.002	Yes	$H_{22\ b}$
SP → CI	-0.43	0.07	-5.96	0.000	Yes	$H_{23\ b}$
SP → BR	0.19	0.11	1.77	0.038	Yes	$H_{26\ b}$
SP → TQMFM	0.01	0.06	0.12	0.452	No	$H_{28\ b}$
SP → PWR	-0.13	0.11	-1.19	0.117	No	$H_{29\ b}$
SP → UNC	0.02	0.09	-0.25	0.401	No	$H_{210\ b}$
SP → COL	-0.35	0.09	-3.67	0.000	Yes	$H_{211\ b}$
SP → QPRF	-0.34	0.06	-5.75	0.000	Yes	$H_{212\ b}$
SP → PETHC	0.04	0.10	0.37	0.356	No	$H_{213\ b}$
SP → WETHC	0.11	0.10	1.10	0.136	No	$H_{214\ b}$
CSMRKT → SP	0.39	0.03	11.84	0.000	Yes	$H_{36\ b}$
CSMRKT → PM	0.41	0.04	10.25	0.000	Yes	$H_{34\ b}$
CSMRKT → INFO	0.30	0.03	10.67	0.000	Yes	$H_{31\ b}$
CSMRKT → CI	-0.04	0.05	-0.70	0.242	No	$H_{32\ b}$
CSMRKT → BR	0.47	0.04	12.85	0.000	Yes	$H_{35\ b}$
CSMRKT → TQMFM	0.04	0.03	1.21	0.113	No	$H_{37\ b}$
CSMRKT → PWR	0.11	0.04	2.75	0.003	Yes	$H_{38\ b}$
CSMRKT → UNC	0.13	0.03	3.93	0.000	Yes	$H_{39\ b}$
CSMRKT → COL	0.06	0.04	1.78	0.038	Yes	$H_{310\ b}$
CSMRKT → QPRF	0.40	0.04	10.96	0.000	Yes	$H_{311\ b}$
CSMRKT → PETHC	0.02	0.04	0.55	0.291	No	$H_{312\ b}$
CSMRKT → WETHC	-0.02	0.04	-0.58	0.281	No	$H_{313\ b}$
HR → SP	0.40	0.03	15.70	0.000	Yes	H_{63} b
HR → PM	0.41	0.03	14.09	0.000	Yes	$H_{61\ b}$
HR → INFO	0.31	0.02	12.59	0.000	Yes	$H_{64\ b}$

HR → CI	-0.21	0.05	-4.27	0.000	Yes	$H_{65\ b}$
HR → BR	0.47	0.04	12.61	0.000	Yes	$H_{62\ b}$
HR → TQMFM	0.01	0.03	0.29	0.385	No	$H_{67\ b}$
HR → PWR	0.12	0.04	3.24	0.001	Yes	$H_{68\ b}$
HR → UNC	0.14	0.03	4.49	0.000	Yes	$H_{69\ b}$
HR → COL	0.12	0.03	3.57	0.000	Yes	$H_{610\ b}$
HR → QPRF	0.43	0.03	13.85	0.000	Yes	$H_{611\ b}$
HR → PETHC	0.01	0.03	0.40	0.345	No	$H_{612\ b}$
HR → WETHC	-0.03	0.03	-1.05	0.147	No	$H_{613\ b}$
PM → SP	-0.27	0.04	-6.69	0.000	Yes	$H_{72\ b}$
PM → PM	-0.28	0.05	-5.69	0.000	Yes	$H_{73\ b}$
PM → INFO	-0.21	0.03	-6.10	0.000	Yes	$H_{74\ b}$
PM → CI	0.15	0.05	2.73	0.003	Yes	$H_{75\ b}$
PM → BR	-0.31	0.05	-6.08	0.000	Yes	$H_{71\ b}$
PM → TQMFM	0.00	0.05	0.09	0.464	No	$H_{76\ b}$
PM → PWR	-0.08	0.03	-3.07	0.001	Yes	$H_{77\ b}$
PM → UNC	-0.09	0.03	-3.11	0.001	Yes	$H_{78\ b}$
PM → COL	0.04	0.05	0.73	0.233	No	$H_{79\ b}$
PM → QPRF	-0.29	0.04	-7.01	0.000	Yes	$H_{710\ b}$
PM → PETHC	0.00	0.03	0.11	0.456	No	$H_{711\ b}$
PM → WETHC	0.03	0.03	1.08	0.140	No	$H_{712\ b}$
INFO → SP	-0.03	0.01	-3.13	0.001	Yes	$H_{45\ b}$
INFO → PM	0.11	0.04	2.59	0.005	Yes	$H_{43\ b}$
INFO → INFO	0.09	0.03	2.62	0.004	Yes	$H_{46\ b}$
INFO → CI	-0.06	0.02	-2.47	0.007	Yes	$H_{41\ b}$
INFO → BR	0.04	0.03	1.56	0.059	No	$H_{44\ b}$
INFO → TQMFM	0.00	0.01	0.31	0.378	No	$H_{47\ b}$

INFO → PWR	-0.02	0.02	-1.09	0.138	No	$H_{48\ b}$
INFO → UNC	-0.01	0.02	-0.73	0.233	No	$H_{49\ b}$
INFO → COL	-0.15	0.05	-2.78	0.003	Yes	$H_{410\ b}$
INFO → QPRF	-0.06	0.02	-2.63	0.004	Yes	$H_{411\ b}$
INFO → PETHC	0.01	0.02	0.40	0.345	No	$H_{412\ b}$
INFO → WETHC	0.01	0.02	0.40	0.345	No	$H_{413\ b}$
CI → SP	-0.13	0.05	-2.64	0.004	Yes	$H_{54\ b}$
CI → PM	0.55	0.03	18.01	0.000	Yes	$H_{52\ b}$
CI → INFO	0.41	0.03	12.27	0.000	Yes	$H_{55\ b}$
CI → CI	-0.28	0.05	-5.69	0.000	Yes	$H_{56\ b}$
CI → BR	0.31	0.09	3.65	0.000	Yes	$H_{53\ b}$
CI → TQMFM	0.02	0.05	0.33	0.371	No	$H_{57\ b}$
CI → PWR	-0.08	0.07	1.19	0.117	No	$H_{58\ b}$
CI → UNC	-0.04	0.06	-0.72	0.236	No	$H_{59\ b}$
CI → COL	-0.12	0.06	-1.97	0.024	Yes	$H_{510\ b}$
CI → QPRF	-0.19	0.04	-4.45	0.000	Yes	$H_{511\ b}$
CI → PETHC	0.02	0.07	0.36	0.359	No	$H_{512\ b}$
CI → WETHC	0.09	0.07	1.42	0.078	No	$H_{513\ b}$
BR → BR	0.00	0.00	0.38	0.351	No	$H_{81\ b}$
BR → TQMFM	0.00	0.00	0.14	0.444	No	$H_{82\ b}$
TQMFM → BR	0.00	0.00	0.42	0.337	No	$H_{91\ b}$
TQMFM → TQMFM	0.00	0.00	0.38	0.352	No	$H_{92\ b}$
PWR → BR	0.00	0.00	0.91	0.181	No	$H_{101\ b}$
PWR → TQMFM	0.00	0.00	-0.20	0.421	No	$H_{102\ b}$
PWR → COL	-0.07	0.02	-3.25	0.001	Yes	$H_{104\ b}$
PWR → QPRF	-0.01	0.00	-2.28	0.011	Yes	$H_{105\ b}$
PWR → PETHC	0.00	0.01	-0.07	0.472	No	$H_{106\ b}$

PWR → WETHC	-0.01	0.01	-1.49	0.068	No	$H_{107\ b}$
UNC → BR	0.01	0.02	0.83	0.203	No	$H_{111\ b}$
UNC → TQMFM	0.00	0.00	0.20	0.421	No	$H_{112\ b}$
UNC → PETHC	-0.03	0.03	-1.03	0.152	No	$H_{115\ b}$
UNC → WETHC	0.01	0.03	0.23	0.409	No	$H_{116\ b}$
COL → BR	0.00	0.00	-0.67	0.251	No	$H_{121\ b}$
COL → TQMFM	0.00	0.00	0.17	0.432	No	$H_{122\ b}$
QPRF → BR	0.00	0.00	0.37	0.356	No	$H_{131\ b}$
QPRF → TQMFM	0.00	0.01	0.21	0.417	No	$H_{132\ b}$
PETHC → BR	0.00	0.00	0.34	0.367	No	$H_{141\ b}$
PETHC → TQMFM	0.00	0.00	0.20	0.421	No	$H_{142\ b}$
WETHC → BR	0.00	0.00	-0.22	0.413	No	$H_{141\ b}$
WETHC → TQMFM	0.00	0.00	-0.17	0.433	No	$H_{142\ b}$

8.4.1 Prediction of Leadership (LDR)

Leadership (LDR) exerts a strong, positive and significant total effect on all TQM components building the TQM model (table 8-5), where the set of hypotheses H_{11}, H_{12}, H_{13}, H_{14}, H_{15}, H_{16}, and H_{17} are, therefore, valid. Furthermore, LDR has a significant positive direct effects (table 8-6) on SP (γ=0.79; $P<0.05$), CSMRKT (γ=0.43; $P<0.05$), CI (γ=0.15; $P<0.05$), HR (γ=0.18; $P<0.05$), and BR (γ=0.03; $P<0.05$) that supports Hypotheses H_{11a}, H_{12a}, H_{14a}, H_{15a}, H_{17a}. Although LDR does not exert a direct effect on INFO (γ=-0.05; $P>0.05$) and PM (γ=-0.05; $P>0.05$), and thus H_{13a}, H_{16a} are not supported. However, LDR strongly and positively affects these two constructs INFO (γ=0.70; $P<0.05$) and PM (γ=0.73; $P<0.05$) in an indirect way (table 8-7). LDR also positively and indirectly effects CSMRKT (γ=0.31; $P<0.05$), CI (γ=0.55; $P<0.05$), HR (γ=0.52; $P<0.05$), and BR (γ=0.66; $P<0.05$). Thus, hypotheses H_{12b}, H_{13b}, H_{14b}, H_{15b}, H_{16b}, and H_{17b} are supported.

While in Phase-II model, LDR exerts a stronger, positive, and significant total effect on all TQM components (table 8-8). Hence, the set of hypotheses H_{11}, H_{12}, H_{13}, H_{14}, H_{15}, H_{16}, and H_{17} are, therefore, valid.

As for control variables, LDR exerted a positive and significant total effect on all control variables except PWR (table 8-8), thus Hypotheses H_{18}, H_{110}, H_{111}, H_{112}, H_{113}, and H_{114} are supported while H_{19} is not supported. As similar practice to Phase-I model was done in Phase-II model; and to sum up the findings, the support of all sub-hypotheses related to the direct and indirect effects in Phase-II model are illustrated in Tables 8-9 and 8-10 respectively. Specifically, after adding the control variables into the model, it was noticed that the LDR total effect on BR (tables 8-5 and 8-8) had increased from 0.69 to 0.73 that implies that the control variables existence had increased the Leadership and top management's impact on the TQM outcomes and business results.

In Phase-I model, the strongest of both total and direct effect of leadership (LDR) is the one exerted on strategic planning (SP), while the strongest indirect effect of leadership is the one exerted on process management (PM). In Phase-II model, LDR strongest total effect (table 8-8) was still on SP. However, its strongest direct effect (table 8-9) was on CSMRKT and strongest indirect effect (table 8-10) was on INFO.

8.4.2 Prediction of Strategic Planning (SP)

LDR exerts a strong, significant, and positive total and direct effect (table 8-5, 8-6) on SP (γ=0.79; $P<0.05$) supporting both hypotheses H_{11} and H_{11a}. This ensures that LDR is the main determinant of SP.

On the other hand, Strategic planning (SP) exerts a strong, positive and significant total effect on TQM components (CSMRKT, INFO, CI, HR, PM, and BR) building the TQM model (table 8-5), where the set of hypotheses H_{21}, H_{22}, H_{23}, H_{24}, H_{25}, and H_{26} are, therefore, valid. Furthermore, SP has a significant positive direct effects (table 8-6) on CSMRKT (β =0.40; $P<0.05$), INFO (β=0.66; $P<0.05$), CI (β=0.38; $P<0.05$), HR (β=0.16; $P<0.05$), and PM (β=0.12; $P<0.05$) that supports Hypotheses H_{21a}, H_{22a}, H_{23a}, H_{24a}, and H_{25a}; while has no significant direct effect on BR (β=-0.04; $P>0.05$) and hence H_{26a} is not supported. However, SP still positively, strongly and indirectly (table 8-7) effects BR (β=0.54; $P<0.05$). SP also positively and indirectly effects INFO (β =0.10; $P<0.05$), CI (β=0.27; $P<0.05$), HR (β =0.45; $P<0.05$), and PM (β=0.52; $P<0.05$). Thus Hypotheses H_{22b}, H_{23b}, H_{24b}, H_{25b}, and H_{26b} are supported.

Unlike in Phase-I model, SP does not exert any total effect on neither CSMRKT nor HR in Phase-II model (table 8-8). Hence, hypotheses H_{21} and $H_{24}$are not supported in this model. However, similar to

Phase-I model, SP exerted a significant but less total effect on INFO, CI, and BR. SP effect on PM had increased from 0.64 to 0.84 after introducing the control variables into the model. This in returns implies that H_{22}, H_{23},and H_{26} are supported. As for SP impact on control variables, SP exerts a significant but negative total effect on both COL and QPRF, and hence H_{211} and H_{212} are partially supported. This implied that the questions of SP related to COL and QPRF are reversed that generated the negative sign. As for the rest of the control variables (TQMFM, PWR, UNC, PETHC, and WETHC) SP's impact on them was not significant, hence H_{28}, H_{29}, H_{210}, H_{213}, H_{214} and are not supported. Similar to Phase-I model, LDR is the strongest determinant of SP.

In Phase-I model, the strongest total and direct effect of Strategic Planning (SP) is the one exerted on Information and analysis (INFO), while in Phase-II model, the strongest total and direct effect of SP is on PM. However, for the strongest indirect effect of SP is the one exerted on Business results (BR) in both models Phase-I and Phase-II (tables 8-7 & 8-10).

8.4.3 Prediction of Customer & Market Focus (CSMRKT)

LDR and SP have a strong, significant, and positive direct effect (table 8-6) on CSMRKT ($\gamma=0.43$; $P<0.05$) and ($\beta=0.40$; $P<0.05$) respectively; therefore, H_{11a} and H_{12a} are supported. LDR also indirectly (table 8-7) effects CSMRKT significantly and positively ($\gamma=0.31$; $P<0.05$); thus H_{12b} is supported. The total effect (table 8-5) exerted by LDR on CSMRKT is quite strong and positive ($\gamma=0.79$; $P<0.05$), also SP total effect on CSMRKT is strong and positive ($\beta=0.74$; $P<0.05$). LDR is the strongest determinant of CSMRKT followed by SP.

On the other hand, customer & market focus (CSMRKT) exerts a strong, positive and significant total effect on INFO, CI, PM, and BR (table 8-5), where the set of hypotheses H_{31}, H_{32}, H_{34}, and H_{35} are, therefore, valid. However, CSMRKT has no significant total effect on HR ($\beta=-0.50$; $P>0.05$). Thus hypothesis H_{33} is not supported. Further more, CSMRKT has a significant positive direct effects (table 8-6) on INFO ($\beta=0.24$; $P<0.05$), CI ($\beta=0.12$; $P<0.05$), PM ($\beta=0.33$; $P<0.05$), and BR ($\beta=0.38$; $P<0.05$) that supports Hypotheses H_{31a}, H_{33a}, H_{34a}, and H_{35a}; while has a significant negative direct effect on HR ($\beta=-0.17$, $P<0.05$) and hence H_{32a} is partially supported. It implies that the questions of CSMRKT are reversed that generated the negative sign. However, CSMRKT still effects directly and significantly HR. CSMRKT has no direct effect on CI ($\beta=-0.17$, $P>0.05$), yet CSMRKT exerts a significant positive and indirect effect (table 8-7) on HR (β=0.12; P<0.05). CSMRKT also positively and indirectly effects CI (β =0.08; P<0.05), PM (β=0.10; P<0.05), and BR (β =0.13; P<0.05). Thus Hypotheses H_{32b}, H_{33b}, H_{34b}, and H_{35b} are supported.

In Phase-II model, CSMRKT impact had increased clearly than in Phase-I model as it had exerted a stronger, significant and positive total effect (table 8-8) on all of TQM components SP, HR, PM, INFO, CI, and BR, thus hypotheses H_{36}, H_{33}, H_{34}, H_{31}, H_{32}, and H_{35} are supported. Moreover, CSMRKT total effect was significant on all control variables except TQMFM, PETHC, and WETHC. Hence, hypotheses H_{38}, H_{39}, H_{310}, and H_{311} are supported while H_{37}, H_{312} and H_{313} are not supported. Similar to Phase-I model, LDR is the strongest determinant of CSMRKT.

It is important to note that Customer and Market Focus (CSMRKT) strongest total, direct, and indirect effect is the one exerted on Business results (BR), that implies that strongest effects of CSMRKT is being exerted mainly on the TQM outcome that is the business results and benefits. Similarly, in Phase-II model, CSMRKT strongest indirect effect (table 8-10) is also on BR. However, the strongest total effect (table 8-8) of CSMRKT was on PM and the strongest direct effect (table 8-9) was on CI.

8.4.4 Prediction of Information and Analysis (INFO)

SP and CSMRKT exerts a strong, positive and direct effect (table 8-6) on INFO (β =0.66; P<0.05), (β=0.24; P<0.05) respectively, thus H_{22a}.and H_{31a} are supported. However, the direct effect of LDR on INFO was not significant (γ =0.-0.05; P>0.05), and LDR exerted a significant indirect (table 8-7), strong, and positive effect on INFO (γ =0.70; P<0.05), also SP indirectly affects INFO positively and significantly (β=0.10; P<0.05); therefore, H_{13b} and H_{22b} are supported. The total effects (table 8-5) of LDR, SP, and CSMRKT on INFO are positive and significant, thus H_{13}, H_{22}, and H_{31} are supported. SP is the strongest determinant of INFO followed by LDR.

On the other hand, information and analysis (INFO) exerts a strong, positive and significant total effect on CI, HR, PM, and BR (table 8-5), where the set of hypotheses H_{41}, H_{42}, H_{43}, and H_{44} are, therefore, valid. Furthermore, INFO has a significant positive direct effects (table 8-6) on CI (β =0.34;

P<0.05), HR (β=0.25; P<0.05), PM (β=0.22; P<0.05), and BR (β=0.08; P<0.05) that supports Hypotheses H_{41a}, H_{42a}, H_{43a}, and H_{44a}. In addition, INFO exerts a significant, positive, and indirect effects (table 8-7) on HR (β=0.17; P<0.05), PM (β =0.11; P<0.05), and BR (β=0.17; P<0.05). Thus Hypotheses H_{42b}, H_{43b}, and H_{44b} are supported.

In Phase-II model, INFO does not exert any total effect on HR. Thus, H_{42} is not supported. However, INFO exerts a positive and significant but less total effect (table 8-8) than in Phase-I model on SP, PM, and INFO, thus hypotheses H_{45}, H_{43}, and H_{46} are supported. INFO exerted a significant but negative total effect on CI. Hence, H_{41} is partially supported. In regards to the control variables, INFO exerts significant but negative total effect on UNC, COL, and QPRF; thus hypotheses H_{49}, H_{410}, and $H_{411}$are partially supported while INFO's impact on TQMFM, PWR, PETHC and WETHC was not significant; hence the hypotheses H_{47}, H_{48}, H_{412}, and H_{413} are not supported. Unlike Phase-I model, LDR is the strongest determinant of INFO in Phase-II model followed by SP.

In Phase-I model, the strongest total and direct effect of INFO is the one exerted on CI, while the strongest indirect effect of SP is the one exerted on both PM and BR. Although the strongest total effect of INFO was on both SP and PM in Phase-II model. Moreover, the strongest direct effect of INFO was on SP while the strongest indirect effect was the one exerted on PM.

8.4.5 Prediction of Continuous Improvement (CI)

LDR, SP, and INFO exerts a significant, positive and direct effect (table 8-6) on CI (γ =0.15; P<0.05), (β=0.38; P<0.05), and (β=0.34; P<0.05) respectively, thus H_{14a}, H_{23a}, and H_{41a} are supported. However, the direct effect of CSMRKT on INFO was not significant (β =0.04; P>0.05), yet CSMRKT exerts a significant indirect (table 8-7), strong, and positive effect on CI (β =0.08; P<0.05), also LDR and SP indirectly effects CI positively and significantly (γ=0.55; P<0.05) and (β=0.27; P<0.05) respectively; therefore H_{14b}, H_{23b} , and H_{32b} are supported. The total effects (table 8-5) of LDR, SP, CSMRKT, and INFO are positive and significant, thus H_{14}, H_{23}, H_{32}, and H_{41} are supported. LDR is the strongest determinant of CI followed by SP.

On the other hand, continuous improvement (CI) exerts a positive and significant total effect HR, PM, and BR (table 8-5), where the set of hypotheses H_{51}, H_{52}, and H_{53} are, therefore, valid. Furthermore, CI has a significant positive direct effects (table 8-6) on HR (β =0.50; P<0.05), PM (β=0.37; P<0.05), and BR (β=0.37; P<0.05) that supports Hypotheses H_{51a}, H_{52a}, and H_{53a}. CI exerts a positive, strong and indirect (table 8-7) effects BR (β=0.36; P<0.05) that supports H_{53b}, while CI does not exert any indirectly effect on PM (β =-0.01; P>0.05), thus hypothesis H_{52b} is not supported.

In Phase-II model similar to Phase-I model, CI effects PM and BR significantly and more strongly. In addition, CI also exerts a stronger, significant and positive total effect on SP, and INFO, and, thus hypotheses H_{54}, H_{52}, H_{55}, and H_{53} are supported while H_{51} related to HR were not supported as CI does not affect HR in this model. Furthermore, CI exerts a significant and positive effect on all control variables (PWR, UNC, COL, and QPRF) except TQMFM, PETHC and WETHC, thus H_{58}, H_{59}, H_{510}, and H_{511} are supported while H_{57}, H_{512}, and H_{513} are not supported. LDR is again the strongest determinant of CI followed by HR.

In Phase-I model, the strongest total and direct effect of CI is the one exerted on HR that implies of the importance of continuous improvement role in continuously improving and developing the human resources. While the strongest indirect effect that CI exerts is the one exerted on BR, this implies that CI affects business results and TQM outcomes through its direct effects on PM and HR. In Phase-II model, different results were obtained, as the strongest both total effect of CI was the one exerted on BR, while the strongest direct effect was on SP and the strongest indirect effect was on PM.

8.4.6 Prediction of Human Resource Focus (HR)

LDR, SP, INFO, and CI exerts a significant, positive and direct effect (table 8-6) on INFO (γ =0.18; P<0.05), (β=0.16; P<0.05), (β=0.25; P<0.05), and (β=0.50; P<0.05) respectively, thus H_{15a}, H_{24a}, H_{42a}, and H_{51a} are supported. However, CSMRKT a significant direct but negative effect on HR (β= -0.17; P>0.05).LDR, SP, CSMRKT, and INFO exerts a significant and positive indirect (table 8-7) effect on HR (γ =0.52; P<0.05), (β=0.45; P<0.05), (β=0.12; P<0.05), and (β =0.17; P<0.05) respectively; therefore H_{15b}, H_{24b}, H_{33b}, and H_{42b} are supported. The total effects (table 8-5) of LDR, SP, INFO, and CI are positive and significant, thus H_{15}, H_{24}, H_{42}, and H_{51} are supported. However, H_{33} is not supported as the total effect of CSMRKT on HR is not significant (β=-0.50; P>0.05). LDR is the strongest determinant of HR followed by SP.

On the other hand, human resource (HR) does not exert any significant total effect on PM, and BR (table 8-5). Thus hypotheses H_{61} and H_{62} are, therefore, not supported. Furthermore, HR has no direct effects (table 8-6) on PM (β =-0.03; P>0.05), and BR (β=-0.03; P>0.05), hence both hypotheses H_{61a}, H_{62a} are not supported. Moreover, HR does not exerts any indirect (table 8-7) effect on BR (β=-0.00; P>0.05), that does not support H_{62b}.

While in Phase-I model, HR does not exert any total effect on any of the TQM constructs, it exerts strong, positive, and significant total effect on SP, PM, INFO, CI, and BR. Hence, H_{63}, H_{61}, H_{64}, H_{65}, H_{62} and are supported. The strongest total effect of HR is one exerted on CI. As for the control variables, HR significantly and positively exerts a total effect on TQMFM, PWR, UNC, COL, and QPRF. Hence, H_{67}, H_{68}, H_{69}, H_{610}, H_{611} and are supported. The strongest determinant of HR is again LDR followed by CSMRKT.

8.4.7 Prediction of Process Management (PM)

SP, CSMRKT, INFO, and CI exerts a significant, positive and direct effect (table 8-6) on PM (β=0.12; P<0.05), (β=0.33; P<0.05), (β=0.22; P<0.05), and (β=0.37; P<0.05) respectively, thus H_{25a}, H_{34a}, H_{43a}, and H_{52a} are supported. However, the direct effect of LDR and HR on PM was not significant (γ=-0.05; P>0.05) and (β= -0.03; P>0.05) respectively; that implies that H_{16a} and H_{61a} are not supported. However, LDR still effects on PM in an indirect (table 8-7) way with a strong and positive effect (γ =0.73; P<0.05). In addition, SP, CSMRKT, and INFO exert a positive, significant, and indirect effect on PM (β=0.52; P<0.05), (β=0.10; P<0.05), and (β=0.11; P<0.05) respectively, while CI indirect effect on PM was found not significant (β=-0.01; P>0.05); therefore H_{16b}, H_{25b}, H_{34b}, and H_{43b} are supported. The total effects (table 8-5) of LDR, SP, CSMRKT, INFO, and CI are positive and significant, thus H_{16}, H_{25}, H_{34}, H_{43}, and H_{52} are supported. However, H_{61} is not supported as the total effect of HR on PM is not significant (β =-0.03; P>0.05). LDR is the strongest determinant of PM followed by SP.

Process management (PM) exerts a strong, positive and significant total effect (table 8-5) on BR (β=0.16; $P<0.05$), the hypothesis H_{71} is, therefore, valid. Furthermore, PM has a significant positive direct effects (table 8-6) on BR (β =0.16; $P<0.05$) that supports hypothesis H_{71a}.

In Phase-II model, it was found that PM had a total effect that was strong and significant on SP, INFO, and CI. Hence H_{72}, H_{74}, and H_{75} are supported. As for PM's effect on BR, although PM has a positive significant direct effect (β =0.42; p= 0.00 <0.05) and a negative significant indirect effect (β =-0.31; p=0.00 <0.05) on BR, PM's total effect on BR (β =0.11; p=0.093 >0.05) was found insignificant, hence H_{71} is not supported.

As for the control variables, PM exerted a negative and significant total effect on PWR, COL, and QPRF. Hence, H_{77}, H_{79}, and H_{710} are supported while H_{78}, H_{711}, and H_{712} are not supported. Moreover, the strongest direct effect of PM is the one exerted on Business results (BR), while the strongest indirect effect of PM is the one exerted on CI.

Similar to Phase-I model, the strongest determinant of PM is LDR followed by SP.

8.4.8 Prediction of Business Result (BR)

CSMRKT, INFO, CI, and PM exert a significant, positive and direct effect (table 8-6) on BR (β=0.38; $P<0.05$), (β=0.08; $P<0.05$), (β=0.37; $P<0.05$), and (β=0.16; $P<0.05$) respectively, thus H_{35a}, H_{44a}, H_{53a}, and H_{71a} are supported. However, the direct effect of LDR, SP, and HR on BR was not significant (γ =0.18; $P>0.05$), (β =-0.04; $P>0.05$), and (β =-0.03; $P>0.05$). Thus H_{17a}, H_{26a}, and H_{62a} are not supported. However, LDR and SP, exert a strong, significant and positive indirect (table 8-7) effect on BR (γ =0.66; $P<0.05$), and (β=0.54; $P<0.05$) respectively; also CSMRKT, INFO, and CI exert a positive indirect effect on BR (β =0.13; $P<0.05$), (β =0.17; $P<0.05$), and (β =0.36; $P<0.05$) respectively. Therefore, H_{17b}, H_{26b}, H_{35b}, H_{44b}, H_{33b}, and H_{53b} are supported. HR still does not exert indirect effect either on BR, that implies that hypothesis H_{62b} is not supported. The total effects (table 8-5) of LDR, SP, CSMRKT, INFO, CI, and PM are positive and significant (69%, 50%, 51%, 25%, 41%, and 16%). Thus H_{17}, H_{26}, H_{35}, H_{44}, H_{53}, and H_{71} are supported. However, H_{62} is not supported as the total effect of HR (-3%) on BR is not significant (β =-0.03; $P>0.05$). LDR is the strongest determinant of BR followed by CSMRKT.

While in Phase-II model, some changes were found on the total effect (table 8-8) of some TQM components on BR as LDR, SP, CSMRKT, HR, and CI exerted a significant, strong, and positive total effect (73%, 37%, 47%, 32%, and 62%) on BR, hence hypotheses H_{17}, H_{26}, H_{35}, H_{62}, H_{53}, and were supported respectively. Moreover, PM and INFO total effect (11%, 11%) on BR had become insignificant as their p-values were greater than 0.05. Thus hypotheses H_{71} and H_{44} were not supported.

Similar to Phase-I model, BR still does not exert any significant total effect in Phase-II model on any of the TQM implementation components since it is seen as the outcomes of this implementation process and effects are being exerted on it rather by it. As, for the control variables, BR's total effect on TQMFM was found not significant hence H_{82} was not supported. Similar to Phase-I model, LDR is the strongest determinant of BR followed by CSMRKT. However, by examining the direct effect, PM had the strongest direct effect on BR (although its total effect was found not significant) while in Phase-I model CSMRKT had the strongest direct effect on BR.

9.4.9 Prediction of Control Variables

The control variables were introduced into Phase-II model only. Hence no comparison with the results of Phase-I model will take place here as these variables were not presented in Phase-II model.

8.4.9.1 Prediction of TQM Familiarity (TQMFM)

Although TQMFM's had a positive total effect on BR (2%, p-value<0.05) that was found not significant, hence H91 was not supported. Moreover, the only strong, positive and significant total effect (table 8-8) exerted on TQMFM was by LDR (63%) followed by HR (10%). Hence, the most determinant of TQMFM is LDR followed by HR.

8.4.9.2 Prediction of Power Distance (PWR)

PWR had a significant but negative total effect (table 8-8) on UNC (-12%, p-value<0.05) and COL (-9%, p-value<0.05). Hence, H_{103} and H_{104} are partially supported. PWR total effect on BR was found not significant (-2%, p-value>0.05), thus H_{101} is not supported. It also exerts a positive and significant total effect on QPRF (5%, p-value<0.05). Since PWR's total effects on TQMFM (0%, p-value>0.05), PETHC(5%, p-value>0.05), and WETHC (3%, p-value>0.05) were found not significant H_{102}, H_{106}, and H_{107} were not supported. The strongest determinant of PWR is CI (16%) followed by HR (12%).

8.4.9.3 Prediction of Uncertainty Avoidance (UNC)

UNC had a positive total effect but not significant on BR (2%, p-value>0.05). Hence, H_{111} is not supported. Moreover, UNC exerted a positive and significant total effect on COL (58%, p-value<0.05) and QPRF (8%, p-value<0.05). Thus, H_{113} and H_{114} are supported. However, UNC's total effects on TQMFM (0%, p-value>0.05), PETHC (1%, p-value>0.05), and WETHC (6%, p-value>0.05) were found not significant, hence H_{112}, H_{115}, and H_{116} were not supported (table 8-8). The strongest determinant of UNC is LDR (42%) followed by CI (16%).

8.4.9.4 Prediction of Collectivism (COL)

COL had a positive but not significant total effect on BR (1%, p-value>0.05). COL did not either exert any significant total effect on any other variable. Hence, the set of hypotheses (H_{121}, H_{122}, H_{123}, and H_{124}) related to BR, TQMFM (0%, p-value>0.05), PETHC (-5%, p-value>0.05), and WETHC (1%, p-value>0.05) were not supported. The strongest determinant of COL is UNC (58%) followed by LDR (42%).

8.4.9.5 Prediction of Quality Performance Orientation (QPRF)

QPRF exert a positive and significant total effect (9%, p-value<0.05) on BR, hence H_{131} is supported (table 8-8). This in return supports the literature findings that societies such as the Kuwaiti oil industry of high performance orientation are positively associated with of TQM practices (Javidan, 2004).

However, its total effect on TQMFM (0%, p-value>0.05) was not significant. Hence H_{132} is not supported. Moreover, by comparing TQM implementation components effect on the control variables, it was found that the number and impact of total effects being exerted by these constructs on QPRF was higher than the other control variables. For example, LDR exerts a total effect of 60%, SP -34%, CI 57%, CSMRKT 40%, HR 43%, and PM -29%. From these total effects, the strongest determinant of QPRF is LDR followed by CI.

8.4.9.6 Prediction of Personal-related Quality Ethical Values (PETHC)

PETHC total effect on BR (2%, p-value>0.05) was found positive but not significant. PETHC effect on TQMFM (0%, p-value>0.05) was also found not significant; hence H_{141} and H_{142} were not supported. Moreover, there is no strongest determinant of PETHC as there is no significant total effect being exerted on it.

8.4.9.7 Prediction of Work-related Quality Ethical Values (WETHC)

WETHC total effect on both BR (-1%, p-value>0.05) and TQMFM (0%, p-value>0.05) was found not significant; hence H_{151} and H_{152} were not supported. Moreover, there is not strongest determinant of WETHC as there is no significant total effect being exerted on it.

The following Tables (8-11) and (8-12) summarize the supported and non- supported hypotheses of Phase-I model and Phase-II model.

Table 8-11: Summary of hypotheses validation (Phase-I Model)

Total Effect		Direct Effect		Indirect Effect	
Hypotheses	**Validation**	**Hypotheses**	**Validation**	**Hypotheses**	**Validation**
H_{11}	Yes	H_{11a}	Yes	H_{12b}	Yes
H_{12}	Yes	H_{12a}	Yes	H_{13b}	Yes
H_{13}	Yes	H_{13a}	No	H_{14b}	Yes
H_{14}	Yes	H_{14a}	Yes	H_{15b}	Yes
H_{15}	Yes	H_{15a}	Yes	H_{16b}	Yes
H_{16}	Yes	H_{16a}	No	H_{17b}	Yes
H_{17}	Yes	H_{17a}	No	H_{22b}	Yes
H_{21}	Yes	H_{21a}	Yes	H_{23b}	Yes
H_{22}	Yes	H_{22a}	Yes	H_{24b}	Yes
H_{23}	Yes	H_{23a}	Yes	H_{25b}	Yes

H_{24}	Yes	H_{24a}	Yes	H_{26b}	Yes
H_{25}	Yes	H_{25a}	Yes	H_{32b}	Yes
H_{26}	Yes	H_{26a}	No	H_{33b}	Yes
H_{31}	Yes	H_{31a}	Yes	H_{34b}	Yes
H_{32}	Yes	H_{32a}	No	H_{35b}	Yes
H_{33}	No	H_{33a}	Partially	H_{42b}	Yes
H_{34}	Yes	H_{34a}	Yes	H_{43b}	Yes
H_{35}	Yes	H_{35a}	Yes	H_{44b}	Yes
H_{41}	Yes	H_{41a}	Yes	H_{52b}	No
H_{42}	Yes	H_{42a}	Yes	H_{53b}	Yes
H_{43}	Yes	H_{43a}	Yes	H_{62b}	No
H_{44}	Yes	H_{44a}	Yes		
H_{51}	Yes	H_{51a}	Yes		
H_{52}	Yes	H_{52a}	Yes		
H_{53}	Yes	H_{53a}	Yes		
H_{61}	No	H_{61a}	No		
H_{62}	No	H_{62a}	No		
H_{71}	Yes	H_{71a}	Yes		

Table 8-12: Summary of hypotheses validation (Phase-II model)

Total Effect		Direct Effect		Indirect Effect	
Hypotheses	**Validation**	**Hypotheses**	**Validation**	**Hypotheses**	**Validation**
H_{11}	Yes	H_{11a}	Yes	$H_{11\,b}$	Yes
H_{12}	Yes	H_{12a}	Yes	$H_{15\,b}$	Yes
H_{13}	Yes	H_{15a}	Yes	$H_{16\,b}$	Yes
H_{14}	Yes	H_{16a}	Partially	$H_{13\,b}$	Yes
H_{15}	Yes	H_{14a}	Yes	$H_{14\,b}$	Yes

H_{16}	Yes	H_{18a}	Yes	$H_{17\,b}$	Yes
H_{17}	Yes	H_{19a}	Partially	$H_{18\,b}$	No
H_{18}	Yes	H_{110a}	Yes	$H_{19\,b}$	Yes
H_{19}	No	H_{111a}	Yes	$H_{110\,b}$	Yes
H_{110}	Yes	H_{112a}	No	$H_{111\,b}$	Yes
H_{111}	No	H_{113a}	No	$H_{112\,b}$	Yes
H_{112}	Yes	H_{114a}	No	$H_{113\,b}$	No
H_{113}	No	H_{25a}	Yes	$H_{114\,b}$	No
H_{114}	No	H_{22a}	Yes	$H_{27\,b}$	Partially
H_{22}	Yes	H_{26a}	No	$H_{25\,b}$	Partially
H_{23}	Yes	H_{33a}	Yes	$H_{22\,b}$	Partially
H_{25}	Yes	H_{34a}	Yes	$H_{23\,b}$	Partially
H_{26}	Yes	H_{31a}	Yes	$H_{26\,b}$	Yes
H_{27}	Partially	H_{32a}	Yes	$H_{28\,b}$	No
H_{28}	No	H_{45a}	Yes	$H_{29\,b}$	No
H_{29}	No	H_{44a}	No	$H_{210\,b}$	No
H_{210}	No	H_{47a}	No	$H_{211\,b}$	Partially
H_{211}	Partially	H_{48a}	No	$H_{212\,b}$	Partially
H_{212}	Partially	H_{49a}	Partially	$H_{213\,b}$	No
H_{213}	No	H_{54a}	Yes	$H_{214\,b}$	No
H_{214}	No	H_{53a}	Yes	$H_{36\,b}$	Yes
H_{31}	Yes	H_{58a}	Yes	$H_{34\,b}$	Yes
H_{32}	Yes	H_{59a}	Yes	$H_{31\,b}$	Yes
H_{35}	Yes	H_{510a}	Yes	$H_{32\,b}$	No
H_{37}	No	H_{511a}	Yes	$H_{35\,b}$	Yes
H_{38}	Yes	H_{512a}	No	$H_{37\,b}$	No
H_{39}	Yes	H_{513a}	No	$H_{38\,b}$	Yes
H_{310}	Yes	H_{65a}	Yes	$H_{39\,b}$	Yes
H_{311}	Yes	H_{62a}	Partially	$H_{310\,b}$	Yes

H_{313}	No	H_{67a}	No	$H_{311\,b}$	Yes
H_{45}	Yes	H_{75a}	Partially	$H_{312\,b}$	No
H_{43}	Yes	H_{71a}	Yes	$H_{313\,b}$	No
H_{46}	Yes	H_{76a}	No	$H_{45\,b}$	Partially
H_{41}	Partially	H_{77a}	No	$H_{43\,b}$	Yes
H_{44}	No	H_{78a}	Yes	$H_{46\,b}$	Yes
H_{47}	No	H_{79a}	Partially	$H_{41\,b}$	Partially
H_{48}	No	H_{711a}	No	$H_{44\,b}$	No
H_{49}	Partially	H_{712a}	No	$H_{47\,b}$	No
H_{410}	Partially	H_{82a}	No	$H_{48\,b}$	No
H_{411}	Partially	H_{91a}	No	$H_{49\,b}$	No
H_{412}	No	H_{101a}	No	$H_{410\,b}$	Partially
H_{413}	No	H_{103a}	Partially	$H_{411\,b}$	Partially
H_{54}	Yes	H_{104a}	No	$H_{412\,b}$	No
H_{52}	Yes	H_{105a}	Yes	$H_{413\,b}$	No
H_{55}	Yes	H_{106a}	No	$H_{54\,b}$	Partially
H_{56}	Partially	H_{107a}	No	$H_{52\,b}$	Yes
H_{53}	Yes	H_{111a}	No	$H_{55\,b}$	Yes
H_{57}	No	H_{113a}	Yes	$H_{56\,b}$	Partially
H_{58}	Yes	H_{114a}	Yes	$H_{53\,b}$	Yes
H_{59}	Yes	H_{115a}	No	$H_{57\,b}$	No
H_{510}	Yes	H_{116a}	No	$H_{58\,b}$	No
H_{511}	Yes	H_{121a}	No	$H_{59\,b}$	No
H_{512}	No	H_{123a}	No	$H_{510\,b}$	Partially
H_{513}	No	H_{124a}	No	$H_{511\,b}$	Partially
H_{63}	Yes	H_{131a}	Yes	$H_{512\,b}$	No
H_{61}	Yes	H_{141a}	No	$H_{513\,b}$	No
H_{64}	Yes	H_{151a}	No	$H_{63\,b}$	Yes
H_{65}	Yes			$H_{61\,b}$	Yes

H_{62}	Yes			$H_{64\,b}$	Yes
H_{67}	Yes			$H_{65\,b}$	Partially
H_{68}	Yes			$H_{62\,b}$	Yes
H_{69}	Yes			$H_{67\,b}$	No
H_{610}	Yes			$H_{68\,b}$	Yes
H_{611}	Yes			$H_{69\,b}$	Yes
H_{612}	No			$H_{610\,b}$	Yes
H_{613}	No			$H_{611\,b}$	Yes
H_{72}	Partially			$H_{612\,b}$	No
H_{73}	Partially			$H_{613\,b}$	No
H_{74}	Partially			$H_{72\,b}$	Partially
H_{75}	Partially			$H_{73\,b}$	Partially
H_{71}	No			$H_{74\,b}$	Partially
H_{76}	No			$H_{75\,b}$	Yes
H_{77}	Partially			$H_{71\,b}$	Partially
H_{78}	No			$H_{76\,b}$	No
H_{79}	Yes			$H_{77\,b}$	Partially
H_{710}	Yes			$H_{78\,b}$	Partially
H_{711}	No			$H_{79\,b}$	No
H_{712}	No			$H_{710\,b}$	Partially
H_{81}	No			$H_{711\,b}$	No
H_{82}	No			$H_{712\,b}$	No
H_{91}	H_{91}			$H_{81\,b}$	No
H_{92}	H_{92}			$H_{82\,b}$	No
H_{101}	No			$H_{91\,b}$	No
H_{102}	No			$H_{92\,b}$	No
H_{103}	Partially			$H_{101\,b}$	No
H_{104}	Partially			$H_{102\,b}$	No
H_{105}	Yes			$H_{104\,b}$	Partially

H_{106}	No			$H_{105\,b}$	Partially
H_{107}	No			$H_{106\,b}$	No
H_{111}	Yes			$H_{107\,b}$	No
H_{112}	No			$H_{111\,b}$	No
H_{113}	Yes			$H_{112\,b}$	No
H_{114}	Yes			$H_{115\,b}$	No
H_{115}	No			$H_{116\,b}$	No
H_{116}	No			$H_{121\,b}$	No
H_{121}	No			$H_{122\,b}$	No
H_{122}	No			$H_{131\,b}$	No
H_{123}	No			$H_{132\,b}$	No
H_{124}	No			$H_{141\,b}$	No
H_{131}	Yes			$H_{142\,b}$	No
H_{132}	No			$H_{141\,b}$	No
H_{141}	No			$H_{142\,b}$	No
H_{142}	No				
H_{151}	No				
H_{152}	No				

8.5 Discussion of the empirically developed framework

This study focused on developing a research framework of TQM implementation process and its gained business results in the presence of a group of control variables. This framework mainly utilized MBNQA framework (NIST, 2000) with adding continuous improvement component to its TQM implementation components. Moreover, it was deployed in the oil sector's companies under the Operations and productions industry in the Kuwaiti business environment. Although some studies such as Winn and Cameron (1998) were not able to validate the Baldrige framework (MBNQA), interestingly that this study's analysis has provided evidence to confirm the validity of

Baldrige framework criteria used and as well as the additional components as it consisted on all the building components of the framework and most of the relationships.

The differences in some relationships' results can be explained by the differences in the sample studied working environment, and culture. It has been also noticed that all TQM constructs were measurable and related to each other, and no constructs were discarded as they were found reliable and valid. On the other hand, two of the control variables (Personal and work related quality ethical values) were discarded as the empirical findings found that they did not play any significant role on any of the framework's components. Moreover, no significant effects were exerted on these two variables by the other framework's components. A further detailed discussion of all building components of the study's developed framework (Phase-II model after introducing the control variables) and the relationships between them are presented in the following sections.

8.5.1 Overall Control variables impact on the research developed model

Many considerable developments and changes were found after introducing the control variables into the second phase of the TQM model. One of these important changes occurred in the measurements related to study's model adequacy and validity (section 8.3), as convergent validity (composite reliability and AVE) of the framework's components had increased after introducing the control variables that shows the added value of these control variable existence in the model. Also, the discriminant validity showed that more overlaps among TQM components (constructs) were found that meant that respondents might have faced a challenge to differentiate between different concepts of TQM components. However no overlap was found between TQM constructs and control variables and within the control variables themselves. This signifies the existence of discriminant validity between them and shows that respondents did not face any difficulties in differentiating between TQM components and control variables, and between control variables themselves. Also, after introducing the control variables into the study's framework, the good-ness-of-fit parameters for the model (phase II) were still in the admissible standard, and hence the findings of this model provide evidence of the relatively strong model fit to the observed data.

In addition, the correlation among TQM constructs became a stronger, positive, and significant with the addition of control variables. Also, the correlations between TQM constructs and the control variables were weak, positive and significant.

Another important development was the clear impact of adding these control variables on the change of how TQM implementation components were related to the gained business results. As discussed in section 8.4.8 and will be discussed in further details in 8.5.2, many relations were effected as some relations' impacts were reduced, some were increased, some relations directions were reversed that led to discarding some relations and creating new ones.

Moreover, although various significant effects were exerted on the control variables by TQM implementation components (constructs) and business results (BR) as discussed in section 8.4.9, yet the control variables themselves did not exert a total effect on any of the TQM implementation components. Moreover, the total effects being exerted by the control variables on TQM business results did not reach to the level of significance as discussed in section 8.4.9 where all total effects found were not significant as p-value was greater than 0.05, Table 8-8, that is except for Quality Performance Orientation (QPERF) that exerted a positive and significant total effect (9%) on the gained business results (BR) that, in return, supports the literature findings as discussed in section 8.4.9.5. This shows the added value of including quality performance orientation as an additional dimension under the national culture variables as it was the only variable among these variables that signified a significant positive effect on the gained business results. It also raises the need for further investigation by top management on how to utilize these control variables in their organizations to positively and significantly affect the TQM implementation process. For instance, power distance value (PWR) should exert a positive impact on TQM implementation as according to the literature high power distance society (such as Kuwait) might impact the implementation process for TQM (Tata and Prasad, 1998; Chin and Pun, 2002).

In addition, by further investigating the control variables' relationships with the components of the developed Phase-II model (figure 8-1b), it was noted that these relationships had positioned the control variables in between the TQM implementation model and the gained business results that, in return, ensures its moderating role in controlling this relationship between them.

Finally; despite the fact that research respondents were able to understand the questions related to the quality ethical values and to distinguish these values into two categories that were personal and work related quality ethical values (as seen in section 6.10.4.3), but both values did not exert any significant effect on the TQM implementation process nor its business results. Moreover, none of the TQM implementation components and business results (BR) exerted any significant effect on these two ethical values. These findings imply that both personal and work related quality ethical values are not important components in this model, and hence, they were not included into the final developed conceptual model of this research.

8.5.2 The control variables' impact on TQM implementation components (Constructs)

A clear impact was found in this study on the relationship between all TQM implementation components (the TQM constructs) and on the gained business results. In this section, the impact on TQM implementation components and their relationship to each others shall be explored in details, and in the following section the impact on business results will be explored thoroughly.

8.5.2.1 Leadership (LDR)

Leadership (LDR) effect on other TQM components had increased significantly. As it had exerted in Phase-I a strong and positive significant total effect on all components (table 8-5 and 8-8), this effect as explored in section 8.4.1 was kept with an increase of its impact in Phase-II model such as SP (79% to 86%), CSMRKT (74% to 77%), INFO (65% to 79%), CI (70% to 78%), HR (70% to 71%), and PM (68% to 79%). LDR also became the strongest determinant of all TQM components in Phase-II model.

Moreover, as LDR had exerted significant direct effect (79%) only on SP in Phase-I model, this direct effect was reduced (24%) and an indirect effect (62%) had came into the picture (table 8-6, 8-7, 8-9, and 8-10). Also, LDR effect on CSMRKT in Phase-I model was divided into direct effect (43%) and indirect effect (31%). However, in Phase-II model these two effects emerged into a stronger and only a direct effect (77%). Finally, as LDR strongest effect in both models was on Strategic Planning (SP).

This confirms the importance role leadership plays in strategic planning practices and processes. As according to quality management pioneers' research (Deming 1982, 1986, Juran 1993, Sashkin and Kiser 1993, Waldman 1994), successful implementation of quality management strategies requires effective leadership from upper management.

From these highlighted impacts related to leadership, it ensures the obvious effect that the control variables had on leadership. Moreover, these findings also show that leadership plays a critical role in promoting quality management implementation in the company as it affects positively and strongly all TQM constructs either directly or indirectly; these results agree with the literature of the crucial role top management plays in driving company-wide quality management efforts that has been recognized by practitioners and researchers as one of the major factors for achieving successful quality performance (Deming, 1986; Flynn *et al.*, 1994; Juran, 1986; Puffer and McCarthy, 1996). Hence, this increase in Leadership's impact had strongly confirmed on this critical role of leadership, and accordingly confirmed of the added value of the control variables into the research model. Moreover, this empirical findings also agree strongly with the Malcolm Baldrige award criteria and other studies' findings of many researchers (Kaynak, 2003; Lee et. al., 2003; Meyer and Collier, 2001; Wilson and Collier, 2000; Winn and Cameron, 1998; Pannirselvam and Ferguson, 2001; Flynn and Saladin, 2001; Steeples, 1992) that the Leadership dimension is classified as the most important and main driver of the quality system as it affects significantly and positively all the building blocks (constructs) of the total quality model. Therefore, such finding needs to be considered carefully by the top management when implementing TQM practices to achieve the best outcomes of such implementation and as leadership and upper management support is expected to be the ultimate drivers of quality management practices in organizations.

8.5.2.2 Strategic Planning (SP)

As explored in section 8.4.2, Strategic Planning (SP) total effects on the remaining TQM constructs were still significant but mostly reduced such as INFO (76% to 62%) and CI (66% to -43%). While for CSMRKT (40% to 0%) and HR (61% to 0%), SP effect became not available. Moreover, SP total effect on PM had increased significantly (64% to 84%) and had exerted higher direct effect on PM than in Phase-I model (Tables 8-6 and 8-9). SP strongest effect was exerted on process management.

All these obvious changes confirm how SP relationships with the other TQM components were clearly activated after adding the control variables into the research model.

Moreover, the overall findings showed that Strategic planning has significant effects (either directly or indirectly) on many of TQM constructs that thus agree with Wilson and Collier's findings (2000) that strategic planning is the second strongest construct after LDR in the TQM model. Add to that, the above findings also agreed with Lee et. al.'s (2003) findings who stated that, in the Malcolm Baldrige model, there is a positive link between strategic planning and quality information, process management, and human resources focus. As the positive link between strategic planning and human resources can be seen in the reversed effect of SP on HR where HR became exerting a strong, positive on SP instead that, in return, might led to such change in the outcomes. This conversion in the direction of the relationship was clearly an impact of the control variables availability in the model.

However, Pannirselvam and Ferguson (2001) showed that the effect of strategic quality planning on product and process management and customer focus and relationship management was not significant that is partially complying with our findings. As strategic planning effect on CSMRKT became not significant in Phase-II model due to the reversed direction of effect where CMRKT became exerting the positive and significant effect on SP, while the SP effect on process management increased significantly and became SP's strongest total and direct effect, that, in return, supports Lee et. al.'s finding (2003) as mentioned earlier.

8.5.2.3 Customer and Market Focus (CSMRKT)

From what had been explored in section 8.4.3, it was found that CSMRKT effect on the remaining TQM components had increased significantly and became stronger such as INFO (24% to 47%), CI (12% to 50%), and PM (43% to 56%). In addition, new positive, strong, and significant effects came into the picture such as CSMRKT effect on SP (0% to 39%) and HR (0% to 33%). And SP's effect on PM became its strongest effect among all TQM components.

From these findings, introducing the control variables had obviously influenced CSMRKT relationship with other TQM components and an added value to this research finding as it provided a stronger support for these empirical findings from the literature studies and researches. For instance, MBNQA (NIST, 2000) implies customer and market management should have a positive impact on strategic planning that is supported clearly in this study after introducing the control variables into the model. Moreover, Lee *et al.* (2003) found that customer orientation is positively related to process management and human resources focus. This supports the above findings as CSMRKT is positively and significantly affecting HR and PM.

8.5.2.4 Information and Analysis (INFO)

Information and analysis's impact was clearly reduced on CI (34% to -6%) and PM (34% to 11%) after introducing the control variables as explored in section 8.4.4. Moreover, information and analysis impact on human resources (42% to 0%) was no longer there. However, a significant and positive effect of INFO on strategic planning (0% to 11%) had come into the picture.

Such clear changes in relationships confirm the clear impact that the control variables had played on this component's relationships with other TQM components. Moreover, from these findings that INFO has an important role in the model since it is connected to all TQM constructs as it exerts significant effect on SP, CI, PM, and BR while LDR, HR, and CSMRKT exert significant effect on INFO. This, in return, supports the literature as Information and analysis (INFO) is seen as the foundation that spans the entire MBNQA framework (Hodgetts *et al*., 1999). This finding also agrees with literature studies that found INFO has significant positive effect on process management (Lee et. al., 2003). In addition, Lee et. al. (2003) were not able to find a significant effect of INFO on HR that is the similar to this research's findings, this might be verified as the effect was reversed where HR became exerting a positive and significant effect on INFO (table 8-8). Moreover, since continuous improvement (CI) was added to the MBNQA as explained in chapter 4, it was found that the significant total effect of information and analysis exerted on continuous improvement ensures the important role that information and analysis plays in the process of continuous improvement of all firms' components at all levels and in all functions (Flynn *et al*.; 1994).

8.5.2.5 Continuous Improvement (CI)

From what was shown in section 8.4.5, continuous improvement's effect had significantly increased on TQM components after adding the control variables into the model such as SP (0% to 53%), INFO (0% to 41%), PM (36% to 55%). However, CI impact on HR became not available (50% to 0%).

From the above findings, the impact of introducing the control variable on continuous improvement relations with the other TQM components was clearly seen. Moreover, since CI has a significant, positive, and strong effect on strategic planning, information and analysis and process management. This supports the literature findings as Sureshchandar *et al*. (2001) stated in their study that striving for continuous improvement is critical to the achievement of quality. In addition, Roth and Jackson (1995) found an important role for continuous improvement in the firm's ability to deliver high service quality. As for the lost impact of continuous improvement on human resources might be due to the reversed direction of this impact as human resources become exerting a positive, strong, and significant impact on continuous improvement i.e. this reverse in effect's direction might entail to eliminate this effect here.

8.5.2.6 Human Resource Focus (HR)

Human resource component was the TQM component that was mostly influenced by the introducing of control variables into the model as shown in section 8.4.6. Since, in Phase-I model, HR did not exert any strong significant effect on any of the TQM components. However, a major shift had occurred in HR's relations with these components as it became effecting most of them positively and strongly such as SP (0% to 40%), INFO (0% to 31%), CI (0% to 54%), and PM (0% to 41%).

These major changes on HR relations, since it became quite active component and connected to the other components (new effects came into the picture), are clearly due to introducing the control variables into the model that led to a reverse in the direction of the effects and generated this new positive and significant effect of HR on the TQM implementation components. This in return agrees with the literature findings as striving to maintain high levels of quality depends on the best use of the talents and abilities of an organization's entire work force (Choppin, 1991; Harber *et al*., 1991; Stratton, 1991).

8.5.2.7 Process Management (PM)

From what has been explored in section 8.4.7, process management (PM) relations with other TQM components heavily influenced by the presence of these control variables. As PM had exerted new strong, significant, and negative effects on SP (0% to -27%), INFO (0% to -21%), and CI (0% to -37%).

These new effects of PM were mainly due to introducing the control variables into the model. Moreover, as these effects were negative, it implies that the direction of this significant effect is reversed. Hence, these TQM components are exerting these significant effects on PM that supports the literature findings (Lee et. al., 2003; Deming, 1982) as presented earlier, since it shows that PM is another core TQM construct that significantly effect and get affected by other TQM components significantly.

8.5.3 Impact of adding the control variables on TQM Business Results (BR)

After this presentation of empirical results and analyzing it respectively (section 8.4.8), further investigation (tables 8-5, 8-8, 8-9, and 8-10) is done here in order to explore more in-depth the moderating/controlling role that the control variables had played in the relationship between the TQM implementation process and the resulted business outcomes. By introducing these controlling variables into this research's model, it was found that the total effect of leadership (LDR) had increased positively (69% to 73%) on the gained business results (BR), also Continuous improvement (CI) total effect increased (41% to 62%) and exceeded CSMRKT and SP effect to take the second largest positive effective component on BR after LDR.

HR became effective (0% to 32%) on BR (-15% indirect effect, 47% indirect effect; Table 8-10). Although the total effect of both CSMRKT and SP was still positive, strong, and significant on BR, yet it was reduced (51% to 47%; and 50% to 37% respectively).

On the other hand, INFO total effect decreased from a significant effect (25%, p-value<0.05) to insignificant effect (10%, p-value>0.05). By further exploring this change, it was found that both direct (5%) and indirect (4%) effect of INFO on BR were not significant, that, in return, resulted in non significant total effect on BR.

Also, PM total effect on BR was reduced from positive and significant effect (16%) to insignificant effect (11%). By further examining this change, it was found that PM has a significant positive direct effect (42%) on BR and significant negative indirect effect (-31%) that resulted in 11% total effect that was found not significant (p-value> 0.05).

Another important change noticed was that on the Phase-I model CSMRKT had exerted the strongest and significant direct effect on BR (38%, Table 8-6). While in Phase-II model, it was found that PM had the strongest and significant direct effect on BR (42%, Table 8-9) though PM's total effect on BR was not significant. This again confirmed the impact that introducing these control variables had made on the developed model relationships.

Hence, the above results corroborate the literature and studies' findings literature suggesting that a positive relationship exists between the extent to that companies implement TQM and the outcomes of this implementation that is the business results (Evans and Jack, 2003; Douglas and Judge, 2001; Easton and Jarrell, 1998; Hendricks and Singhal, 1996, 1997). Moreover, the introducing the control variables into the TQM implementation model had increased the leadership and top management strong impact on the TQM business results (BR), and leadership became the strongest determinant of BR. This in return enforces the literature findings highlighted earlier of leadership and top management positive and critical role in the TQM implementation process and its resulted outcomes and benefits (Lee et. al., 2003; Meyer and Collier, 2001; Wilson and Collier, 2000; Winn and Cameron, 1998; Pannirselvam and Ferguson, 2001; Flynn and Saladin, 2001; Steeples, 1992). In addition, the control variables existence also increased clearly the continuous improvement (CI) positive effect on BR as it had a stronger and more significant impact on Business results than the strategic planning (SP) and customer and market focus (CSMRKT). This in return supports the literature findings (Rungtusanatham *et al*., 1998; Douglas and Fredendall, 2004; Anderson *et al.*, 1995; W.E. Deming, 1989; Juran's Trilogy, 1979; Crosby, 1986), and also emphasizes the added value of this study and the importance of adding this component (CI) taken from Deming management model (Anderson et. al., 1994) into the MBNQA framework (NIST, 2000) as the empirical findings of this study showed that it plays quite critical and positive impact on TQM business results. Moreover, control variable existence created a positive and significant effect of Human resources (HR) on business results that was clearly lacked and not existed before introducing control variables into the model. This again supports the literature findings of Human resource's positive and important role in successful TQM systems force (Choppin, 1991; Harber *et al*., 1991; Stratton, 1991), and also supports Pannirselvam and Ferguson (2001) findings where Human resource (HR) had a significant indirect effect on business results. In addition, although other studies empirically showed that Information and analysis (Pannirselvam and Ferguson's, 2001; Wilson and Collier; 2000) and process management (Lee *et. al*., 2003; Ahire and Dreyfus, 2000; Meyer and Collier, 2001; Flynn and Saladin, 2001; Forza and Flippini, 1998; Flynn *et al.* 1995) had significant and positive effect on Business results, existence of the control variables had reduced the positive total effect of process management (PM) and information and analysis (INFO) exerted on business results (BR) to reach insignificance level. This difference from the literature findings might be explained by the differences in the sample studied working environment, and culture, it also might imply to issues in managerial procedures or how the quality practices is related to process management and how Information and analysis have been implemented and perceived. However, the strongest significant direct effect exerted on BR was by PM, this supports the literature findings of process management positive impact on TQM business results (Lee et. al., 2003; Ahire and Dreyfus, 2000; Pannirselvam and Ferguson, 2001;Wilson and Collier, 2000; Meyer and Collier, 2001; Flynn and Saladin, 2001; Forza and Flippini, 1998).

Finally, the control variables existence also reduced slightly the significant and positive effects of Strategic planning (SP) and customer and market focus (CSMRKT) on TQM business results (BR). That, in return, supports the literature findings (Lascelles and Dale, 1989; Barclay, 1991; Ishikawa, 1985; Steeples, 1992) of the positive and effective role these two components in the gained business results. Moreover, according to Rao *et al.* (1999), "a study by the American Quality Foundation and Ernst & Young (1992) in the US, Canada, Germany, and Japan found that strategic quality planning has significant effects on organizational performance". In addition, many researches in the literature confirmed that the CSMRKT has a positive and significant impact on business results (Pannirselvam and Ferguson, 2001; Dow *et al*., 1999; Samson and Terziovski, 1999).

In conclusion, all of the above findings and those presented in sections 8.4.8, 8.4.9.8, and 8.5.2 clearly emphasized on the important and active role that this research's control variables are playing in controlling and moderating the effect of every component in TQM implementation process on its gained business results and on affecting these components' relationships among each others as well. This, in return, answered the research questions whether or not these selected control variables would actually exert any effects on TQM implementation components and its gained business results, and if it would moderate and effect the relationship between these two. From these presented empirical findings the answer to both questions is obviously yes.

8.6 Summary

In this chapter the research proposed framework of this study was empirically tested and validated through Structural Equation Modeling (SEM) analysis technique. The proposed framework mainly consisted of three main components including TQM implementation constructs, business results and set of control variables. As discussed in section 8.2.2, both difference in managerial levels and demographical variables were not included in the control variables set in this developed framework when conducted the SEM analysis.

As prior step to applying SEM, a step of assessing the model's validity and adequacy was done though convergent validity, discriminant validity, and good-ness-of-fit analysis. After introducing the control variable, convergent validity of the model had increased, and the proposed model was adequate with relatively strong model fit to the observed data. The discriminant validity between TQM constructs themselves was found low, while the discriminant validity between TQM constructs and control variables and between control variables themselves were both found high.

All relationships among all framework's building components were analyzed and their main and sub-hypotheses were examined. As an attempt to enrich the findings of this research, the research model was tested on two phases. Phase-I Model, that consists of only the TQM implementation components and the Business results and outcomes validating the TQM implementation model proposed under the Kuwaiti business environment. And Phase-II Model, that consists of the TQM implementation components and Business results along with the control variables that were introduced into the model in order to verify if these control variables has any moderating impact on the TQM implementation components and Business Results (BR). The main objective of having these two phases is to be able to investigate the impact of the control variables on the relationships among the TQM implementation components themselves and on the gained business results, as well as the relationships between these two. A detailed discussion on all of these relationships and components were presented and highlighted. As seen in this chapter, all of these discussions and interpretations of the results have been supported by other previous empirical studies in the context of TQM and scrutiny of the relevant literature review.

Furthermore, the empirical findings of this study had supported and validated the proposed research framework were MBNQA framework was utilized along with adding continuous improvement construct into it. None of the proposed TQM implementation model's components and gained business (BR) was discarded as they were proven reliable and valid. However, according to the discussed research findings, from the set of control variables, personal and work related quality ethical values were discarded from the model. Add to that, this study's findings also confirmed that control variables played a significant impact on the relationships between framework's components themselves and with gained business results. It also showed that the control variables had acted as moderators and controllers of the relationship among these implementation components and TQM gained business results. Finally, although there were effects being exerted on TQM business results (BR) by these control variables, yet none were significant except the effect of quality performance orientation (QPRF).

Based on the overall study findings and outcomes, the next chapter "conclusion and recommendation" shall consider carefully these key findings and what implications are relaying behind them. Add to that, this chapter will be mainly divided into four sections covering, research contributions, research limitations, managerial implications and recommendations, future research recommendation,

CHAPTER 9

Conclusion and Recommendations

9.1 Introduction

This study is one of the first studies to examine empirically and rigorously the implementation of Total Quality Management (TQM) in the oil industry in Kuwait and how it is being perceived by the employees of this industry. The process through which the thesis was developed and verified is reported in nine chapters. Chapter 1 provides the Introduction, Background and Outline of the research. Chapters 2, 3 and 4 were dedicated to the review of the relevant literature. Chapter 5 discussed the research design and methodology used. Chapter 6 discussed the descriptive analysis of the quantitative and qualitative data collected, as well as basic reliability and validity assessment tools and techniques to this data. Chapters 7 described the next phase of data analysis i.e. the Quantitative and Qualitative Analysis of the research questions' inferences and proposed hypotheses respectively. Chapter 8 then tested the proposed conceptual framework of the research and analyzed all aspects related to it thoroughly using structural equation modeling (SEM) technique and tools. Finally, Chapter 9 provides the discussion related to the key findings of the analysis (i.e. the Quantitative and Qualitative Analysis). It also seeks to draw some conclusions from this research as it points out the contributions to the knowledge the research has made, highlights the limitations of the research, shares managerial implications and recommendations and makes recommendations for future research.

9.2 Overview of research aim, objectives and achievement

The main aim of this research was to contribute to the literature by developing a new conceptual total quality management framework that applies in general to the Kuwaiti Business Environment and in specific to organizations in the Oil "Petroleum" industry, so that it can serve as a good theoretical model for improving the operation and production level of the Oil industry organizations in other developing and developed countries. Moreover, it also explored a set of selected variables that may not be all explored earlier that could have an effect on the level of implementing TQM, and examine the relationship between the developed TQM model and business results gained from implementing TQM practices. To achieve this aim, this research has carried out comprehensive investigation using various literature reviews, methodologies (quantitative and qualitative), and models. Consequently, the major objectives achieved have been:

1. To develop a comprehensive view and conceptual framework of Total Quality Management (TQM) implementation in oil industry (operations and production) from the literature, to be explored and validated in the field through a complementary empirical investigation using a combination of qualitative and quantitative methods.

2. To identify the new set of constructs (TQM implementation components) that builds new theory of quality management according to the Kuwaiti Business environment, after performing a detailed investigation of the existing TQM literature.

3. To investigate the causal relationship between these constructs as they shall formulate the conceptual model that shall apply to the Kuwaiti Oil industry in specific and in Operations and productions at the Kuwaiti Business Environment in general.

4. To examine and analyze the moderating role and effect of some control variables (TQM awareness, managerial levels, national cultural values, and a group of demographical variables) on the perceived level of TQM implementation in the Kuwaiti Business Environment.

5. To empirically and thoroughly examine the relationship between the TQM implementation components (TQM Constructs, gained business results and control variables) of the newly developed TQM model and to explore also how the implementation of TQM can significantly affect the gained business results of the company within the Kuwaiti Business environment.

6. To utilize the findings of these empirical investigations to minimize the found gaps in the literature that has been addressed in section 1.2. Accordingly, recommendations towards having positive effects of TQM implementation in the Kuwaiti Oil industry can be suggested

to organizations' management and decision makers as well as recommendations for future research based on the findings of this empirical study in this Kuwaiti context.

This research has found that the organizational experiences of TQM implementation in most organizations of the oil industry are still not quite mature yet. However, efforts to promote the awareness of TQM concepts and practices were sensed in the surveys' responses and interviews conducted. As the companies who adopted TQM practices earlier than other companies had developed a more positive perception in its employees towards TQM implementation than the employees of these companies which promoted for quality at later stages.

Further more, after purifying the research's measurements and assessing the reliability and validity of its variables that are the building blocks of the research's conceptual framework, this study had investigated the control variables role in playing any significant effect on respondents' perception towards the level of implementing the quality practices underlying TQM constructs. Moreover, the study had also investigated the model adequacy and validity of the proposed research conceptual framework, assessed and tested the proposed framework, and performed a thorough investigation of the relationships among this framework's building components.

The research design chosen incorporates the concept of triangulation by using large-scale survey questionnaire (quantitative analysis), followed by semi-structured interviews of employees in different managerial levels (qualitative analysis). This combination of survey questionnaire and interviews enabled the researcher to get a wider and a deeper understanding of the research dimensions, to interpret the quantitative findings answering the "how" and "why" this result was gained, to strengthen the resulting findings validity, to utilize the strengths of each methodology, and to provide more robust and richer portrait of the phenomena under the study.

The three aspects of TQM 'Adoption, implementation and implications' were developed from an extensive literature review, that included the TQM Fundamentals and other related concepts (Chapters 1, 2, 3, 4). A brief insight of the literature of research methodology and design that led to highlights this research design and methodology (Chapter 5). The concepts of data for analysis that included both the quantitative and qualitative aspects are appropriately covered (Chapters 6 and 7). Chapters 8 consisted of empirically testing and validating the proposed conceptual research framework through a powerful statistical tool which is Structural Equation Modeling (SEM). Finally, Chapter 9 provided the interpretation and comprehensive discussion of both quantitative and qualitative key findings suggesting that the research objectives set out have been adequately addressed the research contributions and limitations encountered, and recommendations for future research and managerial implications.

9.3 Key research findings

This study developed a new TQM implementation conceptual model that is valid and applies in general to operations and productions organization at the Kuwaiti business environment and in specific to organizations in the Oil industry. Although there are limitations to this study, as is the case with most empirical work, yet, it does provide a number of this study's major findings which are presented below:

- This study has developed new model for TQM implementation in the oil industry (operations and production) underlying the Kuwaiti business environment. This new model is a combination of Malcolm Baldrige National Quality Awards framework (NIST, 2000) with continuous improvement construct from Deming management model (Anderson *et. al.*, 1994b). Unlike some studies such as Winn and Cameron (1998) were not able to validate the MBNQA, interestingly this study's analysis had provided evidence to confirm the validity of research's TQM implementation framework i.e. to MBNQA framework added to it continuous improvement component. All of the TQM framework's components were measurable and related to each other, and no component (construct) was discarded as they were empirically proven all reliable and valid. However, both personal and work related quality ethical values were discarded from the study's framework as all of their relationships with other model components were empirically found insignificant. Moreover, Difference in managerial levels variable and the group of demographical variables were not included into the new developed research framework because their effects on TQM implementation process were investigated differently and not through the structural equation modeling (SEM) analysis. That is because their measurements' type are of non-stochastic type and SEM could not be utilized to analyze such type of measurements.
- The study findings have shown the importance of adding continuous improvement (CI) construct as an additional construct into MBNQA framework to represent the TQM implementation model

for this study. This addition had added value to the outcomes as CI had played a very strong and positive significant effect on the TQM business results (BR) of the company.

- Introducing the control variables (TQM familiarity, power distace values, uncertainity avoidance values, collectivisim values, Quality performance orientation, Personal-related quality ethic values, and work-related quality ethical values) into the study's framework had many obvious influences on the research's framework components which added value to its findings and outcomes, Examples of these influences:

    - The study's model adequacy and validity were significantly affected. The convergent validity increased (increased in composite reliability and AVE), and the proposed model was adequate with relatively strong model fit. This ensures of the added value of control variables existence. However, the discriminant validity between TQM components were found low, while the discriminant validity between TQM constructs and control variables, and between the control variables them selves were both found high. This in return showed that respondents did not face any difficulties in differentiating between TQM constructs and control variables and between control variables them selves, yet they might have faced a challenge to differentiate between the concepts of TQM components themselves.

    - Correlation among TQM constructs became stronger, positive, and significant.

    - Quality performance orientation (QPRF) had significant and positive effect on business results (BR). This confirms on added value of including this value under the national culture values. However, other control variables had exerted an effect on BR but it did not reach to the level of significance.

    - Leadership had exerted positive, strong, and significant effect on all TQM constructs and control variables (except power distance and both personal and work related quality ethical values).

    - Although respondents were able to categorize the quality ethical values into two main categories including personal and work related quality ethical values yet both categories were excluded from the new developed research's framework as their existence in the model was empirically proven insignificant.

- Control variables had positioned itself in between TQM implementation components and gained business results confirming the moderating role it played in this TQM implementation process. This was proven by empirically exploring how Control variables were related to other components of the research framework.

- Affecting clearly TQM components' relationships with each others:

  - **Leadership** became the strongest determinant of all TQM constructs and its positive effect had significantly increased on all TQM constructs that provide more support to the literature related to leadership's critical role as the main driver of TQM implementation. Also leadership's direct effect on strategic planning increased to the double that provides again more support to the literature related to leadership effective role in implementing successful quality management strategies. This more support provided to the literature confirms the added value of introducing the control variables into the TQM implementation model.

  - **Strategic Planning**'s effect on process management had significantly increased. Its effect on information and analysis is still significant, strong and positive. The positive link between strategic planning and both human resource focus (HR) and customer and market focus (CSMRKT) still exists but its direction was reversed (as HR and CSMRKT became exerting positive and strong effect on SP after introducing control variables). From these findings, the literature related to the positive link between strategic planning these quality components is still supported.

  - **Customer and market focus**'s positive and strong effect on the remaining TQM constructs had increased significantly. It also had exerted new positive and strong effect on both strategic planning and human resources. This in return provided more support to the literature related to CSMRKT positive link with strategic planning, process management, and human resource focus.

- **Information and Analysis**'s effect was clearly reduced on continuous improvements and process management. Its positive link with human resource still exists but the direction of the link was reversed (HR exerting positive effect on INFO) after introducing the control variables. Also a new positive and significant effect on strategic planning by information and analysis had come into the picture. Also leadership and customer market focus exert significant effect on information and analysis. This, in return, shows that strategic planning is connected to all TQM constructs. These findings provide more support to the literature related to information and analysis that is seen as the foundation that spans the entire quality framework and exert significant effects on most of its components.

- **Continuous Improvement**'s positive and strong effect had significantly increased on TQM components. However, the positive link between it and human resource was still there with its direction being reversed (HR exerting positive effect on CI). This confirms of the added value of including CI into the TQM implementation framework and control variables which strengthened CI's effects on other TQM components and provided more support to the literature supporting to these effects and links.

- **Human Resource Focus** was the most TQM component influenced by the control variables existence since it had a major shift in its relations with other TQM components from not exerting any significant effect on any TQM component to affecting strongly and positively most TQM components. This, in returns, provided more support to the literature related to human resource focus important role in maintaining high levels of quality in the company.

- **Process Management**'s exerted new significant and negative effects on strategic planning, information and analysis and continuous improvement. The negative effects imply that the direction of these effects is reversed. Hence, this also supports the literature as these components exert positive and significant effects on process management.

- Affecting the relationship between TQM implementation components and gained Business results. As the positive effect of leadership, continuous improvement and human resource focus had increased significantly. However, strategic planning's and customer and market focus's effects on business results were both reduced but it is still strong and positive effect. All of these findings provide more support to the literature related to business results' relationship with other TQM constructs. Finally, although both information and analysis and process management exerted a positive effect on business results, yet this effect did not reach to the significance level. This difference from the literature might be explained by the differences in sample studies and the working environment and culture, it also might be due to managerial procedures on how the quality practices related to process management and information and analysis is deployed.

- The role of control variables (Difference in managerial levels, Demographical variables, TQM familiarity, power distace values, uncertainity avoidance values, collectivisim values, Quality performance orientation, Personal-related quality ethic values and work-related quality ethical values) in affecting respondents' perceptions and perceptions toward the level of implementing quality practices underlying TQM constructs was investigated. All of the following results were obtained in the quantitative (surveys) analysis and have been empirically validated and supported by the qualitative analysis (interviews) outcomes:

  - **Employees in different managerial levels,** Employees in middle managerial levels have a more positive perception towards TQM practices that is related to leadership, strategic planning, information and analysis and business results when compared with the managers in both top and low managerial levels (whom shared the same perception). Yet, this difference in perception is very minimal and did not reach to the level of significance that needs to be considered. Hence, employees in all three managerial levels share a high and positive perception towards TQM implemented practices.

- **Demographical variables** consist of company, nationality and job experience. First, by investigating **company**'s effect, it was found that PIC employees have a more positive perception than those in KOC and KNPC (who shared same positive perception) towards implemented TQM practices related to customer and market focus, information and analysis, process management, continuous improvement, and business results. Second, as for **nationality**'s effect, it was found that employees who are Arabs (non Kuwaitis), Asian (i.e. Indians, Pakistanis,..etc) and others (other nationalities other than Westerns, Kuwaitis, Arabs, and Asians) shared a more positive perception towards implemented TQM practices than Kuwaitis and Western (US and Europeans) employees. This difference in perception can be interpreted as Kuwaitis and Western employees mostly share the same business environment culture with higher expectations of achievements and where constructive criticism is expressed clearly and openly; they also share higher expectations for implemented quality practices. Hence, their perception towards the implemented quality practices at their companies might be less than their standards and what they lookup or hope for. That could be the reason why Western and Kuwaitis employees have less positive perceptions than Arabs, Asians and other nationality's employees. Another interpretation for the more positive perception by Arabs, Asian, and other nationality's employees can be due to as they did not come from the same high quality standards expectations western business culture, and also as these employees' in managerial levels in a Kuwaiti oil company are most likely satisfied with their well-being and the high style life they live in Kuwait (no taxes are forced in Kuwait) compared with their life style back in their home countries were taxes are paid. Hence, they tend to be happier and satisfied that leads to a more positive oriented perception towards their responses in interviews and surveys. Third, employees with different **job experience** shared the same positive perception towards the implemented quality practices related to business results. Hence, job experience does not have any significant effect on employees' perceptions towards the implemented quality practices.

- **TQM familiarity**, employees with fully familiar and very familiar levels shared a higher and more positive perception towards TQM implemented practices, since they are more aware and knowledge with TQM concepts and implementation their perception tends to be more positive than others with lower familiarity levels. This finding has provided support to the literature related to the positive relationship between TQM awareness and employee's perceptions toward it.

- **National Culture values** that consist of power distance values, uncertainity avoidance values, collectivisim values, Quality performance orientation, Personal-related quality ethic values, and work-related quality ethical values. For, **power distance**, **uncertinity avoidance, collectivisim, and quality performance orientation**, it was found that the higher is the level of this national culture value found within the employee, the more positive perception towards implemented TQM practices is found. However, both **personal and work related quality ethical values** had no significant effect on employees' perception towards implemented TQM practices. Yet, by further comparing the mens; it showed that the higher is the level of these values, the more positive perception towards implemented TQM practices.
- These quantitative findings of surveys analyzed were all validated and supported with the qualitative findings of interviews conducted.

9.4 Research contributions

9.4.1 Theoretical contribution

This study makes several significant contributions towards research and theory of TQM as a new field of knowledge. As the theory in the field of TQM in Kuwait is still not well developed, fragmented and the environment is rapidly changing, this study can be considered as a step towards the building of a more robust theory. It has provided new theoretical grounds for studying the concept of TQM in the oil industry (operations and production industries), and has also brought a large body of relevant literature, and unified diverse schools of thought into one integrative perspective while building the research framework. Because it has combined a component from Deming management model with Baldrige framework components and has developed the conceptual framework for implementing TQM in Kuwaiti business environment. Furthermore, the main contributions of this study are presented in five accessible parts: 1) Adoption of Total Quality Management, 2) The universal applicability of TQM practices, 3) Development of a generic TQM implementation framework, and 4) Introducing the controlling variables,

9.4.1.1 Contribution 1: Adoption of Total Quality Management

The pressure on companies to improve has become quite intense as TQM is now considered by many as an important quality and business performance improvement tool. Furthermore, this study has shown that adoption of TQM is an important step that organizations should take because TQM can not be seen as just an organizational management program or management-initiative package, rather it refers to a complete change in an organization's culture where various elements addressed in this study are utilized to effectively achieve this change. It has also shown that successful TQM implementation is a phenomenon that is crucial in organizational sustainable competitive advantages and gaining surprising business results that calls for participation of every individual and most significantly, the top management.

Moreover, with the radical changes taking place in developing Arab oil producing countries (Al-Khalifa, 2000). TQM is considered to be the ideal philosophy to bring about these necessary changes and to perform this restructuring in these countries, and also to increase their trade activities and develop sustainable ways to improve quality of their products and services. In this respect, having carried out this study in Kuwait (an Arab oil producing country countries) which scores very low when it comes to maturity levels of quality management practices and implementation similar to other developing countries, is quite appropriate and logical where the need is cofounded by a dire lack of TQM information (Thiagarajan et al., 2001; Ali, 1997). This in return had contributed to minimize this gap (gap no. 3) identified in this research.

Add to that, choosing the Oil industry as this study context had contributed highly to the significance and importance of this study as it minimized the second gap identified in this research and met the need for research in process-based, mature, and well-developed industries (Sousa and Voss, 2002). That is due to many factors such as the significant role of Oil industry on the country's (Kuwait) main income (Central Bank of Kuwait, 2010), as it is the mainstay of the national economy, as well as the global economy. It also plays a significant role in national security and power (Salameh, 2003). In addition, conducting the study in the oil industry had also contributed to the need for a research in process-based, mature, and well-developed industries (Sousa and Voss, 2002). Finally, oil industry was the most proper industry which was utilized in this research to investigate accurately the employees' national culture values impact on TQM implementation process, since this industry is quite rich with employees coming from different national cultures and backgrounds.

9.4.1.2 Contribution 2: The universal applicability of TQM practices

The research findings had contributed to minimize the first gap identified in this research which is the dispute of the applicability of total quality management (TQM) practices universally (Garvin, 1986; Yoshida, 1989; Mersha, 1997; Hoskisson *et al*., 1999; Sousa and Voss, 2002), and had overcome the limitations of the findings of some of the earlier studies in quality management practices applicability across national boundaries (Dawson, 1994; Rao *et al*., 1999). As this study's findings had showed that TQM practices are being perceived positively in Kuwait similar to other developing countries as it was empirically confirmed that these practices plays the same active role in effecting significantly the company's business results such as profitability, productivity and customer satisfaction.

9.4.1.3 Contribution 3: Development of a generic TQM implementation framework

In particular, the study has been uniquely effective in identifying and describing a number of operative components that make up the comprehensive approach to TQM implementation process, and show their significant effects on it by testing and validating for the first time a set of hypotheses between the TQM implementation framework underlying the Kuwaiti business environment which were derived from the literature and tested in previous studies. This testing was essential in order to foresee if such hypotheses would standstill in the Kuwaiti business environment (which is different business environment and cultural context than previous studies) and different outcomes might result accordingly. Moreover, the study has developed a new framework for TQM implementation that is consisted of a widely held set of variables and relationships in a developing Arab country (Kuwait) in the Middle East where they have not been investigated and validated before. Hence, this study had contributed to the establishment of such a model as it had identified the main constructs that build a new theory of TQM implementation and empirically examined the relationships between them. This in return had minimized the fourth gap identified in this research in chapter one. In addition, the development of TQM implementation framework had also contributed to minimize the third gap identified as gap found in the clear dearth of theories and generic models of TQM implementation that are empirically based and validated (Thiagarajan *et al*., 2001).

Add to that, the findings of this study had also contributed to a better theoretical understanding of elements effecting significantly and promoting TQM in a developing Arab country in the Middle East. In addition, as the instruments used for measuring TQM implementation, gained business results and the set of control variables are proven reliable and valid, these instruments can be utilized by other researchers to test the effects of these components on successful TQM implementation process.

Finally, this study has contributed to the TQM literature by validating the direct and indirect relations among TQM practices and the effects of these practices on the organization gained business results, as well as validating the control variables' (the moderators) direct and indirect relationships with both TQM practices and the gained business results. These TQM implementation components combined with the control variables investigated in this study represent a wider domain of TQM than the other studies in which direct and indirect effects of all of these elements are identified.

9.4.1.4 Contribution 4: Introducing the control variables

Not only did this study has provided an empirical assessment of the essential elements in TQM implementation but it has also introduced a set of control variables that were distilled from a comprehensive review of relative literature concepts and practices and empirically investigated their moderating effects as moderators on this implementation process. This, in return, had contributed to minimize the fifth gap identified in this research by responding to the concerns raised by previous studies as some other variables which could have an impact on TQM implementation have not been widely explored (Kumar, 2006; Weltgen 2004), and actually identified additional elements under the national culture values which were not included before, such as quality performance orientation and ethical quality values .Not only that, the research had provided significant findings as these control variables has confirmed its moderating role in the TQM implementation framework. This in return, had contributed to the debate of national culture's role in implementing TQM (Katz *et al.*, 1998; Flynn and Saladin, 2002) by confirming the significant moderating effect of these values on TQM implementation. It is worth mentioning that there was another added value to the literature from this contribution since these set of control variables were not investigated before in a developing Arab country in the Middle East.

9.4.2 Methodological contribution

This study contributes methodologically by employing an empirical and multi-disciplinary approach to business research. This was chosen because it incorporates the concept of triangulation and argues the case of combining large-scale survey questionnaires and semi-structured interviews. Moreover, in order to create as much as possible a similar sample demographics for both methodologies, the interviewees were selected in a way that the percentages of the demographics of the respondents (i.e. number of employees from each company, managerial levels ratios, and nationalities) were relatively close to those of the questionnaire survey as shown previously in Table 6-6 in chapter 6. This, in return, enforces the validation process of the outcomes for both methodologies as both are coming from quite similar distribution of the sample's demographics.

Add to that, inferential research questions were addressed by quantitative analysis (inferential statistics and analysis techniques) using SPSS and were supported and validated by findings of the qualitative analysis of interviews conducted.

Furthermore, the proposed conceptual framework and its relationships that emerged from the literature search were tested and built in two phases; first phase tested and assessed the model consisting only of TQM implementation components and the gained business results, and the second phase tested and assessed the entire model and its relationships after introducing the control variables into it. This unique and complex approach was adopted mainly to evaluate thoroughly the moderating effect (Donaldson, 2001; Edwards and Lambert 2007) of control variables as moderators on the whole developed TQM model which in return enhanced the TQM constructs interrelationships as a result of this moderating effect, and also to provide more insights into the model findings and richer outcomes to the research and literature. Another contribution is that this proposed framework was developed and validated by rigorous statistical technique of Structural Equation Modelling (SEM) analysis using LISREL which is a sophisticated form of path analysis providing greater theoretical validity and statistical precision clarifying the direct or indirect interrelationships among variables relative to a given variable (Schreiber *et. al.;* 2006~~)~~.Thus, a very thorough and in-depth analysis was done in this research by segregating the total effects into direct and indirect effects which provided statistical efficiency to asses directly unobservable concepts and to detect deficiencies in the interrelationships between different constructs (Hoe,2008). This, in return, had assessed in empirically testing the applicability of MBNQA framework (along with continuous improvements component) in the Kuwaiti context which was raised as a need in the literature to test the generalizability and validity of MBNQA in the global context in by some studies (Wilson & Collier, 2000; Wu *et al*., 1997; Rao, *et al.*, 1999).

As far as empirical study of operations and production quality in developing Arab countries in the Middle East is concerned, this is the first study of operations and productions quality in oil industry that combines quantitative and qualitative research into a single research design. Most of the previous empirical studies on operations and productions quality adopted either survey or case studies and interviews as their main method of research design. Therefore, by combining in-depth literature review, quantitative survey research and confirmatory qualitative research, this study overcomes the limitation of previous research and provides new perspective for quality practices and its implementation in the oil industry specifically, and in operations and productions industries in general.

9.4.3 Practical contribution

The findings of this study are found quite important and relevant to all the organizations in the Kuwaiti oil industry and other organizations in operations and production industries in Kuwait and other developing Arab and Middle Eastern countries in general. This study also makes a significant contribution to organizations in operations and productions industries in developing and developed countries in as well.

It has provided an insight into the various principles and techniques of a successful TQM implementation. Despite the increasing awareness of quality programs, yet TQM implementation in Kuwait is still in maturing stage. Through using the findings of this model, organizations can improve their TQM implementation efforts by quickly identifying which areas are critical and urgently need enhancements. Thus, the resources can be allocated more wisely and more effective improvement plans can be formulated. Consequently, this study has recognized a series of critical issues that must be carefully considered to ensure successful and effective TQM implementation. Furthermore, utilizing the research findings and addressing the managerial implications in an efficient manner will offer organizations strategies on how to effectively implement TQM practices through its process, and will also ensure that organizations can derive maximum benefits of TQM implementation.

Generally, the generic developed research framework proposed by this study should enhance the current practices of TQM implementation. In essence, the results of this research will help management in making crucial decisions regarding different aspects related to the various TQM components and set of control variables addressed here, just to make the TQM implementation process a success.

9.5 Managerial implications and recommendations

From a managerial perspective, this study has several managerial implications based on its findings that can be addressed to the management in Kuwaiti petroleum industries.

First, the developed research model, with its set of components and their relationships, could be utilized as an effective decision-making tool to orient what companies need to emphasis in order to ensure a successful implementation of TQM and to maximize the gained business results from implementing TQM practices such as and customer satisfaction, operations and product performance, financial and market performance, employees' wellbeing and satisfaction, and work system performance.

Second, in realizing the strategic role of quality and as it was empirically proven that leadership component is the strongest determinant for all TQM constructs, top management in the Kuwaiti petroleum industry is expected to understand that its responsibility for quality cannot be delegated. It is the role of top management to formalize and communicate the company's total quality management values and vision and project them in a clear, visible, and a consistent manner (Puffer and McCarthy, 1996; Waldman and Gopalakrishnan, 1996). Active and visible participation by top management in total quality management implementation is crucial in supporting the actions and behaviors that steer the organization to success in increasing the gained business results. Top management should accept its responsibility for quality leadership and provide active and timely support to build quality awareness and to achieve higher quality performance.

Third, in order to improve company's business results, the managers in the Kuwaiti petroleum industry need to focus on these elements in this specific descending order (according to their effect on business results): leadership, continuous improvement, customer and market focus, strategic planning, human resource focus, and quality performance orientation value as they were found significant predictors of business results. More focus on leadership and continuous improvements should be given as they exerted the highest effects on business results.

Forth, process management and information and analysis did not exert any significant effect on Business results that could imply that the practices related to these two construct might have not been implemented effectively, and hence were perceived improperly. This, in return, led to findings which conflicts with the literature as these two constructs plays an important and positive effect in a successful TQM implementation process (Lee *et. al.*, 2003; Ahire and Dreyfus, 2000; Pannirselvam and Ferguson, 2001;Wilson and Collier, 2000). Hence, it is recommended for managerial implications to further investigate these practices related to these two components (constructs) and rectify the problem causing such finding, in order to enhance the business outcomes of TQM implementation process.

Fifth, the significant effect of human resource focus on business results, which appeared after introducing the control variables, refers to a managerial implication that the effectiveness of the organizations that implement TQM depends on their ability to satisfy their employees, a necessary goal for companies that wish to realize benefits from employee involvement.

Sixth, the control variables had obviously played a moderating and controlling effect in the developed TQM framework. Hence, it will be advisable that top management in the petroleum industries should not ignore these respondents' values and try to foster them in an effective and efficient way to positively and significantly affect the TQM implementation process.

Seventh, as collectivism and quality performance orientation are more related to TQM practices than the other control variables, this shows that TQM practices do influence individual's values. Top management should consider how to better utilize these relations for the better implementation of TQM and better TQM outcomes.

Eighth, although the managers in difference managerial levels all share a positive perception towards implemented quality practices, yet managers in top and low management levels had slightly less positive perception than those in middle management. Despite the slight difference in their perceptions, it is recommended for top management to address this difference and attempt to understand employees in top and low management concerns towards TQM implementation and act accordingly to enhance their perception levels.

Ninth, employees working in PIC had more positive perception than those in KOC and KNPC towards the implemented TQM practices. This, in return, shows that top management in KOC and KNPC need to exert more efforts in promoting TQM to their employees and conduct awareness sessions of the implemented quality practices in their companies in order to gain better support and improve their perception levels towards TQM practices implemented in their companies.

Tenth, employees of Kuwaiti and Western nationalities had less positive perceptions towards the implemented TQM practices in their companies than the other nationalities. Thus, top management should exert the necessary efforts to understand their concerns and accordingly raise their perception levels.

And finally, it was found that the higher the control variables levels of employees (TQM familiarity, power distance, uncertainity avoidance, collectivisim, and quality performance orientation**)** were found, the more positive their perceptions became towards the implemented TQM practices. Therefore, it would be recommended that top management maintain high levels of these control variables in their employees in order to maintain high employees' perceptions towards the implemented TQM practices in their companies.

9.6 Research limitations

As in any research, this research was also subjected to certain limitations. However, every care was taken in structuring this research so that these limitations would not significantly affect contributions.

First, the research sample is composed of respondents only from the oil industry that is under the governmental authorities in Kuwait. Hence, the study findings may not be applicable to oil companies under private authorities (private sector) in other countries in the region. This, in return, might imply generalization is some kind limited in this research.

Second, the primary limitation is the difficulties associated with all survey-based research. There exists no practical way whereby the researcher can ensure the truthfulness and sincerity of the respondents when completing the survey questionnaire or while giving answers during the direct interviews. In addition, there is no way to ensure that the respondents always understand the bottom line of each question in the way the researcher wants the respondents to understand it. Given these considerations, it is reasonable to conclude that the respondents may have provided some answers that may have deviated from reality. However, the researcher cross-checked data across the various levels of investigation to reduce the degree of discrepancies that could creep up in the results and conducted interviews to avoid this problem and to support and validate the questionnaire results and findings.

Third, the time frame of data collection was one of the main constraints. As the questionnaire distribution and collection took three months, despite of the efforts made to reduce this time frame by frequent follow up and sending reminders to respondents. In addition, the process for coordinating for the interviews and actually conducting them was very time consuming and hectic. That was mainly due to the fact that all our interviewees were in the managerial levels and were overloaded with work and had to reschedule the interviews' dates many times due to unexpected work tasks assigned to them on urgent basis. This in return exceeded the time frame set and dedicated for data collection process. Thus, if these activities had consumed less time, more time would have been available there to obtain richer data by conducting more interviews and collecting more than one questionnaire or using the initial analysis of responses to iterate the collection process in order to gain further data.

Furthermore, this time limitation had led to creating a forth limitation for this research that was the type of interviews conducted. As semi-structured interviews with open-ended questions were chosen mainly for two reasons: to validate the findings of the questionnaire and to adjust with the time constraint of the interview's duration that was suitable for the interviewee. Again, if more time was available, unstructured interviews might be more useful in this research to allow the chance to explore more views of the employees rather than directing them into answering specific topics that intend mainly to validate the quantitative findings and adjust to the lack of time these interviewees suffered from. Hence, conducting unstructured interviews might have opened new topics of discussions and areas of interest related to TQM implementation process.

Fifth, difference of managerial levels and demographical variables were not included in the new developed research framework, where structural equation modeling "SEM" analysis was used. That was mainly due to the limitation in their measurements type as they are of no-stochastic type that could not be included in the framework structuring analysis using SEM.

Finally, TQM in Kuwait is still seen as a new concept and when compred to the Western countries, Kuwait scores a very low maturity level of quality management as it did not reach to accepted maturity stages yet. Although efforts are being exerted to encourage adopting quality practices and concepts into work practices in various industries and sectors yet a lack of awareness and quality adoption is sensed clearly in many of the governmental organizations. This, in return, limited the number of expertise and references of quality found that could assess the quality performance and status through out the Kuwaiti business environment including both government and private sectors.

9.7 Recommendations for future research

While the number of various organizations implementing TQM practices continues to grow and as this study covers a wide area of research, there are many directions in which future research is needed. Moreover, the potential implications which this study has for future research are related both to methodology employed in collecting and analyzing the data, and to the substantive findings of the research effort. Hence, future research and further investigations can be conducted here to expand the findings from this study and to provide more conclusive and broader answers.

First, further empirically testing and refining of the developed TQM model, and exploring the relationships among the various variables (TQM components and outcomes, controlling variables) by collecting data from various organizations that have already implemented TQM concepts and practices should be considered.

Second, the model also calls for a micro type of research, where each component of the model is examined more in-depth through exploratory studies that can provide better understanding of the internal working of these components, and the mechanisms by which the role of each in TQM implementation and effectiveness can be improved.

Third, as mentioned earlier, the study did not cover all companies in the operations and productions industry due to the lack of variety in Kuwait, and it also did not cover the private sector as well. Therefore, to discover any expected differences in TQM implementation process and outcomes, further studies may be necessary exploring more various operations and productions industry as well as covering private sector while exploring this industry and not to be limited only to the governmental sector only. Such expansion to the research sample would provide further valuable contribution to the findings of this study.

Fourth, a logical expansion for this study would be to carry out a similar study involving service organizations in the Kuwaiti business environment, the results of which could be compared to results found in the operation organizations investigated in this research. The same proposed model developed by the current study could be employed in such study.

Fifth, since this research discussed the overall gained business results from successful implementation of TQM, further empirical research can be conducted to provide more detailed assessment of these different components under business results and benefits, and how each of these components is related and affected in the developed TQM Implementation framework. Examples to these results that could be addressed separately are customer's and employee's loyalty and commitment, retention, product/service quality, and company's profitability.

Sixth, a very useful contribution to this study findings is by exploring more thoroughly the insignificant effect found of some TQM components (constructs) among each other, and investigating what factors had caused and led to such insignificant effects.

Seventh, as the developed model discovered relationships among the control variables them selves which was out of this study's research to investigate any further. However, further investigation by exploring the cause of these relations and the affect of such relations in the overall process of TQM implementation would be recommended for future research. It would be highly recommended also to further investigate the reason behind the insignificant effects found of some of these control variables on the proposed framework components. For example, although quality ethical values was categorized by the respondents into two categories of personal and work related quality ethical values, yet these two variables did not have any significance effect on any components of the developed model.

Eighth, As some demographical variables might declare significance with major components of this developed research framework, however their effect were studied differently away from the model, and it is believed that their effects on the model components deserve a separate investigation in future by Means of partial least square analysis for example.

Ninth, further expansion of the empirical investigation of control variable's moderating effect on TQM implementation process needs to be considered in future to include the two national culture dimensions Masculinity and Long-term orientation dimensions (Hofstede, 2007), which were not explored in this research.

Tenth, regarding research design and methodology, future research should consider a wider time frame dedicated for quantitative and qualitative data collection, in order to have more flexible options towards the design of the research interviews and questionnaires and the process of collecting the data related to them. Also, it would be useful to take into account effective approaches and management techniques for data collection process.

Eleventh, as the discriminant validity between TQM constructs was found low, it implied that respondents might have faced a challenge to differentiate between the concepts of these components. Thus, it would be recommended for future research to revise the survey's questions related to TQM components in order to minimize this overlapping between constructs.

If these recommendations are met, there is chance of more rigorous research findings and possibility of a detailed richer study.

9.8 Conclusion

This study has presented a holistic review of TQM implementation in operation and production organizations under the oil industry in the Kuwaiti business environment through a comprehensive scrutiny of the relevant literature, 937 surveys, and 30 interviews in three of the major leading organizations in the oil industry. It has provided a detailed discussion of TQM implementation components, gained TQM business results, and the moderating and controlling effect of some proposed variables on these components and results. These components and variables are shown in the developed TQM model. The concept of TQM in the oil industry underlying the operations and productions and philosophy has emerged to be an integrated issue through time. A continuing challenge in quality management is sustainability, where it is necessary for production and operation organizations to maintain a high level of performance. Therefore, the study points out the TQM implementation components that formulate the backbone of any quality initiatives.

To sum up, TQM is essential for any production and operation organization to be successful and competitive. But TQM alone cannot act as the reagent for the success of an organization; it is the organization's commitments, policies, and priorities that must be set right first to ensure a successful implementation of these TQM practices and concepts.

References

Aaker, D.A., Jacobson, R., 1994. The financial information content of perceived quality. *Journal of Marketing Research*, 31, pp. 191– 201.

Aaker, D., Allen, D. and George, S. (1995). *Marketing research*. 5th Ed., New York, Wiley.

Aalbregtse, R.J., Heka, J.A. and McNeley, P.K. 1991. TQM: How do you do to do it? *Automation,* 9(1), pp. 30-32.

Abbas Ali, J., 1996. Organizational development in the Arab world. Journal of Management Development, 15(5). Pp. 4-21.

AbdulSalam, R., 2007. In secularism and religion and democracy: concepts and contexts. The Arab Scientific Publishers, Al Jazeera Centre for Studies.

Abu Bakar, Nooh; Ooi, K. B.; Arumugam, V. ; Vellapan, L.; and Loke, A. K. Y., 2007.Does TQM influence employees' job satisfaction? An empirical case analysis.*International Journal of Quality & Reliability Management*, 24(1), pp.62 – 77.

Adam, E.E. Jr, 1994. Alternative quality improvement practices and organization performance. *Journal of Operations Management*, 12(1), pp.27-44.

Adam, E.E. Jr, Corbett, L.M., Flores, B.E., Harrison, N.J., Lee, T.S., Rho, B., Ribera, J., Samson, D., and Westbrook, R., 1997. An international study of quality improvement approach and firm performance. *International Journal of Operations & Production Management*,17(9), pp. 842-73.

Adinolfi, P., 2003. Total Quality Management in public health care: a study of Italian and Irish hospitals. *Total Quality Management & Business Excellence*, 14(2), pp. 141- 150.

Adler, N.J., 1997. *International Dimensions of Organizational Behavior*. Southwestern, Cincinnati, OH.

Agayo, R, 1991. Dr. Deming, The American Who Taught The Japanese About Quality. *New York, NY:* Simon and Schuster..

Ahire, S.L., Dreyfus, P., 2000. The impact of design management and process management on quality: an empirical examination. Journal of Operations Management. 18, pp. 549–575.

Ahire, SL., and Golhar, DY., 1996. Quality management in large vs small firms. *Journal of Small Business Management*, 34(2), pp. 1–13.

Ahire, S.L., Golhar, D.Y., and Waller, M.A. 1996. Development and validation of TQM implementation constructs*. Decision Sciences*, 27(1), pp. 23-56.

Ahire, S. L., Landeros, Robert, and Golhar, D. Y., 1995. Total Quality Management: A Literature review and an agenda for future research. *Production and Operations Management,* 4(3), pp. 277-306.

Ahmad, S., Schroeder, R.G., 2002. The importance of recruitment and selection process for sustainability of total quality management. The International Journal of Quality and Reliability Management, 19 (5), pp. 540–551.

Aiken LS, West SG. Multiple regression: Testing and interpreting interactions. Newbury Park, CA: Sage; 1991.

Aksu, M.B. 2003. TQM readiness level perceived by the administrators working for the central organisation of the ministry of national education in Turkey. *Total Quality Management & Business Excellence*, 14 (5), pp. 591-604.

Al-Khalifa, K.N., and Aspinwall, E.M., 2000. Using the competing values framework to identify the ideal culture profile for TQM: a UK perspective. *International Journal of Manufacturing Technology and Management*, 2 (1-7), pp. 1024-40.

Al-Khalifa, N. and Aspinwall, E.M. (2000) The development of total quality management in Qatar, *TQM Magazine*, 12 (3), pp.194-204.

Al-Qarthawi, Yousef, 1995. Worship in Islam. 24th Edition. Egypt, Cairo. Wahibah Lib. Publishing Limited.

Al-Omaim, Naser; Zairi, Mohamed; Ahmed, Abdel Moneim, 2003. *Generic Framework for TQM Implementation within Saudi Context: An Empirical Study*. Bradford University School of Management. Working paper No. 03/17.

Al-Zamany, Y., Dulaimi, M. F., Hoddell, S.E.J. and Savage, B.M., 2002. The cultural acceptability of the EBEM in Yemen. Managerial Auditing Journal, 17 (9), pp. 568-575.

Ali, M., 1997. *An empirical study of total quality management in the Middle East: a proposed model for implementation*. University of Bradford, Unpublished PhD thesis.

Aly, M., 1996. Culture uniqueness and implementation in the Middle East: fantasy or reality, The Fourth Arab Management Conference, 16-18 July, University of Bradford, UK, pp. 164-186.

Andersson, Roy; Eriksson, Henrik; and Torstensson, Hakan, 2006. Similarities and differences between TQM, six sigma and lean .*The TQM Magazine*,18 (3), pp. 282-296.

Anderson, J.C., Rungtusanatham, M. and Schroeder, R.G., 1994. A theory of quality management underlying the Deming management method. *Academy of Management Review*, 19(3), 472-509.

Anderson, J., Rungtusanatham, M., Schroeder, R., and Devaraj, S., 1995. A path analytic model of a theory of quality management underlying the Deming management method: Preliminary empirical findings. *Decision Sciences*, 26 (5), pp. 637-658.

Anderson, M., Sohal, A.S., 1999. A study of the relationship between quality management practices and performance in small businesses. International Journal of Quality and Reliability Management, 16 (9), pp. 859–877.

Antony, J., Leung, K., Knowles, G., Gosh, S. (2002), "Critical success factors of TQM implementation in Hong Kong industries", *International Journal of Quality & Reliability Management*, Vol. 19 No.5, pp.551-66.

Arumugam, V.; Ooi, K-B.; and Fong, T-C., 2008. TQM practices and quality management performance- an investigation of their relationship using data from ISO 9001:2000 firms in Malaysia. *The TQM Magazine*, 20, (6), pp. 636-650.

Ary, D., Jacobs, L.C. and Razavieh, A., 1990. *Introduction to Research in Education.* Fourth Edition. Harcourt Brace Jovanovich Inc.

Aycan, Z., Kanungo, R.N., Mendonca, M., Yu, K., Deller, J., Stahl, G., Kurshid, A., 2000. Impact of culture on human resource management practices: a 10-country comparison", Applied Psychology: An International Review, 49 (1), pp.192-221.

Baali, F., 2004. Arab Unity and Disunity, Past and Present. Published by University Press of America.

Babich, P., 1992. Customer satisfaction: how good is good enough? Quality Progress, 25 (12), pp.65–67.

Badri, M., Davis, D. and Davis, D., 1995. A study measurement the critical factors of quality management, *International Journal of Quality and Reliability Management*, 12(2), pp. 36–53.

Badri, Masood; Selim, H.; Alshare, K.; Grandon, E.; Younis, H.; Abdulla, M., 2006.The Baldrige Education Criteria for performance Excellence Framework Empirical test and validation. *International Journal of Quality & Reliability Management,* 23(9),pp. 1118-1157.

Baidoun, Samir, and Zairi, Mohamed, 2003. A proposed model of TQM implementation in the Palestinian context. *TQM & Business Excellence*, 14 (10), pp.1193–1211.

Baila, D. L., 1996. The Deming prize. *Journal for Quality and Participation, 19 (4)*, pp.16-19.

Bain & Company, 2005. ***New Bain & Company survey of top 25 management tools reveal Technology influence gains wide acceptance***. Accessed: 20 July, 2010, http://www.bain.com/management_tools/mt_detail.asp?groupcode=4&id=19962&menu_url=articles%5Foverview%2Easp.

Baker, E. M., and Artinian, H. L., 1985. The case of Windsor Export Supply. *Quality Progress*, Milwaukee,18 (6), pp. 61-69.

Baker, G., and Starbird, S., 1992. Managing quality in California food processing firms, *Agribusiness*, 8(2), pp. 155–164.

Balbastre, F. and Moreno-Luzón, M., 2003. Self-assessment application and learning in organizations: a special reference to the ontological dimension. *Total Quality Management & Business Excellence*, 14(3), pp. 367-388.

Baldrige National Quality Program 2005a. Education Criteria for Performance Excellence. National Institute of Standards and Technology, US Department of Commerce. Available at www.baldrige.nist.gov.

Baldrige National Quality Program, 2009. (http://www.baldrige.nist.gov/Contacts_Profiles.htm). (Accessed, 24 July, 2010).

Balogun, J., Johnson, G., 2004. Organizational restructuring and middle manager sensemaking. Academy of Management Journal, 47 (4), pp.523-49.

Barclay, C. A., 1993. Quality strategy and TQM policies: empirical evidence. *Management International Review*, 33, pp. 87–98.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.

Beekun Rafik & Badawi Jamal., 2005. Balancing Ethical Responsibility. Journal of Business Ethics; 60(2), p131-145.

Bell, R., and Keys, B.,1998. A conversation with Curt W. Reimann on the background and future of the Baldrige award. *Organizational Dynamics*, 26(4), pp. 51-61.

Benbasat, I., Goldstein, D. and Mead, M. (1987).“The case research strategy in studies of Information Systems.” *MIS Quarterly*, 11(3): 369-386.

Bendell, Tom. **The quality gurus**. London: Department of Trade and Industry, 1991.

Bendell, Tony, 2006. A review and comparison of six sigma and the lean organizations. *The TQM Magazine*. 18 (3), pp. 255-262.

Bennington, L., and Cummane, J., 1997. The road to privatisation: TQM and business planning. International Journal of Public Sector Management, 10(5), pp. 364-76.

Benson, P. G., Saraph, J. V., and R. G. Schroeder, 1991. The Effects of Organizational Context on Quality Management: An Empirical Investigation. *Management Science*, 37(9), pp. 1107-l 124.

Bergquist, T. M. and Ramsing, K. D. (1999), Measuring performance after meeting award criteria. *Quality Progress,* Vol. 32 No. 9, pp. 66-72.

Bergman, B., Klefsjö, B., 2003. *Quality from Customer Needs to Customer Satisfaction*, 2nd ed., Studentlitteratur, Lund.

Besterfield, D.H., Besterfield-Michna, C., Besterfield, G.H., Besterfield-Sacre, M., 1999. *Total Quality Management*, 2^{nd} ed., Prentice-Hall, Upper Saddle River, NJ.

Billich, F. and Neto, A.A. 2000. Total Quality Management: quality macro- function model for banks. *Total Quality Management,* 11(1), pp. 5-15.

Bhagj, M. and Sharma, S. ,1992. Encyclopedic Dictionary of Psychology. New Delhi: Anmol Publ. Vol 1.

Black, S., 1993. *Measuring the critical factors of total quality management*. University of Bradford, Unpublished PhD thesis.

Black, S. and Porter, L., 1996. Identification of critical factors of TQM. *Decision Sciences*, 27, pp. 1–21.

Blackiston, G.H., 1996. A barometer of trends in quality management, *National Productivity Review*, 16, pp. 15-23.

Blaxter, L., Hughes, C. and Tight, M. (2001) *How to research,* Open University Press,

Buckingham.

Boaden, R. J., 1997."What is Total Quality Management...and does it matter?" *Total Quality Management*, 8(4), pp. 153-171.

Boltes, B., 1992. Quality management factors and related performance measures in the Cooperative Extension System, Oregon State University, Unpublished PhD thesis.

Bounds, Greg; Yorks, Lyle; Adams, Mel; and Ranney, Gipsie. 1994. *Beyond total quality management: toward the emerging paradigm*. McGraw-Hill series in management

Boselie, P., van der Wiele, T., 2002. Employee perceptions of HRM and TQM, and the effects on satisfaction and intention to leave. Managing Service Quality 12 (3), pp. 165-173.

Bou-Llusar, J., Escrig-Tena, A., Roca-Puig, V., and Beltrán-Martín, I.. 2005. To what extent do enablers explain results in the EFQM excellence model? An empirical study. *The International Journal of Quality & Reliability Management*, *22*(4/5), pp. 337-353.

Boyacigiller and Adler, 1991 N.A. Boyacigiller and N.J. Adler, The parochial dinosaur: organizational science in a global context. *Academy of Management Review,* 16 (2), pp. 262–290.

Boyett, J. H., Kearney, A. T., and Conn, H. P., 1992. What's Wrong with Total Quality Management. *Tapping the Network Journal*, 3(1), pp.10-14.

Brannen, J. (1995) *Mixing methods : qualitative and quantitative research,* Ashgate,

1995, Aldershot.

Brah, S.A., Tee, S.L., Rao, B.M., 2002. Relationship between TQM and performance of Singapore companies. *International Journal of Quality and Reliability Management,* 19 (4), pp. 356–379.

Brewer, P. C., & Eighme, J. E., 2005. Using six sigma to improve the finance function. *Strategic Finance,* 86 (11), pp. 26-34.

Brewer, J. and Hunter, A. (1989) *Multimethod research : a synthesis of styles,* Sage

Publications, Newbury Park, Calif.

Britton, P.B., Chadwick, S.J.,Walker, T., 1999. Reward of works. Ivey Business Journal 63 (4), pp. 46–52.

Broetzmann, S.M., Kemp, J., Rossano, M. and Marwaha, J., 1995. Customer satisfaction—lip service or management tool?. *Managing Service Quality,* 5, pp. 13–18

Brown, A., 1995. Quality management: Issues for human resource management. *Asia Pacific Journal of Human Resources,* 33(3), pp. 117-129.

Brown, S.P., Peterson, R.A., 1993. Antecedents and consequences of salesperson job satisfaction: meta-analysis and assessment of causal effects. Journal of Marketing Research 30 (1), pp. 63-77.

Browning, G., 1992. Quest for quality. *National Journal*, December 1992, pp. 3071-4.

Bryman, A. (1989).*"Research methods and organization studies"*. London, Unwin Hyman.

Bryman, A. (1994).*"Analysing qualitative data"*. London, Routledge.

Bryman, A. (1995).*"Quantity and quality in social research"*. London, Unwin Hyman.

Bryman, A. and Cramer, D. (1990).*Quantitative Data Analysis for Social Statistics*. London, Routledge.

Bryman, A., & Cramer, D., 2001. *Quantitative data analysis with SPSS Release 10 for Windows: A guide for social scientists*. Hove: Routledge.

Byrne, B. (2001). *Structural equation modeling with AMOS: Basic concepts, applications,and programming*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Bunney, H.S., Dale, B.G., 1997. The implementation of quality management tools and techniques: a study. *The TQM Magazine*, 9(3), pp.183-9.

Burr, J.T., 1993. A new name for a not-so-new concept. *Quality Progress,* 26(3), pp. 87-88.

Burrows, P.,1992. TQM reality check: It works, but it's not cheap or easy. *Electron. Business.* 18, pp. 47–54

Business Week, 1992. The quality imperative: What it takes to win for the global economy. [Special issue]. October 25, 1-216.

Butler, Daniel; Oswald, Sharon L.; and Turner, Douglas E., 1996. The effects of demographics on determinants of perceived health-care service quality. *Journal of Management in Medicine*, 10 (5), pp. 8-20

Buzzell, R.D., Gale, B.T., Sultan, R.G.M., 1975. Market share-a key to profitability. Harvard Business Review, 53 (1), pp. 97–106.

Campell, D. T., and Fiske, D. W., 1959. Convergent and discriminate validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56, pp. 81- 105.

Carmines, E.G. and Zeller, R.A., 1979. *Reliability and Validity Assessment*. Beverly Hills, CA: Sage Publications.

Choppin, J., 1991. *Quality through People — A Blueprint for Proactive Total Quality Management*. San Diego: Pfeiffer Publishers.

Capezio, P. and Morehouse, D., 1993. Take the mystery out of TQM. *Total Quality Management.* New York: Book-mart Press.
Capon, N., Kaye, M.; and Wood, M., 1994, Measuring the success of a TQM programme. International Journal of Quality and Reliability Management, 12, pp.8-22.
Carlopio, J., and Gardner, D., 1995. Perceptions of work and workplace: mediators of the relationship between job level and employee reactions. *Journal of Occupational and Organizational Psychology*, 68, pp.321-6.
Carmines, E. & Zeller, R. (1979). *Reliability and validity assessment*. Thousand Oaks,
CA: Sage Publications.
Carson, K.D., Carson, P.P., Roes, C.W., Birkenmeier, B.J., Phillips, K.C., 1999. Four Commitment profiles and their relationships to empowerment, service recovery, and work attitudes. Public Personnel Management , 28 (1), pp.1–13.
Carter, R.J., Narasimhan, R., 1994. The role of purchasing and materials management in total quality management and customer satisfaction. International Journal of Purchasing and Materials Management. 30 (3), pp. 3–15.

Cascella, V.,2002. Effective strategic planning. *Quality Progress,* 35(11), pp. 62-67.

Castle, J., 1996. An integrated model in quality management positioning TQM, BPR and ISO 9000. *The TQM Magazine*, 8(5), pp.1-7.

Chan, T.H., Quazi, H.A. (2002), "Overview of quality management practices in selected Asian countries", *Quality Management Journal*, 9(1), pp.34-47.

Chang, C. C., Chiu, C. M.; Chen, C.A.; 2010. The effect of TQM practices on employee satisfaction and loyalty in government. Total Quality Management & Business Excellence, 21 (12), pp. 1299-1314.
Chapman, C. D. ,2005. Clean house with Lean 5S. *Quality Progress, 38 (6)*, pp. 27-32.
Chapman, R., Al-Khawaldeh, K., 2002. Quality management worldwide: TQM and labour productivity in Jordanian industrial companies. *The TQM Magazine*, 14 (4), pp.248-62.
Charlesworth, K., 2000. ***A question of quality? A survey of performance improvement initiatives***, British Quality Foundation, Institute of management, London.
Chapra, M. U., 1992. Islam and the Economic challenge, Leicester: Islamic Foundation
Chase, R.B. (Ed.), 1998. *Production and OperationsManagement:Manufacturing and Services*. 8th Edn, London, Irwin McGraw-Hill.
Chatman, Jennifer A., Polzer, Jeffrey T., Barsade, Sigal G., and Neale, Margaret A., 1998. Being Different Yet Feeling Similar: The Influence of Demographic Composition and Organizational Culture on Work Processes and Outcomes. *Administrative Science Quarterly*, 43(4), pp. 749-780.
Chin, S.C. and Pun, K.F., 2002. A proposed framework for implementing TQM in Chinese Organizations. The International Journal of Quality & Reliability Management, 19(2/3), pp. 272-94.
Choi, T.Y., Eboch, K., 1998. The TQM paradox: relations among TQM practices, plant performance, and customer satisfaction. Journal of Operations Management 17, 59–75.
Choi, T.Y., Behling, O.C. ,1997. Top managers and TQM success: one more look after all these years. Academy of Management Executives, 11 (1), pp.37-47.
Churchill, G. A. (1979).“A Paradigm for Developing Better Measures of Marketing Construct” *Journal of Marketing Research*, XVI (February): 64-73.
Churchill, G. A. (1995) *Marketing research : methodological foundations,* Dryden Press, Chicago.

Claire, et al., 1976. *Research Methods in Social Relations*. 3rd edition. Holt, Rinehart and Winston: USA.
Clark, M., Riley, M., Wilkie, E and Wood, R.C., 1998. *Researching and Writing Dissertations in Hospitality and Tourism.* London: International Thomson Business Press.
Claus, L.M., 1991. Total Quality Management: a health care application. *Total Quality Management*, 1(2), pp.131-147.
Clauson, J., 1995. Cyberquality: quality resources on the internet. *Quality Progress*, January 1995, pp. 12-45.
Claver, E., Tarí, J.J., Molina, J.F. (2003), "Critical factors and results of quality management: an empirical study", *Total Quality Management*, Vol. 14 No.1, pp.91-118.

Clayton, M., 1995. Encouraging the Kaizen approach to quality in a university. *Total Quality Management*, 6 (5/6), pp. 593-601.
Coff, R., 1999. When competitive advantage doesn't lead to performance: The resource-based view and stakeholder bargaining power. *Organisation Science*, 10(3), pp.119-133.
Cohen, L. and Manion, L. (1994).*Research method in education*, London: Routledge
Cohen, L. and Manion. L., 1998. *Research Methods in Education*, London: Routledge.
Cole, R.E.,1992. The quality revolution. *Production and Operations Management*, 1(1), pp.118-20.
Cole, R., 1998. Learning from the quality movement, *California Management Review,*
41, pp. 43-73.
Collier, D.A., Goldstein, S.M. and Wilson, D.D., 2002. A thing of the past? *Quality Progress,* 35(10), pp. 97-103.

Collier, D.A., 1992. Service, please: the MalcolmBaldrigeNationalQualityAward. BusinessHorizons, July–August, 88–95.

Collier, J., & Esteman, R. (2000). Systematic leadership: ethical and effective. *The Leadership & Organization Development Journal*, 21, 207-215.

Cooke, R.A., Rousseau, D.M., 1988. Behavioral norms and expectations: a quantitative approach to the assessment of organizational culture. *Group and Organization Studies*, September, pp.245-73.
Cooper, D. and Emory, C. (1995). *Business research methods*. Chicago, Irwin.

Cowling, A.; and Newman, K.,1995. Banking on people: TQM, service quality, and human resources Personnel Review, 24 (7), pp. 25–40

Cox, Taylor H.; Lobel, Sharon A.; and McLeod, Poppy L., 1991. Effects of ethnic group cultural differences on cooperative and competitive behavior on a group task. *Academy of Management Journal*, 34, pp. 827-847.

Craig, C.S., Douglas, S.P., 1982. Strategic factors associated with market and financial performance. Quarterly Review of Economics and Business, 22, pp. 101–112.

Creswell, J. W. (1994) *Research design : qualitative & quantitative approaches,* Sage

Publications, c1994, Thousand Oaks, Calif. ; London.

Crosby, P. B., 1979. *Quality is free.* New York, McGraw-Hill.

Crosby, B. P., 1984. *Quality without tears: The art of hassle-free management.* New York: McGraw-Hill.

Crosby, P.B., 1987. *Quality is Free, The Art of Making Quality Certain*. McGraw-Hill, New York, NY.

Cullen, J. M. (1987). *Implementing total quality*. Bedford: IFS Publications.

Curkovic S.; Melnyk S.; Calantone R.; Handfield R. 2000. *Validating the Malcolm Baldrige National Quality Award Framework through structural equation modeling.* International Journal of Production Research, 38 (4), pp. 765-791.

Curkovic, S., Vickery, S., Droge, C., 2000b. Quality-related action programs: their impact on quality performance and firm performance. Decision Sciences, 31 (4), pp.885-905.

Curry, A., Kadasah, N., 2002. Focusing on key elements of TQM-evaluation for sustainability. *The TQM Magazine*, 14 (4), pp.207-16.

Cusumano, M.A., 1994. The limits of lean. *Sloan Management Review*, 35 (4), pp.27-32.

Dahlgaard, J. J., Kristensen, K. and Kanji, G. K., 1998. *Fundamentals of total quality management*. London: Chapman and Hall.

Dahlgaard-Park, S.M., 2000. *From ancient philosophies to TQM and modern management theories*. Linköping University, Sweden, .

Dahlgaard, J.J., Dahlgaard, S.M.P, 2001. Lean production, six sigma quality, TQM and company culture – a critical review. *Conference Proceedings from the International Shanghai Quality Symposium, November*.

Dale, B.G., Plunkett, J.J.,1995. *Quality Costing.* 2nd ed., Chapman and Hall, London

Dale, B.G., Shaw, P., 1991. Statistical process control: an examination of some common queries. *International Journal of Production Economic*, 22 (1), pp.33-41.

Dale, B. G., 1994. *Managing Quality*, Second Edition, Hemel Hempstead: Prentice
Hall International.

Dale, B.G., 2003. *Managing quality.* Fourth Edition. Hertfordshire: Prentice Hall.

Dale, B., and Cooper, C., 1992. *Total Quality and Human Resources: An Executive Guide*. Oxford: Blackwell Publishers.

Dale, B.G. (2003). *Managing Hides et. al., 2004.* (4th ed.). Hertfordshire: Prentice Hall.

Dale, B., Y-Wu, P., Zairi, M., Williams, A. and Van Der Wiele, T., 2001. Total quality management and theory: an exploratory study of contribution. *Total Quality Management*, 12(4), pp. 439–449.

Dale, B. G., 1999. *TQM: An overview. In B. G. Dale (Eds.), Managing quality (3rd ed)*. Oxford: Blackwell-Business.

Dale, B.G., and Cooper, C.L., 1994. Introducing TQM: The Role of Senior Management. *Management Decision*, 32 (1), pp. 20-26.

Damanpour, F., and Evan, M.W.. Organizational innovation and performance the problem of organizational lag. Administrative Science Quarterly. 1984, 29 (3), pp. 392-409.

Das, A., Handfield, R., Calantone, R., Ghosh, S., 2000. A contingency view of quality management-the impact of international competition on quality. Decision Sciences, 31 (3), pp. 649-690.

Dastmalchian, A., Lee, S. and Ng, I., 2000. The interplay between organizational and national cultures: a comparison of organizational practices in Canada and South Korea using the competing values framework. International Journal of Human Resource Management, 11(2), pp. 388-412.

Davis, D., Fisher, T., 2002. Attitudes of middle managers to quality-based organisational change. *Managing Service Quality*, 12 (6), pp.405-13.

Dawson, P., 1994. Quality Management: Beyond the Japanese Model, International Journal of Quality and Reliability Management, 11(7), pp. 51–59.

Dean Jr., J.W., and Bowen, D.E., 1994. Managing theory and total quality: improving research and practice through theory development. *Academy of Management Review,* 19 (3), pp. 392–418

Dean, J.W. and Evans, J., 1994. *Total Quality Management, organization, and strategy.* St Paul, MN: West.

Dean, M. B., and Helms, M. M., 1996.The implementation of total quality management into public sector agencies: a case study of the Tennessee Valley Authority. *Benchmarking: An International Journal*, 3 (1), pp. 50-64.

Dearing E, Hamilton LC. Contemporary advances and classic advice for analyzing mediating and moderating variables. Monographs of the Society for Research in Child Development. 2006 December;71:88–104.

DeBalyo, P.W., 1999. Ten reasons why the Baldrige model works, *Journal for Quality and Participation*, 22 (1), pp. 24-28.

De Cock, C., 1998. "It seems to fill my head with ideas" A few thoughts on postmodernism, TQM, and BPR.”. *Journal of Management Inquiry*, 7(2), pp. 144-153.

De Vaus, D. A. (1996). *Surveys in Social Research*. 4th ed, London, UCL Press.

Dedhia, N.S., 2001. Global perspectives on quality. *Total Quality Management,* 12(6), pp. 657-668.

Dellana, S.A. and Hauser, R.D., 1999. Toward defining the quality culture. Engineering and Management Journal 11(2), pp. 11–15.

Demirbag, M., Tatolglu, E., Tekinkus, M., Zaim, S. (2006), "An analysis of the relationship between TQM implementation and organizational performance: evidence from Turkish SMEs", *Journal of Manufacturing Technology Management*, Vol. 17 No.6, pp.829-47.

Demers, J., 2002. The lean philosophy. *CMA Management*, *76* (7), pp. 31-33.

Deming, W. E., 1982. *Quality, productivity, and competitive position*. Cambridge: Massachusetts Institute of Technology, Center for Advanced Engineering Study.

Deming. W. E., 1986. *Out of the Crisis.* Cambridge: Massachusetts Institute of Technology, Center for Advanced Engineering Study.

Deming, W.E., 1993. *Out of Crisis: Quality, Productivity and Competitive Position*. Cambridge, University Press, Madras.

Deming, W.E., 1993. *The New Economics – for Industry, Government, Education*, Massachusetts Institute of Technology, Center for Advanced Engineering Study, Cambridge, MA.

(The) Deming Prize Committee (2000), The Deming Prize Application Guide, Union of Japanese Scientists and Engineers (JUSE), Tokyo.,

Denzin, N. K. and Lincoln, Y. S. (1994) *Handbook of qualitative research,* Sage Publications, Thousand Oaks, Calif. ; London.

Deshpande, C. D. (1983) *A survey of research in physical geography*.

Dervitsiotis, K. N., 2001. Emerging elements of a world view for sustainable quality, *Total Quality Management*, 12 (7&8), pp. 817-824.

Dervitsiotis, K.N., 2003. The pursuit of sustainable business excellence: guiding transformation for effective organisational change. *Total Quality Management & Business Excellence*, 14(3), pp. 251-267.

Dew, J.R., 1994. Measuring Total Quality Management. Tapping Network J. 5, pp. 6–9.

Djerdjour, M. and Patel, R., 2000. Implementation of quality programmes in developing countries: A Fiji islands case study. *Total Quality Management*, 11(1), pp. 25-44.

Dodangeh, J and Yusuff, Rosnah Mohd, A Decision Model for Selecting of Areas for Improvement in EFQM Model (November 9, 2011). 2011 IEEE International Conference on Quality and Reliability (ICQR), Bangkok, Thailand, September 14-17, 2011.

Douglas, T., J. and Judge, W. Q. J., 2001. Total quality management implementation and competitive advantage: The role of structural control and exploration. *Academy of Management Journal*, 44(1), pp. 158-169.

Donaldson SI. Mediator and moderator analysis in program development. In: Sussman S, editor. Handbook of Program Development for Health Behavior Research and Practice. Thousand Oaks, CA: Sage; 2001. pp. 470–96.

Donnellon, Anne, 1993. Crossfunctional teams in product development: Accommodating the structure to the process. *Journal of Product Innovation Management*, 10, pp. 377-392.

Dopson, S., Risk, A., & Stewart, R., 1992. The changing role of the middle manager in the United Kingdom. *International Studies of Management and Organisation*, *22*(1), pp. 40-49.

Dopson, S., Stewart, R., 1993. Information technology, organisational restructuring and the future of middle management. New Technology, Work and Employment, 8 (1), pp.10-20.

Dove, R., 1999. Knowledge management, response ability and the agile enterprise, *Journal of Knowledge Management*, 3 (1), pp.18-35.

Dow, D., Samson, D., and Ford, S., 1999. Exploding the myth: do all quality management practices contribute to superior quality performance? *Production and Operations Management*, 8 (1), pp. 1-27.

DPAC, 1992. Guide on Total Quality Management in The Public Services. Development of Public Administration Circular No. of 1992. MDC Penerbit Pencetak Sdn. Bhd.

Easton, G.S., and Jarrell, S.L., 1998. The effects of total quality management on corporate performance: An empirical investigation, *Journal of Business*, 71 (2), pp. 253-307.

Ebrahimpour, M., and B. E., Withers, 1992. Employee Involvement in Quality Improvement: A Comparison of American and Japanese Manufacturing Firms Operating in the U.S. *IEEE Transactions on Engineering Management*, 39(2) , pp. 142-148.

Economist, 1992. April 18, p. 67.

Eckes, G., 2001. *The Six Sigma Revolution*, Wiley, New York, NY, .

Edari, R.S. (2004), "Factor analysis", available at: www.uwm.edu/~ edari/methstat/factor.htm (accessed 14 March 2009).

Edgeman, R.L. 1999. On leaders and leadership. *Quality Progress*, 32(10), pp. 4,49-53.

Edwards JR, Lambert LS. Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. Psychological Methods. 2007;12:1–22.

EFQM, 2000. *EFQM Excellence Model*, European Foundation for Quality Management, Brussels.

Ehlers, D.J., 2001. *The development of a department of defence business strategy.* Pretoria: Department of Defense.

Eisenhardt, K., (1989). “Building Theories from case study research” *Academy of Management Review*, 14(4): 532-550.

Eklöf, J.A., Hackl, P., Westlund, A., 1999. On measuring interaction between customer satisfaction and financial results. *Total Quality Management*, 10 (4/5), pp.514-22.

EL-Kafafi, S., 2005. "The Linkage between TQM Implementation and Organizational Strategy: The Case of a New Zealand Manufacturing Organization". *10th International Conference on ISO 9000 and TQM based on the theme TQM and 6-Sigma Competitiveness*", Shanghai, China.
EL-KAFAFI, S., 2006. TQM models and their effectiveness in New Zealand water utilities services. *The TQM Magazine*, 18(5), pp. 440-454

Elmuti, D.S. and Kathawala, Y., 1999. Small service firms face implementation challenges. *Quality Progress,* April 1999, pp. 67-75.

Elshennawy, A.K. and McCarthy, K.M., 1992. Implementing Total Quality Management at the US department of defence. *Total Quality Management*, 3(1), pp. 31-45.

Emory, C. W. and Cooper, D. R. (1991). *Business Research Methods*. 4th ed, Boston, Irwin.

Eng, Q. and Yusof, S.M., 2003. A survey of TQM practices in the Malaysian electrical and electronic industry. *Total Quality Management & Business Excellence*, 14(1), pp. 63- 77.

Entrekin, L. V., and Pearson, C. A., 1995. A comparison of values espoused by quality and other managers. *Asia Pacific Journal of Human Resources,* 33(3), pp. 130-139.

Erickson, T. J., 1992. Beyond TQM: Creating the High Performance Business. *Management Review*, 81(1), pp. 58-61.

Eriksson, H. Johansson, F. and Wiklund, H., 2003. Effects of in-company quality awards on organisational performance. *Total Quality Management*, 14(2), pp. 235-242.

Erridge, A-, Fee, R. and McIlroy, J., 1998. Public sector quality: political project or legitimate goal?. *Internatio Journal of Public Sector Management*, 11(5), pp. 341-53.

Eskildson, L., 1994. Improving the odds of TQM's success. *Quality Prog*ress. 27, pp. 61–63.

Eskildson, L., 1995. TQM's role in corporate success: analysing the evidence. *National Productivity Review*. 16 (2), pp. 25-38

Ettorre, B., 1996. Is the Baldrige still meaningful? *Management Review*, 85 (3), pp. 28-31.

Evans, J.R., 1992, A Report of the Total Quality L eadership Steering committee and Working Councils (Milwaukee: Proctor and Gamble); 1997, The 1997 Baldrige: making quality an adjective. POM Chronicle, 7, 4.

Evans, J.R. and Dean, J.W. 2003. *Total Quality Management, organization and strategy*. United States: Thomson Learning.

Evans, J. R. *and* Jack, E. P.*,* 2003. Validating key results linkages in the Baldrige Performance Excellence Model *The Quality Management Journal*. Milwaukee: 2003. 10 (2), pp. 7- 24.

Evans, J. R. and Lindsay, W. M., 1993.*The Management and Control of Quality*. Second Edition, St. Paul: West Publishing Company.

Evans, J.R., Lindsay, W.M., 1995. *The management and control of quality*, 3rd edn. West Publishing, New York.

Evans, J.R., and Lindsay, W.M., 1996. The Management and Control of Quality, 3rd Edition, West Publishing Co., Cincinnati, OH.

Ezzamel, M.,1994. From problem solving to problematization, relevance revisited. *Critical Perspectives on Accounting*, 5, pp. 269-80.

Fard H.T., 1986. Management and management in Islam. Iran:Elham.

Farooqui, R. U.; Masood, R. ; Aziz, J. , 2008 . Assessing the Viability of Total Quality Management Implementation in Contracting firms of Pakistani Construction industry. *Proceedings: First International Conference on Construction In Developing Countries (ICCIDC–I).“Advancing and Integrating Construction Education, Research & Practice” August 4-5, 2008, Karachi,, Pakistan.*

Feigenbaum, A. V., 1956. “Total quality control.” *Harvard Business Review*, 34(6), pp. 93- 101.

Feigenbaum, A. V., 1961. *Total Quality Control*. Second Edition, New York, McGraw Hill.

Feigenbaum, A. V., 1983. *Total Quality Control*. Third Edition, New York: McGraw Hill.

Feigenbaum, A. V., 1986.*Total Quality Control*. New York, McGraw Hill.

Feigenbaum, A.V., 1991. *Total Quality Control*, Third edition, McGraw-Hill, Inc., New York.

Feigenbaum, A. V., 1994. Quality and economy. *Quality*, 33, pp. 33-36.

Feigenbaum, A.V. , 1997. Changing concepts and management of quality worldwide, *Quality Progress*, 30 (12), pp. 45-48.

Filiatrault, P., Harvey, J., Chebat, J.-C., 1996. Service quality and service productivity management practices. Industrial Marketing Management, 25 (3), pp. 243–255.

Fink, A. (2006), “How to conduct surveys: a step-by-step guide”, (3rd ed), Thousand Oaks : Sage Publications

Flick, U. (2002) *An introduction to qualitative research,* SAGE Publications, London ;

Thousand Oaks, Calif.

Flood, R. L., 1993. *Beyond TQM*. New York, John Wiley & Sons.

Flynn, B.B., Schroeder, R.G. and Sakakibara, S., 1994. A framework for quality management research and an associated measurement instrument. *Journal of Operations Management*, 11(4), pp. 339-366.

Flynn, B.B., Schroeder, R.G., Sakakibara, S., 1995. The impact of quality management practices on performance and competitive advantage, *Decision Sciences*, 26, pp. 659- 691.

Flynn, B.B. and Saladin, B., 2001. Further evidence on the validity of the theoretical models underlying the Baldrige criteria, *Journal of Operations Management*, 19 (3), pp. 617-652.

Ferdows, K., Demeyer, A., 1990. Lasting improvements in manufacturing performance: in search of a new theory. Journal of Operations Management, 9 (2), pp. 168–183.

Field, A.P. (2000), *Discovering Statistics Using SPSS for Windows: Advanced Techniques for the Beginner*, Sage, London, .

Foley, K., 2004. *Five Essays on Quality Management*, SAI Global Ltd, Sydney.

Ford, M.W. and Evans, J.R., 2000. Conceptual foundations of strategic planning in the Malcolm Baldrige criteria for performance excellence. Quality Management Journal 7 (1), pp. 8–26.

Fornell, C. & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), pp. 39-50.

Fornell, C., Johnson, M.D., Anderson, E.W., Cha, J., Bryant, B.E., 1996. The American customer satisfaction index: nature, purpose, and findings. *Journal of Marketing*, 60 (4), pp. 7–18.

Forza, C., Flippini, R., 1998. TQM impact on quality conformance and customer satisfaction: a causal model. International Journal of Production Economics, 55, pp. 1–20.

Frazier PA, Tix AP, Barron KE. Testing moderator and mediator effects in counseling psychology research. Journal of Counseling Psychology. 2004;51:115–134.

Frucot, Veronique, and White, Stephen, 2006. Managerial levels and the effects of budgetary participation on managers. *Managerial Auditing Journal*, 21 (2), pp. 191-206.

Gable, G. G. (1994) Integrating case study and survey research methods: an example in

information systems, *EUROPEAN JOURNAL OF INFORMATION SYSTEMS,* 3; pp. 2.

Galperin, B. L., 1995. *The Implementation of TQM in Canada and Mexico: A Cross- Cultural Perspective*. Business Administration, Management. Canada, Concordia Unviversity (Canada).

GAO (United States General Accounting Office). (1990), Management Practices: U.S. Companies Improve Performance Through Quality Efforts.

Garvin, D.A., 1983. Quality on the line. *Harvard Business Review*, 61, pp. 64-75.

Garvin, D.A., 1984. What does 'product quality' really mean? *Slogan Management Review*, 26 (1), pp. 25-43.

Garvin, D. A., 1986. Quality Problems, Policies, and Attitudes in the United States and Japan: An Exploratory Study. *Academy of Management Journal,* 29(4), pp. 653-673.

Garvin, D. A., 1987. "Competing on the eight dimensions of quality." *Harvard Business Review,* 65(6), pp. 101-109.

Galperin, B.L., and Lituchy, T.R., 1999. The implementation of total quality management in Canada and Mexico: a case study. International Business Review. 8 (3), pp. 323-349.

Garvin, **D.A., 1988.** ***Managing Quality****: The* ***Strategic*** *and Competitive Edge*. New York: Free Press.

Garvin, D.A., 1991. How the Baldrige award really works. *Harvard Business Review*, 69 (6), pp.80–95.

George, S., 1992. *The Baldrige Quality System*, Wiley, New York, NY, .

George, M., Rowlands, D., Kastle, B., 2003. *What is Lean Six Sigma?*, McGraw-Hill Companies, New York, NY, .

George, S., Weimerskirch, A., 1994. Total Quality Management: Strategies and Techniques Proven at Today's Most Successful Companies. Wiley and Sons, NewYork.

Ghobadian, A. and Speller, S., 1994. "Gurus of quality: A framework for comparison." *Total Quality Management* 5(3), pp. 53-69.

Ghobadian, A. and Woo, H.S., 1996. Characteristics, benefits and shortcomings of four major quality awards. *International Journal of Quality & Reliability Management*, 13 (2), pp. 10-44.

Ghobadian, A., Gallear, D., Woo, H. and Liu, J., 1998. *Total Quality Management - impact, introduction and integration strategies*. London: The Chartered Institute of Management Accounts.
Gibson, T. C., 1990. Helping leaders accept leadership of total quality management. *Quality Progress*, 23, pp. 45–47.

Gitlow, H., Oppenheim, A., Oppenheim, R. (1995), Quality Management: Tools and Methods for Improvement, 2nd ed., Irwin, Homewood, IL, .

Glesne, C., 1999. Becoming Qualitative Researchers: An introduction, New York: Addison Wesley Longman, Inc.

Godfrey, G., Dale, B., Marchington, M., Wilkinson, A., 1997. Control: a contested concept in TQM research, International Journal of Operations & Production Management, 17(5-6), pp.558-73.

Goeke, R. J., and Offodile, O. F., 2005. Forecasting management philosophy life cycles: A comparative study of six sigma and TQM. *Quality Management Journal*, *12 (2)*, pp. 34-46.

Goetsch, D.L., Davis, S.B., 2000. Quality Management: Introduction to Total Quality Management for Production, Processing, and Services, 3rd ed., Prentice-Hall, Englewood Cliffs, NJ, .

Goetsch, D.L., Davis, S., 1994. Introduction to Total Quality: Quality, Productivity, and Competitiveness. Merrill, New York.

Goldstein, S. and Schweikhart, S., 2002. Empirical support for the Baldrige Award Framework in US hospitals. *Health Care Management Review*, 27(1), pp. 62-75.

Goodman, J., O'Brein, P. and Segal, E. 2000. Turning CEOs into quality champions. *Quality Progress,* March: 47-54.

Gordon, D.K., 2002. Quality management system vs. quality improvement. *Quality Progress,* 35(11), pp. 86-88.

Grandzol, J.R., 1998. A survey instrument for standardizing TQM modeling research. International Journal of Quality Science, 3 (1), pp. 80–105.

Grib, B.J.P., 1993. *A critical literature study and research conducted on selected South African companies.* Stellenbosch: University of Stellenbosch.

Griffeth, R.W., Hom, P.W., Gaertner, S., 2000. A meta-analysis of antecedents and correlates of employee turnover: update, moderator tests, and research implication for the next millennium. Journal of Management, 26 (3), pp. 463-488.
Gryna, F. M., 1991. The quality director of the '90s. *Quality Progress*, 24, pp. 51–54.

Guimaraes, T., 1996. TQM's impact on employee attitudes. The TQM Magazine 8 (1), pp. 20.

Guimaraes, T., (1997) "Assessing employee turnover intentions before/after TQM", International Journal of Quality & Reliability Management, 14(1), pp.46 – 63.
Guler, I., Guillén, M. F., & Macpherson, J. M., 2002. Global competition, institutions, and the diffusion of organizational practices: The international spread of ISO 9000 quality certificates. *Administrative Science Quarterly, 47()*, pp. 207-233.
Gummesson, E., 1987. "Lip Service: A Neglected Area in Services Marketing." *Journal of Services Marketing* 1(1), pp. 19-23.

Gummesson, E. (2000) *Qualitative methods in management research,* Sage Publications, Thousand Oaks, Calif., London.

Grossnickle, J. & Raskin, O. (2001). *The handbook of online marketing research*. New York, NY: The McGraw-Hill Companies, Inc.

Hackman, J.R. and Wageman, R., 1995. Total quality management: Empirical, conceptual, and practical issues, *Administrative Science Quarterly*, 40 (2), pp. 309-342.

Haffar, M., 2007. Global brands and religious boycott. MSC dissertation in Marketing. University of Glamoragn, UK.

Hafeez, K., Malak, N., Abdelmeguid, H. (2006), "A framework for TQM to achieve business excellence", *Total Quality Management*, Vol. 17 No.9, pp.1213-29.

Hair, F. J., Jr, Anderson, R. E., Tatham, R. L. and Black, W. C., 1998. *Multivariate Data Analysis.* Upper Saddle River, NJ: Prentice-Hall.
Hakim, C. (2000) *Research design : successful designs for social and economic research,* Routledge, London.

Hammer, M., 1990. Re-engineering work: Don't automate, obliterate, *Harvard Business Review*, July – August, 60 (4), pp. 104 – 112.

Hammer, M., 2001. ***The Agenda: What Every Business Must Do to Dominate the Decade***, Random House, London.

Hammer, M. and Champy, J., 2000. *Reengineering the corporation.* London: Nicholas Brealey Publishing.

Hammons, C., and Maddux, G., 1990. Total quality management in the public sector. *Management Decision*, 28 (4), pp. 15-19.

Handfield, R.B., Ghosh, S. and Fawcett, S., 1998. Quality-driven change and its effects on financial performance. Quality Management Journal, 5(3), pp. 13–30.

Handfield, R., Jayaram, J., Ghosh, S., 1999. An empirical examination of quality tool deployment patterns and their impact on performance. International Journal of Production Research, 37, pp.1403–1426.

Hanifi, F., 2001. Islamic management and Japanees management. Iran.

Hansson, J., 2001. Implementation of Total Quality Management in small organisations: a case study in Sweden. *Total Quality Management,* 12(7&8), pp. 988-994.

Hansson, J., Eriksson, H., 2002. The impact of TQM on financial performance. Measuring Business Excellence, 6 (4), pp. 44–54.

Harber, D., K. Burgess, and Barclay, D.,1993a. Total Quality Management as a Cultural Intervention: An Empirical Study. *International Journal of Quality and Reliability Management*, 10(6), pp. 28-46.

Harber, D., K., F. Marriott, and Indrus, N., 1991b. Employee Participation in TQC: The Effect of Job Levels on Participation and Job Satisfaction. *International Journal of Quality and Reliability Management*, 8(5), pp. 35-54.

Harris, C. R., 1995. The evolution of quality management: An overview of the TQM literature. *Canadian Journal of Administrative Sciences*, 12(2), pp. 95-105.

Harris, J.R., 1990. Ethical values of individuals at different levels in the organizational hierarchy of a single firm. *Journal of Business Ethics*, September, pp.741-50.

Harris, R. D., and Gonzalez, R. F., 1981. *The operations manager*. West, St Paul.

Harry, M., Schroeder, R., 2000. *Six Sigma: The Breakthrough Management Strategy Revolutionising the World's Top Corporations*, Century Double Day, New York, NY.

Heller, R., 1994. Putting the total into total quality. *Management Today*. London: August 1994, pp. 56-60.

Hellsten, U., Klefsjö, B., 2000. TQM as a management system consisting of values, techniques and tools. *TQM Magazine*, 12(4), pp.238-44.

Helms, M., Williams, A. and Nixon, J., 2001. TQM principles and their relevance to higher education: The question of tenure and post-tenure review. *The International Journal of Educational Management*. 15 (6/7), pp. 332-341.

Hendricks, K.B. and Singhal, V.R., 1997. Does implementing an effective TQM programme actually improve operating performance? Empirical evidence from firms that have won quality awards*, Management Science*, 43 (9), pp. 1258-74.

Hendricks, KB; and Singhal, VR., 2001. Firm characteristics, total quality management and financial performance. *Journal of Operations Management*,19, pp. 269–85.

Hendricks KB; and Singhal VR., 2001. The long-run stock price performance of firms with effective TQM programs. *Management Science*, 47(3), pp. 359–68.

Hides, M.T., Davies, J., Jackson, S. (2004), "Implementation of EFQM excellence model self-assessment in the UK higher education sector – lessons learned from other sectors", *The TQM Magazine*, Vol. 16 No.3, pp.194-201.

Hill, T., 1983. *Production/operations management*. Prentice Hall, London.

Hill, T., 1991. *Production/operations management*. Prentice Hall, 2nd Ed., London.

Hill, S., 1991. Why quality circles failed but total quality might succeed. British Journal of Industrial Relations, 29 (4), pp.541-69.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black W. C. (1998). *Multivariate data analysis* (5th ed.) New York: Prentice Hall.

Ho, S. K. M., 1994. Is the ISO9000 Series for Total Quality Management. *International Journal of Quality and Reliability Management,* 11(9), pp. 74-89.

Ho, L. and Chuang, C., 2006. A Study of implementing six-sigma quality management system in government agencies for raising service quality. *Journal of American Academy of Business*, *10*(1), pp. 167-173.

Ho, D.C.K., Duffy, V.G., Shih, H.M., 2001. Total quality management: an empirical test for mediation effect. International Journal of Production Research 39, pp. 529-548.

Ho, D.C.K., Duffy, V.G., Shih, H.M., 1999. An empirical analysis of effective TQM implementation in the Hong Kong electronics manufacturing industry. Human Factors and Ergonomics in Manufacturing, 9 (1), pp. 1–25.

Hodgetts, R. M., 1996. *Implementing TQM in small and medium-sized organisations*. AMACOM, New York.

Hoffman, L. Richard; and Maier, Norman R. F., 1961. Quality and acceptance of problem solutions by members of homogeneous and heterogeneous groups. *Journal of Abnormal and Social Psychology*, 62, pp. 401-407.

Hofstede, G., 1980. Hofstede, Motivation, leadership and organizations: do American theories apply abroad?, *Organizational Dynamics,* 9 (1980) (1), p. 92.

Hofstede, G., 1983a, The cultural relativity of organizational practices and theories. *Journal of International Business Studies*, pp. 75–89 (Fall).

Hofstede, 1983b G. Hofstede, National cultures in four dimensions, *International Studies of Management and Organizations,* 8 (1983) (1 & 2), pp. 46–74.

Hofstede, G., 1984a. The cultural relativity of the quality of life concept. *Academy of Management Review,* 9 (3), pp. 389–398.

Hofstede, G., 1984b. *Culture's Consequences: International Differences in Work-Related Values*. Sage Publications, London.

Hofstede, G., 1994a. Management scientists are human. *Management Science,* 40(1), pp. 4–13.

Hofstede, G., 1994b. Cultural constraints in management theories. *International Review of Strategic Management*, 5, pp. 27–48.

Hofstede, G., 1996. An American in Paris: The Influence of Nationality on Organization Theories. Organization Studies, 17(3): 525-537.

Hofstede, G., 1997. Cultures and Organisations, Software of the Mind, McGraw-Hill, New York, NY.

Hofstede, G., 1999. Problems remain, but theories will change: the universal and the specific in 21st century global management, Organizational Dynamics, 28(1), pp. 34–44.

Hofstede, G. (2001), Culture’s Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations, Sage, Beverly Hills, CA.
Hofstede, G. (2007), available at: www.geert-hofstede.com (retrieved December, 2007). Jones, G.R. and George, J.M. (2003), Contemporary Management, McGraw-Hill, Boston, MA.

Hodgetts, R.M., Juratko, D.F., Hornsby, J.S., 1999. Quality implementation in small business: perspectives from the Baldrige award winners. *SAM Advanced Management Journal*, pp. 37–47.

Hodgson, A., 1987. Deming's never-ending road to quality. *Personnel Management*. London: Jul 1987. 19 (7), pp. 40-44.

Hoe, S. L. 2008. Issues and procedures in adopting structural equation modeling technique. Journal of Applied Quantitative Methods 3(1), pp. 76-83.

Hoelter, J. (1983). The analysis of covariance structures; Goodness of Fit Indices. *Social Methods and Research,* 11(1), 325-344.

Hoinville, G. and Jowell, R. (1985) *Survey research practice,* Gower, Aldershot.

Hollander, M. and Wolfe, D. A., 1973. *Nonparametric Statistical Methods (First Edition)*. New York: John Wiley & Sons.

Holtz, R., and Campbell, P., 2004. Six sigma: Its implementation in Ford's facility management and maintenance functions. *Journal of Facilities Management*, 2(4), pp. 320- 330.

Hom, P.W., Kinicki, A.J., 2001. Toward a greater understanding of how dissatisfaction drives employee turnover. Academy of Management Journal, 44 (5), pp. 975-987.

Hooper, J.H., 2001. The process approach to quality management systems. *Quality Progress, 34*(12), pp. 70-73.

Hoskisson, R.E., Hitt, A. M., Wan W. P., and Yiu D., 1999. Theory and research in strategic management: swings of a pendulum. *Journal of Management*, 25 (3), pp. 417-456.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V., 2004. *Leadership, Culture, and Organizations: The GLOBE Study of 62 Societies*. Sage Publications.

Hoyer, R. W., Hoyer, B. B. Y., Crosby, P. B., and Deming, W. E. ,2001. What is quality? *Quality Progress. 34 (7)*, pp. 52-63.

Hradesky, J., 1995. *Total Quality Management handbook.* New York: McGraw-Hill, Inc.

Huang, Y.-S., Lin, B.M.T., 2002. An empirical investigation of total quality management: a Taiwanese case. The TQM Magazine 14 (3), pp. 172–181.

Huberman, A. M. and Miles, M. B. (2002) *The qualitative researcher's companion,* Sage Publications, Thousand Oaks, California ; London.

Hunt, V. D., 1992. Quality in America: How to Implement A Competitive Quality Programme. Illinois: Business one. Irwin.

Hunter, S. and Malik, H., 2005. Modernization, Democracy, and Islam. Center for Strategic and International Studies (Washington, D.C), Published by Greenwood Publishing Group.

Hussey, J. and Hussey, R., 2003. *Business research : a practical guide to undergraduate and postgraduate students,* Palgrave Macmillan, Basingstoke.

Huysamen, G. K., 1994. *Methodology for the Social and Behvaioral Scienes*. Halfway House: Southern Book Publishers.

Idris, A. M. and Zairi, M., 2006. Sustaining TQM: A synthesis of literature and proposed research framework. *Total Quality Management*, 17(9), pp. 1245-1260.

Imai, M., 1986. *Kaizen: The key to Japanese competitive success*. New York, Random House Business Division.

Ingle, S., Roe, W., 2001. Six sigma black implementation. *The TQM Magazine*, 13(4), pp.273-80.

Ishikawa, K., 1985. *What is quality control? The Japanese Way*. New Jersey: Prentice Hall.

Ishikawa, K., 1985. *What is Total Quality Control? The Japanese Way*. New York: Prentice- Hall.

Ishikawa, K. and Kano, N., 1993. Profit and growth through quality. *Guide to Quality Control*, August 1993: 9.

Islam, R., 2007. MBNQA criteria in education: assigning weights from a Malaysian perspective and proposition for an alternative evaluation scheme. Intl. Trans. in Op. Res. 14 (2007), pp. 373–394.

Jens J. Dahlgaard, Su Mi Dahlgaard-Park, 2006. Lean production, six sigma quality, TQM and company culture. The TQM Magazine, 18 (3), pp. 263-281

Jacobson, R., Aaker, D.A., 1987. The strategic role of product quality. Journal of Marketing. 51 (4), pp. 31–44.

Jacobs, B., Suckling, S. (2007), "Assessing customer focus using the EFQM excellence model: a local government case", *The TQM Magazine*, Vol. 19 No.4, pp.368-78.

Jaeger, A., & Kanungo, R., 1990. *Management in developing countries.* London: Routledge.

Javidan, M., 2004. Performance orientation, in House, R., Hanges, P., Javidan, M., Dorfman, P., Gupta, V. (Eds),*Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*, Sage Publications, Thousand Oaks, CA, .

Jick, T. (1979). “Mixing qualitative and quantitative methods: Triangulation in action” *Administrative Science Quarterly*, 24(4): 602-611.

Johnson, R.S., 1993. *Leadership for the quality transformation.* Wisconsin: ASQC Quality Press.

Johnson, C. N., 2002. Annual quality awards listing. *Quality Progress, 35(8)*, pp.48-57.

Jones, C., 1994. Making total quality work for your organisation. *Quality World,* September 1994, pp. 97-101.

Ju, T.J., Lin, B., Lin, C., Kuo, H.J. (2006), "TQM critical factors and KM value chain activities", *Total Quality Management*, Vol. 17 No.3, pp.373-93.

Jun, Minjoon; Cai, S.; Shin, H. , 2006. TQM practice in maquiladora: Antecedents of employee satisfaction and loyalty, Journal of Operations Management, 24 (6), pp.791-812.

Jung, J., Su, X., Baeza, M. and Hong, S., 2008. The effect of organizational culture stemming from national culture towards quality management deployment. The TQM Magazine, 20 (6), pp. 622-635

Juran, J. M., 1974*. Quality control handbook*. New York, McGraw-Hill.

Juran, J.M., 1951. *The Quality Control Handbook*, 1st ed., McGraw-Hill, New York, NY.

Juran, J.M., 1986. The quality trilogy. *Quality Progress,* 19(8), pp. 19-24.

Juran, J. M., 1989. Juran on Leadership for Quality: An Executive Handbook. New York: The Free Press.

Juran, J. M., 1991. “World war II and the quality movement.” *Quality Progress* 24(12), pp. 19-24.

Juran, J.M., 1992. Juran on Quality by Design: The New Steps for Planning Quality into Goods and Services. The Free Press, New York, NY.

Juran, J. .M., 1993. Why quality initiatives fail, *Journal of Business Strategy*, 14 (4), pp. 35- 38.

Juran, 1994 J.M. Juran, Japanese and Western quality—a contrast, Quality Progress II

(1994) (12), pp. 10–18.

Juran, J. M., Gryna, F. M. and Bingham, R. S. (eds.), 1988. *Quality Control Handbook*. 4th Ed., McGraw Hill, New York.

Kachigan, S. K., 1986. *Statistical analysis: An interdisciplinary introduction to univariate & multivariate methods.* New York: Radius Press.

Karia, N., Asaari, M.H.A.H. (2006), "The effects of total quality management practices on employees' work-related attitudes", *The TQM Magazine*, Vol. 18 No.1, pp.30-43.

Kanji, G.K., 1990. Total quality management: the second industrial revolution. *Total Quality Management*, 1(1), pp.3-11.

Kanji, G.K.,1995. *Total Quality Management process: a systematic approach.* Abington, UK: Carfax Publishing Company.

Kanji, G.K., 1998. An innovative approach to make ISO 9000 standards more effective. *Total Quality Management,* 9(4), pp. 67-78.

Kanji, G.K., 2000. A european application of the business excellence Index. *Quality Progress*, 33(12), pp. 109-114.

Kanji, G.K., Barker, R.L., 1990. Implementation of total quality management. Total Quality Management, 1 (3), pp. 375–389.

Kanji, G.K. and Moura, P., 2002. Business scorecard. *Total Quality Management,* 13(1), pp. 13-27.

Kanji, G. K. and Tambi, A. M. B. A., 1999. Total Quality Management in UK Higher Education Institutions. *Total Quality Management***,** 10(1), pp. 129-153.

Kanji, G.K. and Wallace, W., 2000. Business excellence through customer satisfaction. *Total Quality Management,* 11(7), pp. S979-S998.

Kanungo, R.N., Mendonca, M., 1996. Cultural contingencies and leadership in developing countries, in Bacharach, S., Erez, M., Bamberger, P. (Eds),Research in Sociology of Organisations, JAI Press, Greenwich, CT, 14, pp.263-95.

Karl, K.A., Sutton, C.L., 1998. Job values in today's workforce: a comparison of public and private sector employees. Public Personnel Management, 27 (4), pp. 515–527.

Katz, J. P., Krumwiede, D. W., and de Czege, M. W., 1998. Total Quality Management in the Global Marketplace: The Impact of National Culture on TQM Implementation. *International Journal of Management,* 15(3), pp. 349-356.

Kathawala, Y., 1989. A comparative analysis of selected approaches to quality. *International Journal of Quality and Reliability Management, 6(5), pp. 7-17.*

Kaplan, B. and Duchon, D. (1988). "Combining qualitative and quantitative methods in information systems research: A Case Study" *MIS Quarterly*, 12(4): 571-583.

Kaynak, H., 2003. The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management*, 21, pp. 405-35.

Kekale, T. and Kekale, J., 1995. A mismatch of cultures: a pitfall of implementing a total quality approach. International Journal of Quality & Reliability Management, 12 (9), pp. 210-20

Kelada, J.N.,1996. *Integrating reengineering with total quality*. New York: McGraw-Hill Book Co.

Kelloway, E. (1998). *Using LISREL for structural equation modeling*: A researcher's guide. Thousand Oaks, CA: SAGE Publications, Inc.

Ken Black, Lee Revere, 2006. Six Sigma arises from the ashes of TQM with a twist. International Journal of Health Care Quality Assurance. 19(3), pp. 259-266

Ketola, J. and Roberts, K., 2001. Demystifying ISO 9001:2000. *Quality Progress,* 34(9), pp. 65-70.

Khanna, V., Vrat, P., Shankar, R. and Sahay, B.,2002. Developing causal relationships for a TQM index for the Indian automobile sector. *Work Study*, 51 (7), pp. 364-73.

Khoo, H. H., & Tan, K. C., 2003. Managing for quality in the USA and Japan: Differences between the MBNQA, DP and JQA. TQM Magazine, 15(1), pp.14-24.

Kidder, L. H., Judd, C. M., Smith, E. R. and Selltiz, C. (1986) *Research methods in social relations,* Published for the Society for the Psychological Study of Social Issues (SPSSI) by Holt, Rinehart and Winston, c1986, New York ; London.

Kim, K. Y., & Chang, D. R. ,1995. Global quality management: A research focus. Decision Sciences, 26, pp. 561–568.

Kim, K. Y., & Kang, Y. C. (2001). Analysis of structural equation model. Seoul, Korea: Freedom Academy.

Klefsjö, B., Wiklund, H., Edgeman, R.L., 2001. Six sigma seen as a methodology for total quality management. Measuring Business Excellence, 5(1), pp.31-5.

Kline, R. (1998). *Principles and practice of structural equation modeling*. New York, NY: The Guilford Press.

Knights, D., McCabe, D., 1998. Dreams and designs on strategy: a critical analysis of TQM and management control. Work, Employment & Society, 12 (3), pp.433-56.

Knights, D., McCabe, D.,1999. Are there no limits to authority? TQM and organisational power", Organization Studies, 20(2), pp.197-224.

Koch, J, Cebula, R, 1994. In search of excellent management. *Journal of Management Studies*, 31(5), pp.681-700.

Korunka, C., Carayon, P., Sainfort, F., Scharitzer, D. and Hoonakker, P., 2003. Quality in the public sector from an employee's perspective: results from a transnational comparison. *Total Quality Management,* 14(3), pp. 537-548.

Kosko, J., 1999. "Baldrige Index outperforms S and P 500 for fourth year. [Online] Available from http://www.nist.you/public [cited 20 November 2011]

Kossek, E.E., 1989. The acceptance of human resource innovation by multiple constituencies. *Personnel Psychology*, Summer, pp. 263-81.

Kowalski, E., and Walley, P., 1993. Employee Receptivity to Total Quality. *International Journal of Quality and Reliability Management*, 10(1), pp. 23-37.

Krajewski, L. J. and Ritzman, L. P., 1990. *Operations management*. Addison-Wesley, 2nd Ed, Massachusetts.

Krajewski, L.J., Ritzman, L.P., 2001. Operations Management: Strategy and Analysis, sixth ed. Prentice-Hall, Upper Saddle River, NJ.

Krantz, K. T., 1989. How Velcro Got Hooked on Quality. *Harvard Business Review*, 67(5), pp. 34-40.

Kraemer HC, Stice E, Kazdin A, Offord D, Kupfer D. How do risk factors work together? Mediators, moderators, and independent, overlapping, and proxy risk factors. Am J Psychiatry. 2001;158:848–56.

Kreiner, K., 1989. Culture and meaning: making sense of conflicting realities in the workplace. *International Studies of Management and Organizations*, 19(3), pp.64-81.

Kreitner, R. and Kinicki A., 1998. *Organizational behaviour.* Massachusetts: Irwin/McGraw-Hill.

Kruger, V., 1998. Total quality management and its humanistic orientation towards organizational analysis. *The TQM Magazine*, 10(4), pp.293-301.

Kruger, L. (2001) *Methods in pain research,* CRC, Boca Raton ; London.

Kueng, P., 2000. Process performance measurement system: a tool to support process-based organisations. *Total Quality Management,* 11(1): 67-85.

Kujala, J. and Lillrank, P (2004), "Total quality management as a cultural pheneomenon", QMJ, 11 (4), PP. 43-55

Kumar, V. (2000). *International marketing research*. New Jersey, Prentice Hall, Upper Saddle River.

Kumar, M.R., 2006. TQM as the basis for organizational transformation of Indian railways: a study in action research. DBA thesis, Southern Cross University, Tweed Heads.

Kumar, V., Choisne, F., de Grosbois, D., Kumar, U. (2009), "Impact of TQM on company's performance", *International Journal of Quality & Reliability Management*, Vol. 26 No.1, pp.23-37.

Kumar, M.R. (2006), "Total quality management as the basis for organisational transformation of Indian railways – a study in action research", DBA dissertation, Southern Cross University, Lismore,

Kunst, P., and Lemmink, J., 2000. Quality management and business performance in hospitals: A search for success parameters. *Total Quality Management*, 11(8), pp. 1123-1133.

Lagrosen, S., 2002. Quality management in Europe: a cultural perspective. *The TQM Magazine,* 14 (5), pp. 275–283.

La-Hay, C.W. and Noble, J.S., 1998. A framework for business system and quality management integration, *International Journal of Quality & Reliability Management*, 15 (6), pp. 556-581.

Lake, R.R. and Mohanty, R.P., 1994. Total quality management: concepts, evolution and acceptability in developing economics, *Total Quality Management*, 11(9), pp. 9-33.

LaKhal, L., Pasin, F., Limam, M. (2006), "Quality management practices and their impact on performance", *International Journal of Quality & Reliability Management*, Vol. 23 No.6, pp.625-45.

Lane, J., 1993. *The Public Sector*, Sage, London.

Lascelles, D. M., and Dale, B. G, 1989b. The UK Department of Trade and Industry National Quality Campaign: 1983 to January 1989. *International Journal of Operations and Production Management,* 9 (6), pp. 2-46.

Lawler, E., 1994. Total quality management and employee involvement: are they compatible?, *Academy of Management Executive,* 1, pp. 68–76.

Lawler, E.E., Mohrman, S.A. and Ledford, G.E., Jr., 1995. *Creating High Performance Organizations*. San Francisco: Jossey-Bass.

Lascelles, D. M. and Dale, B. G., 1989. A review of the issues involved in quality improvement. *International Journal of Quality and Reliability Management*, 5, pp. 76–94.

Lee, S. M. and Schiederjans, M. J., 1994. *Operations Management.* Boston, MA: Houghton Mifflin.

Lemak, D. J., Reed, R., & Satish, P. K., 1997. Commitment to Total Quality Management: Is There a Relationship with Firm Performance?, Journal of Quality Management, 2 (1), pp. 67- 86.

Lengnick-Hall, C.A., 1996. Customer contributions to quality: a different view of the customer-oriented firm, *Academy of Management Review*, 21 (3), pp. 791-824.

Lindsay, W.M. and Petrick, J.A., 1998. *Total quality and organization development.* Florida: St. Lucie Press.

Logothetis, N., 1992, Managing for Total Quality: From Deming to Taguchi and SPC (Hertfordshire, UK: Prentice-Hall International), 5.

Longenecker,C. 0., and Scazzero, J. A., 1993. Total Quality Management from Theory to Practice: A Case Study. *International Journal of Quality and Reliability Management*, 10(5), pp. 24-31.

López-Fresno, P., 2005."Service Quality Certification: A Practical Experience". *10th International Conference on ISO 9000 and TQM based on the theme TQM and 6-Sigma Competitiveness*", Shanghai, China.

Lorente, Martinez, Rodriguez, Gallego, and Dale, B.G, 1998. Total quality management and company characteristics: an examination. Quality Management Journal, 5 (4), pp.59-71.

Llorens, F.J., Ruiz, A. and Molina, L.M., 2003. An analysis of the relationship between quality and perceived innovation: the case of financial firms. Industrial Management & Data Systems, 103, pp. 579-90.

Lleras, Christy. 2005. “Path Analysis.” The Encyclopedia of Social Measurement. New York: Academic. Press.

Lou, R., Zhao, X., and Xiao, M., 2004. Assessing quality management in China with MBNQA criteria. *International Journal of Quality & Reliability Management*, 21(7), pp. 699-713.

Macdonald, J., 1992. Reasons for failure. *The TQM magazine,* 4(4), pp. 237-240.

MacDonald, J., 1995. Together TQM and BPR are winners. *The TQM Magazine* 7(3), pp. 21-25.

MacKinnon DP. Mediating variable. In: Smelser NJ, Baltes PB, editors. International Encyclopedia of the Social and Behavioral Sciences. Oxford, UK: Pergamon; 2001. pp. 9503–7.

Macleod C. J. and Hockey, L. (eds.) (1989*). Further Research for Nursing: A New Guide for the Enquiring Nurse*. London: Scutari.

Madu, C. N., and C., Kui, 1993. *Introducing Strategic Quality Management*. Long-Range Planning, 26(6), pp. 121-131.

Madu, C.N., Kuei, C.,and Lin, C., 1995. A comparative analysis of quality practice in manufacturing firms in the US and Taiwan. *Decision Science*. 26, pp. 621–635.

Magnusson, K., Kroslid, D., Bergman, B, 2003. *Six Sigma – The Pragmatic Approach*, Lund, Studentlitteratur, .

Maani, K.E., Putterill, M.S., Sluti, D.G., 1994. Empirical analysis of quality improvement in manufacturing. *The International Journal of Quality and Reliability Management*, 11 (7), pp.19-37.

Mani, T.P., Murugan, N. and Rajendran, C., 2003(a). TQM is a must for success, but not sufficient for survival: a conceptual framework as contemplated in ancient Tamil literature in India. *Total Quality Management & Business Excellence*, 14(4), pp. 395-405.

Mani, T.P., Murugan, N. and Rajendran, C., 2003(b). Classical approach to contemporary TQM: an integrated conceptual TQM model as perceived in Tamil classical literature. *Total Quality Management & Business Excellence*, 14(5), pp. 605-636.

Manz, C.C. and Stewart, G.L., 1997. Attaining flexible stability by integrating total quality management and socio-technical systems theory, *Organization Science* 8 (1), pp. 59-70.

Maitlis, S., Lawrence, T.B., 2003. Orchestral manoeuvres in the dark: understanding failure in organizational strategizing", Journal of Management Studies, 40 (1), pp.109-39.

March, C. (1982). *The Survey Methods: the contribution of surveys to sociological explanation*. London, George Allen & Unwin.

Marchington, M., Goodman, J., Wilkinson, A., Ackers, P., 1992. New developments in employee involvement. UMIST, Manchester, Employment Department Research Paper No.2, .

Marie, W., 1995. The effects of self-regulatory coping orientation on newcomer adjustment and job survival. Personnel Psychology 48 (3), pp. 633–650.

Marshall, C. and Rossman, G. B. (1989) *Designing qualitative research,* Sage

Publications, Newbury Park, CA ; London.

Martensen, A., Gronholdt, L., 2001. Using employee satisfaction measurement to improve people management: an adaptation of Kano's quality types. Total Quality Management 12 (7/8), pp.949-957.

Martichenko, R., 2004. Lean six sigma logistics. *Logistics Quarterly*, 10(1).

Mast, J., 2004. A methodological comparison of three strategies for quality improvement. *International Journal of Quality & Reliability Management*, 21 (2), pp.198-213.

Mason, J. (1984). *Analysing qualitative data*. London, Routledge.

Masters, R.J., 1996. Overcome the barriers to TQM. *Quality Progress, 29*(5), pp. 53-55.

Matherly, L.L. and Lasater, H.A., 1992. Implementing TQM in a hospital. *Quality Progress,* XXV(4), pp. 81-85.

May, T. (1997). *Social research: issues, methods and process*. 2nd Ed., Buckingham, Open University Press.

McAdam, R., Bannister, A., 2001. Business performance measurement and change management within a TQM framework. International Journal of Operations and Production Management, 21 (1/ 2), pp. 88–107.

McClintock, C., Brannon, D. and Maynard-Moody, S. (1979). "Applying the Logic of Sample Surveys to Qualitative Case Studies" *Administrative Science Quarterly*, 24(4):

612-629.

McCune, J.T., 1989. Customer satisfaction as a strategic weapon: the implications for performance management. Hum. Resource Planning. 12, pp. 195–204.

McCurry, L., McIvor, R.T., 2001. Agile manufacturing: 21st century strategy for manufacturing on the periphery?. *Conference Proceedings, Irish Academy of Management Conference, University of Ulster, September*.

McDaniel, C. and Gates, R. (2002) *Marketing research : the impact of the internet,*

John Wiley, New York, N.Y.

McMillan, J.H. and Schumacher, S.(1993). *Research in Education: A conceptual Introduction.* Third Edition. New York: Harper Collins Publishers.

McKenna, J.F., 1991. TQ government. *Industry Week,* 240(21), November, pp. 13-19.

McNeil, R. & Greatbanks, R., 2002. ***The EQF Project- The True Effectiveness of Quality Related Initiatives in the UK***, Engineering Quality Forum, Survey on: February, 2002.

Mehralizadeh, Y. and Safaeemoghaddam, M., 2010. The applicability of quality management systems and models to higher education. *The TQM Journal*. 22 (2), pp. 175-187.

Mehta, P.V., 2000. President's quality program honors government organisations. *Quality Progress, 33*(8), pp. 57-62.

Mellahi, K. and Eyuboglu, F., 2001. Critical factors for successful Total Quality Management implementation in Turkey: evidence from the banking sector. *Total Quality Management, 12*(6), pp. 745-756.

Melnyk, S. A. and Denzler, D. R., 1996, Operations Management: A V alue-Driven Approach (Chicago, Illinois: Irwin).

Mersha, T., 1997. TQM Implementation in LDCs: Driving and Restraining Forces. *International Journal of Operations and Production Management*,17 (2), pp. 164–183

Merton, R. K. (1968). *Social theory and social structure*. New York, Free Press.

Merriam, S. (1988). *Case study research in education: A qualitative approach*. San Francisco, Jossey-Bass.

Meyer, S., Collier, D., 2001. An empirical test of the causal relationships in the Baldrige Health Care Pilot Criteria. *Journal of Operations Management*. 19(4), pp.403-25.

Miles, M. B. and Huberman, A. M. (1994). *Qualitative data analysis: an expanded sourcebook*. London, Sage Publications.

Modarres, B., and Ansari, A., 1989. Quality Control Techniques in U.S. Firms: A Survey. *Production and Inventory Management Journal,* 30 (2), pp. 58-62.

Mohanty, R.P.; and Behera, A.K., 1996. TQM in the service sector. *Work Study*, 45 (3), pp.13-17.

Mohd Zain, Z., Dale, B.G. and Kehoe, D.F., 2001. Doctoral TQM research: a study of themes, directions and trends. *Total Quality Management,* 12(5), pp. 599-609.

Mohrman, S. A., Tenkasi, R. V., Lawler III, E. E. and Ledford Jr, G. E., 1995. Total quality management: practice and outcomes in the largest US firms. *Employee Relations*, 17 (3), pp. 26-41.

Montes, F.J.L.M., Jover, A.V., Fernandez, L.M.M. (2003), "Factors affecting the relationship between total quality management and organizational performance", *International Journal of Quality & Reliability Management*, Vol. 20 No.2, pp.189-209.

Morgan, C., & Murgatroyd, S., 1997. *Total quality management in the public sector.* Buckingham, UK: Open University Press.

Morgan, G. and Smircich, L.,1980. *The case for qualitative research, Academy of management review;*5, pp.491-500.

Morrison, C.M. and Rahim, M. A., 1993. Adopt a new philosophy: the TQM challenge. *Total Quality Management*, 4(2), pp. 143-149.

Mouton, J. M., 1996. *Understanding Social Research.* Pretoria: Van Schaik Publishers.

Motwani J., 1997. Viewpoint: total quality management or totaled quality management. *International Journal of Quality and Reliability Management*,14(7), pp. 647–50.

Motawni, J.G., Mahmoud, E. and Rice, G., 1994. Quality practices of Indian organisation: an empirical analysis. *International Journal of Quality & Reliability Management*, 11(1), pp. 38–52.

Muhlemann, A. O., J. and Lockyer, K. (1992).*Production and operations management*. Pitman, 6th Ed., London.

Muller D, Judd CM, Yzerbyt VY. When moderation is mediated and mediation is moderated. Journal of Personality and Social Psychology. 2005;89:852–863.

Murphy, W.H., 1999. Hofstede's national culture as a guide for sales practices across countries: the case of a MNC's sales practices in Australia and New Zealand. *Australian Journal of Management,* 24 (2), pp. 37–58.

Nachmias, C. and Nachmias, D., 1996. *Research methods in the social sciences,* Edward Arnold, London.

Nagaprasad, H. and Yogesha, B., 2009. Enrichment Of Customer Satisfaction Through Total Quality Management Techniques. Proceedings of the International MultiConference of Engineers and Computer Scientists (IMECS 2009), 2,3, pp.18 - 20, 2009, Hong Kong.

Nasierowski, W. and Coleman, D. F., 1997. Lessons Learned from Unsuccessful Transfers of Managerial Techniques: Cultural Impediments to the Transfer of TQM Practices. *International Journal of Management*, 14 (1), pp. 29-37.

Naylor, L. L., 1996. *Culture and Change: An Introduction*. London, Bergin & Garvey.

Neal, J.A., and Tromley, C.L., 1995. From incremental change to retrofit: creating high-performance work systems. *Academy of Management Executive*, 9, pp. 42–54

Neave, H.R., 1990. Deming '88', Part 3: The 14 points revisited. *Total Quality Management*, 1(3), pp. 293-307.

Nelson, A.G., Cooper, L., and Jackson, P.R., 1995. Uncertainty amidst change: the impact of privatization on employee job satisfaction and well-being. *Journal of Occupational and Organizational Psychology*, 68, pp.57-71.

Nettelton, H. and Taylor, K. (1990). *Sociology for pharmacists*. London, Macmillan.

Neuman, W. L. (1997) *Social research methods : qualitative and quantitative approaches,* Allyn and Bacon, Boston, Mass. ; London.

Nilsson, L., Johnson, M.D., Gustafsson, A. (2001), "The impact of quality practices on customer satisfaction and business results: product versus service organizations", *Journal of Quality Management*, Vol. 6 No.1, pp.5-27.

NIST, 2003. *Utah Manufacturing Extension Partnership*, Manufacturing Extension Partnership, National Institute of Standards and Technology, Gaithersburg, MD.

Noorliza, K., 1999. The impact of TQM practice on employees' work-related attitudes. MBA unpublished research report, University Science Malaysia, Penant,

Noorliza, K., and Zainal, A.A., 2000. Quality practices that pay: empowerment and teamwork. Malaysian Management Review, 35(2), pp.66-76.

Noronha, C., 2002. Chinese cultural values and total quality climate. *Managing Service Quality*, 12 (4), pp. 210-23.

Nutt, P.C. and Backoff R.W., 1993. Transforming public organizations with strategic management and strategic leadership, *Journal of Management*, 19 (2), pp. 299-347.

Nunnally, J. (1978). *Psychometric theory*. New York, McGraw Hill.

Nunnally, J. C., & Bernstein, I. H., 1994. *Psychometric theory (3rd ed)*. New York: McGraw-Hill.

Nwabueze, U. and Kanji, G.P., 1997. A systems management approach for business process re-engineering. *Total Quality Management*, 8(5), ppp. 281-292.

Nwabueze, U., 2001. The implementation of TQM for the NHS manager. *Total Quality Management*, 12(5), pp. 657-675.

O'Reilly, Charles A.; Caldwell,David F.; and Barnett, William P., 1989. Work group demography, social integration, and turnover. *Administrative Science Quarterly*, 34, pp. 21-37.

Oakland, J. S.,1989*. Total quality management*. Heinemann, Oxford.

Oakland, J.S., 1993. *Total quality management: The route to improving performance*. 2nd ed., Butterworth-Heinemann, Oxford.

Oakland, J. S., 2000. *TQM: text with cases*. Second Edition, Oxford: Butterworth Heinemann.

Oakland, J. S., Zairi, M. and Letza, S. R.,1994. TQM and Bottom line results. *Quality World,* September, pp.600-604.

Oliver, N., 2002. ***Lean production and manufacturing performance improvement in Japan, the UK and US 1994-2001***, Working paper (ESRC Centre for Business Research), series 232.

Ortiz, C., 2006. All-out kaizen. *Industrial Engineering*, 38(4), pp.30.

Pande, P.S., Neuman, R.P., Cavanagh, R.R., 2000. *The Six Sigma Way – How GE, Motorola and Other Top Companies are Honing Their Performance*. McGraw-Hill, New York, NY.

Pannirselvam, G.P. and Ferguson, L.A., 2001. A study of the relationships between the Baldrige categories. International Journal of Quality and Reliability Management, 18(1), p. 14–34.

Parker, M. and Slaughter, J., 1993. Should the labour movement buy TQM?. *Journal of Organizational Change Management*, 6 (4), pp. 43-56.

Parasuraman, A. (1995). “A conceptual model of service quality and its implications for future research.” *Journal of marketing* 49(fall,): 41-50.
Parasuraman, A., Berry, L.L. and Zeithaml, V.A.,1993. More on improving service quality measurement. *Journal of Retailing,* 69, pp.140-147.

Parzinger, M.J., Nath, R., 2000. A study of the relationships between total quality management implementation factors and software quality. Total Quality Management, 11 (3), pp. 353–371.

Patton, M. (1990). *Qualitative evaluation and research methods*. London, Sage Publications.

Paulo Sampaio, Pedro Saraiva, Ana Monteiro, (2012) "A comparison and usage overview of business excellence models", The TQM Journal, Vol. 24 Iss: 2, pp.181 – 200.

Pegels, C.C., 1995. Total Quality Management: A Survey of Its Important Aspects. Boyd and Fraser, Boston, MA.

Pelser, J.D., 2000. *Total Quality Management*. Pretoria: South African Air Force Headquarters.

Petersen, P. B., 1999. Total quality management and the Deming approach to quality management. *Journal of Management History,* 5 (8), 468-510.

Peterson et al., 1995, M.F. Peterson, P.B. Smith, A. Akande, S. Ayestaran, S. Bochner, U. Callan, N.G. Sho, J.C. Jesuino, M. D’Amorim, P.H. Francois, K. Hofmann, P.L. Koopman, K. Leung, F.K. Lim, S. Mortazani, J. Munene, M. Radford, A. Ropo, G. Savage, B. Setiadi, T.N. Sinha, R. Sorenson and C. Viedge. 1995. Role conflict, ambiguity and overload: a 21-nation study. *Academy of Management Journal,* 38 (2), pp. 429–452.

Parzinger, M.J. and Nath, R., 2000. A study of the relationships between Total Quality Management implementation factors and software quality. *Total Quality Management*, 11(3), pp. 353-371.

Perigod, M., 1990. *Achieving Total Quality Management: a plan for action.* Cambridge: Productivity.

Peter, J. P. (1979).“Reliability: A review of psychometric basis and recent marketing practice.” *Journal of Marketing Research*, XVI (February): 6-17.

Philips, L.W., Chang, D.R., Buzzell, R.D., 1983. Product quality, cost position business performance: a test of some key hypotheses. *Journal of Marketing*, 46, pp.26-43.

Pkasoy, H. M.; Paksoy, S.; Mrangoz , M.; Ozcalici, M., 2010. TQM perception inTurkey: A comparison of industries. African Journal of Business Management 5(8), pp.3188-3198

Powell, T. C., 1995. Total quality management as competitive advantage: a review and empirical study. *Strategic Management Journal*, 16 (1), pp. 15-37.
Porter, L.J. and Tanner, S.J. 2004. *Assessing Business Excellence*. Oxford: Elsevier Butterworth-Heinemann.

Prajogo, D.I., Sohal, A.S. (2003), "The relationship between TQM practices, quality performance, and innovation performance: an empirical examination", *International Journal of Quality & Reliability Management*, Vol. 20 No.8, pp.901-18.

Prajogo, D.I., McDermott, C.M. (2005), "The relationship between TQM practices and organizational culture", *International Journal of Operations & Production Management*, Vol. 25 No.11, pp.1101-22.

Prajogo D.I., and Sohal A.S., 2001. “TQM and innovation: a literature review and research framework”, ***Technovation,*** 21, pp. 539-558.

Daniel I. Prajogo, Christopher M. McDermott, 2005. The relationship between total quality management practices and organizational culture. International Journal of Operations & Production Management, 25(11), pp.1101 - 1122

Preacher KJ, Rucker DD, Hayes RF. Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. Multivariate Behavioral Research. 2007;42:185–227.

Provost, L.P. and Quayle, R.B., 2001. Quality makes a splash. *Quality Progress*, 34(9), pp. 43-48.

Prybutok, V.R., Stafford, M.R., 1997. Using Baldrige criteria for self-assessment. Marketing Health Services, 45–48.
Psychogios, G. A. and Priporas, C.V., 2007. Understanding total quality management in context: Qualitative research on managers’ awareness of TQM aspects in the Greek service industry. *The Qualitative Report*, *12*(1), 40-66.

Pun, K., 2001. Cultural influences on Total Quality Management adoption in Chinese enterprises: a empirical study. *Total Quality Management,* 12(3), pp. 323-342.

Pun, K., 2002. Developing of an integrated Total Quality Management and performance measurement system for self-assessment: a method. *Total Quality Management,* 13(6), pp. 759-777.

Pun, K., & Hui, I. (2002). Integrating the safety dimension into quality management systems: a process model. *Total Quality Management,* 13(3), 373-391.
Punch, K., 2000. *Developing effective research proposals.* London: Sage.

Punter, L. and Gangneux, D., 1998. Social responsibility: the most recent element to ensure total quality management, *Total Quality Management*, 9 (4&5), pp. 197-199.

Pycraft, M., Singh H. and Phihlela, K. 2000. *Operations management.* Pretoria: Pearson Education.
Pyzdek, T. (2001), *The Six Sigma Revolution*, Quality America, Tuscon, AZ, available at: www.qualityamerica.com/knowledgecente/articles/PYZDEK**Six**SigRev.htm (Accessed 10 December 2007).

Pyzdek, T., 2003. *The Six Sigma Handbook*, McGraw-Hill, New York, NY, .

Quazi, H. A., Jemangin, J., Kit, J. W., and Lee, C., 1998. Critical Factors in Quality Management and Guidelines for Self-Assessment: The Case of Singapore. *Total Quality Management,* .9(1): pp. 35-55.

Quazi, H.A., Hong, C.W. and Meng, C.T., 2002. Impact of ISO 9000 certification on quality management practices: a comparative study. *Total Quality Management,* 13(1), pp.53-67.

Quinn, et al., 1990. *Becoming a master manager: A competency Framework.* John Wiley and Sons, Inc.: USA.

R.M. Baron and D.A. Kenny. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*.

Raiborn, C., Payne, D., 1996. TQM: just what the ethicist ordered. Journal of Business Ethics,15 (9), pp.963-72.

Randall, D.M., 1993. Cross-cultural research on organizational commitment: a review and application of Hofstede's value survey model. *Journal of Business Research,* 26, pp. 91–110.

Rancour, T., McCracken, M., 2000. Applying six sigma methods for breakthrough safety performance. *American Society of Safety Engineers*, October, pp. 31-4, .

Rao, A., Carr, L.P., Dambolena, I., Kopp, R.J., Martin, J., Rafii, F. and Schlesinger, P.F., 1996. *Total Quality Management.* New York: John Wiley & Sons.

Rao, S., Solis, L. and Raghunathan, T., 1999. A framework for international quality management research: development and validation of a measurement instrument, *Total Quality Management*, 10(7), pp. 1047–1075.

Redman, T., Mathews, B., Wilkinson, A., and Snape, E., 1995. Quality management in services: is the public sector keeping pace?. *International Journal of Public Sector Management*, 8(7), pp. 21-34.

Redman, T., Grieves, J., 1999. Managing strategic change through TQM: learning from failure", New Technology, Work and Employment, 14(1), pp.45-61.

Reed, R., Lemak, D.J., Montgomery, J.C., 1996. Beyond process: TQM content and firm performance. Academy of Management Review, 21, pp. 173–202.

Reed, R., Lemak, D.J., Mero, N.P. (2000), "Total quality management and sustainable competitive advantage", *Journal of Quality Management*, 5 (1), pp.5-26.

Rees, C., 1995. Quality management and HRM in the service industry: some case study evidence", Employee Relations, 17 (3), pp.99-111.

Reeves, C. A. and Bender, D. A., 1994. Defining quality: alternatives and implications. Academy of Management Review, 19(3), pp. 419-445.

Reinertsen, D., & Shaeffer, L., 2005. Making R&D lean. Research Technology *Management, 48(4)* , pp. 51-57.

Remenyi, D., Williams, B., Money, A. and Swaartz, E. (1998). *Doing research in business and management: an introduction to process and method*. London, Sage Publications.

Reynolds, P., 1971. *Ethical dilemmas and social science research*. San Francisco, CA, Jossey-Bass.

Riehl, J.W. .1988, Planning for total quality: the information technology components, Advanced Management Journal, Vol. 53 No.4, pp.13-19.

Rhonda, K., Reger, L., Gustafson, T., DeMarie, S.M. and Mullane, J.V., 1994. Reframing the organization: why implementing total quality is easier said than done. *Academy of Management Science,* 19(4), pp. 565-584.

Rigby, D. and Bilodeau, B., 2005. Management Tools 2005: Global survey results, Bain & Company.

Robert, C, 2000. Empowerment and continuous improvement in the United States, Mexico, Poland, and India: predicting fit on the basis of the dimensions of power distance and individualism, et al., 85(5), pp.643-58.

Robert, C., Probst, T.M., Martocchio, J.J., Drasgrow, F., Lawler, J.J., 2000. Empowerment and continuous improvement in the United States, Mexico, Poland, and India: predicting fit on the basis of dimensions of power distance and individualism, Journal of Applied Psychology, 85(5), pp.643-58.

Rodney, McAdam and Joan ,Henderson, 2004 .New Research Influencing the future of TQM: Internal and External Driving Factors, *International Journal of Quality and Reliability Management*, 21(1), pp. 51 – 71.

Rodney McAdam, 2000. Three leafed clover?: TQM, organisational excellence and business improvement", The TQM Magazine, 12 (5), pp.314 - 320

Roney, J., 1997. Cultural implications of implementing TQM in Poland, Journal of World Business, 32(2), pp.152-68.

Roth, A. V., and Miller, J. G., 1992. Success factors in manufacturing. Business Horizons, 35 (4), pp. 73-81.

Rose BM, Holmbeck GN, Coakley RM, Franks EA. Mediator and moderator effects in developmental and behavioral pediatric research. Journal of Developmental and Behavioral Pediatrics. 2004;25:58–67.

Ross, J.E., 1994. *Total Quality Management.* London: St. Lucie Press.

Ross, J.E., 1995. Total Quality Management: Text, Cases and Readings. St. Lucie Press, Delray Beach, FL.

Rutledge, I., 2003. Profitability and Supply Price in the US Domestic Oil Industry: Implications for the Political Economy of Oil in the Twenty-first Century. *Cambridge Journal of Economics*, 27, pp. 1-23.

Ruben, B., Russ, T., Smulowitz, S., Connaughton, S. (2007), "Evaluating the impact of organizational self-assessment in higher education – the Malcolm Baldrige/excellence in higher education framework", *Leadership & Organization Development Journal*, Vol. 28 No.3, pp.230-50.

Rungtusanatham, M., Forza, C., Filippini, R., and Anderson, J., 1998. A replication study of a theory of quality management underlying the Deming management method: Insights from an Italian context. *Journal of Operations Management*, 17 (1), pp. 77-95.

Russel, S., 2000. ISO 9000:2000 and the EFQM excellence model: competition or cooperation? *Total Quality Management,* 10(4/5&6), pp. S657-S665.

Rust, R.T., Zahorik, A.J., 1993. Customer satisfaction, customer retention, and market share. J. Retailing 69, pp. 193–215.

Sadgrove, K., 1995. *Making TQM work.* London: Kogan Page Ltd.

Saha, S., and Hardie, M., 2005. Culture of quality and the Australian construction industry. Proceedings of the 13th Annual Conference of the International Group for Lean Construction, Sydney, pp. 531-38.

Saks, A.M., 1996. The relationship between the amount and helpfulness of entry training and work outcomes. Human Relations 49 (4), pp. 429–451.

Salegna, G. and Fazel F., 2000. Obstacles to implementing quality. *Quality Progress,* 33(7), pp. 53-57.

Samson, D., and Terziovski, M.,1999. The relationship between total quality management practice and organisational performance. Journal of Operations Management. 17, pp. 393–409.

Samson, D., and Terziovski, M.,1999. The link between total quality management practice and organisational performance. International Journal of Quality and Reliability Management,16(3), pp. 226–37.

Sankar, M., 1995. Self-Assessment Using the Baldrige Criteria. AQSC Professional and Technical Development, Milwaukee, WI.

Saraph, J.V., Benson, G.P., and Schroeder, R.G., 1989. An instrument for measuring the critical factors of quality management, *Decision Sciences*, 20, pp. 810-829.

Sarkar, B., 1991. Total Quality Management – problems and prospects in India. *Total Quality Management*, 2(3), pp. 239-247.

Sashkin, M., and Kiser, K.J.,1992. *Total quality management assessment inventory*. Seabrook, MD: Ducochon Press. (Accompanying Trainer Guide.)

Sashkin, M. and Kiser, K.J., 1993. *Putting Total Quality Management to work.* San Francisco: Berrett-Koehler.

Sawhney, R., & Chason, S., 2005. Human behavior based exploratory model for successful implementation of lean enterprise in industry. *Performance Improvement Quarterly, 18(2), pp. 18*, 76-96.

Savolainen, T. 2000. Leadership strategies for gaining business excellence through Total Quality Management: a Finnish case study. *Total Quality Management*, 11(7), pp. 211-226.

Sila, I., Ebrahimpour, M. (2005), "Critical linkages among TQM factors and business results", *International Journal of Operations & Production Management*, Vol. 25 No.11, pp.1123-55.

Sykes, W. and Warren, M. (1991). "Taking stock: Issues from the literature on validity and reliability in quantitative research" *Journal of Marketing Research* 33(1): 3-17.

Sekaran, U. 2003. *Research methods for business : a skill-building approach,* Wiley, New York ; Great Britain.

Selladurai, R., 2002. An organisational profitability, productivity, performance model, going beyond TQM and BPR. *Total Quality Management,* 13(5), pp. 613-619.

Senthil, V., S.R. Devadasan, V. Selladurai, and R. Baladhandayutham, 2001. "Integration of BPR and TQM: past, present and future trends", *Production Planning & Control*, 12 (7), pp. 680-688.

Scharitzer, D. and Korunka, C., 2000. New public management: evaluating the success of Total Quality Management and change management interventions in public services from the employees' and customers' perspectives. *Total Quality Management*, 11(7), pp. 941-953.

Scherkenbach, W. W., 1986b. Performance appraisal and quality: Ford's new philosophy. *Quality Progress*, 18 (4), pp. 40-46.

Schniederjans, M., Parast, M., Nabavi, M., Rao, S., Raghu-Nathan, T. (2006), "Comparative analysis of Malcolm Baldrige National Quality Award criteria: an empirical study of India, Mexico, and the United States", *Quality Management Journal*, Vol. 13 No.4, pp.7-21.

Scholtz, H.D., 1998. The national quality system. *Management Today,* 10(1), pp. 64-65.

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A. and King, J. Reporting Structural Equation Modeling and Confirmatory Factor Analysis Results: A Review, The Journal of Educational Research, 99, 6, 2006, pp. 323-337.

Schonberger, R. J., 1985. *Operations management*. Business Publications, 2nd Ed., Texas.

Schonberger, R.J., 1990. *Building a chain of customers: linking business function to create a world-class company.* New York: The Free Press.

Schumacker, R. & Lomax, R. (2004). *A Beginner's Guide to Structural Equation Modeling*. Second Edition, Lawrence Erlbaum Associates.

Schroeder, R. G., 1989. *Operations Management*. 3rd Ed., New York, McGraw Hill.

Schroeder, R. G., Sakakibara, S., Flynn, E. J., and Flynn, B. B., 1992. Japanese plants in U.S.: How good are they?. *Business Horizons*, 35(4), pp. 66-72.

Schultz, L. E., 1994. *Profiles in quality: learning from the masters*. New York, Quality Resources.

Schweizer, A., 2004. How can I become a leader?. MC News, available at: www.genre.com/sharedfile/pdf/MCnews2004-en.pdf (accessed 15 Feb 2012),

Seawright, K. W. and Young, S. T., 1996. "A Quality definition continuum." *Interfaces*, 26(3), pp. 107-113.

Sebastianelli, R., Tamimi, N., 2002. How product quality dimensions relate to defining quality. The International Journal of Quality and Reliability Management, 19 (4), pp.442–454.

Seghezzi, H.D., 2001. Business excellence: what is to be done? *Total Quality Management*, 12(7&8), pp. 861-866.

Selladurai, R., 2002. An organizational profitability, productivity, performance (PPP) model: going beyond TQM and BPR, *Total Quality Management*, 13 (5), pp. 613-619.

Shane, S., 1994. Cultural values and the championing process, *Entrepreneurship Theory and Practice*, pp. 25–41 (Summer).
Sharma, S., 1996. *Applied Multivariate Techniques*, USA: John Wiley & Sons Inc.

Shetty, Y.K., 1987. Product quality and competitive strategy. Business Horizons, 30 (3), pp. 46–53.

Shetty, Y.K., 1988. Managing product quality for profitability. SAM Advanced Management Journal, 53 (4), pp. 33–38.

Shewhart, W. A., 1931. *Economic control of quality of manufactured products*. New York, Van Nostrand.

Shenaway, E.E., Baker, T., Lemak, D.J. (2007), "A meta-analysis of the effect of TQM on competitive advantage", *International Journal of Quality & Reliability Management*, Vol. 25 No.5, pp.442-71.

Shiba, S., Graham, A., Walden, D.,1993. *A New American TQM: Four Practical Revolutions in Management*, Center for Quality Management, Productivity Press, Portland, OR.

Sila, I., and Ebrahimpour, M., 2002. An investigation of the total quality management survey based research published between 1989 and 2000: A literature review. International Journal of Quality & Reliability Management, 19 (7), pp. 902-971.

Sila, I., Ebrahimpour, M. (2005), "Critical linkages among TQM factors and business results", *International Journal of Operations and Product Management*, Vol. 25 No.11, pp.1123-55.
Silverman, D. (2000) *Doing qualitative research : a practical handbook,* SAGE

Publications, Thousand Oaks, CA ; London.

Singh, P.J. and Smith, A.J.R., 2004. Relationship between TQM and innovation: an empirical study. Journal of Manufacturing Technology Management, 15(5), pp. 394-401.

Sinha,Madhav N., 1999. Gaining perspectives: the future of TQM in public sectors. *The TQM Magazine*. 11 (6), pp. 414-419.

Sirota, D., 1994. Breaking through the culture wall. *Journal for Quality and Participation*, March 1994, pp. 61-63.

Sit,Wen-Yi; Ooi, Keng-Boon; Alain, Binshan Lin; Chong,Yee-Loong, 2009. TQM and customer satisfaction in Malaysia's service sector. Industrial Management & Data Systems, 109(7), pp.957-975.

Sitkin S.M., Sutcliffe, K.M., and Schroeder, R.G., 1994. Distinguishing control from learning in total quality management: a contingency perspective, *The Academy of Management Review*, 19 (3), pp. 537-564.

Sivo, S. A., Fan, X. T., Witta, E .L. and Willse, J. T. The Search for 'Optimal' Cutoff Properties: Fit Index Criteria in Structural Equation Modeling, The Journal of Experimental Education, 74, 3, 2006, pp. 267-289

Slack, N., 1991. *The Manufacturing Advantage*. London, Mercury.

Sluti, D.G., 1992. Linking progress quality with performance: an empirical study of New Zealand manufacturing plants, PhD thesis, University of Auckland, Auckland.

Soltani, E., van der Meer, R.B., Williams, T.M. , 2005. A contrast of HRM and TQM approaches to performance management: a survey. British Journal of Management, 16 (3) , pp.211-30.

Soltani, E., 2005a. Conflict between theory and practice: TQM and performance appraisal", International Journal of Quality & Reliability Management, 22 (8), pp.796-818.

Soltani, Ebrahim; and Wilkinson, Adrian, 2010. Stuck in the middle with you: The effects of incongruency of senior and middle managers' orientations on TQM programmes. International Journal of Operations & Production Management, 30 (4), pp.365 - 397

Soltani, E., Lai, P., Phillips, P., 2008. A new look at factors influencing total quality management failure: work process control or workforce control?. New Technology, Work and Employment, 23 (1-2), pp.125-42.

Sousa, R. and Voss, C.A., 2002. Quality management re-visited: a reflective review and agenda for future research. Journal of Operation Management, 20 (1), pp. 91-109.

Spencer, B.A., 1994. Models of Organization and Total Quality management: a comparison and critical evaluation, *The Academy of Management Review*, 19 (3), pp. 446-471.

Spigener, J.B. and Angelo, P.J., 2001. What would Deming say? *Quality Progress*, 34(3), pp. 61-64.

Spybey, T., 1989. Frames of meaning as a concept of organization. *International Studies of Management and Organizations*, 19(3), pp.16-33.

Stahan, J., 2002. Transition to ISO 9000:2000. *Quality Progress*, 35(2), pp. 27-29.

Stahl, M.J., 1995. *Management: total quality in a global environment*. University of Tennessee: Blackwell Business.

Stamatis, D.H. 2003. *Six sigma and beyond: foundations of excellent performance*. New York: St. Lucie Press.

Statt, D., 1981. A Dictionary of Human Behavior, London: Harper & Row Publ.

Steenkamp, R.J.,2001. *Basics of Total Quality Management*. Pretoria: University of South Africa.

Steeples, M. M., 1992. The Corporate Guide to the Malcolm Baldrige National Quality Award. Homewood, IL: Business One-Irwin.

Stephens, B., 1997. Implementation of ISO 9000 or Ford's Q1 award: effects on organizational knowledge and application of TQM principles and quality tools, *The TQM Magazine*, Vol. 9 No.3, pp.190-200.

Stevenson, W.J. 1996. *Production/operations management.* Chicago: The McGraw-Hill Companies.

Strauss, A. and Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. London, Sage.

Strauss, J. and Myburgh, C. P. H. (Eds), 2000. *Research Methodology, Study Guide* 81416: D.Ed.Education, Training and Development. Melville: Rand Afrikaans University.

Storey, D. J. (1994), *Understanding the small business sector*. International Thomson Publishing Inc., London.
Stratton, A. D., 1991. An Approach to Quality Improvement That Works: Implementing Quality Improvement in the 90s. Milwaukee: ASQC Quality Press.

Stockmann, Reinhard, 2008.Principles of Impact-Based Quality Management:Evaluation and Quality Development.Peter Lang GmbH, Internationaler Verlag der Wissenschaften, Frankfurt am Main.

Sumner, M., 1999. Critical Success Factors in Enterprise Wide Information Management

Swift, J.A., Ross, J.E. and Omachonu, V.K. 1998. *Principles of Total Quality Management.* Florida: St. Lucie Press.

Systems Projects. *Proceedings of the Americans Conference on Information Systems (AMICS)*, Milwaukee, WI, USA.

Taguchi, Genichi, 1995. Quality engineering (Taguchi methods) for the development of electronic circuit technology. *IEEE Transactions on Reliability* (IEEE Reliability Society). 44 (2), pp. 225–229.

Tamimi , N., 1998. A second order factor analysis of critical TQM factors. *International Journal of Quality and Reliability Management*, 14(1), pp. 71–79.

Tamimi, N. and Gershon, M., 1995. A tool for assessing industry TQM practice versus Deming philosophy. *Production and Inventory Management Journal*, 36, pp. 27–32.

Tamini, N. and Sebastianelli, R., 1998. The barriers to Total Quality Management. *Quality Progress, XXII*(5), pp. 57-60.

Tan, K.C., 2001. A structural equation model of new product design and development. Decision Sciences, 32, pp. 195–226.

Tan, K.C., Wong, M.F., Mehta, T., and Khoo, H.H., 2003. Factors affecting the development of national quality awards. Measuring Business Excellence, 7 (3), pp. 37-45.

Tannenbaum, A.S., 1992. Organizational theory and organizational practice. *Management International Review*, 32, Special Issue, pp.50-62.

Tarí, Juan José, 2005. Components of successful total quality management. *The TQM Magazine*. 17 (2), pp. 182-194.

Tashakkori, A. and Teddlie, C. (1998) *Mixed methodology : combining qualitative and quantitative approaches,* Sage, Thousand Oaks, Calif. ; London.

Tata, J., and Prasad, S., 1998. Cultural and Structural Constraints on Total Quality Management Implementation. *Total Quality Management,* 9(8), pp. 703-710.

Tata, J., Prasad, S., Motwani, J., 2000. Benchmarking quality management practices: US versus Costa Rica. Multinational Business Review, 8 (2), pp. 37–42.

Tena, A., Llusar, J., Puig, V., 2001. Measuring the relationship between total quality management and sustainable competitive advantage: a resource-based view. Total Quality Management, 12 (7/8), pp. 932–938.

Terziovski, M., 1997. The relationship between quality management strategies and organisational performance in manufacturing firms. Centre for Manufacturing Management, Melbourne Business School, The University of Melbourne, Victoria, PhD thesis, .

Tesch, R., 1990. *Qualitative research: Analysis, types, and software tools.* New York: The Falmer Press.

(The) W. Edwards Deming Institute, 2004. *Institute History*, available at: www.deming.org/instituteinfo/wedihistory.html (accessed November 12, 2007), .

Thiagarajan, T., 1996. *An empirical study of total quality management (TQM) in Malaysia: a proposed framework of generic application*. University of Bradford, Unpublished PhD thesis.

Thiagarajan, T., Zairi, M. and Dale, B., 2001. A proposed model of TQM implementation based on an empirical study of Malaysia industry. *International Journal of Quality and Reliability Management*, 18(3), pp. 289–306.

Thomas, P.R., 1989. Put time on your side. *Exec. Excellence*, 6, pp. 19–20.

Thomas, David A.; and Ely, Robin J., 1996. Making differences matter: A new paradigm for managing diversity. Harvard Business Review, 74, pp. 79-90.

Tornatzky, L. G. and Klein, K. J., 1982. Innovation Characteristics and Innovation Adoption-Implementation: A Meta-Analysis of findings. *IEEE Transactions on Engineering Management,* 29 (1), pp. 28-45.

Tornow, W.W.; and Wiley, J.W., 1991. Service quality and management practices: a look at employee attitudes, customer satisfaction, and bottom-line consequences. Hum. Resource Planning, 14, pp. 105–115.

Tsui, Anne S.; Egan, Terri D.; and O'Reilly, Charles A., 1992. Being different: Relational demography and organizational attachment. *Administrative Science Quarterly*, 37, pp. 549-579.

Tuckman, B. W., 1998. *Conducting Educational Research*. Third Edition. Harcourt Brace Jovanovich Publishers.

Tummala, V. M. R., & Tang, C. L., 1996. Strategic quality management, Malcolm Baldrige and European Quality awards and ISO 9000 core concepts and comparative analysis. *International Journal of Quality & Reliability Management,* 13 (4), pp. 8-38.

Tushman, Michael L., 1977. Special boundary roles in the innovation process. *Administrative Science Quarterly*, 22, pp. 587-605.

Townsend, P., Gebhardt, J., 1996. The importance of the Baldrige to US economy. Journal of Quality and Participation, pp. 6–13.

Tregoe, B.B., Zimmerman, J.W., Smith, R.A., Tobia, P.M., 1990. Implementing the vision: the lessons learned. Planning Review, 18 (1), pp.39-44.

U. K. Jayasinghe-Mudalige , J. M. M. Udugama and S. M. M. Ikram,2012.Use of Structural Equation Modeling to Overcome the Empirical Issues. Sri Lankan Journal of Applied Statistics, Volume 13 (2012), p. 15-37

Uzumeri, M. V., 1997. " ISO 9000 and other metastandards: Principles for management Practice?" *Academy of Management Executive*, 11 (1), pp. 21-36.

Vancouver, J.B., and Schmitt, N.W., 1991. An exploratory examination of person-organization fit: organizational goal congruence. *Personnel Psychology*, Summer, pp.333-52.

Van Horn, L.H., 1997. Improving results through total quality management. American Agent and Broker,69(6), pp.46-9.

Van Maanen, J. (1979). "Reclaiming qualitative methods for organisational research: A preface" *Administrative Science Quarterly*, 24(4): 520-526.

Vavra, T.G., 2002. ISO 9001:2000 and customer satisfaction. *Quality Progress,* 35(5), pp. 69-75.

Voelkel, J. G. (2005). What makes a Six Sigma project successful? *Quality Progress, 38 (5)*, pp. 66- 69.

Vokurka, R.J. and Lummus, R.R., 2003. Better supply chains with Baldrige. *Quality Progress*, 36(4), pp. 51-57.

Vokurka, R.J., Stading, G.L. and Brazeal, J., 2000. A comparative analysis of national and regional quality awards. *Quality Progress*, 9(2), pp. 41-47.

Vouzas, F., 1997. Middle management and quality improvement: Evidence from five countries. In Livian Yves-Frédéric & G. J. Burgoyone (Eds.), *Middle managers in Europe,* pp. 155-172. London, UK: Routledge.

Vuppalapati, K., Ahire, S.L., and Gupta T., 1995. JIT and TQM: a case for joint implementation, *International Journal of Operations & Production Management*, **15** (5), pp. 89-94.

Wadsworth, H. M., Stephens, K. S., & Godfrey, A. B., 2002. *Modern methods for quality control and improvement*. New York: Wiley.

Wageman, R., 1995. Interdependence and Group Effectiveness. Administrative Science Quarterly, 40 (1), pp. 145–180.

Waldman, D.A., 1994. The contributions of Total Quality Management to a theory of work performance. Acad. Manage. Rev. 19, pp. 510–536.

Waldman, D.A., Lituchy, T., Gopalakrishnan, M., Laframboise, K., Galperin, B., Kaltsounakis, Z., 1998. A qualitative analysis of leadership and quality improvement", Leadership Quarterly, 9 (2), pp.177-201.

Walter, R. and Gall Meredith, D. (1989) *Educational research : an introduction,*

Longman, New York ; London.

Walton, M., 1986. The Deming management method. New York: Putnam.

Walumbwa, F.O., Lawler, J.J., 2003. Building effective organisations: transformational leadership, collectivist orientation, work related attitudes and withdrawal behaviours in three emerging economies", Human Resource Management, 14 (7), pp.1083-101.

Warwick, D. P. and Lininger, C. A. (1975) *The sample survey : theory and practice,*

McGraw-Hill, New York ; London.

Weinstein, M.B., 1996, Total quality approach to safety management. Professional Safety, 41(7), pp.18-22.

Welbourne, T.M., Cable, D.M., 1995. Group incentives and pay satisfaction: understanding the relationship through an identity theory perspective. Human Relations 48 (6), pp. 711–726.

Welsh, J., and White, J.,1981. A small business is not a little big business. *Harvard Business Review*, 59(4), pp.18–32.

Weltgen, Werner, 2004. *Total Quality Management as a Structuring Task Workshop*. Tokyo. November.

West, J.E., 2002. Should you transition to ISO 9001:2000. *Quality Progress, 35(9), pp. 58-65.*

West, J., Cianfrani, C.A. and Tsiakals , J.J., 1999. ISO 9000:2000 shifts focus of quality management system standards. *Quality Progress*, 32(10), p. 41-44.

West, J., Cianfrani, C.A. and Tsiakals, J.J., 2000. Quality management principles, *Quality Progress*, 33(3), p. 79-80.

Westphal, J.D., Gulati, R. and Shortell, S.M., 1997. Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption, *Administrative Science Quarterly*, 42 (2), pp. 366-394.

Wheatley, M., 1998. Asian lessons in the art of manufacturing. ***Management Today***,
London, Apr 1998, pp.72-75.
Wicks, A.C., 2001. The value dynamics of total quality management: ethics and the
foundations of TQM, *Business Ethics Quarterly*, 11(3), pp. 501-536.

Wiele, T.V., Dale, B. and Williams, R. 2003. Business improvement through quality management systems. *Management Decisions*, 38(1), pp. 19-23.
Wild, R., 1980. *Production and Operations Management*. London, Holt, Rhinehart and

Winston.

Wilkinson, A., 1992. "The other side of quality: 'Soft' issues and the human resources
dimension." *Total Quality Management* 3(3), pp. 323-329.

Wilkinson, A. and Witcher, B.,1993. Holistic Total Quality Management must take account of political processes. *Total Quality Management, 4*(1), pp. 47-55.

Wilkinson, A., Redman, T., Snape, E., 1993. Quality Management and the Manager: An Institute of Management Report. Corby Institute of Management.

Wilkinson, A., Redman, T., & Snape, E., 1993. *Quality and the manager.* London: Institute of Management.

Wilkinson, A., Redman, T., Snape, E., 1994. The problems with quality management: the views of managers. Total Quality Management, 5 (6), pp.397-404.

Wilkinson, A., Godfrey, G., Marchington, M., 1997. Bouquets, brickbats and blinkers: total quality management and employee involvement in practice", Organisation Studies, 18 (5), pp.799-819.

Wilkinson, A., Redman, T., Snape, E., Marchington, M., 1998. Managing with Total Quality Management: Theory and Practice, Macmillan, London, .

Williams, Katherine Y.; and O'Reilly, Charles A., 1998. Forty years of diversity research: A review. In B. M. Staw and L. L.Cummings (eds.), *Research in Organizational Behavior*, 20, pp. 77-140. Greenwich, CT: JAI Press.

Williams, A., Davidson, J., Waterworth, S., & Partington, R., 2002. Total quality management versus business process re-engineering: a question of degree. ***Journal Engineering Manufacture***. Proceedings of the Institution of Mechanical Engineers PartB, Engineering Manufacture, 217(1), pp.1-10.

Willmott, H., 1993. Strength in ignorance; slavery is freedom: managing culture in modern organizations. Journal of Management Studies, 30 (4), pp.515-52.

Wilson, D.D., Collier, D.A., 2000. An empirical investigation of the Malcolm Baldrige National Quality Award casual model. *Decision Sciences*, 31(2), pp. 361-390.

Wilson, J.P. (2004), "An examination of the economic benefits of ISO 9000 and the Baldrige Award to manufacturing firms", MS thesis, Department of Industrial Engineering, University of Pittsburgh, Pittsburgh, PA, .

Winn, B., Cameron, K., 1998. Organizational quality: an examination of the Malcolm Baldrige quality framework. *Research in Higher Education*, 39(5), pp. 491-512.

Wollner, G.E., 1992. The law of producing quality. Quality Progress, 1, pp.35-40.

Wolman, B. B., 19973. Dictionary of Behavioral Science. N.Y.: Van Nostrand Reinhold Co.

Womack, J.P., Jones, D.T., 1996. *Lean Thinking – Banish Waste and Create Wealth in your Corporation*, Simon & Schuster, London.

Womack, J.P., Jones, D.T., Roos, D., 1990. *The Machine that Changed the World*, Maxwell Macmillan International, New York, NY.

Wong, A. (1992). *The transferability of Japanese management practice: The case of Singapore*. PhD Thesis, University of Bradford, Management Centre, Bradford, UK.

Wong, A., 2000. Integrating supplier satisfaction with customer satisfaction. *Total Quality Management*, 11(4/5&6), pp. 427-432.

Wood, M., 1997. The notion of the customer in Total Quality Management. *Total Quality Management*, 8(4), pp.181-191.

Wood, John C. and Wood, Michael C. (eds) **W. Edwards Deming (Critical Evaluations in Business and Management)**. London: Routledge, 2005. Two-volume collection of key articles exploring Deming's work and its impact, with a new introduction and detailed annotated bibliography.

Wu, H.Y., Wiebe, H. and Politi, J., 1997. Self-assessment of total quality management programs. *Engineering Management Journal*, 9 (1), pp. 25-30.

Wright, T., 2001. ISO 9001 without tears. Q*uality Progress*, 34(7), pp. 57-62.

Wright, P.M., Snell, S.A., 2002. Research update. *HR Human Resource Planning*, 25(2), pp.45-54.

Yang, C.C. (2005), "An integrated model of TQM and GE-Six Sigma", *International Journal of Six Sigma and Competitive Advantage*, Vol. 1 No.1, pp.97-105.

Yen, H.J., Krumwiede, D.W., and Sheu, C., 2002. A cross-cultural comparison of top management personality for TQM implementation.*Total Quality Management*, 13 (3), pp. 335-46.

Yin, R. K. (1989). *Case study research: design and methods*. London, Sage.

Yin, R. K. (2003) *Case study research : design and methods,* Sage Publications,

Thousand Oaks, Calif. ; London.

Yeung, A.C.L., Chan, L.Y. and Lee, T.S., 2003. "An empirical taxonomy for a quality management system: a study of the Hong Kong electronics industry", Journal of Operations Management, 21 (1), pp. 45-62.

Yong, J. and Wilkinson, A., 2001. Rethinking Total Quality Management. *Total Quality Management*, 12(2), pp. 247-258.

Yong, J. and Wilkinson, A. 2002. The long and winding road: the evolution of quality management. *Total Quality Management*, 13(1), pp. 101-121.

Yoshida, K., 1989. Deming management philosophy: Does it work in the United States as well as in Japan?. *Columbia Journal of World Business*, 24 (3), pp. 10-17.

York, K., Miree, C., 2004. Causation or covariation? An empirical re-examination of the link between TQM and financial performance, *Journal of Operations Management,* 22(3), pp.291-311.

Yoo, Boonghee, Naveen Donthu, and Tomasz Lenartowicz (2011), "Measuring Hofstede's Five Dimensions of Cultural Values at the Individual Level: Development and Validation of CVSCALE," Journal of International Consumer Marketing, 23 (3/4), pp. 193-210.

Yusof, S.M.; and Aspinwall, E., 1999. Critical success factors for total quality management in implementation in small and medium enterprises. *Total Quality Management*, 10(4- 5), pp. 803-809.

Yusof, S.M. and Aspinwall, E. 2000(a). Total Quality Management implementation frameworks: comparison and review. *Total Quality Management,* 11(3), pp. 281-294.

Zairi, M., Leitza, S.R., and Oakland, J.S., 1994. Does TQM impact bottom-line results?. *The TQM Magazine*, 6(1), pp.38-43.

Zairi, M. and Simintiras, A. C., 1991. "The sales link in the customer supplier chain."
Productivity 32(3): 427-434.

Zaleznik, A., 1989. The mythological structure of organizations and its impact. *Human Resource Management*, Summer, pp.267-77.

Zenger, Todd R., and Barbara S. Lawrence, 1989. Organizational demography: The differential effects of age and tenure distributions on technical communication. *Academy of Management Journal,* 32, pp. 353-376.

Zeithaml, C.P., Fry, L.W., 1981. The impact of real market growth and technology on strategy–performance relationships. In: Proceedings of the American Institute for Decision Sciences, Boston, MA, November 1981, pp. 27–29.

Zhang, Zhihai, 2000. Developing a model of quality management methods and evaluating their effects on business performance. *Total Quality Management*, 11(1), pp. 129-137.

Zhang, Z., Waszink, A. and Wijngaard, J., 2000. An instrument for measuring TQM implementation for Chinese manufacturing companies. *International Journal of Quality and Reliability*, 17(7), pp. 730–755.

Zimmerman, J. P., & Weiss, J., 2005. Six sigma's seven deadly sins. *Quality, 44( )*, pp. 62-67.

Zineldin, M., 2005."Strategic alliance for business excellence and competitiveness: cultures, motivations and achievements - A case of Swedish automanufacturers in Russia". *10th International Conference on ISO 9000 and TQM based on the theme TQM and 6-Sigma Competitiveness*", Shanghai, China.

Zink, K., 1997. *Succesful TQM – Inside Stories European Quality Award Winners*, Gower Publishing, London.

Zink, K., 1998. *Total Quality Management as a Holistic Management Concept – The European Model for Business Excellence*, Springer, Hamburg.

Zuckerman, A. 1999. ISO 9000 revisions are key to knowledge age excellence. *Quality Progress,* 7(3), pp. 35-39.

Zuckerman, A., & Hamson, N., 2001. *Managing quality*. Oxford, UK: Capstone.

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Appendix-T

Summarized Tables

Chapter 2 Tables

Table 2-1: The relative strengths and weaknesses of Crosby, Deming, Feigenbaum, Juran, and Ishikawa's approaches.

Quality guru	Strengths of approach	Weakness of approach
Deming	▪ Emphasizes removal of barriers to employee participation. ▪ Provides a systematic and functional logic, which identifies stages in quality improvement. ▪ Stresses that management comes before technology. ▪ Leaders and motivation are recognized as important. ▪ Emphasizes role of statistical and quantitative methods. ▪ Recognizes the different contexts of Japan and North America.	▪ Action plan and methodological principles are sometimes vague. ▪ The approach to leadership and motivation is seen by some as idiosyncratic. ▪ Does not treat situations that are political or coercive.
Juran	▪ Emphasis to orientate quality managers toward both suppliers and customers. ▪ Emphasizes the need to move away from quality hype and slogans. ▪ Stresses the role of the customer, both internal and external. ▪ Management involvement and commitment are stressed.	▪ Does not relate to other work on leadership and motivation. ▪ Seen by some as undervaluing the contribution of the worker by rejecting bottom-up initiatives. ▪ Seen as being stronger on control systems than the human dimension in organizations.
Feigenbaum	▪ A clear customer-oriented quality management process required. ▪ Provides a total system approach to quality control. ▪ Places the emphasis on the importance of management. ▪ Includes socio-technical systems thinking.	▪ Does not discriminate between different kinds of quality context. ▪ Does not bring together the different theories into one coherent whole.
Crosby	▪ Strong focus on organizational factors such as cultural change, training, leadership and ongoing calculation of quality costs. ▪ Strong emphasis on organizational wide motivation. ▪ Provides clear methods, which are easy to follow. ▪ Worker participation is recognized as important. ▪ Strong on explaining the realities of quality and motivating people to start the quality process.	▪ Seen by some as implying that workers are to blame for quality problems. ▪ Zero defects sometimes seen as risk avoidance. ▪ Insufficient attention given to statistical methods.

Ishikawa	▪ Strong emphasis on the importance of people and participation in the problem-solving process. ▪ A blend of statistical and people-oriented techniques. ▪ Introduces the idea of quality control circles.	▪ Some of his problem-solving methods seen as simplistic. ▪ Does not deal adequately with moving quality circles from ideas to action.

Source: Adapted by Waldman (1994) and Yong & Wilkinson (2001)

Table 2-2: Characteristics of the Stages of TQM Development

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Source: Dahlgaard et al. (1998, p. 10)

Chapter 3 Tables

Table 3-1: Criteria for three Quality Management Awards

Quality Management Criteria	Deming Prize	EFQM	MBNQA
Customer Focus	Yes	Yes	Yes
Leadership	Yes	Yes	Yes
Quality planning	Yes	Yes	Yes
Human Resource Development	Yes	Yes	Yes
Information Management	Yes	Yes	Yes
Process Management	Yes	Yes	Yes
Supplier relationship	Yes	Yes	Yes
Benchmarking	No	Yes	Yes
Organization Culture	Yes	Yes	No
Social Responsibilities	Yes	Yes	Yes
Business results	Yes	Yes	Yes

Chapter 4 Tables

Table 4-1: Summary of previous researches findings on TQM

Study	Operationalization of TQM	Main findings
Anderson *et al.* (1995)	Multidimensional construct Visionary leadership Internal and external cooperation Learning Process management Continuous improvement Employee fulfillment Customer satisfaction	Employee fulfillment has a significant effect on customer satisfaction. No significant relationship exists between continuous improvement and customer satisfaction.
Flynn *et al.* (1995)	Multidimensional construct Process flow management Product design process Statistical control/feedback QM infrastructure practices Customer relationship Supplier relationship Work attitudes Workforce management Top management support	Statistical control/feedback and the product design process have positive effects on perceived quality market outcomes while the process flow management and statistical control/feedback are significantly related to internal measure of the percent that passed final inspection without requiring rework. Both perceived quality market outcomes and percent-passed final inspection with no rework have significant effects on competitive advantage.
Mohrman *et al.* (1995)	Multidimensional construct Core practices Quality improvement teams Quality councils Cross-functional planning Process reengineering Work simplification Customer satisfaction monitoring Direct employee exposure to customers Production-oriented practices Self-inspection Statistical control methods used by front line employees Just-in-time deliveries Work cells or manufacturing cells Other practices Cost-of-quality Collaboration with suppliers	There is a significant and positive relationship between the extent of TQM adoption and efficiency of employee and capital utilization. The relationship of TQM to manufacturing costs and inventory turnover is not significant. Although core TQM practices and market share are significantly related for manufacturing firms, no significant relationships are found between TQM adoption and financial performance.
Powel (1995)	Multidimensional construct Executive commitment Adopting the philosophy Closer to customers	Executive commitment, open organization, and employee empowerment show significant partial correlations for both total

	Benchmarking Training Employee empowerment Zero-defects mentality Flexible manufacturing Process improvement Measurement	performance and TQM program performance. A zero-defects mentality and closeness to suppliers correlate with TQM performance, but with total performance only marginally.
Hendricks and Singhal (1996, 1997)	Single construct (winning of a quality award is a proxy for the effective implementation of TQM programs)	Implementing an effective TQM program improves performance of firms.
Adam *et al.* (1997)	Multidimensional construct Employee involvement Senior executive involvement Employee satisfaction Compensation Customers Design and conformance Knowledge Employee selection and development Inventory reduction	Employee knowledge about quality improvement, what quality of product customers receive and perceive, employee compensation and recognition and management involvement are significantly and inversely correlated with the total cost of quality and average percent of items defective. Financial performance is positively correlated with senior management involvement and with employee compensation and recognition.
Chenhall (1997)	Single construct	The relationship between TQM and performance is stronger when manufacturing performance measures are used as part of the managerial evaluation.
Grandzol and Greshon (1997)	Multidimensional construct Leadership Continuous improvement Internal/external cooperation Customer focus Learning Employee fulfillment Process management	Financial performance is a function of operating performance while operating performance is a function of continuous improvement. Customer focus has a significant effect on product/service quality. Employee fulfillment, cooperation and customer focus positively impact customer satisfaction.
Choi and Eboch (1998)	Single construct (in this study, various dimensions of TQM were examined: however, a single TQM construct is used to analyze the relationship between TQM and performance)	TQM practices have a stronger effect on customer satisfaction than they do on plant performance. The plant performance has no significant effect on customer satisfaction.
Ahire and O’Shaughnessy (1998)	Multidimensional construct Management commitment Employee training Employee empowerment Employee involvement	Firms with high top management commitment produce higher quality products that those with low top management commitment.

	Internal quality information usage Supplier quality management Design quality management Statistical process control usage Customer focus Benchmarking	Customer focus, supplier quality management and empowerment emerge as significant predictors of product quality.
Easton and Jarrell (1998)	Single construct (in this study, various dimensions of TQM were examined; however, a single TQM construct is used to analyze the relationship between TQM and performance)	For the firms adopting TQM, financial performance has increased.
Forza and Flippini (1998)	Multidimensional construct Orientation towards quality TQM links with suppliers Human resources TQM links with customers Process control	Process control has a significant effect on quality conformance, and TQM links with customers have a significant effect on customer satisfaction.
Rungtusanatham *et al.* (1998)	Multidimensional construct Visionary leadership Internal and external cooperation Learning Process management Continuous improvement Employee fulfillment Customer satisfaction	Continuous improvement has a positive effect on customer satisfaction. Employee fulfillment seems to have no effect on customer satisfaction.
Dow *et al.* (1999), Samson and Teziovski (1999)	Multidimensional construct Leadership Workforce commitment Shared vision Customer focus Use of teams Personnel training Cooperative supplier relations Use of benchmarking Use of advanced manufacturing systems Use of just-in-time principles	Employee commitment, shared vision, and customer focus in combination has a positive impact on quality outcomes. Leadership, human resource management and customer focus (soft factors) are significantly and positively related to operating performance.
Das *et al.* (2000)	Multidimensional construct High involvement work practices Quality practices	High involvement practices are positively correlated with quality practices; quality practices are positively correlated with customer satisfaction; customer satisfaction is positively correlated with firm performance.

Wilson and Collier (2000)	Multidimensional construct Leadership Information and analysis Strategic planning Human resource management Process management	Process management, and information and analysis have significant and positive direct effects on financial performance
Douglas and Judge (2001)	Single construct (in this study, various dimensions of TQM were examined; however, a single TQM construct is used to analyze the relationship between TQM and performance)	The extent to which TQM practices are implemented is positively and significantly related to both the perceived financial performance and the industry expert-rated performance.
Ho *et al.* (2001)	Multidimensional construct Supportive TQM factor (employee relations and training). Core TQM factor (quality data and reporting, supplier quality management).	Supportive TQM factor has an indirect effect on product quality through the core TQM factor.
Pannirselvam and Ferguson (2001)	Multidimensional construct (instrument developed based on Arizona Governor's Quality Award) Leadership Information management Strategic quality planning Human resource management Product and process management Business results Customer focus and relationship management Customer satisfaction	Leadership significantly, directly or indirectly, affects all of the system's constructs, except for strategic quality planning and information management. Information management, human resource management and customer focus have a significant effect on customer satisfaction and business results.
Lee *et al.* (2003)	Multidimensional construct (instrument developed based on Malcolm Baldrige criteria) Leadership Quality information and analysis Customer and market focus Strategic quality planning Human resource management Process management Quality results	Quality information and analysis has strong, positive impact on strategic quality planning and process management, and quality results are affected by human resource and process management.
Kaynak (2003)	Multidimensional construct Management leadership Training Employee relations Quality data and reporting Supplier quality management Process management Product/service design	Management leadership is directly related to training, employee relations, supplier quality management, and product design, and indirectly related to quality data and reporting, and process management. Quality data and

	Inventory management performance Quality performance Financial and market performance	reporting does not have any direct effect on any of the [financial] performance measures. Supplier quality management emerges as an important component of TQM. It is the only TQM practice that has a direct effect on inventory turnover. Improving operating performance results in increased sales and market share, thereby providing companies a competitive edge.
De Ceiro (2003)	Multidimensional construct Practices relating to the design and development of new products Production process Links the suppliers Links with customers Human resource management	The results are consistent with those of most of the studies carried out to date and demonstrate a significant relationship between the level of implementation of quality management practices and improvement in operational performance in terms of cost, quality and flexibility. Quality management practices related to product design and development, together with human resource practices, are the most significant predictors of operational performance.
Lai and Chang (2003)	Multidimensional construct People and customer management Supplier partnerships Communication of improvement information Customer satisfaction orientation External interface management Strategic quality management Teamwork structures for improvement Operational quality planning Quality improvement measurement systems Corporate quality culture	Significant contrast exists between public utilities/service industries and manufacturing/construction industries, with the former group having a higher level of quality management implementation and achieving better quality outcomes. The emphases that they placed on their quality management implementation also seem to differ.
Lai (2003)	People and customer management Supplier partnerships Communication of improvement information Customer satisfaction orientation External interface management Strategic quality management Teamwork structures for	The results suggest that market orientation factors (i.e., market intelligence generation, market intelligence dissemination, responsiveness to market intelligence) are positively correlated with quality management factors and

	improvement Operational quality planning Quality improvement measurement systems Corporate quality culture	business performance
Sanchez- Rodriguez and Martinez-Lorente (2004)	Multidimensional construct Management commitment to quality Coordination with other functional areas People management Cooperative relationships with suppliers Effective evaluation and monitoring of customer satisfaction Benchmarking	The results suggest that all quality management practices in purchasing except benchmarking were significantly and positively correlated with market share. Meanwhile, benchmarking was the only construct that was significantly correlated with production costs. Return on assets was significantly correlated with management commitment, coordination and people management constructs, whereas, return on sales was significantly correlated with only management commitment construct
Rahman and Bullock (2005)	Multidimensional construct Customer satisfaction Employee morale Productivity Defects as a percentage of production volume Delivery in full on time to customer Warranty claims cost as percentage of total sales Cost of quality as a percentage of total sales	The paper investigates the direct impact of soft TQM on the diffusion of hard TQM, and then assesses the direct impact of hard TQM on performance. Analysis of 261 Australian manufacturing companies revealed significant positive relationships between soft TQM and hard TQM elements. In addition to direct affects, soft TQM also has an indirect affect on performance through its effect on hard TQM.
Sila (2006)	Multidimensional construct Leadership Strategic planning Customer focus Information and analysis Human resource management Process management Supplier management	The results show that the implementation of all TQM practices is similar across subgroups of companies within each contextual factor. In addition, the effects of TQM on four performance measures, as well as the relationships among these measures, are generally similar across subgroup companies. Thus, for the five contextual factors analyzed, the overall findings do not provide support for the argument that TQM and TQM– performance relationships are context dependent.

Source: Kaynak (2003)

Table 4-2: TQM traits under different frameworks

Associated Traits of TQM	Juran	Deming	Crosby	Saraph *et al.* (1989)	Flynn *et al.* (1994)	Powell (1995)	ISO 9000	MBNQA
Continuous improvement	×	×	×	×	×			×
Meeting customer's requirements	×	×			×	×	×	×
Long-range planning	×			×				×
Increased employee improvement	×	×	×	×		×		×
Process management		×		×	×	×	×	×
Competitive benchmarking				×		×		×
Team-based problem-solving	×		×	×		×		×
Constant measurement of results	×		×	×	×	×	×	×
Closer relationships with customers	×	×			×	×		×
Management commitment	×	×	×	×	×	×	×	×
10 Traits total:	8	6	5	8	6	8	4	10

Table 4-3 High and low performance orientation's characteristics of societies

HIGH PERFORMANCE ORIENTATION societies have characteristics such as	LOW PERFORMANCE ORIENTATION societies have characteristics such as...
▪ Value training and development. ▪ Value competitiveness and materialism. ▪ View formal feedback as necessary for performance improvement. ▪ Value what one does more than who one is. ▪ Expect direct, explicit communication.	▪ Value societal and family relationships. ▪ Value harmony with the environment. ▪ View formal feedback as judgmental and discomfiting. ▪ Value who one is more than what one does. ▪ Expect indirect, subtle communication.

Chapter 5 Tables

Table 5-1: Dissimilar Features in Quantitative and Qualitative Methods

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Source: Bryman (1995)

Chapter 6 Tables

Frequency Table 6-1: Company

		Frequency	Percent
Valid	PIC	108	11.5
	KNPC	248	26.5
	KOC	581	62.0
	Total	937	100.0

Frequency Table 6-2: Grade

		Frequency	Percent
Valid	Grade 19 to 18	81	8.6
	Grade 17 to 16	140	14.9
	Grade 15 to 14	716	76.4
	Total	937	100.0

Frequency Table 6-3: Years of Experience

		Frequency	Percent
Valid	Less than 5 years	114	12.2
	5 to 10 years	218	23.3
	11 to 15 years	100	10.7
	More than 15 years	505	53.9
	Total	937	100.0

Frequency Table 6-4: Nationality

		Frequency	Percent
Valid	Kuwaiti	612	65.3
	Arabs	42	4.5
	Western (European & U.S.)	32	3.4
	Asians (Indians, Pakistani, etc)	213	22.7
	Others	38	4.1
	Total	937	100.0

Table 6-24 KMO and Bartlett's Test for TQM Familiarity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.855
Bartlett's Test of Sphericity	Approx. Chi-Square	2187.875
	Df	10
	Sig.	.000

Table 6-25 Principal Component Analysis Extraction Results

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.283	65.655	65.655	3.283	65.655	65.655
2	.607	12.143	77.798			
3	.470	9.395	87.193			
4	.324	6.477	93.670			
5	.316	6.330	100.000			

Extraction Method: Principal Component Analysis.

Table 6-26 Communalities

	Initial	Extraction
TQMFmlrtyq1	1.000	.725
TQMFmlrtyq2	1.000	.535
TQMFmlrtyq3	1.000	.698
TQMFmlrtyq4	1.000	.714
TQMFmlrtyq5	1.000	.610

Extraction Method: Principal Component Analysis.

Table 6-27 Principal Component Analysis Extraction Results

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.839	70.965	70.965	2.839	70.965	70.965
2	.477	11.925	82.890			
3	.361	9.035	91.926			
4	.323	8.074	100.000			

Table 6-28 Communalities

	Initial	Extraction
TQMFmlrtyq1	1.000	.706
TQMFmlrtyq3	1.000	.740
TQMFmlrtyq4	1.000	.756
TQMFmlrtyq5	1.000	.636

Extraction Method: Principal Component Analysis.

Table 6-29 Rotated Component Matrix[a]

a. Only one component was extracted. The solution cannot be rotated.

Table 6-31 KMO and Bartlett's Test for leadership "Construct #1"

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.817
Bartlett's Test of Sphericity	Approx. Chi-Square	2276.659
	Df	10
	Sig.	.000

Table 6-32 Principal Component Analysis Extraction
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.242	64.837	64.837	3.242	64.837	64.837
2	.752	15.040	79.877			
3	.413	8.251	88.128			
4	.333	6.664	94.792			
5	.260	5.208	100.000			

Extraction Method: Principal Component Analysis.

Table 6-33 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.312	77.057	77.057	2.312	77.057	77.057
2	.425	14.165	91.222			
3	.263	8.778	100.000			

Extraction Method: Principal Component Analysis.

Table 6-34 Communalities

	Initial	Extraction
ldr11 Leadership1	1.000	.724
ldr12 Leadership2	1.000	.829
ldr13 Leadership3	1.000	.759

Extraction Method: Principal Component Analysis.

Table 6-35 **Rotated Component Matrix**[a]

a. Only one component was extracted. The solution cannot be rotated.

Table 6-37 KMO and Bartlett's Test for Strategic Planning "Construct#2"

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.844
Bartlett's Test of Sphericity	Approx. Chi-Square	2675.318
	Df	15
	Sig.	.000

Table 6-38 Principal Component Analysis Extraction
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.642	60.700	60.700	3.642	60.700	60.700
2	.803	13.382	74.083			
3	.548	9.127	83.209			
4	.437	7.279	90.489			
5	.296	4.926	95.414			
6	.275	4.586	100.000			

Extraction Method: Principal Component Analysis.

Table 6-39 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.200	73.327	73.327	2.200	73.327	73.327
2	.521	17.351	90.678			
3	.280	9.322	100.000			

Extraction Method: Principal Component Analysis.

Table 6-40 Communalities

	Initial	Extraction
sp22 StrtgicPlanning2	1.000	.629
sp23 StrtgicPlanning3	1.000	.793
sp24 StrtgicPlanning4	1.000	.778

Extraction Method: Principal Component Analysis.

Table 6-41 **Rotated Component Matrix**[a]
a. Only one component was extracted. The solution cannot be rotated.

Table 6-47 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.814	46.901	46.901	2.814	46.901	46.901	2.264	37.739	37.739
2	1.551	25.856	72.757	1.551	25.856	72.757	2.101	35.017	72.757
3	.552	9.196	81.953						
4	.465	7.744	89.696						
5	.351	5.849	95.545						
6	.267	4.455	100.000						

Extraction Method: Principal Component Analysis.

6-48 Rotated Component Matrix[a]

	Component	
	1	2
NCQEthcs3		.797
NCQEthcs4		.869
NCQEthcs5		.810
NCQEthcs7	.838	
NCQEthcs8	.826	
NCQEthcs9	.908	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Chapter 7 Tables

Table 7-1 One-Sample Kolmogorov-Smirnov Test for TQM constructs

		Trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
N		937	937	937	937	937	937	937	937
Normal Parameters[a,,b]	Mean	3.8433	3.3232	3.8075	3.4615	3.3814	3.6850	3.6387	3.6967
	Std. Deviation	1.03136	1.00192	1.14011	1.09629	1.06649	1.09130	1.02200	1.07334
Most Extreme Differences	Absolute	.102	.075	.080	.086	.071	.059	.116	.111
	Positive	.086	.050	.049	.056	.056	.059	.078	.058
	Negative	-.102	-.075	-.080	-.086	-.071	-.057	-.116	-.111
Kolmogorov-Smirnov Z		3.114	2.308	2.438	2.645	2.178	1.809	3.566	3.398
Asymp. Sig. (2-tailed)		.000	.000	.000	.000	.000	.003	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

Table 7-2 One-Sample Kolmogorov-Smirnov Test for TQM Familiarity

		trfmlrty
N		937
Normal Parameters[a,,b]	Mean	3.8385
	Std. Deviation	.94074
Most Extreme Differences	Absolute	.124
	Positive	.091
	Negative	-.124
Kolmogorov-Smirnov Z		3.789
Asymp. Sig. (2-tailed)		.000

a. Test distribution is Normal.

b. Calculated from data.

Table 7-3: One-Sample Kolmogorov-Smirnov Test

		trpwr	trunc	trcol	trqpr	trpersnlethic	trworkethic
N		937	937	937	937	937	937
Normal Parameters[a,,b]	Mean	2.5218	4.2306	4.1198	3.2740	4.1699	3.5590
	Std. Deviation	1.57989	.88767	.98944	1.24464	.83156	1.07615
Most Extreme Differences	Absolute	.177	.182	.180	.085	.163	.089
	Positive	.177	.182	.172	.064	.155	.079
	Negative	-.168	-.167	-.180	-.085	-.163	-.089
Kolmogorov-Smirnov Z		5.414	5.582	5.519	2.604	4.983	2.712
Asymp. Sig. (2-tailed)		.000	.000	.000	.000	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

Table 7-4 Ranks

	Grade	N	Mean Rank
trldr	Grade 19 to 18	81	491.75
	Grade 17 to 16	140	539.75
	Grade 15 to 14	716	452.59
	Total	937	
trsp	Grade 19 to 18	81	477.54
	Grade 17 to 16	140	538.58
	Grade 15 to 14	716	454.43
	Total	937	
trcsmk	Grade 19 to 18	81	469.73
	Grade 17 to 16	140	521.63
	Grade 15 to 14	716	458.63
	Total	937	
trinfo	Grade 19 to 18	81	481.16
	Grade 17 to 16	140	525.64
	Grade 15 to 14	716	456.55
	Total	937	
trhr	Grade 19 to 18	81	518.64
	Grade 17 to 16	140	516.42
	Grade 15 to 14	716	454.11
	Total	937	
trpm	Grade 19 to 18	81	490.80
	Grade 17 to 16	140	526.38
	Grade 15 to 14	716	455.31

	Total	937	
trci	Grade 19 to 18	81	510.64
	Grade 17 to 16	140	513.09
	Grade 15 to 14	716	455.67
	Total	937	
trbr	Grade 19 to 18	81	473.98
	Grade 17 to 16	140	534.59
	Grade 15 to 14	716	455.61
	Total	937	

Table 7-5 Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	12.843	11.443	6.357	7.835	9.204	8.667	7.417	10.062
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.002	.003	.042	.020	.010	.013	.025	.007

a. Kruskal Wallis Test

b. Grouping Variable: Grade

Table 7-6 trldr

Duncan[a,,b]

Grade	N	Subset for alpha = 0.05	
		1	2
Grade 15 to 14	716	3.7866	
Grade 19 to 18	81	3.9140	3.9140
Grade 17 to 16	140		4.0924
Sig.		.293	.141

Table 7-7 trsp

Duncan[a,,b]

Grade	N	Subset for alpha = 0.05	
		1	2
Grade 15 to 14	716	3.2749	
Grade 19 to 18	81	3.3688	3.3688
Grade 17 to 16	140		3.5442
Sig.		.425	.137

Table 7-8 trcsmk

Duncan[a,,b]

Grade	N	Subset for alpha = 0.05
		1
Grade 15 to 14	716	3.7728
Grade 19 to 18	81	3.7870
Grade 17 to 16	140	3.9971
Sig.		.115

Table 7-9 trinfo

Duncan[a,,b]

Grade	N	Subset for alpha = 0.05	
		1	2
Grade 15 to 14	716	3.4145	
Grade 19 to 18	81	3.4873	3.4873
Grade 17 to 16	140		3.6870
Sig.		.573	.122

Table 7-10 trhr

Duncan[a,,b]

Grade	N	Subset for alpha = 0.05
		1
Grade 15 to 14	716	3.3241
Grade 19 to 18	81	3.5570
Grade 17 to 16	140	3.5731
Sig.		.060

Table 7-11 trpm

Duncan[a,,b]

Grade	N	Subset for alpha = 0.05
		1
Grade 15 to 14	716	3.6355
Grade 19 to 18	81	3.7566
rade 17 to 16	140	3.8966
Sig.		.054

Table 7-12 trci

Duncan[a,,b]

Grade	N	Subset for alpha = 0.05
		1
Grade 15 to 14	716	3.5952
Grade 19 to 18	81	3.7704
Grade 17 to 16	140	3.7852
Sig.		.137

Table 7-13 trbr

Duncan[a,,b]

Grade	N	Subset for alpha = 0.05	
		1	2
Grade 15 to 14	716	3.6449	
Grade 19 to 18	81	3.7251	3.7251
Grade 17 to 16	140		3.9450
Sig.		.525	.082

Table 7-14 Ranks

	Company	N	Mean Rank
trldr	PIC	108	564.90
	KNPC	248	449.48
	KOC	581	459.51
	Total	937	
trsp	PIC	108	553.24
	KNPC	248	436.28
	KOC	581	467.31
	Total	937	
trcsmk	PIC	108	552.16
	KNPC	248	454.23
	KOC	581	459.85
	Total	937	
trinfo	PIC	108	546.94
	KNPC	248	440.25
	KOC	581	466.79
	Total	937	
trhr	PIC	108	485.09
	KNPC	248	403.18
	KOC	581	494.10
	Total	937	
trpm	PIC	108	558.00
	KNPC	248	451.72
	KOC	581	459.83
	Total	937	
trci	PIC	108	563.82
	KNPC	248	433.33
	KOC	581	466.60
	Total	937	
trbr	PIC	108	539.47
	KNPC	248	436.19
	KOC	581	469.91
	Total	937	

Table 7-15 Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	15.651	14.150	11.618	11.833	20.082	13.384	17.726	11.041
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.000	.001	.003	.003	.000	.001	.000	.004

a. Kruskal Wallis Test

b. Grouping Variable: Company

Table 7-16 trldr

Duncan[a,,b]

Company	N	Subset for alpha = 0.05	
		1	2
KNPC	248	3.7690	
KOC	581	3.8087	
PIC	108		4.2000
Sig.		.699	1.000

Table 7-17 trsp

Duncan[a,,b]

Company	N	Subset for alpha = 0.05	
		1	2
KNPC	248	3.1986	
KOC	581	3.3149	
PIC	108		3.6541
Sig.		.242	1.000

Table 7-18 trhr

Duncan[a,,b]

Company	N	Subset for alpha = 0.05	
		1	2
KNPC	248	3.1248	
KOC	581		3.4727
PIC	108		3.4796
Sig.		1.000	.948

Table 7-20 Ranks

	Nationality	N	Mean Rank
trldr	Kuwaiti	612	436.40
	Arabs	42	630.40
	Western (European & U.S.)	32	376.33
	Asians (Indians, Pakistani, etc)	213	524.81
	Others	38	580.95
	Total	937	
trsp	Kuwaiti	612	422.19
	Arabs	42	519.26
	Western (European & U.S.)	32	398.98
	Asians (Indians, Pakistani, etc)	213	583.53
	Others	38	584.30
	Total	937	
trcsmk	Kuwaiti	612	424.90
	Arabs	42	560.36
	Western (European & U.S.)	32	434.13
	Asians (Indians, Pakistani, etc)	213	562.79
	Others	38	581.97
	Total	937	
trinfo	Kuwaiti	612	422.76
	Arabs	42	533.89
	Western (European & U.S.)	32	379.09
	Asians (Indians, Pakistani, etc)	213	575.78
	Others	38	619.11
	Total	937	
trhr	Kuwaiti	612	428.76
	Arabs	42	518.21
	Western (European & U.S.)	32	434.30
	Asians (Indians, Pakistani, etc)	213	543.20
	Others	38	675.99
	Total	937	
trpm	Kuwaiti	612	418.86
	Arabs	42	595.25
	Western (European & U.S.)	32	431.53

	Asians (Indians, Pakistani, etc)	213	567.57
	Others	38	616.03
	Total	937	
trci	Kuwaiti	612	434.54
	Arabs	42	527.50
	Western (European & U.S.)	32	376.00
	Asians (Indians, Pakistani, etc)	213	537.52
	Others	38	653.66
	Total	937	
trbr	Kuwaiti	612	415.21
	Arabs	42	567.26
	Western (European & U.S.)	32	459.77
	Asians (Indians, Pakistani, etc)	213	581.20
	Others	38	605.58
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	43.368	67.130	53.850	68.885	53.766	70.370	47.312	76.503
df	4	4	4	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: Nationality

Table 7-22 Ranks

	YearsofExperince	N	Mean Rank
trldr	Less than 5 years	114	444.52
	5 to 10 years	218	448.65
	11 to 15 years	100	472.69
	More than 15 years	505	482.58
	Total	937	
trsp	Less than 5 years	114	462.75
	5 to 10 years	218	454.69
	11 to 15 years	100	474.46
	More than 15 years	505	475.50
	Total	937	
trcsmk	Less than 5 years	114	462.32
	5 to 10 years	218	427.77
	11 to 15 years	100	484.54
	More than 15 years	505	485.23
	Total	937	
trinfo	Less than 5 years	114	451.97
	5 to 10 years	218	457.99
	11 to 15 years	100	468.24
	More than 15 years	505	477.75
	Total	937	
trhr	Less than 5 years	114	495.39
	5 to 10 years	218	432.14
	11 to 15 years	100	504.94
	More than 15 years	505	471.84
	Total	937	
trpm	Less than 5 years	114	458.00
	5 to 10 years	218	446.83
	11 to 15 years	100	477.30
	More than 15 years	505	479.41
	Total	937	
trci	Less than 5 years	114	458.04
	5 to 10 years	218	460.04
	11 to 15 years	100	473.71
	More than 15 years	505	474.41
	Total	937	
trbr	Less than 5 years	114	461.30
	5 to 10 years	218	423.84

	N	Mean Rank
11 to 15 years	100	486.81
More than 15 years	505	486.70
Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	3.474	1.005	7.285	1.345	6.957	2.497	.663	8.809
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.324	.800	.063	.718	.073	.476	.882	.032

a. Kruskal Wallis Test

b. Grouping Variable: YearsofExperince

Table 7-23 trbr

Duncan[a,,b]

YearsofExperince	N	Subset for alpha = 0.05
		1
5 to 10 years	218	3.5275
Less than 5 years	114	3.6427
11 to 15 years	100	3.7658
More than 15 years	505	3.7682
Sig.		.068

Table 7-24 Ranks

	ctgryfmlrty	N	Mean Rank
trldr	Very low familiar	231	289.74
	Moderately familiar	293	454.76
	Very familiar	182	528.85
	Fully Familiar	231	619.17
	Total	937	
trsp	Very low familiar	231	309.33
	Moderately familiar	293	490.53
	Very familiar	182	524.74
	Fully Familiar	231	557.44
	Total	937	
trcsmk	Very low familiar	231	322.65
	Moderately familiar	293	466.20
	Very familiar	182	530.24
	Fully Familiar	231	570.66
	Total	937	
trinfo	Very low familiar	231	328.08

	Moderately familiar	293	465.75
	Very familiar	182	538.90
	Fully Familiar	231	558.97
	Total	937	
trhr	Very low familiar	231	301.84
	Moderately familiar	293	482.56
	Very familiar	182	523.39
	Fully Familiar	231	576.11
	Total	937	
trpm	Very low familiar	231	307.56
	Moderately familiar	293	478.24
	Very familiar	182	530.82
	Fully Familiar	231	570.02
	Total	937	
trci	Very low familiar	231	298.03
	Moderately familiar	293	476.64
	Very familiar	182	542.78
	Fully Familiar	231	572.15
	Total	937	
trbr	Very low familiar	231	307.07
	Moderately familiar	293	473.82
	Very familiar	182	535.92
	Fully Familiar	231	572.10
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	183.180	114.971	109.651	100.671	132.596	124.468	140.398	128.220
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: ctgryfmlrty

Table 7-25 trldr

Duncan[a,,b]

ctgryfmlrty	N	Subset for alpha = 0.05			
		1	2	3	4
Very low familiar	231	3.1415			
Moderately familiar	293		3.8350		
Very familiar	182			4.0766	
Fully Familiar	231				4.3717
Sig.		1.000	1.000	1.000	1.000

Table 7-27 Ranks

	ctgrypwr	N	Mean Rank
trldr	Low power distance	202	453.96
	Moderate power distance	301	469.58
	High power distance	200	433.82
	Very high power distance	234	511.31
	Total	937	
trsp	Low power distance	202	418.35
	Moderate power distance	301	453.78
	High power distance	200	465.13
	Very high power distance	234	535.61
	Total	937	
trcsmk	Low power distance	202	467.46
	Moderate power distance	301	462.37
	High power distance	200	446.98
	Very high power distance	234	497.68
	Total	937	
trinfo	Low power distance	202	441.17
	Moderate power distance	301	460.98
	High power distance	200	480.03
	Very high power distance	234	493.91
	Total	937	
trhr	Low power distance	202	442.68
	Moderate power distance	301	464.56
	High power distance	200	461.58
	Very high power distance	234	503.78
	Total	937	
trpm	Low power distance	202	459.91

	Moderate power distance	301	466.34
	High power distance	200	444.72
	Very high power distance	234	501.03
	Total	937	
trci	Low power distance	202	421.35
	Moderate power distance	301	456.88
	High power distance	200	455.70
	Very high power distance	234	537.09
	Total	937	
trbr	Low power distance	202	454.00
	Moderate power distance	301	456.08
	High power distance	200	479.41
	Very high power distance	234	489.67
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	9.777	22.304	4.145	4.732	6.016	5.155	22.304	2.986
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.021	.000	.246	.193	.111	.161	.000	.394

a. Kruskal Wallis Test

b. Grouping Variable: ctgrypwr

Table 7-30 Ranks

	ctgryunc	N	Mean Rank
trldr	Low uncertainity avoidance	235	353.12
	Moderate uncertainity avoidance	248	455.02
	High uncertainity avoidance	444	536.20
	Very high uncertainity avoidance	10	555.20
	Total	937	
trsp	Low uncertainity avoidance	235	366.20
	Moderate uncertainity avoidance	248	469.28
	High uncertainity avoidance	444	520.00
	Very high uncertainity avoidance	10	613.25
	Total	937	
trcsmk	Low uncertainity avoidance	235	351.96

	Moderate uncertainity avoidance	248	471.79
	High uncertainity avoidance	444	526.99
	Very high uncertainity avoidance	10	575.45
	Total	937	
trinfo	Low uncertainity avoidance	235	358.67
	Moderate uncertainity avoidance	248	461.33
	High uncertainity avoidance	444	526.63
	Very high uncertainity avoidance	10	692.95
	Total	937	
trhr	Low uncertainity avoidance	235	360.79
	Moderate uncertainity avoidance	248	467.05
	High uncertainity avoidance	444	524.48
	Very high uncertainity avoidance	10	597.25
	Total	937	
trpm	Low uncertainity avoidance	235	338.76
	Moderate uncertainity avoidance	248	464.25
	High uncertainity avoidance	444	536.30
	Very high uncertainity avoidance	10	659.20
	Total	937	
trci	Low uncertainity avoidance	235	332.97
	Moderate uncertainity avoidance	248	471.70
	High uncertainity avoidance	444	535.34
	Very high uncertainity avoidance	10	652.95
	Total	937	
trbr	Low uncertainity avoidance	235	340.69
	Moderate uncertainity avoidance	248	456.03
	High uncertainity avoidance	444	542.22
	Very high uncertainity avoidance	10	554.95
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	72.527	52.666	66.001	66.451	58.573	87.066	91.277	87.425
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: ctgryunc

Able 7-33 Ranks

	Ctgrycol	N	Mean Rank
trldr	Low collectivisim	235	351.12
	Moderate collectivisim	233	442.02
	High collectivisim	455	537.63
	Very high collectivisim	14	666.04
	Total	937	
trsp	Low collectivisim	235	373.33
	Moderate collectivisim	233	485.28
	High collectivisim	455	508.15
	Very high collectivisim	14	531.79
	Total	937	
trcsmk	Low collectivisim	235	381.62
	Moderate collectivisim	233	456.23
	High collectivisim	455	515.66
	Very high collectivisim	14	631.79
	Total	937	
trinfo	Low collectivisim	235	372.16
	Moderate collectivisim	233	467.47
	High collectivisim	455	512.39
	Very high collectivisim	14	709.82
	Total	937	
trhr	Low collectivisim	235	361.45
	Moderate collectivisim	233	468.77
	High collectivisim	455	517.52
	Very high collectivisim	14	701.14
	Total	937	
trpm	Low collectivisim	235	378.33
	Moderate collectivisim	233	469.37
	High collectivisim	455	510.22
	Very high collectivisim	14	645.25

	Total	937	
trci	Low collectivisim	235	344.83
	Moderate collectivisim	233	460.11
	High collectivisim	455	530.61
	Very high collectivisim	14	698.79
	Total	937	
trbr	Low collectivisim	235	384.37
	Moderate collectivisim	233	464.21
	High collectivisim	455	511.32
	Very high collectivisim	14	593.68
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	84.038	40.597	43.671	53.052	62.131	42.957	83.929	37.376
Df	3	3	3	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: ctgrycol

Table 7-34 trsp

Duncan[a,,b]

ctgrycol	N	Subset for alpha = 0.05	
		1	2
Low collectivisim	235	2.9497	
Moderate collectivisim	233		3.3862
High collectivisim	455		3.4711
Very high collectivisim	14		3.7393
Sig.		1.000	.093

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 7-36 Ranks

	Ctgryqpr	N	Mean Rank
trldr	Low quality performance oriented	236	296.79
	Moderate quality performance oriented	222	419.48
	High quality performance oriented	240	536.13
	Very high quality performance oriented	239	617.63
	Total	937	
trsp	Low quality performance oriented	236	276.77
	Moderate quality performance oriented	222	414.40
	High quality performance oriented	240	538.08
	Very high quality performance oriented	239	640.16
	Total	937	
trcsmk	Low quality performance oriented	236	304.15
	Moderate quality performance oriented	222	415.98
	High quality performance oriented	240	539.94
	Very high quality performance oriented	239	609.79
	Total	937	
trinfo	Low quality performance oriented	236	260.57
	Moderate quality performance oriented	222	423.16
	High quality performance oriented	240	523.39
	Very high quality performance oriented	239	662.78
	Total	937	
trhr	Low quality performance oriented	236	210.29
	Moderate quality performance oriented	222	416.08

	High quality performance oriented	240	537.57
	Very high quality performance oriented	239	704.76
	Total	937	
trpm	Low quality performance oriented	236	262.62
	Moderate quality performance oriented	222	421.22
	High quality performance oriented	240	538.05
	Very high quality performance oriented	239	647.83
	Total	937	
trci	Low quality performance oriented	236	251.30
	Moderate quality performance oriented	222	413.08
	High quality performance oriented	240	530.82
	Very high quality performance oriented	239	673.83
	Total	937	
trbr	Low quality performance oriented	236	279.40
	Moderate quality performance oriented	222	415.03
	High quality performance oriented	240	531.59
	Very high quality performance oriented	239	643.50
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	190.880	240.015	177.517	279.481	421.552	264.662	313.614	238.297
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: ctgryqpr

Table 7-38 Ranks

	ctgryprsnlethc	N	Mean Rank
trldr	Low personal ethical values	241	437.87
	Moderate personal ethical values	213	450.00
	High personal ethical values	479	493.07
	Very high personal ethical values	4	474.00
	Total	937	
trsp	Low personal ethical values	241	442.75
	Moderate personal ethical values	213	487.69
	High personal ethical values	479	475.48
	Very high personal ethical values	4	278.88
	Total	937	
trcsmk	Low personal ethical values	241	437.48
	Moderate personal ethical values	213	474.32
	High personal ethical values	479	482.83
	Very high personal ethical values	4	428.50
	Total	937	
trinfo	Low personal ethical values	241	441.07
	Moderate personal ethical values	213	465.51
	High personal ethical values	479	486.42
	Very high personal ethical values	4	251.63
	Total	937	
trhr	Low personal ethical values	241	436.34
	Moderate personal ethical values	213	483.64

	High personal ethical values	479	479.59
	Very high personal ethical values	4	389.63
	Total	937	
trpm	Low personal ethical values	241	440.52
	Moderate personal ethical values	213	468.27
	High personal ethical values	479	483.77
	Very high personal ethical values	4	455.50
	Total	937	
trci	Low personal ethical values	241	448.21
	Moderate personal ethical values	213	479.01
	High personal ethical values	479	475.26
	Very high personal ethical values	4	438.63
	Total	937	
trbr	Low personal ethical values	241	446.20
	Moderate personal ethical values	213	460.03
	High personal ethical values	479	483.99
	Very high personal ethical values	4	525.75
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	8.073	5.547	4.700	7.189	5.218	4.114	2.033	3.612
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.045	.136	.195	.066	.156	.249	.565	.307

a. Kruskal Wallis Test

b. Grouping Variable: ctgryprsnlethc

Table 7-39 trldr

Duncan[a,,b]

ctgryprsnlethc	N	Subset for alpha = 0.05
		1
Low personal ethical values	241	3.7177
Moderate personal ethical values	213	3.7838
High personal ethical values	479	3.9310
Very high personal ethical values	4	4.0752
Sig.		.388

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 15.330.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 7-40 Ranks

	ctgrywrkethc	N	Mean Rank
trldr	Low work ethical values	325	459.24
	Moderate work ethical values	164	468.47
	High work ethical values	183	476.20
	Very high work ethical values	265	476.33
	Total	937	
trsp	Low work ethical values	325	472.59
	Moderate work ethical values	164	448.73
	High work ethical values	183	491.40
	Very high work ethical values	265	461.67
	Total	937	
trcsmk	Low work ethical values	325	473.26
	Moderate work ethical values	164	445.07
	High work ethical values	183	498.27
	Very high work ethical values	265	458.37
	Total	937	
trinfo	Low work ethical values	325	451.13
	Moderate work ethical values	164	449.25
	High work ethical values	183	508.02

	Very high work ethical values	265	476.19
	Total	937	
trhr	Low work ethical values	325	454.47
	Moderate work ethical values	164	483.95
	High work ethical values	183	483.63
	Very high work ethical values	265	467.46
	Total	937	
trpm	Low work ethical values	325	455.46
	Moderate work ethical values	164	456.10
	High work ethical values	183	494.64
	Very high work ethical values	265	475.88
	Total	937	
trci	Low work ethical values	325	459.30
	Moderate work ethical values	164	454.48
	High work ethical values	183	494.55
	Very high work ethical values	265	472.25
	Total	937	
trbr	Low work ethical values	325	454.29
	Moderate work ethical values	164	469.57
	High work ethical values	183	494.08
	Very high work ethical values	265	469.37
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	.752	2.433	3.919	6.302	1.983	3.006	2.576	2.548
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.861	.488	.270	.098	.576	.391	.462	.467

a. Kruskal Wallis Test

b. Grouping Variable: ctgrywrkethc

Appendix-1

Dear Esteemed User;

As part of a PhD research to design a model for Total Quality Management (TQM) in the Oil Sector in Kuwait, a survey is done and uploaded On-Line to be filled by your kind self.

Your participation is valuable as it will help improving the quality of work concepts and practices in the company.

The online survey takes approximately less than 5 minutes to complete.

To complete the survey, please follow this link:
http://..... "Pls. paste the link of the survey HERE".

Thank you for your kind contribution!
Best regards;

===========================

عزيزي الموظف المحترم،

كجزء من بحث لرسالة الدكتوراه لتصميم نموذج لنظام الجودة الكاملة في القطاع النفطي في الكويت تم تحميل استبيان على الشبكة ليتم ملاه من قبل شخصك الكريم.
مشاركتك قيمة جدا في هذا الاستبيان حيث انها ستساعد على تحسين جودة مفاهيم وممارسات العمل في الشركة.

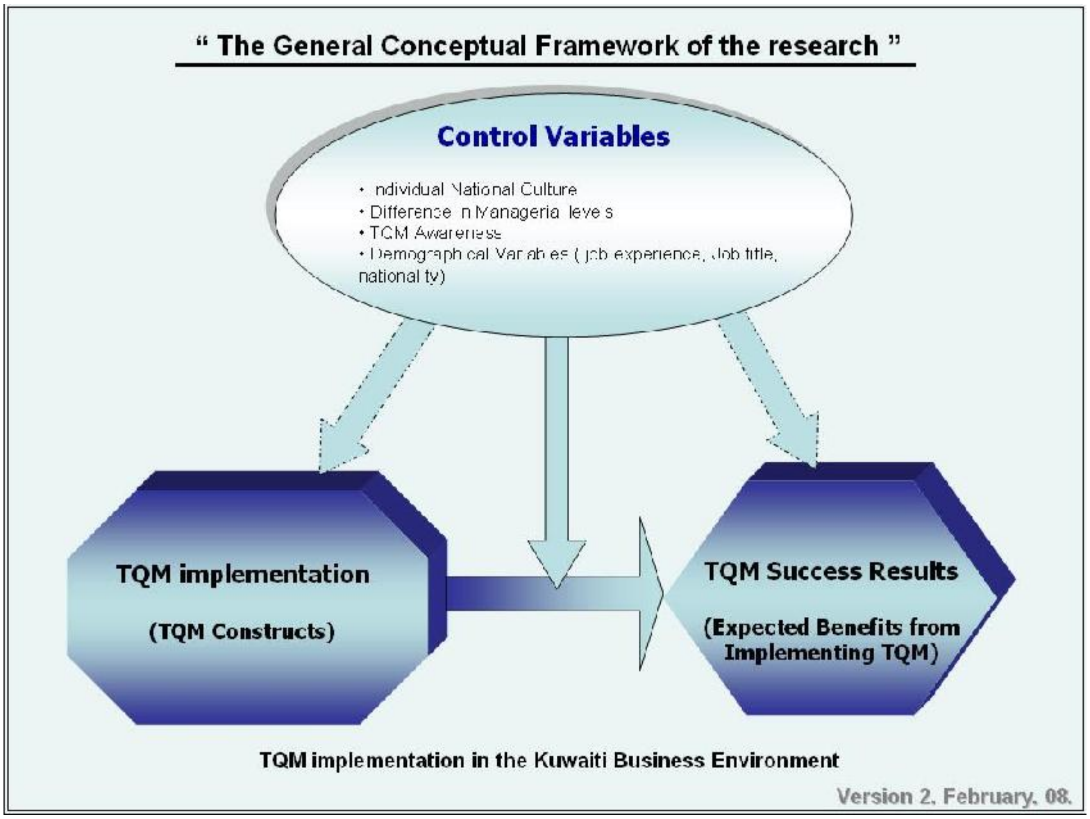
تعبئة الاستبيان ستستغرق أقل من خمس دقائق.

الرجاء النقر على الرابط التالي للدخول الى صفحة الاستبيان:

http://..... "Pls. paste the link of the survey HERE".

نشكر لك حسن مشاركتك!
مع أفضل التحيات..

TQM survey of the below research framework



بسم الله الرحمن الرحيم

هذه القائمة تحتوي على المفاهيم والقيم التقليدية المتعلقة بطرق ونهج نظام إدارة الجودة الكاملة المتعلقة بالأنشطة والأعمال في مكان العمل أو الموقع أو المصنع الذي تشرف عليه.

الرجاء الإجابة عن الأسئلة الموجودة بالقائمة تبعاً للأبعاد الأساسية التالية:

- ***الوعي بالأبعاد الأساسية ومفاهيم نظام إدارة الجودة الكاملة.***

- ***أسس نظام الجودة الكاملة:***
  1. ***القيادة.***
  2. ***التخطيط الاستراتيجي.***
  3. ***التركيز على الزبون والسوق.***
  4. ***التركيز على الموارد البشرية.***
  5. ***إدارة العمليات.***
  6. ***نتائج العمل.***
  7. ***التطوير المستمر.***

- ***قيم الحضارة المحلية:***
  1. ***تفاوت السلطة.***
  2. ***تجنب الشك.***
  3. ***الجماعية.***
  4. ***توجيه أداء الجودة.***
  5. ***أخلاقيات الجودة.***

الرجاء قراءة كل بند في القائمة في الصفحات التالية و وضع علامة (✓) مقابل المقياس المناسب للعبارة.

وشكرا جزيلا...

📝ملاحظة: كلمة "زبون" تعني كلٍ من الزبون الداخلي "الموظفين" و الزبون الخارجي.

الجزء الأول: المتغيرات الديموجرافية

1. اسم الشركة:

☐ شركة نفط الكويت "KOC" ☐ شركة البترول الوطنية "KNPC" ☐ شركة صناعة البتروكيماويات "PIC"

2. اسم المجموعة "الإدارة" ________________________________

3. المسمى الوظيفي ____________________________________

4. تندرج الدرجة الوظيفية في:

☐ 18 إلى 19 ☐ 16 إلى 17 ☐ 14 إلى 15

5. الخبرة الوظيفية:

☐ أقل من 5 سنوات ☐ من 5-10سنوات ☐ من 11 إلى 15سنة ☐ أكثر من 15سنة

6. الجنسية:

☐ كويتي ☐ عربي ☐ غربي (أوروبي –امريكي) ☐ آسيوي (هندي،باكستاني)

☐ غيره......

الجزء الثاني: الوعي بأسس ومبادئ نظام إدارة الجودة الكاملة

بمقياس من 1 إلى 5، الرجاء تحديد مستوى الإدراك والوعي بعناصر إدارة الجودة الكاملة الأساسية ومبادئها:

المبادئ والعناصر الأساسية	مستوى الإدراك والوعي					
	دراية منخفضة جداً (1)	دراية ضعيفة (2)	دراية متوسطة (3)	على دراية جيدة (4)	على دراية تامة (5)	لا ينطبق (NA)
1. القيادة والتخطيط طويل الأمد						
2. إدارة العمليات (التصميم، الإنتاج، التصنيع)						
3. التطوير المستمر (التعليم، التدريب)						
4. المشاركة في اتخاذ القرار (العمل الجماعي، حل المشاكل)						
5. إرضاء الزبون						

الجزء الثالث: مستوى تطبيق إدارة الجودة الكاملة (الأسس)

بمقياس من 1 إلى 5، الرجاء تحديد مدي تطبيق كل بند من بنود الجودة ومفاهيمها في شركتكم

مفاهيم الجودة وممارساتها	مستوى التطبيق					
	نادر التطبيق (1)	قليل التطبيق (2)	متوسط التطبيق (3)	ينطبق بكثرة (4)	ينطبق بشكل كلي ودائم (5)	لا ينطبق (NA)
1. **القيادة**						
1.1 المسئولين التنفيذيين بالشركة دائما يؤكدون أهمية الزبون.						
2.1 المسئولين التنفيذيين بالشركة يأخذون جودة الخدمة والمنتج بجدية.						
3.1 المسئولين التنفيذيين بالشركة يهيئون استراتيجيات العمل طبقاً لاتجاه سوق العمل						
4.1 تطبق الشركة دوماً مبادئ و ممارسات العمل الأخلاقية.						
5.1 تشارك الشركة بحماس في توفير الخدمات للمجتمع (تطبيق سياسة التكويت، الأنشطة الاجتماعية)						
6.1 المسئولين التنفيذيين بالشركة يأخذون آراء الموظفين بجدية واهتمام.						
2. **التخطيط الاستراتيجي**						
1.2 الشركة تأخذ بعين الاعتبار عوامل كثيرة كتوجهات سوق العمل والبيئة التنافسية عندما تعرف أهدافها الإستراتيجية الواضحة.						
2.2 الشركة تطور خطط قصيرة وطويلة الأمد ذات طابع واقعي						
3.2 كل موظف بالشركة على دراية واضحة بأهداف وخطط الشركة الإستراتيجية.						
4.2 كل موظف بالشركة يدعم هذه الأهداف والخطط.						
5.2 قدرة المقاول على استيفاء مقاييس الجودة فيما يقدمه عامل مهم في عملية اختيار المقاول.						
6.2 قرار اختيار رأس مال المشروع له علاقة مباشرة بهدف الشركة الاستراتيجي.						

مفاهيم الجودة وممارساتها	مستوى التطبيق					
	نادر التطبيق (1)	قليل التطبيق (2)	متوسط التطبيق (3)	ينطبق بكثرة (4)	ينطبق بشكل كلي ودائم (5)	لا ينطبق (NA)
3. **التركيز على سوق العمل والزبون**						
1.3 الشركة تفهم جيداً زبائنها وقطاعات سوق العمل.						
2.3 الشركة تأخذ بجدية اقتراحات زبائنها.						
3.3 الشركة تراقب عن قرب تحركات الشركات المنافسة لها.						
4.3 الشركة على دراية تامة بتوجهات سوق العمل.						
5.3 الشركة تخطط خدماتها ومنتجاتها تبعاً لاحتياجات الزبون.						
4. **المعلومات والتحليل**						
1.4 لدى الشركة نظام فعال لتقييم أداء عملها.						
2.4 لدى الشركة نظام تقييم واضح لجميع موظفيها طبقاً لطبيعة العمل الداخلية والخارجية.						
3.4 جميع الموظفين يفهمون جيدا مؤشرات ومقاييس أدائهم للعمل ويتعاملون معها بجدية.						
4.4 المسئولين التنفيذيين بالشركة يقومون بتحليل المعلومات اللازمة عند إجراء تعديلات على سياسة وإستراتيجية الشركة.						
5. **التركيز على الموارد البشرية**						
1.5 الشركة تشرك موظفيها في عمليات اتخاذ القرار.						
2.5 الشركة تقدّر جهود الموظفين وتكافئهم طبقاً لجهودهم المبذولة.						
3.5 الشركة تؤكد على أهمية العمل الجماعي.						
4.5 إدارة الشركة تشجع موظفيها وتطور دوماً طاقاتهم.						
5.5 الشركة توفر برامج التدريب لموظفيها لتحسين كفاءاتهم (برامج تدريب عن الجودة، التعامل مع الزبون....)						
6.5 الشركة توفر بيئة عمل صحية وآمنة.						

مفاهيم الجودة وممارساتها	مستوى التطبيق					
	نادر التطبيق (1)	قليل التطبيق (5)	متوسط التطبيق (3)	ينطبق بكثرة (4)	ينطبق بشكل كلي ودائم (5)	لا ينطبق (NA)
6. **إدارة العمليات**						
1.6 الشركة تأخذ بعين الاعتبار عوامل عدة عند تخطيط عمليات العمل.						
2.6 الشركة تجري اختبارات مكثفة للتأكد من الجودة قبل تطبيق أي عملية جديدة.						
3.6 لدى الشركة مقاييس وأدوات إدارة مناسبة للتحكم بالعمليات وتطويرها.						
4.6 الشركة تحسن عملياتها باستمرار من خلال مقاييس وأدوات الإدارة المناسبة.						
5.6 الشركة تقدم أداء أفضل لعملياتها من خلال مشاركة الخبراء فيها.						
6.6 الشركة تتعاون عن قرب مع مقاوليها.						
7. **التحسين المستمر**						
1.7 جميع موظفي الشركة يعلمون أن تحسين جودة العمل هي مسئولية كل فرد في الشركة.						
2.7 موظفوك مؤيدون للتحسين والتطوير المستمر للعمل.						
3.7 القيادة بالشركة تشجع التطوير المستمر للعمل.						
4.7 التطوير المستمر للجودة ينال أهمية في جميع العمليات المطبقة شتى أنحاء الشركة.						
5.7 تطوير الجودة هو مسؤولية جماعية.						
8. **نتائج العمل**						
1.8 الزبون راضي عن خدماتنا/منتجاتنا.						
2.8 أداء الشركة المالي مقبول.						
3.8 جميع مكافآت الشركة جيدة جداً.						
4.8 الموظفون راضين عن دوائر عملهم.						
5.8 عمل الشركة يزدهر بانتظام.						
6.8 جودة منتجات الشركة تتحسن بانتظام.						
7.8 إنتاجية الشركة تزداد بانتظام.						
8.8 تقييم الزبائن لأداء الشركة في تحسن دائم.						

الجزء الرابع: قيم الحضارة المحلية

بمقياس من 1 إلى 5،، الرجاء تحديد إلى أي مدى توافق على أهمية القيم/الممارسات التالية في تحسين أداء العمل في الشركة.

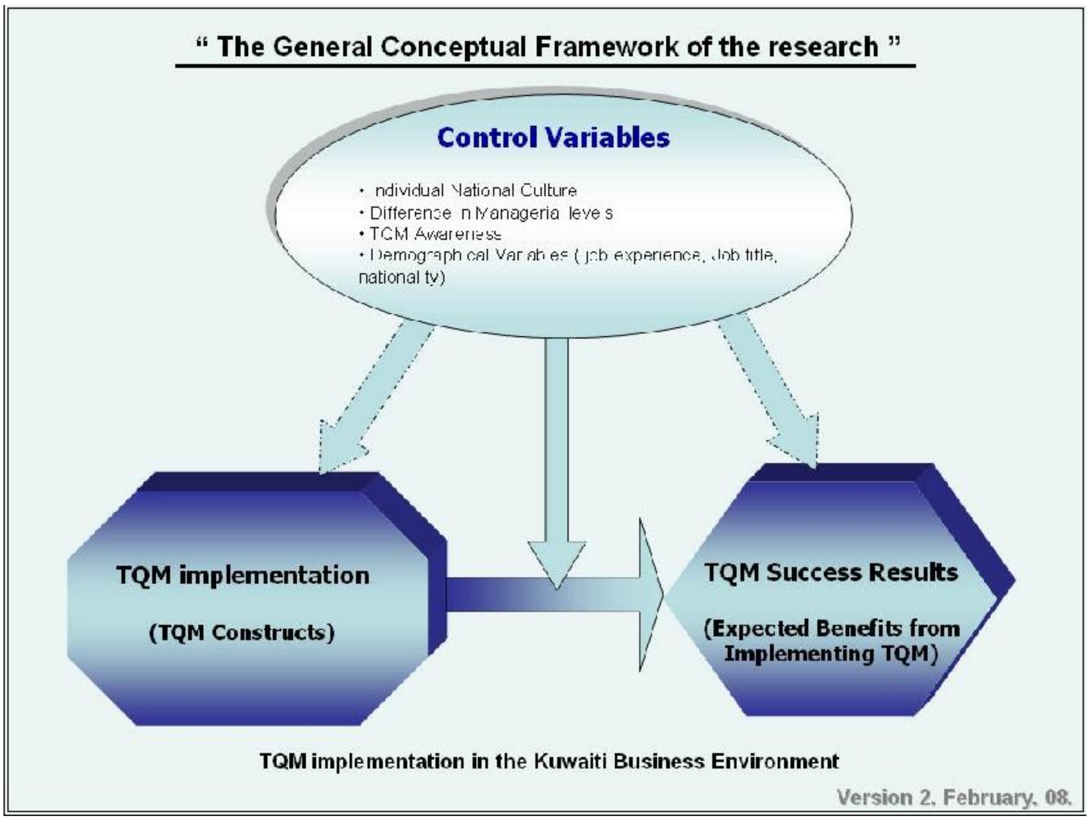
القيم / الممارسات	مدى الموافقة والتأييد					
	موافق بتحفظ (1)	موافق لحد ما (2)	موافق (3)	موافق بشدة (4)	موافق تماما (5)	لا ينطبق (NA)
4.1 تفاوت السلطة						
1. يجب على المسئول اتخاذ معظم قراراتهم دون استشارة موظفيه.						
2. يجب على المسئول تجنب أي تعامل اجتماعي مع موظفيه.						
3. يجب على المسئول أن لا يوكل الأعمال المهمة إلى موظفيه.						
4.2 **تجنب المجهول**						
1. الحصول على توجيهات مفصلة للعمل يساعد على معرفة العمل المتوقع انجازه.						
2. إتباع التوجيهات والإجراءات بدقة أمر مهم.						
3.القوانين وقواعد العمل مفيدة في العمل.						
4. إجراءات العمل القياسية (الموحدة) نافعة في العمل.						
4.3 **الجماعية**						
1. يجب على الأفراد الوقوف مع مجموعتهم وقت الحاجة.						
2. منفعة المجموعة أهم بكثير من المنفعة الشخصية.						
3. يجب الالتزام بالإخلاص للمجموعة حتى لو كانت على حساب الأهداف الشخصية.						
4.4 **أداء الجودة**						
1. شركتنا تشجع وتكافئ الإبداع.						
2. شركتنا تحافظ على مقاييس عالية للجودة في العمل وتشجع عليها.						
3. شركتنا تشجع وتكافئ التفوق في العمل.						

4. شركتنا تشجع وتحافظ على التطوير المستمر للعمل.						

القيم / الممارسات	مدى الموافقة والتأييد					
	موافق بتحفظ (1)	موافق لحد ما (2)	موافق (3)	موافق بشدة (4)	موافق تماما (5)	لا ينطبق (NA)
5.4 الأخلاقيات في الجودة						
1. التأكد دوما من أن عملي لا يتعارض مع مبادئي الدينية والأخلاقية.						
2.الاجتهاد بالعمل و الإخلاص لشركتك بنية صالحة يشعرك بالرضا.						
3. النظر لمصلحة المؤسسة بالدرجة الأولى والاجتهاد والإخلاص لها إحدى القيم التي تؤمن بها.						
4. تحرص دوما عند أدائك عملاً أن تؤديه بإتقان وإحسان.						
5. عند إنجازك لعمل ما تشعر بأن المحفزات المعنوية وتوطيد علاقتك الروحانية مع الله أهم وتشكل دافع أقوى من محفزات العمل المادية.						
6. الحفاظ على خصوصية العمل وسرية أمر مهم.						
7. امتلاك الكفاءة الأخلاقية تساعد في حل الخلافات.						
8. التفاهم الأخلاقي مهم في التعرف على النزاعات وحلها.						

9. اتخاذ قرار عمل ذو سمة أخلاقية مرتكز على التزام الموظف بالقواعد الأخلاقية العامة للشركة.						
10. توفير الاهتمام لتصرفات الموظفين الأخلاقية تحسن أداء وانجاز الأعمال.						

TQM survey of the below research framework



In the Name of God the Compassionate the Merciful

This list consists of a collection of conventional concepts and values regarding methods of total quality management (TQM) which is supposed to be related to the activities being carried out in the plant/site/workplace that you supervise.

Please answer the questions contained in the list according to the following basic dimensions:

- ***Awareness of TQM basic elements and concepts***

- ***TQM constructs***
  1. ***Leadership.***
  2. ***Strategic Planning.***
  3. ***Customer and market focus.***
  4. ***Information and analysis.***
  5. ***Human resource focus.***
  6. ***Process management.***
  7. ***Business results.***
  8. ***Continuous Improvement.***

- ***National Culture values***
  1. ***Power distance.***
  2. ***Uncertainty avoidance.***
  3. ***Collectivism.***
  4. ***Quality performance Orientation.***
  5. ***Quality Ethics.***

You are kindly requested to read each item of list in the following pages and mark (✓) against the grade which conforms with the expression.

Thank you.

** **Note**: By "customer" we mean either external or internal customer.

Part 1: Demographical Variables

1. Company Name:

☐*KOC* ☐*KNPC* ☐ *PIC*

2. Group Name: _______________________________

3. Job title: _________________________________

4. Grade range:

☐ *Grade 19 to 18* ☐ *Grade 17 to 16.* ☐ *Grade 15 to 14.*

5. Job Experience

☐ *Less than 5 years* ☐ *5 to 10 years.* ☐ *11 to 15 years* ☐*More than 15 years*

6. Nationality

☐*Kuwaiti* ☐*Arabs* ☐ *Western (European & U.S.)* ☐*Asians (Indians, Pakistani, etc)* ☐*Others*

Part 2: Awareness of TQM Basic elements and Principles

On a scale from 1 to 5, please indicate the level of familiarity and knowledge with the following TQM basic elements and principles:

Basic elements & Principles	Level of Familiarity					
	Very low familiar or Very little knowledge (1)	Low familiar "Little knowledge (2)	Average Level of familiarity "Fair knowledge (3)	Very familiar "Good knowledge" (4)	Fully familiar "Very good Knowledge" (5)	Not Applicable (NA)
1. Leadership and Long-term planning						
2. Process Management (Design, Product, Manufacture…)						
3. Continuous Improvement (learning,training)						
4. Decision making involvement (teamwork, problem solving)						
5. Customer Satisfaction						

Part 3: TQM level of implementation (TQM Constructs)

On a scale from 1 to 5, please indicate the level of implementation of each of the following quality practices and concepts in your company.

Quality Practices and concepts	Level of implementation					
	Rarely implemented (1)	Slightly implemented (2)	Average implemented (3)	Frequently implemented (4)	Fully implemented (5)	Not Applicable (NA)
1. Leadership						
1.1 Senior executives always emphasize the importance of customer orientation.						
1.2 Senior executives take product and service quality seriously.						
1.3 Senior executives adapt their business strategies to market trends.						
1.4 The company always uses ethical business practices.						
1.5 The company participates enthusiastically in social and community services (Kuwaitization policy)						
1.6 Senior executives take employees feedback and surveys seriously.						
2. Strategic planning						
2.1 The company considered various factors such as market trends and competitive environment, when it defines its clear strategic objectives.						
2.2 The company develops realistic short-term and long-term plans and corresponding actions.						
2.3 Every employee in the organization is clear about the strategic objective and its action plans.						
2.4 Every employee in the organization supports the strategic objective and action plans.						
2.5 The suppliers' capability to meet company's quality requirements is essential in suppliers selection process						
2.6.Capital project selection decision has direct link with the strategic intent of the company.						

Quality Practices and concepts	Level of implementation					
	Rarely implemented **(1)**	**Slightly** implemented **(2)**	**Average** implemented **(3)**	**Frequently** implemented **(4)**	**Fully** implemented **(5)**	**Not Applicable (NA)**
3. Customer and market focus						
3.1 The company understands its customers, and market segments well.						
3.2 The company takes its customers' suggestions seriously.						
3.3 The company closely monitors its competitor's actions						
3.4 The company is fully aware of market trends.						
3.5 The company designs products and services using customer-focused approach.						
4. Information and analysis						
4.1 The company has an effective system to asses its business performance.						
4.2 The company has a clear appraisal system for every one that is *according to the internal and external business environment*.						
4.3 All employees understand their performance indicators well and take them seriously.						
4.4 Senior executives adjust policy and strategy by analyzing information.						
5. Human resource focus						
5.1 The company involves its employees in decision making.						
5.2 The company recognizes employees' efforts *and rewards accordingly.*						
5.3 The company stresses teamwork						
5.4 The management motivates employees and fully develops their potential.						
5.5 The company provides training for employees to improve their competency (quality, customer...)						
5.6 The company provides a safe and healthy work environment.						

Quality Practices and concepts	Level of implementation					
	Rarely implemented (1)	Slightly implemented (2)	Average implemented (3)	Frequently implemented (4)	Fully implemented (5)	Not Applica ble (NA)
6. Process Management						
6.1 The company considers various factors when designing business processes.						
6.2 The company conducts comprehensive tests to assure its quality, before applying a new production or delivery process.						
6.3 The company has appropriate management measures to control and improve the production or delivery processes.						
6.4 The company continuously improves its process through appropriate management measures.						
6.5 The company shares its business processes with experts to achieve better performance.						
6.6 The company closely cooperates with its suppliers.						
7. Continous Improvement						
7.1 All company employees believe that quality improvement is their individual responsibility.						
7.2 Your employees are aware of(in support for) continuous improvement to the business.						
7.3 The leadership in my organization encourages continuous improvement.						
7.4 Continuous quality improvement gains importance in all commissioned operations everywhere in the company.						
7.5 Quality improvement is a team's responsibility.						
8. Business results						
8.1 Customers satisfied with our products and/or services.						
8.2 The company's financial performance is acceptable.						
8.3 Company's overall benefits are quite good.						
8.4 Employees are satisfied with the department for which they work.						
8.5 The company's business has been growing steadily.						
8.6 Company's product quality has been improving steadily.						
8.7 Company's productivity has been rising steadily.						
8.8 Customer evaluation of company's performance has been improving.						

Part 4: National Culture Values

On a scale from 1 to 5, please specify to what extent do you prefer/ believe that the following values/practices will enhance performance in your company.

Values / Practices	Preference degree					
	Agree in a low degree (1)	Agree to some extent (2)	Agree to Medium degree (3)	Agree to great extend (4)	Fully Agree (5)	Not Applicable (NA)
4.1 Power Distance Values						
1. Supervisors should make most decisions without consulting subordinates.						
2. Supervisors should avoid social interaction with subordinates.						
3. Supervisors should not delegate important tasks to subordinates.						
4.2 Uncertainty Avoidance Values						
1. Having *detailed* instructions helps to know what is expected to do.						
2. following instructions and procedures closely is important.						
3. Rules and regulations are helpful.						
4. Standardized work procedures are helpful.						
4.3 Collectivism Values						
1. Individuals should stick with the group even through difficulties.						
2. Group well-being is more important than individual rewards.						
3. Group loyalty should be encouraged even if individual goals suffer.						
4.4 Quality Performance Orientation						
1. Our company encourages and rewards innovation.						
2. Our company encourages and maintains high quality standards.						
3. Our company encourages and rewards excellence.						
4. Our company encourages and maintains continuous improvement (or performance).						

Values / Practices	Preference degree					
	Agree in a low degree (1)	Agree to some extent (2)	Agree to Medium degree (3)	Agree to great extend (4)	Fully Agree (5)	Not Applicable (NA)
4.5 Quality Ethical Values						
1. Ensuring always that my work practices are according to religious and ethical standards.						
2. Working hard and serious will lead me to self recognition.						
3. Achieving the benefits to my organizations is part of my moral culture.						
4. Being punctual at work is one of my moral principles.						
5. My work practices are derived by the intention to be rewarded by God in addition to social rewards.						
6. Protecting privacy and confidentiality is crucial.						
7. Having ethical competency helps me in solving conflicts.						
8. Ethical understanding is needed to identify conflicts and solve them.						
9. Ethical decision-making is stemmed on employees' Commitment to common ethical standard of the company.						
10. Fostering attention to individual ethical behavior enhances performance in the company.						

Total numbers of employees in the whole company in each category	KOC	KNPC	PIC	Total of total
TOP: Grade(19-18)	281	173	23	477
MIDDLE: Grade (17-16)	927	403	73	1403
LOW: Grade (15-14)	1336	877	132	2345
total	**2544**	**1453**	**228**	**4225**
Number of questionnaires collected	581	248	108	937

Response rate	Percentage (%)
KOC	22.9%
KNPC	17.1%
PIC	47.4%
Total	22.2%

Appendix-2

Quantitative Analysis (Questionnaires)

```
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  /FORMAT BLANK(0.5)
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  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
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Factor Analysis

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[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Correlation Matrix[a]

		TQMFmlrtyq1	TQMFmlrtyq3	TQMFmlrtyq4
Correlation	TQMFmlrtyq1	1.000	.644	.643
	TQMFmlrtyq3	.644	1.000	.674
	TQMFmlrtyq4	.643	.674	1.000
	TQMFmlrtyq2	.601	.471	.477
	TQMFmlrtyq5	.541	.570	.600

a. Determinant = .096

Correlation Matrix[a]

		TQMFmlrtyq2	TQMFmlrtyq5
Correlation	TQMFmlrtyq1	.601	.541
	TQMFmlrtyq3	.471	.570
	TQMFmlrtyq4	.477	.600
	TQMFmlrtyq2	1.000	.464
	TQMFmlrtyq5	.464	1.000

a. Determinant = .096

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.855
Bartlett's Test of Sphericity	Approx. Chi-Square	2187.875
	df	10
	Sig.	.000

Communalities

	Initial	Extraction
TQMFmlrtyq1	1.000	.725

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
TQMFmlrtyq3	1.000	.698
TQMFmlrtyq4	1.000	.714
TQMFmlrtyq2	1.000	.535
TQMFmlrtyq5	1.000	.610

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.283	65.655	
2	.607	12.143	77.798
3	.470	9.395	87.193
4	.324	6.477	93.670
5	.316	6.330	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	65.655	3.283	65.655	65.655

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
TQMFmlrtyq1	.851
TQMFmlrtyq3	.836
TQMFmlrtyq4	.845
TQMFmlrtyq2	.732
TQMFmlrtyq5	.781

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
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  /MISSING LISTWISE
  /ANALYSIS TQMfm1 TQMfm3 TQMfm4 TQMfm5
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  /FORMAT BLANK(0.5)
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/METHOD=CORRELATION.
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Factor Analysis

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[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Correlation Matrix[a]

		TQMFmlrtyq1	TQMFmlrtyq3	TQMFmlrtyq4	TQMFmlrtyq5
Correlation	TQMFmlrtyq1	1.000	.644	.643	.541
	TQMFmlrtyq3	.644	1.000	.674	.570
	TQMFmlrtyq4	.643	.674	1.000	.600
	TQMFmlrtyq5	.541	.570	.600	1.000

a. Determinant = .158

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.826
Bartlett's Test of Sphericity	Approx. Chi-Square	1722.752
	df	6
	Sig.	.000

Communalities

	Initial	Extraction
TQMFmlrtyq1	1.000	.706
TQMFmlrtyq3	1.000	.740
TQMFmlrtyq4	1.000	.756
TQMFmlrtyq5	1.000	.636

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.839	70.965	
2	.477	11.925	82.890
3	.361	9.035	91.926
4	.323	8.074	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	70.965	2.839	70.965	70.965

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
TQMFmlrtyq1	.840
TQMFmlrtyq3	.860
TQMFmlrtyq4	.870
TQMFmlrtyq5	.798

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
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  /EXTRACTION PC
  /CRITERIA ITERATE(25)
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  /METHOD=CORRELATION.
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Factor Analysis

```
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```

Correlation Matrix[a]

		TQMFmlrtyq1	TQMFmlrtyq3	TQMFmlrtyq4
Correlation	TQMFmlrtyq1	1.000	.644	.643
	TQMFmlrtyq3	.644	1.000	.674
	TQMFmlrtyq4	.643	.674	1.000

a. Determinant = .276

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.731
Bartlett's Test of Sphericity	Approx. Chi-Square	1203.709
	df	3
	Sig.	.000

Communalities

	Initial	Extraction
TQMFmlrtyq1	1.000	.753
TQMFmlrtyq3	1.000	.777
TQMFmlrtyq4	1.000	.777

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.307	76.917	
2	.367	12.225	89.142
3	.326	10.858	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	76.917	2.307	76.917	76.917

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
TQMFmlrtyq1	.868
TQMFmlrtyq3	.882
TQMFmlrtyq4	.882

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
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Factor Analysis

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Correlation Matrix[a]

		NCPwrdstnc1	NCPwrdstnc2	NCPwrdstnc3
Correlation	NCPwrdstnc1	1.000	.631	.562
	NCPwrdstnc2	.631	1.000	.689
	NCPwrdstnc3	.562	.689	1.000

a. Determinant = .300

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.709
Bartlett's Test of Sphericity	Approx. Chi-Square	1123.221
	df	3
	Sig.	.000

Communalities

	Initial	Extraction
NCPwrdstnc1	1.000	.702
NCPwrdstnc2	1.000	.803
NCPwrdstnc3	1.000	.751

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.255	75.181	
2	.446	14.854	90.034
3	.299	9.966	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	75.181	2.255	75.181	75.181

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
NCPwrdstnc1	.838

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Component Matrix[a]

	Component
	1
NCPwrdstnc2	.896
NCPwrdstnc3	.866

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
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Factor Analysis

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Correlation Matrix[a]

		NCUncrtnty1	NCUncrtnty2	NCUncrtnty3	NCUncrtnty4
Correlation	NCUncrtnty1	1.000	.740	.577	.554
	NCUncrtnty2	.740	1.000	.727	.667
	NCUncrtnty3	.577	.727	1.000	.736
	NCUncrtnty4	.554	.667	.736	1.000

a. Determinant = .088

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.790
Bartlett's Test of Sphericity	Approx. Chi-Square	2264.335
	df	6
	Sig.	.000

Communalities

	Initial	Extraction
NCUncrtnty1	1.000	.679

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
NCUncrtnty2	1.000	.823
NCUncrtnty3	1.000	.774
NCUncrtnty4	1.000	.727

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.004	75.107	
2	.511	12.774	87.881
3	.275	6.887	94.768
4	.209	5.232	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	75.107	3.004	75.107	75.107

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
NCUncrtnty1	.824
NCUncrtnty2	.907
NCUncrtnty3	.880
NCUncrtnty4	.853

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
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Factor Analysis

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Correlation Matrix[a]

		NCUncrtnty2	NCUncrtnty3	NCUncrtnty4
Correlation	NCUncrtnty2	1.000	.727	.667
	NCUncrtnty3	.727	1.000	.736
	NCUncrtnty4	.667	.736	1.000

a. Determinant = .199

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.737
Bartlett's Test of Sphericity	Approx. Chi-Square	1510.069
	df	3
	Sig.	.000

Communalities

	Initial	Extraction
NCUncrtnty2	1.000	.787
NCUncrtnty3	1.000	.839
NCUncrtnty4	1.000	.794

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.420	80.681	
2	.334	11.124	91.804
3	.246	8.196	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	80.681	2.420	80.681	80.681

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
NCUncrtnty2	.887
NCUncrtnty3	.916
NCUncrtnty4	.891

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

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Factor Analysis

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Correlation Matrix[a]

		NCCollctvsm1	NCCollctvsm2	NCCollctvsm3
Correlation	NCCollctvsm1	1.000	.646	.575
	NCCollctvsm2	.646	1.000	.712
	NCCollctvsm3	.575	.712	1.000

a. Determinant = .274

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.710
Bartlett's Test of Sphericity	Approx. Chi-Square	1208.117
	df	3
	Sig.	.000

Communalities

	Initial	Extraction
NCCollctvsm1	1.000	.709
NCCollctvsm2	1.000	.817
NCCollctvsm3	1.000	.764

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.290	76.337	
2	.434	14.451	90.788
3	.276	9.212	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	76.337	2.290	76.337	76.337

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
NCCollctvsm1	.842
NCCollctvsm2	.904
NCCollctvsm3	.874

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
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  /ROTATION VARIMAX
  /METHOD=CORRELATION.
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Factor Analysis

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Correlation Matrix[a]

		NCQPerfm1	NCQPerfm2	NCQPerfm3	NCQPerfm4
Correlation	NCQPerfm1	1.000	.705	.814	.677
	NCQPerfm2	.705	1.000	.705	.791
	NCQPerfm3	.814	.705	1.000	.754
	NCQPerfm4	.677	.791	.754	1.000

a. Determinant = .045

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.795
Bartlett's Test of Sphericity	Approx. Chi-Square	2887.829
	df	6
	Sig.	.000

Communalities

	Initial	Extraction
NCQPerfm1	1.000	.792
NCQPerfm2	1.000	.793
NCQPerfm3	1.000	.833
NCQPerfm4	1.000	.805

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.223	80.582	
2	.386	9.650	90.232
3	.236	5.910	96.142
4	.154	3.858	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	80.582	3.223	80.582	80.582

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
NCQPerfm1	.890
NCQPerfm2	.891
NCQPerfm3	.913
NCQPerfm4	.897

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
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  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
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Factor Analysis

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Correlation Matrix[a]

		NCQPerfm2	NCQPerfm3	NCQPerfm4
Correlation	NCQPerfm2	1.000	.705	.791
	NCQPerfm3	.705	1.000	.754
	NCQPerfm4	.791	.754	1.000

a. Determinant = .150

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.742
Bartlett's Test of Sphericity	Approx. Chi-Square	1773.837
	df	3
	Sig.	.000

Communalities

	Initial	Extraction
NCQPerfm2	1.000	.831
NCQPerfm3	1.000	.803
NCQPerfm4	1.000	.866

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.501	83.351	
2	.300	9.985	93.336
3	.200	6.664	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	83.351	2.501	83.351	83.351

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
NCQPerfm2	.912
NCQPerfm3	.896
NCQPerfm4	.931

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
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hic457 qethic458 qethic459 qethic4510
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  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Correlation Matrix[a]

		NCQEthcs1	NCQEthcs2	NCQEthcs3	NCQEthcs4	NCQEthcs5
Correlation	NCQEthcs1	1.000	.453	.322	.290	.157
	NCQEthcs2	.453	1.000	.590	.457	.395
	NCQEthcs3	.322	.590	1.000	.608	.453
	NCQEthcs4	.290	.457	.608	1.000	.575
	NCQEthcs5	.157	.395	.453	.575	1.000
	NCQEthcs6	.086	.201	.270	.319	.291
	NCQEthcs7	.212	.252	.259	.278	.201
	NCQEthcs8	.259	.250	.263	.206	.152
	NCQEthcs9	.191	.216	.204	.186	.137
	NCQEthcs10	.160	.095	.087	.105	.093

a. Determinant = .030

Correlation Matrix[a]

		NCQEthcs6	NCQEthcs7	NCQEthcs8	NCQEthcs9	NCQEthcs10
Correlation	NCQEthcs1	.086	.212	.259	.191	.160
	NCQEthcs2	.201	.252	.250	.216	.095
	NCQEthcs3	.270	.259	.263	.204	.087
	NCQEthcs4	.319	.278	.206	.186	.105
	NCQEthcs5	.291	.201	.152	.137	.093
	NCQEthcs6	1.000	.477	.445	.338	.070
	NCQEthcs7	.477	1.000	.538	.699	.167
	NCQEthcs8	.445	.538	1.000	.649	.206
	NCQEthcs9	.338	.699	.649	1.000	.178
	NCQEthcs10	.070	.167	.206	.178	1.000

a. Determinant = .030

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.782
Bartlett's Test of Sphericity	Approx. Chi-Square	3257.502
	df	45
	Sig.	.000

Communalities

	Initial	Extraction
NCQEthcs1	1.000	.647
NCQEthcs2	1.000	.648
NCQEthcs3	1.000	.683

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
NCQEthcs4	1.000	.705
NCQEthcs5	1.000	.619
NCQEthcs6	1.000	.609
NCQEthcs7	1.000	.730
NCQEthcs8	1.000	.695
NCQEthcs9	1.000	.756
NCQEthcs10	1.000	.413

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.726	37.259	
2	1.713	17.132	
3	1.066	10.660	
4	.895	8.945	73.997
5	.608	6.081	80.077
6	.531	5.308	85.386
7	.461	4.611	89.996
8	.449	4.487	94.483
9	.314	3.144	97.627
10	.237	2.373	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	37.259	3.726	37.259	37.259
2	54.391	1.713	17.132	54.391
3	65.051	1.066	10.660	65.051

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.630	26.300	26.300
2	2.555	25.549	51.848
3	1.320	13.203	65.051

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component		
	1	2	3
NCQEthcs1			.605
NCQEthcs2	.660		
NCQEthcs3	.695		
NCQEthcs4	.685		
NCQEthcs5	.578		
NCQEthcs6	.592		
NCQEthcs7	.694		
NCQEthcs8	.665		
NCQEthcs9	.642	.586	
NCQEthcs10			.562

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Rotated Component Matrix[a]

	Component		
	1	2	3
NCQEthcs1			.731
NCQEthcs2	.684		
NCQEthcs3	.791		
NCQEthcs4	.823		
NCQEthcs5	.769		
NCQEthcs6		.657	
NCQEthcs7		.830	
NCQEthcs8		.788	
NCQEthcs9		.842	
NCQEthcs10			.616

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Component Transformation Matrix

Component	1	2	3
1	.688	.657	.309
2	-.687	.726	-.014
3	-.234	-.203	.951

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
FACTOR
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hic457 qethic458 qethic459
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  /MISSING LISTWISE
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ic457 qethic458 qethic459
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  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Correlation Matrix[a]

		NCQEthcs1	NCQEthcs2	NCQEthcs3	NCQEthcs4	NCQEthcs5
Correlation	NCQEthcs1	1.000	.453	.322	.290	.157
	NCQEthcs2	.453	1.000	.590	.457	.395
	NCQEthcs3	.322	.590	1.000	.608	.453
	NCQEthcs4	.290	.457	.608	1.000	.575
	NCQEthcs5	.157	.395	.453	.575	1.000
	NCQEthcs6	.086	.201	.270	.319	.291
	NCQEthcs7	.212	.252	.259	.278	.201
	NCQEthcs8	.259	.250	.263	.206	.152
	NCQEthcs9	.191	.216	.204	.186	.137

a. Determinant = .032

Correlation Matrix[a]

		NCQEthcs6	NCQEthcs7	NCQEthcs8	NCQEthcs9
Correlation	NCQEthcs1	.086	.212	.259	.191
	NCQEthcs2	.201	.252	.250	.216
	NCQEthcs3	.270	.259	.263	.204
	NCQEthcs4	.319	.278	.206	.186
	NCQEthcs5	.291	.201	.152	.137
	NCQEthcs6	1.000	.477	.445	.338
	NCQEthcs7	.477	1.000	.538	.699
	NCQEthcs8	.445	.538	1.000	.649
	NCQEthcs9	.338	.699	.649	1.000

a. Determinant = .032

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.779

KMO and Bartlett's Test

Bartlett's Test of Sphericity	Approx. Chi-Square	3197.000
	df	36
	Sig.	.000

Communalities

	Initial	Extraction
NCQEthcs1	1.000	.770
NCQEthcs2	1.000	.693
NCQEthcs3	1.000	.682
NCQEthcs4	1.000	.724
NCQEthcs5	1.000	.693
NCQEthcs6	1.000	.616
NCQEthcs7	1.000	.733
NCQEthcs8	1.000	.703
NCQEthcs9	1.000	.772

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	3.672	40.797	
2	1.702	18.913	
3	1.012	11.244	
4	.609	6.770	77.723
5	.539	5.990	83.713
6	.463	5.143	88.857
7	.451	5.009	93.865
8	.314	3.493	97.359
9	.238	2.641	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigenvalues	Extraction Sums of Squared Loadings		
Component	Cumulative %	Total	% of Variance	Cumulative %
1	40.797	3.672	40.797	40.797
2	59.710	1.702	18.913	59.710
3	70.953	1.012	11.244	70.953

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.555	28.390	28.390
2	2.350	26.108	54.499
3	1.481	16.455	70.953

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component		
	1	2	3
NCQEthcs1			.700
NCQEthcs2	.666		
NCQEthcs3	.703		
NCQEthcs4	.691		
NCQEthcs5	.583		
NCQEthcs6	.597		
NCQEthcs7	.692	-.504	
NCQEthcs8	.659	-.507	
NCQEthcs9	.637	-.596	

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Rotated Component Matrix[a]

	Component		
	1	2	3
NCQEthcs1			.861
NCQEthcs2		.517	.640
NCQEthcs3		.707	
NCQEthcs4		.816	
NCQEthcs5		.829	
NCQEthcs6	.612		
NCQEthcs7	.835		
NCQEthcs8	.810		
NCQEthcs9	.864		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Component Transformation Matrix

Component	1	2	3
1	.659	.643	.392

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Component Transformation Matrix

Component	1	2	3
2	-.751	.589	.296
3	-.040	-.490	.871

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
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hic458 qethic459
  /MISSING LISTWISE
  /ANALYSIS qethc451 qethc452 qethic453 qethic454 qethic455 qethic457 qeth
ic458 qethic459
  /PRINT INITIAL CORRELATION DET KMO EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

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[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Correlation Matrix[a]

		NCQEthcs1	NCQEthcs2	NCQEthcs3	NCQEthcs4	NCQEthcs5
Correlation	NCQEthcs1	1.000	.453	.322	.290	.157
	NCQEthcs2	.453	1.000	.590	.457	.395
	NCQEthcs3	.322	.590	1.000	.608	.453
	NCQEthcs4	.290	.457	.608	1.000	.575
	NCQEthcs5	.157	.395	.453	.575	1.000
	NCQEthcs7	.212	.252	.259	.278	.201
	NCQEthcs8	.259	.250	.263	.206	.152
	NCQEthcs9	.191	.216	.204	.186	.137

a. Determinant = .049

Correlation Matrix[a]

		NCQEthcs7	NCQEthcs8	NCQEthcs9
Correlation	NCQEthcs1	.212	.259	.191
	NCQEthcs2	.252	.250	.216
	NCQEthcs3	.259	.263	.204
	NCQEthcs4	.278	.206	.186
	NCQEthcs5	.201	.152	.137
	NCQEthcs7	1.000	.538	.699
	NCQEthcs8	.538	1.000	.649
	NCQEthcs9	.699	.649	1.000

a. Determinant = .049

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.774
Bartlett's Test of Sphericity	Approx. Chi-Square	2810.007
	df	28
	Sig.	.000

Communalities

	Initial	Extraction
NCQEthcs1	1.000	.298
NCQEthcs2	1.000	.608
NCQEthcs3	1.000	.685
NCQEthcs4	1.000	.673
NCQEthcs5	1.000	.528
NCQEthcs7	1.000	.727
NCQEthcs8	1.000	.699
NCQEthcs9	1.000	.825

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	3.389	42.359	
2	1.654	20.671	
3	.917	11.468	74.497
4	.541	6.757	81.254
5	.464	5.802	87.056
6	.455	5.683	92.740
7	.315	3.931	96.671
8	.266	3.329	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	42.359	3.389	42.359	42.359
2	63.029	1.654	20.671	63.029

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.743	34.293	34.293
2	2.299	28.737	63.029

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
NCQEthcs1	.534	
NCQEthcs2	.707	
NCQEthcs3	.733	
NCQEthcs4	.709	
NCQEthcs5	.593	
NCQEthcs7	.657	.543
NCQEthcs8	.628	.552
NCQEthcs9	.621	.663

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
NCQEthcs1		
NCQEthcs2	.761	
NCQEthcs3	.815	
NCQEthcs4	.814	
NCQEthcs5	.726	
NCQEthcs7		.831
NCQEthcs8		.821
NCQEthcs9		.904

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	.793	.610
2	-.610	.793

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
FACTOR
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thic459
  /MISSING LISTWISE
  /ANALYSIS qethc452 qethic453 qethic454 qethic455 qethic457 qethic458 qet
hic459
  /PRINT INITIAL CORRELATION DET KMO EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
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  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Correlation Matrix[a]

		NCQEthcs2	NCQEthcs3	NCQEthcs4	NCQEthcs5	NCQEthcs7
Correlation	NCQEthcs2	1.000	.590	.457	.395	.252
	NCQEthcs3	.590	1.000	.608	.453	.259
	NCQEthcs4	.457	.608	1.000	.575	.278
	NCQEthcs5	.395	.453	.575	1.000	.201
	NCQEthcs7	.252	.259	.278	.201	1.000
	NCQEthcs8	.250	.263	.206	.152	.538
	NCQEthcs9	.216	.204	.186	.137	.699

a. Determinant = .065

Correlation Matrix[a]

		NCQEthcs8	NCQEthcs9
Correlation	NCQEthcs2	.250	.216
	NCQEthcs3	.263	.204
	NCQEthcs4	.206	.186
	NCQEthcs5	.152	.137
	NCQEthcs7	.538	.699
	NCQEthcs8	1.000	.649
	NCQEthcs9	.649	1.000

a. Determinant = .065

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.765
Bartlett's Test of Sphericity	Approx. Chi-Square	2553.560
	df	21
	Sig.	.000

Communalities

	Initial	Extraction
NCQEthcs2	1.000	.570
NCQEthcs3	1.000	.699
NCQEthcs4	1.000	.702
NCQEthcs5	1.000	.583
NCQEthcs7	1.000	.734
NCQEthcs8	1.000	.698
NCQEthcs9	1.000	.830

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.171	45.298	
2	1.646	23.519	
3	.665	9.499	78.316
4	.465	6.642	84.957
5	.458	6.543	91.500
6	.328	4.682	96.182
7	.267	3.818	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	45.298	3.171	45.298	45.298
2	68.817	1.646	23.519	68.817

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.539	36.274	36.274
2	2.278	32.543	68.817

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
NCQEthcs2	.678	
NCQEthcs3	.732	
NCQEthcs4	.714	
NCQEthcs5	.614	
NCQEthcs7	.681	.521
NCQEthcs8	.639	.538
NCQEthcs9	.646	.642

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
NCQEthcs2	.733	
NCQEthcs3	.821	
NCQEthcs4	.829	
NCQEthcs5	.762	
NCQEthcs7		.837
NCQEthcs8		.823
NCQEthcs9		.908

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	.765	.644
2	-.644	.765

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
FACTOR
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  /ANALYSIS qethic453 qethic454 qethic455 qethic457 qethic458 qethic459
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  /ROTATION VARIMAX
  /METHOD=CORRELATION.
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Factor Analysis

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Correlation Matrix[a]

		NCQEthcs3	NCQEthcs4	NCQEthcs5	NCQEthcs7
Correlation	NCQEthcs3	1.000	.608	.453	.259
	NCQEthcs4	.608	1.000	.575	.278
	NCQEthcs5	.453	.575	1.000	.201
	NCQEthcs7	.259	.278	.201	1.000
	NCQEthcs8	.263	.206	.152	.538
	NCQEthcs9	.204	.186	.137	.699

a. Determinant = .105

Correlation Matrix[a]

		NCQEthcs8	NCQEthcs9
Correlation	NCQEthcs3	.263	.204
	NCQEthcs4	.206	.186
	NCQEthcs5	.152	.137
	NCQEthcs7	.538	.699
	NCQEthcs8	1.000	.649
	NCQEthcs9	.649	1.000

a. Determinant = .105

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.726
Bartlett's Test of Sphericity	Approx. Chi-Square	2103.387
	df	15
	Sig.	.000

Communalities

	Initial	Extraction
NCQEthcs3	1.000	.668
NCQEthcs4	1.000	.773
NCQEthcs5	1.000	.659
NCQEthcs7	1.000	.736
NCQEthcs8	1.000	.699
NCQEthcs9	1.000	.830

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.814	46.901	
2	1.551	25.856	
3	.552	9.196	81.953
4	.465	7.744	89.696
5	.351	5.849	95.545
6	.267	4.455	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	46.901	2.814	46.901	46.901
2	72.757	1.551	25.856	72.757

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.264	37.739	37.739
2	2.101	35.017	72.757

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
NCQEthcs3	.661	
NCQEthcs4	.674	.564
NCQEthcs5	.577	.572
NCQEthcs7	.751	
NCQEthcs8	.704	
NCQEthcs9	.728	-.547

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
NCQEthcs3		.797
NCQEthcs4		.869
NCQEthcs5		.810
NCQEthcs7	.838	
NCQEthcs8	.826	
NCQEthcs9	.908	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	.751	.660
2	-.660	.751

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
FACTOR
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  /MISSING LISTWISE
  /ANALYSIS qethic453 qethic454 qethic457 qethic458 qethic459
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  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
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  /ROTATION VARIMAX
  /METHOD=CORRELATION.
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Factor Analysis

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Correlation Matrix[a]

		NCQEthcs3	NCQEthcs4	NCQEthcs7	NCQEthcs8	NCQEthcs9
Correlation	NCQEthcs3	1.000	.608	.259	.263	.204
	NCQEthcs4	.608	1.000	.278	.206	.186
	NCQEthcs7	.259	.278	1.000	.538	.699
	NCQEthcs8	.263	.206	.538	1.000	.649
	NCQEthcs9	.204	.186	.699	.649	1.000

a. Determinant = .161

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.682
Bartlett's Test of Sphericity	Approx. Chi-Square	1703.999
	df	10
	Sig.	.000

Communalities

	Initial	Extraction
NCQEthcs3	1.000	.800
NCQEthcs4	1.000	.807
NCQEthcs7	1.000	.738
NCQEthcs8	1.000	.697
NCQEthcs9	1.000	.833

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.589	51.788	
2	1.286	25.712	
3	.482	9.639	87.139
4	.376	7.514	94.653
5	.267	5.347	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	51.788	2.589	51.788	51.788
2	77.500	1.286	25.712	77.500

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.245	44.904	44.904
2	1.630	32.596	77.500

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
NCQEthcs3	.581	.680
NCQEthcs4	.561	.702
NCQEthcs7	.815	
NCQEthcs8	.778	
NCQEthcs9	.817	

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
NCQEthcs3		.882
NCQEthcs4		.890
NCQEthcs7	.838	
NCQEthcs8	.823	
NCQEthcs9	.910	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	.858	.514
2	-.514	.858

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
FACTOR
  /VARIABLES qethic453 qethic454 qethic457 qethic459
  /MISSING LISTWISE
  /ANALYSIS qethic453 qethic454 qethic457 qethic459
  /PRINT INITIAL CORRELATION DET KMO EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
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/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PC
/CRITERIA ITERATE(25)
/ROTATION VARIMAX
/METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Correlation Matrix[a]

		NCQEthcs3	NCQEthcs4	NCQEthcs7	NCQEthcs9
Correlation	NCQEthcs3	1.000	.608	.259	.204
	NCQEthcs4	.608	1.000	.278	.186
	NCQEthcs7	.259	.278	1.000	.699
	NCQEthcs9	.204	.186	.699	1.000

a. Determinant = .292

KMO and Bartlett's Test

	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.566
Bartlett's Test of Sphericity	Approx. Chi-Square	1149.138
	df	6
	Sig.	.000

Communalities

	Initial	Extraction
NCQEthcs3	1.000	.802
NCQEthcs4	1.000	.805
NCQEthcs7	1.000	.846
NCQEthcs9	1.000	.859

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.120	53.011	
2	1.192	29.799	
3	.395	9.873	92.683
4	.293	7.317	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	53.011	2.120	53.011	53.011
2	82.810	1.192	29.799	82.810

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	1.696	42.408	42.408
2	1.616	40.403	82.810

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
NCQEthcs3	.692	.568
NCQEthcs4	.693	.570
NCQEthcs7	.789	
NCQEthcs9	.734	-.566

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
NCQEthcs3		.887
NCQEthcs4		.888
NCQEthcs7	.901	
NCQEthcs9	.923	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	.737	.676
2	-.676	.737

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
GET
  FILE='F:\Reem Shameri Last\reemmodel.sav'.

>Warning.  Command name: GET FILE
>PASW Statistics system file "F:\Reem Shameri Last\reemmodel.sav" is written
in a character encoding (windows-1256)
>incompatible with the current LOCALE setting.  It may not be readable.
>Consider changing LOCALE or setting UNICODE on.  (DATA 1721)
DATASET NAME DataSet1 WINDOW=FRONT.
FACTOR
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rkt31 cstmrkt32 cstmrkt33 cstmrkt34 cstmrkt35 Info41 Info42 Info43 Info44 hr5
1 hr52 hr53 hr54 hr55 hr56 pm61 pm62 pm63 pm64 pm65 pm66 ci71 ci72 ci73 ci74
ci75 br81 br82 br83 br84
br85 br86 br87 br88
  /MISSING LISTWISE
  /ANALYSIS ldr11 ldr12 ldr13 ldr14 ldr15 sp21 sp22 sp23 sp24 sp25 sp26 cstmr
kt31 cstmrkt32 cstmrkt33 cstmrkt34 cstmrkt35 Info41 Info42 Info43 Info44 hr51
 hr52 hr53 hr54 hr55 hr56 pm61 pm62 pm63 pm64 pm65 pm66 ci71 ci72 ci73 ci74 c
i75 br81 br82 br83 br84
br85 br86 br87 br88
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

Communalities

	Initial	Extraction
ldr11 Leadership1	1.000	.603
ldr12 Leadership2	1.000	.686
ldr13 Leadership3	1.000	.676
ldr14 Leadership4	1.000	.566
ldr15 Leadership5	1.000	.560
sp21 StrtgicPlanning1	1.000	.624
sp22 StrtgicPlanning2	1.000	.658

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
sp23 StrtgicPlanning3	1.000	.590
sp24 StrtgicPlanning4	1.000	.653
sp25 StrtgicPlanning5	1.000	.464
sp26 StrtgicPlanning6	1.000	.543
cstmrkt31 CustmrMrktFocus1	1.000	.703
cstmrkt32 CustmrMrktFocus2	1.000	.675
cstmrkt33 CustmrMrktFocus3	1.000	.595
cstmrkt34 CustmrMrktFocus4	1.000	.687
cstmrkt35 CustmrMrktFocus5	1.000	.680
Info41 InfoAnlysis1	1.000	.606
Info42 InfoAnlysis2	1.000	.567
Info43 InfoAnlysis3	1.000	.638
Info44 InfoAnlysis4	1.000	.576
hr51 HumanRes1	1.000	.548
hr52 HumanRes2	1.000	.683
hr53 HumanRes3	1.000	.631
hr54 HumanRes4	1.000	.714
hr55 HumanRes5	1.000	.601
hr56 HumanRes6	1.000	.623
pm61 PrcMngmt1	1.000	.742
pm62 PrcMngmt2	1.000	.845
pm63 PrcMngmt3	1.000	.828
pm64 PrcMngmt4	1.000	.827
pm65 PrcMngmt5	1.000	.773
pm66 PrcMngmt6	1.000	.660
ci71 Contimprv1	1.000	.706
ci72 Contimprv2	1.000	.787
ci73 Contimprv3	1.000	.667
ci74 Contimprv4	1.000	.655
ci75 Contimprv5	1.000	.654
br81 BusReslt1	1.000	.617
br82 BusReslt2	1.000	.603
br83 BusReslt3	1.000	.584
br84 BusReslt4	1.000	.654
br85 BusReslt5	1.000	.669

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
br86 BusReslt6	1.000	.720
br87 BusReslt7	1.000	.679
br88 BusReslt8	1.000	.691

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component				
	1	2	3	4	5
ldr11 Leadership1	.607				
ldr12 Leadership2	.732				
ldr13 Leadership3	.711				
ldr14 Leadership4	.658				
ldr15 Leadership5	.620				
sp21 StrtgicPlanning1	.718				
sp22 StrtgicPlanning2	.776				
sp23 StrtgicPlanning3	.676				
sp24 StrtgicPlanning4	.684				
sp25 StrtgicPlanning5	.647				
sp26 StrtgicPlanning6	.661				
cstmrkt31 CustmrMrktFocus1	.722				
cstmrkt32 CustmrMrktFocus2	.722				
cstmrkt33 CustmrMrktFocus3	.699				
cstmrkt34 CustmrMrktFocus4	.743				
cstmrkt35 CustmrMrktFocus5	.734				
Info41 InfoAnlysis1	.764				
Info42 InfoAnlysis2	.721				
Info43 InfoAnlysis3	.695				
Info44 InfoAnlysis4	.752				
hr51 HumanRes1	.643				
hr52 HumanRes2	.655				
hr53 HumanRes3	.739				
hr54 HumanRes4	.734				
hr55 HumanRes5	.660				

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Component Matrix[a]

	Component				
	1	2	3	4	5
hr56 HumanRes6	.697				
pm61 PrcMngmt1	.805				
pm62 PrcMngmt2	.774				
pm63 PrcMngmt3	.807				
pm64 PrcMngmt4	.808				
pm65 PrcMngmt5	.798				
pm66 PrcMngmt6	.758				
ci71 Contimprv1	.631				.521
ci72 Contimprv2	.762				
ci73 Contimprv3	.631				
ci74 Contimprv4	.767				
ci75 Contimprv5	.785				
br81 BusReslt1	.662				
br82 BusReslt2	.643				
br83 BusReslt3	.653				
br84 BusReslt4	.713				
br85 BusReslt5	.766				
br86 BusReslt6	.755				
br87 BusReslt7	.743				
br88 BusReslt8	.702				

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
ldr11 Leadership1				.662	
ldr12 Leadership2				.641	
ldr13 Leadership3				.659	
ldr14 Leadership4				.546	
ldr15 Leadership5	.519				
sp21 StrtgicPlanning1				.568	
sp22 StrtgicPlanning2				.520	
sp23 StrtgicPlanning3					.515
sp24 StrtgicPlanning4					.594

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 13 iterations.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
sp25 StrtgicPlanning5					
sp26 StrtgicPlanning6					
cstmrkt31 CustmrMrktFocus1		.603			
cstmrkt32 CustmrMrktFocus2		.616			
cstmrkt33 CustmrMrktFocus3		.566			
cstmrkt34 CustmrMrktFocus4		.619			
cstmrkt35 CustmrMrktFocus5		.624			
Info41 InfoAnlysis1					
Info42 InfoAnlysis2					
Info43 InfoAnlysis3					.569
Info44 InfoAnlysis4					
hr51 HumanRes1	.559				
hr52 HumanRes2	.752				
hr53 HumanRes3	.543				
hr54 HumanRes4	.710				
hr55 HumanRes5	.676				
hr56 HumanRes6	.669				
pm61 PrcMngmt1			.631		
pm62 PrcMngmt2			.796		
pm63 PrcMngmt3			.738		
pm64 PrcMngmt4			.733		
pm65 PrcMngmt5			.690		
pm66 PrcMngmt6			.597		
ci71 Contimprv1					.738
ci72 Contimprv2			.754		
ci73 Contimprv3					.694
ci74 Contimprv4	.561				
ci75 Contimprv5					
br81 BusResl t1		.684			
br82 BusReslt2		.693			
br83 BusReslt3	.617				
br84 BusReslt4	.669				

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 13 iterations.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
br85 BusReslt5	.560				
br86 BusReslt6		.665			
br87 BusReslt7		.617			
br88 BusReslt8		.727			

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 13 iterations.

Component Transformation Matrix

Component	1	2	3	4	5
1	.507	.492	.460	.401	.358
2	.690	-.643	-.165	-.124	.258
3	.073	.110	-.729	.669	-.068
4	.301	.575	-.449	-.612	.047
5	-.412	-.033	-.168	-.042	.894

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
FACTOR
  /VARIABLES ldr11 ldr12 ldr13 ldr14 sp21 sp22 sp23 sp24 sp25 sp26 cstmrkt31
cstmrkt32 cstmrkt33 cstmrkt34 cstmrkt35 Info41 Info42 Info43 Info44 hr51 hr52
 hr53 hr54 hr55 hr56 pm61 pm62 pm63 pm64 pm65 pm66 ci71 ci72 ci73 ci74 ci75 b
r81 br82 br83 br84 br85
br86 br87 br88
  /MISSING LISTWISE
  /ANALYSIS ldr11 ldr12 ldr13 ldr14 sp21 sp22 sp23 sp24 sp25 sp26 cstmrkt31 c
stmrkt32 cstmrkt33 cstmrkt34 cstmrkt35 Info41 Info42 Info43 Info44 hr51 hr52
hr53 hr54 hr55 hr56 pm61 pm62 pm63 pm64 pm65 pm66 ci71 ci72 ci73 ci74 ci75 br
81 br82 br83 br84 br85
br86 br87 br88
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  /ROTATION VARIMAX
  /METHOD=CORRELATION.
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Factor Analysis

[DataSet1] F:\Reem Shameri Last\reemmodel.sav

Communalities

	Initial	Extraction
ldr11 Leadership1	1.000	.625
ldr12 Leadership2	1.000	.707
ldr13 Leadership3	1.000	.673
ldr14 Leadership4	1.000	.504
sp21 StrtgicPlanning1	1.000	.631
sp22 StrtgicPlanning2	1.000	.656
sp23 StrtgicPlanning3	1.000	.594
sp24 StrtgicPlanning4	1.000	.661
sp25 StrtgicPlanning5	1.000	.462
sp26 StrtgicPlanning6	1.000	.543
cstmrkt31 CustmrMrktFocus1	1.000	.703
cstmrkt32 CustmrMrktFocus2	1.000	.677
cstmrkt33 CustmrMrktFocus3	1.000	.595
cstmrkt34 CustmrMrktFocus4	1.000	.686
cstmrkt35 CustmrMrktFocus5	1.000	.680
Info41 InfoAnlysis1	1.000	.608
Info42 InfoAnlysis2	1.000	.568
Info43 InfoAnlysis3	1.000	.647
Info44 InfoAnlysis4	1.000	.576
hr51 HumanRes1	1.000	.553
hr52 HumanRes2	1.000	.703
hr53 HumanRes3	1.000	.643
hr54 HumanRes4	1.000	.736
hr55 HumanRes5	1.000	.615
hr56 HumanRes6	1.000	.625
pm61 PrcMngmt1	1.000	.742
pm62 PrcMngmt2	1.000	.846
pm63 PrcMngmt3	1.000	.827
pm64 PrcMngmt4	1.000	.827
pm65 PrcMngmt5	1.000	.772
pm66 PrcMngmt6	1.000	.662
ci71 Contimprv1	1.000	.710
ci72 Contimprv2	1.000	.789

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
ci73 Contimprv3	1.000	.661
ci74 Contimprv4	1.000	.654
ci75 Contimprv5	1.000	.650
br81 BusReslt1	1.000	.614
br82 BusReslt2	1.000	.610
br83 BusReslt3	1.000	.581
br84 BusReslt4	1.000	.655
br85 BusReslt5	1.000	.666
br86 BusReslt6	1.000	.722
br87 BusReslt7	1.000	.685
br88 BusReslt8	1.000	.691

Extraction Method: Principal Component Analysis.

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Component Matrix[a]

	Component				
	1	2	3	4	5
ldr11 Leadership1	.606				
ldr12 Leadership2	.732				
ldr13 Leadership3	.709				
ldr14 Leadership4	.651				
sp21 StrtgicPlanning1	.717				
sp22 StrtgicPlanning2	.775				
sp23 StrtgicPlanning3	.675				
sp24 StrtgicPlanning4	.684				
sp25 StrtgicPlanning5	.645				
sp26 StrtgicPlanning6	.663				
cstmrkt31 CustmrMrktFocus1	.724				
cstmrkt32 CustmrMrktFocus2	.724				
cstmrkt33 CustmrMrktFocus3	.700				
cstmrkt34 CustmrMrktFocus4	.744				
cstmrkt35 CustmrMrktFocus5	.736				

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Component Matrix[a]

	Component				
	1	2	3	4	5
Info41 InfoAnlysis1	.765				
Info42 InfoAnlysis2	.720				
Info43 InfoAnlysis3	.695				
Info44 InfoAnlysis4	.754				
hr51 HumanRes1	.642				
hr52 HumanRes2	.654				
hr53 HumanRes3	.739				
hr54 HumanRes4	.732				
hr55 HumanRes5	.657				
hr56 HumanRes6	.695				
pm61 PrcMngmt1	.806				
pm62 PrcMngmt2	.776				
pm63 PrcMngmt3	.809				
pm64 PrcMngmt4	.809				
pm65 PrcMngmt5	.799				
pm66 PrcMngmt6	.759				
ci71 Contimprv1	.633				.524
ci72 Contimprv2	.763				
ci73 Contimprv3	.633				
ci74 Contimprv4	.766				
ci75 Contimprv5	.786				
br81 BusReslt1	.664				
br82 BusReslt2	.644				
br83 BusReslt3	.651				
br84 BusReslt4	.712				
br85 BusReslt5	.765				
br86 BusReslt6	.757				
br87 BusReslt7	.745				
br88 BusReslt8	.704				

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
ldr11 Leadership1				.695	
ldr12 Leadership2				.663	
ldr13 Leadership3				.661	
ldr14 Leadership4					
sp21 StrtgicPlanning1				.592	
sp22 StrtgicPlanning2				.525	
sp23 StrtgicPlanning3					.524
sp24 StrtgicPlanning4					.604
sp25 StrtgicPlanning5					
sp26 StrtgicPlanning6					
cstmrkt31 CustmrMrktFocus1		.560		.504	
cstmrkt32 CustmrMrktFocus2		.578			
cstmrkt33 CustmrMrktFocus3		.540			
cstmrkt34 CustmrMrktFocus4		.588			
cstmrkt35 CustmrMrktFocus5		.589			
Info41 InfoAnlysis1					
Info42 InfoAnlysis2					
Info43 InfoAnlysis3					.581
Info44 InfoAnlysis4					
hr51 HumanRes1	.585				
hr52 HumanRes2	.776				
hr53 HumanRes3	.573				
hr54 HumanRes4	.738				
hr55 HumanRes5	.693				
hr56 HumanRes6	.675				
pm61 PrcMngmt1			.635		
pm62 PrcMngmt2			.798		
pm63 PrcMngmt3			.740		
pm64 PrcMngmt4			.736		
pm65 PrcMngmt5			.692		
pm66 PrcMngmt6			.600		
ci71 Contimprv1					.742

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 13 iterations.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
ci72 Contimprv2			.756		
ci73 Contimprv3					.691
ci74 Contimprv4	.568				
ci75 Contimprv5					
br81 BusReslt1		.664			
br82 BusReslt2		.690			
br83 BusReslt3	.602				
br84 BusReslt4	.663				
br85 BusReslt5	.535				
br86 BusReslt6		.671			
br87 BusReslt7		.628			
br88 BusReslt8		.721			

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 13 iterations.

Component Transformation Matrix

Component	1	2	3	4	5
1	.505	.479	.467	.411	.359
2	.704	-.597	-.160	-.224	.269
3	.099	.093	-.766	.628	.013
4	.365	.615	-.338	-.556	-.255
5	-.326	.169	-.235	-.277	.856

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
FACTOR
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t32 cstmrkt33 cstmrkt34 cstmrkt35 Info41 Info42 Info43 Info44 hr51 hr52 hr53
hr54 hr55 hr56 pm61 pm62 pm63 pm64 pm65 pm66 ci71 ci72 ci73 ci74 ci75 br81 br
82 br83 br84 br85 br86
br87 br88
  /MISSING LISTWISE
  /ANALYSIS ldr11 ldr12 ldr13 sp21 sp22 sp23 sp24 sp25 sp26 cstmrkt31 cstmrkt
32 cstmrkt33 cstmrkt34 cstmrkt35 Info41 Info42 Info43 Info44 hr51 hr52 hr53 h
r54 hr55 hr56 pm61 pm62 pm63 pm64 pm65 pm66 ci71 ci72 ci73 ci74 ci75 br81 br8
2 br83 br84 br85 br86
br87 br88
  /PRINT INITIAL EXTRACTION ROTATION
```

```
/FORMAT BLANK(0.5)
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PC
/CRITERIA ITERATE(25)
/ROTATION VARIMAX
/METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] F:\Reem Shameri Last\reemmodel.sav

Communalities

	Initial	Extraction
ldr11 Leadership1	1.000	.636
ldr12 Leadership2	1.000	.699
ldr13 Leadership3	1.000	.652
sp21 StrtgicPlanning1	1.000	.634
sp22 StrtgicPlanning2	1.000	.651
sp23 StrtgicPlanning3	1.000	.596
sp24 StrtgicPlanning4	1.000	.660
sp25 StrtgicPlanning5	1.000	.464
sp26 StrtgicPlanning6	1.000	.546
cstmrkt31 CustmrMrktFocus1	1.000	.707
cstmrkt32 CustmrMrktFocus2	1.000	.682
cstmrkt33 CustmrMrktFocus3	1.000	.595
cstmrkt34 CustmrMrktFocus4	1.000	.685
cstmrkt35 CustmrMrktFocus5	1.000	.681
Info41 InfoAnlysis1	1.000	.608
Info42 InfoAnlysis2	1.000	.568
Info43 InfoAnlysis3	1.000	.646
Info44 InfoAnlysis4	1.000	.576
hr51 HumanRes1	1.000	.561
hr52 HumanRes2	1.000	.710
hr53 HumanRes3	1.000	.643
hr54 HumanRes4	1.000	.742
hr55 HumanRes5	1.000	.621
hr56 HumanRes6	1.000	.626

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
pm61 PrcMngmt1	1.000	.742
pm62 PrcMngmt2	1.000	.845
pm63 PrcMngmt3	1.000	.827
pm64 PrcMngmt4	1.000	.826
pm65 PrcMngmt5	1.000	.772
pm66 PrcMngmt6	1.000	.662
ci71 Contimprv1	1.000	.713
ci72 Contimprv2	1.000	.789
ci73 Contimprv3	1.000	.661
ci74 Contimprv4	1.000	.654
ci75 Contimprv5	1.000	.651
br81 BusReslt1	1.000	.612
br82 BusReslt2	1.000	.610
br83 BusReslt3	1.000	.582
br84 BusReslt4	1.000	.655
br85 BusReslt5	1.000	.669
br86 BusReslt6	1.000	.727
br87 BusReslt7	1.000	.697
br88 BusReslt8	1.000	.690

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component				
	1	2	3	4	5
ldr11 Leadership1	.605				
ldr12 Leadership2	.729				
ldr13 Leadership3	.705				
sp21 StrtgicPlanning1	.717				
sp22 StrtgicPlanning2	.773				
sp23 StrtgicPlanning3	.675				
sp24 StrtgicPlanning4	.683				
sp25 StrtgicPlanning5	.645				
sp26 StrtgicPlanning6	.663				
cstmrkt31 CustmrMrktFocus1	.725				
cstmrkt32 CustmrMrktFocus2	.725				

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Component Matrix[a]

	Component				
	1	2	3	4	5
cstmrkt33 CustmrMrktFocus3	.702				
cstmrkt34 CustmrMrktFocus4	.744				
cstmrkt35 CustmrMrktFocus5	.737				
Info41 InfoAnlysis1	.766				
Info42 InfoAnlysis2	.720				
Info43 InfoAnlysis3	.696				
Info44 InfoAnlysis4	.754				
hr51 HumanRes1	.643				
hr52 HumanRes2	.653				
hr53 HumanRes3	.737				
hr54 HumanRes4	.732				
hr55 HumanRes5	.657				
hr56 HumanRes6	.694				
pm61 PrcMngmt1	.807				
pm62 PrcMngmt2	.777				
pm63 PrcMngmt3	.811				
pm64 PrcMngmt4	.811				
pm65 PrcMngmt5	.800				
pm66 PrcMngmt6	.759				
ci71 Contimprv1	.634				.509
ci72 Contimprv2	.764				
ci73 Contimprv3	.634				
ci74 Contimprv4	.765				
ci75 Contimprv5	.787				
br81 BusReslt1	.666				
br82 BusReslt2	.645				
br83 BusReslt3	.652				
br84 BusReslt4	.712				
br85 BusReslt5	.764				
br86 BusReslt6	.757				
br87 BusReslt7	.744				
br88 BusReslt8	.705				

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
ldr11 Leadership1				.708	
ldr12 Leadership2				.653	
ldr13 Leadership3				.642	
sp21 StrtgicPlanning1				.607	
sp22 StrtgicPlanning2				.522	
sp23 StrtgicPlanning3					.521
sp24 StrtgicPlanning4					.604
sp25 StrtgicPlanning5					
sp26 StrtgicPlanning6					
cstmrkt31 CustmrMrktFocus1			.510	.557	
cstmrkt32 CustmrMrktFocus2			.533	.520	
cstmrkt33 CustmrMrktFocus3			.503		
cstmrkt34 CustmrMrktFocus4			.554		
cstmrkt35 CustmrMrktFocus5			.550		
Info41 InfoAnlysis1					
Info42 InfoAnlysis2					
Info43 InfoAnlysis3					.581
Info44 InfoAnlysis4					
hr51 HumanRes1	.601				
hr52 HumanRes2	.785				
hr53 HumanRes3	.586				
hr54 HumanRes4	.750				
hr55 HumanRes5	.702				
hr56 HumanRes6	.678				
pm61 PrcMngmt1		.639			
pm62 PrcMngmt2		.801			
pm63 PrcMngmt3		.744			
pm64 PrcMngmt4		.740			
pm65 PrcMngmt5		.695			
pm66 PrcMngmt6		.605			
ci71 Contimprv1					.745
ci72 Contimprv2		.759			

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 14 iterations.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
ci73 Contimprv3					.692
ci74 Contimprv4	.568				
ci75 Contimprv5					
br81 BusResIt1			.638		
br82 BusResIt2			.680		
br83 BusResIt3	.591				
br84 BusResIt4	.654				
br85 BusResIt5	.517		.515		
br86 BusResIt6			.679		
br87 BusResIt7			.642		
br88 BusResIt8			.710		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 14 iterations.

Component Transformation Matrix

Component		dimension1				
		1	2	3	4	5
dimension0	1	.505	.475	.463	.418	.361
	2	.715	-.162	-.542	-.312	.268
	3	.135	-.790	.097	.589	.044
	4	.344	-.264	.645	-.511	-.368
	5	-.313	-.234	.260	-.346	.813

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
FACTOR
  /VARIABLES ldr11 ldr12 ldr13 sp21 sp22 sp23 sp24 sp25 sp26 cstmrkt33 cstmrk
t34 cstmrkt35 Info41 Info42 Info43 Info44 hr51 hr52 hr53 hr54 hr55 hr56 pm61
pm62 pm63 pm64 pm65 pm66 ci71 ci72 ci73 ci74 ci75 br81 br82 br83 br84 br85 br
86 br87 br88
  /MISSING LISTWISE
  /ANALYSIS ldr11 ldr12 ldr13 sp21 sp22 sp23 sp24 sp25 sp26 cstmrkt33 cstmrkt
34 cstmrkt35 Info41 Info42 Info43 Info44 hr51 hr52 hr53 hr54 hr55 hr56 pm61 p
m62 pm63 pm64 pm65 pm66 ci71 ci72 ci73 ci74 ci75 br81 br82 br83 br84 br85 br8
6 br87 br88
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
```

```
/CRITERIA ITERATE(25)
/ROTATION VARIMAX
/METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
ldr11 Leadership1	1.000	.646
ldr12 Leadership2	1.000	.717
ldr13 Leadership3	1.000	.678
sp21 StrtgicPlanning1	1.000	.661
sp22 StrtgicPlanning2	1.000	.661
sp23 StrtgicPlanning3	1.000	.597
sp24 StrtgicPlanning4	1.000	.661
sp25 StrtgicPlanning5	1.000	.464
sp26 StrtgicPlanning6	1.000	.556
cstmrkt33 CustmrMrktFocus3	1.000	.580
cstmrkt34 CustmrMrktFocus4	1.000	.667
cstmrkt35 CustmrMrktFocus5	1.000	.655
Info41 InfoAnlysis1	1.000	.609
Info42 InfoAnlysis2	1.000	.571
Info43 InfoAnlysis3	1.000	.655
Info44 InfoAnlysis4	1.000	.578
hr51 HumanRes1	1.000	.566
hr52 HumanRes2	1.000	.721
hr53 HumanRes3	1.000	.643
hr54 HumanRes4	1.000	.751
hr55 HumanRes5	1.000	.625
hr56 HumanRes6	1.000	.622
pm61 PrcMngmt1	1.000	.743
pm62 PrcMngmt2	1.000	.845
pm63 PrcMngmt3	1.000	.826
pm64 PrcMngmt4	1.000	.826
pm65 PrcMngmt5	1.000	.772
pm66 PrcMngmt6	1.000	.664

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
ci71 Contimprv1	1.000	.714
ci72 Contimprv2	1.000	.788
ci73 Contimprv3	1.000	.658
ci74 Contimprv4	1.000	.651
ci75 Contimprv5	1.000	.648
br81 BusReslt1	1.000	.615
br82 BusReslt2	1.000	.620
br83 BusReslt3	1.000	.581
br84 BusReslt4	1.000	.655
br85 BusReslt5	1.000	.668
br86 BusReslt6	1.000	.734
br87 BusReslt7	1.000	.698
br88 BusReslt8	1.000	.690

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component				
	1	2	3	4	5
ldr11 Leadership1	.598				
ldr12 Leadership2	.727				
ldr13 Leadership3	.703				
sp21 StrtgicPlanning1	.713				
sp22 StrtgicPlanning2	.772				
sp23 StrtgicPlanning3	.680				
sp24 StrtgicPlanning4	.686				
sp25 StrtgicPlanning5	.648				
sp26 StrtgicPlanning6	.657				
cstmrkt33 CustmrMrktFocus3	.692				
cstmrkt34 CustmrMrktFocus4	.733				
cstmrkt35 CustmrMrktFocus5	.724				
Info41 InfoAnlysis1	.769				
Info42 InfoAnlysis2	.724				
Info43 InfoAnlysis3	.701				
Info44 InfoAnlysis4	.754				

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Component Matrix[a]

	Component				
	1	2	3	4	5
hr51 HumanRes1	.650				
hr52 HumanRes2	.662				
hr53 HumanRes3	.743				
hr54 HumanRes4	.738				
hr55 HumanRes5	.664				
hr56 HumanRes6	.703				
pm61 PrcMngmt1	.806				
pm62 PrcMngmt2	.779				
pm63 PrcMngmt3	.812				
pm64 PrcMngmt4	.812				
pm65 PrcMngmt5	.802				
pm66 PrcMngmt6	.759				
ci71 Contimprv1	.638				.509
ci72 Contimprv2	.765				
ci73 Contimprv3	.638				
ci74 Contimprv4	.773				
ci75 Contimprv5	.792				
br81 BusReslt1	.657				
br82 BusReslt2	.639				
br83 BusReslt3	.655				
br84 BusReslt4	.717				
br85 BusReslt5	.767				
br86 BusReslt6	.757				
br87 BusReslt7	.745				
br88 BusReslt8	.698				

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
ldr11 Leadership1				.717	
ldr12 Leadership2				.673	
ldr13 Leadership3				.666	
sp21 StrtgicPlanning1				.624	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
sp22 StrtgicPlanning2				.529	
sp23 StrtgicPlanning3					.521
sp24 StrtgicPlanning4					.607
sp25 StrtgicPlanning5					
sp26 StrtgicPlanning6					
cstmrkt33 CustmrMrktFocus3			.508		
cstmrkt34 CustmrMrktFocus4			.561		
cstmrkt35 CustmrMrktFocus5			.551		
Info41 InfoAnlysis1					
Info42 InfoAnlysis2					
Info43 InfoAnlysis3					.587
Info44 InfoAnlysis4					
hr51 HumanRes1	.601				
hr52 HumanRes2	.789				
hr53 HumanRes3	.577				
hr54 HumanRes4	.753				
hr55 HumanRes5	.702				
hr56 HumanRes6	.664				
pm61 PrcMngmt1		.648			
pm62 PrcMngmt2		.806			
pm63 PrcMngmt3		.749			
pm64 PrcMngmt4		.745			
pm65 PrcMngmt5		.700			
pm66 PrcMngmt6		.613			
ci71 Contimprv1					.747
ci72 Contimprv2		.765			
ci73 Contimprv3					.688
ci74 Contimprv4	.556				
ci75 Contimprv5					
br81 BusReslt1			.647		
br82 BusReslt2			.692		
br83 BusReslt3	.584				
br84 BusReslt4	.652				

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
br85 BusResIt5	.502		.526		
br86 BusResIt6			.692		
br87 BusResIt7			.653		
br88 BusResIt8			.715		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Component Transformation Matrix

Component	1	2	3	4	5
1	.508	.488	.461	.393	.370
2	.721	-.277	-.552	-.182	.257
3	.027	-.753	.223	.618	.025
4	.371	-.253	.613	-.532	-.374
5	-.290	-.229	.240	-.386	.810

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
FACTOR
  /VARIABLES ldr11 ldr12 ldr13
  /MISSING LISTWISE
  /ANALYSIS ldr11 ldr12 ldr13
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
ldr11 Leadership1	1.000	.724
ldr12 Leadership2	1.000	.829

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
ldr13 Leadership3	1.000	.759

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.312	77.057	77.057	2.312	77.057	77.057
2	.425	14.165	91.222			
3	.263	8.778	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp...
	1
ldr11 Leadership1	.851
ldr12 Leadership2	.910
ldr13 Leadership3	.871

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES ldr11 ldr12 ldr13 ldr14 ldr15
  /MISSING LISTWISE
  /ANALYSIS ldr11 ldr12 ldr13 ldr14 ldr15
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
ldr11 Leadership1	1.000	.591
ldr12 Leadership2	1.000	.734
ldr13 Leadership3	1.000	.720
ldr14 Leadership4	1.000	.642
ldr15 Leadership5	1.000	.555

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.242	64.837	64.837	3.242	64.837	64.837
2	.752	15.040	79.877			
3	.413	8.251	88.128			
4	.333	6.664	94.792			
5	.260	5.208	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
ldr11 Leadership1	.768
ldr12 Leadership2	.857
ldr13 Leadership3	.849
ldr14 Leadership4	.801
ldr15 Leadership5	.745

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES ldr11 ldr12 ldr13 ldr14
  /MISSING LISTWISE
  /ANALYSIS ldr11 ldr12 ldr13 ldr14
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
```

```
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
ldr11 Leadership1	1.000	.652
ldr12 Leadership2	1.000	.795
ldr13 Leadership3	1.000	.754
ldr14 Leadership4	1.000	.582

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.782	69.555	69.555	2.782	69.555	69.555
2	.573	14.336	83.890			
3	.381	9.526	93.416			
4	.263	6.584	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
ldr11 Leadership1	.807
ldr12 Leadership2	.892
ldr13 Leadership3	.868
ldr14 Leadership4	.763

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES ldr11 ldr12 ldr13
  /MISSING LISTWISE
  /ANALYSIS ldr11 ldr12 ldr13
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
```

```
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
ldr11 Leadership1	1.000	.724
ldr12 Leadership2	1.000	.829
ldr13 Leadership3	1.000	.759

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.312	77.057	77.057	2.312	77.057	77.057
2	.425	14.165	91.222			
3	.263	8.778	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp...
	1
ldr11 Leadership1	.851
ldr12 Leadership2	.910
ldr13 Leadership3	.871

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES sp21 sp22 sp23 sp24 sp25 sp26
  /MISSING LISTWISE
  /ANALYSIS sp21 sp22 sp23 sp24 sp25 sp26
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
```

```
/EXTRACTION PC
/CRITERIA ITERATE(25)
/ROTATION VARIMAX
/METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
sp21 StrtgicPlanning1	1.000	.593
sp22 StrtgicPlanning2	1.000	.679
sp23 StrtgicPlanning3	1.000	.633
sp24 StrtgicPlanning4	1.000	.633
sp25 StrtgicPlanning5	1.000	.560
sp26 StrtgicPlanning6	1.000	.546

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.642	60.700	60.700	3.642	60.700	60.700
2	.803	13.382	74.083			
3	.548	9.127	83.209			
4	.437	7.279	90.489			
5	.296	4.926	95.414			
6	.275	4.586	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
sp21 StrtgicPlanning1	.770
sp22 StrtgicPlanning2	.824
sp23 StrtgicPlanning3	.795
sp24 StrtgicPlanning4	.795

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Component Matrix[a]

	Comp…
	1
sp25 StrtgicPlanning5	.748
sp26 StrtgicPlanning6	.739

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES sp21 sp22 sp23 sp24 sp25
  /MISSING LISTWISE
  /ANALYSIS sp21 sp22 sp23 sp24 sp25
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
sp21 StrtgicPlanning1	1.000	.573
sp22 StrtgicPlanning2	1.000	.675
sp23 StrtgicPlanning3	1.000	.684
sp24 StrtgicPlanning4	1.000	.676
sp25 StrtgicPlanning5	1.000	.570

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.178	63.553	63.553	3.178	63.553	63.553
2	.746	14.916	78.469			
3	.504	10.083	88.552			

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
4	.296	5.919	94.472
5	.276	5.528	100.000

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp...
	1
sp21 StrtgicPlanning1	.757
sp22 StrtgicPlanning2	.821
sp23 StrtgicPlanning3	.827
sp24 StrtgicPlanning4	.822
sp25 StrtgicPlanning5	.755

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES sp21 sp22 sp23 sp24
  /MISSING LISTWISE
  /ANALYSIS sp21 sp22 sp23 sp24
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
sp21 StrtgicPlanning1	1.000	.622
sp22 StrtgicPlanning2	1.000	.711
sp23 StrtgicPlanning3	1.000	.699
sp24 StrtgicPlanning4	1.000	.671

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.703	67.565	67.565	2.703	67.565	67.565
2	.721	18.030	85.595			
3	.297	7.436	93.031			
4	.279	6.969	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp...
	1
sp21 StrtgicPlanning1	.789
sp22 StrtgicPlanning2	.843
sp23 StrtgicPlanning3	.836
sp24 StrtgicPlanning4	.819

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES sp22 sp23 sp24
  /MISSING LISTWISE
  /ANALYSIS sp22 sp23 sp24
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
sp22 StrtgicPlanning2	1.000	.629
sp23 StrtgicPlanning3	1.000	.793

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
sp24 StrtgicPlanning4	1.000	.778

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.200	73.327	73.327	2.200	73.327	73.327
2	.521	17.351	90.678			
3	.280	9.322	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
sp22 StrtgicPlanning2	.793
sp23 StrtgicPlanning3	.890
sp24 StrtgicPlanning4	.882

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES cstmrkt31 cstmrkt32 cstmrkt33 cstmrkt34 cstmrkt35
  /MISSING LISTWISE
  /ANALYSIS cstmrkt31 cstmrkt32 cstmrkt33 cstmrkt34 cstmrkt35
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
cstmrkt31 CustmrMrktFocus1	1.000	.773
cstmrkt32 CustmrMrktFocus2	1.000	.741
cstmrkt33 CustmrMrktFocus3	1.000	.697
cstmrkt34 CustmrMrktFocus4	1.000	.784
cstmrkt35 CustmrMrktFocus5	1.000	.765

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.759	75.180	75.180	3.759	75.180	75.180
2	.424	8.486	83.666			
3	.330	6.609	90.275			
4	.261	5.219	95.493			
5	.225	4.507	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
cstmrkt31 CustmrMrktFocus1	.879
cstmrkt32 CustmrMrktFocus2	.861
cstmrkt33 CustmrMrktFocus3	.835
cstmrkt34 CustmrMrktFocus4	.885
cstmrkt35 CustmrMrktFocus5	.875

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES Info41 Info42 Info43 Info44
  /MISSING LISTWISE
  /ANALYSIS Info41 Info42 Info43 Info44
  /PRINT INITIAL EXTRACTION ROTATION
```

```
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
Info41 InfoAnlysis1	1.000	.768
Info42 InfoAnlysis2	1.000	.784
Info43 InfoAnlysis3	1.000	.698
Info44 InfoAnlysis4	1.000	.642

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.892	72.289	72.289	2.892	72.289	72.289
2	.472	11.793	84.082			
3	.412	10.290	94.372			
4	.225	5.628	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
Info41 InfoAnlysis1	.876
Info42 InfoAnlysis2	.885
Info43 InfoAnlysis3	.835
Info44 InfoAnlysis4	.801

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES Info41 Info42 Info43
```

```
  /MISSING LISTWISE
  /ANALYSIS Info41 Info42 Info43
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
Info41 InfoAnlysis1	1.000	.794
Info42 InfoAnlysis2	1.000	.841
Info43 InfoAnlysis3	1.000	.717

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.352	78.394	78.394	2.352	78.394	78.394
2	.416	13.880	92.274			
3	.232	7.726	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
Info41 InfoAnlysis1	.891
Info42 InfoAnlysis2	.917
Info43 InfoAnlysis3	.847

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES hr51 hr52 hr53 hr54 hr55 hr56
```

```
/MISSING LISTWISE
/ANALYSIS hr51 hr52 hr53 hr54 hr55 hr56
/PRINT INITIAL EXTRACTION ROTATION
/FORMAT BLANK(0.5)
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PC
/CRITERIA ITERATE(25)
/ROTATION VARIMAX
/METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
hr51 HumanRes1	1.000	.593
hr52 HumanRes2	1.000	.718
hr53 HumanRes3	1.000	.670
hr54 HumanRes4	1.000	.797
hr55 HumanRes5	1.000	.665
hr56 HumanRes6	1.000	.622

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.064	67.740	67.740	4.064	67.740	67.740
2	.528	8.796	76.536			
3	.453	7.545	84.080			
4	.416	6.937	91.017			
5	.313	5.216	96.233			
6	.226	3.767	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

		Component
		dimension1
		1
dimension0	hr51 HumanRes1	.770
	hr52 HumanRes2	.847
	hr53 HumanRes3	.818
	hr54 HumanRes4	.893
	hr55 HumanRes5	.815
	hr56 HumanRes6	.789

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES hr52 hr53 hr54 hr55 hr56
  /MISSING LISTWISE
  /ANALYSIS hr52 hr53 hr54 hr55 hr56
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] F:\Reem Shameri Last\reemmodel.sav

Communalities

	Initial	Extraction
hr52 HumanRes2	1.000	.709
hr53 HumanRes3	1.000	.687
hr54 HumanRes4	1.000	.812
hr55 HumanRes5	1.000	.695
hr56 HumanRes6	1.000	.639

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.541	70.829	70.829	3.541	70.829	70.829
2	.467	9.335	80.164			
3	.432	8.633	88.797			
4	.334	6.682	95.479			
5	.226	4.521	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
hr52 HumanRes2	.842
hr53 HumanRes3	.829
hr54 HumanRes4	.901
hr55 HumanRes5	.834
hr56 HumanRes6	.799

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES hr52 hr53 hr54 hr55
  /MISSING LISTWISE
  /ANALYSIS hr52 hr53 hr54 hr55
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
hr52 HumanRes2	1.000	.748
hr53 HumanRes3	1.000	.693
hr54 HumanRes4	1.000	.836
hr55 HumanRes5	1.000	.705

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.982	74.554	74.554	2.982	74.554	74.554
2	.432	10.803	85.357			
3	.360	8.993	94.349			
4	.226	5.651	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
hr52 HumanRes2	.865
hr53 HumanRes3	.832
hr54 HumanRes4	.914
hr55 HumanRes5	.840

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES pm61 pm62 pm63 pm64 pm65 pm66
  /MISSING LISTWISE
  /ANALYSIS pm61 pm62 pm63 pm64 pm65 pm66
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
pm61 PrcMngmt1	1.000	.761
pm62 PrcMngmt2	1.000	.781
pm63 PrcMngmt3	1.000	.838
pm64 PrcMngmt4	1.000	.847
pm65 PrcMngmt5	1.000	.807
pm66 PrcMngmt6	1.000	.703

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.737	78.949	78.949	4.737	78.949	78.949
2	.369	6.156	85.105			
3	.295	4.913	90.018			
4	.279	4.658	94.676			
5	.179	2.980	97.656			
6	.141	2.344	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
pm61 PrcMngmt1	.872
pm62 PrcMngmt2	.884
pm63 PrcMngmt3	.915
pm64 PrcMngmt4	.921
pm65 PrcMngmt5	.898
pm66 PrcMngmt6	.838

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES ci71 ci72 ci73 ci74 ci75
  /MISSING LISTWISE
  /ANALYSIS ci71 ci72 ci73 ci74 ci75
  /PRINT INITIAL EXTRACTION ROTATION
```

```
/FORMAT BLANK(0.5)
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PC
/CRITERIA ITERATE(25)
/ROTATION VARIMAX
/METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] F:\Reem Shameri Last\reemmodel.sav

Communalities

	Initial	Extraction
ci71 Contimprv1	1.000	.636
ci72 Contimprv2	1.000	.541
ci73 Contimprv3	1.000	.643
ci74 Contimprv4	1.000	.719
ci75 Contimprv5	1.000	.758

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.297	65.933	65.933	3.297	65.933	65.933
2	.680	13.610	79.543			
3	.468	9.362	88.905			
4	.318	6.354	95.259			
5	.237	4.741	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
ci71 Contimprv1	.797
ci72 Contimprv2	.735
ci73 Contimprv3	.802
ci74 Contimprv4	.848
ci75 Contimprv5	.871

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES ci71 ci73 ci74 ci75
  /MISSING LISTWISE
  /ANALYSIS ci71 ci73 ci74 ci75
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] F:\Reem Shameri Last\reemmodel.sav

Communalities

	Initial	Extraction
ci71 Contimprv1	1.000	.682
ci73 Contimprv3	1.000	.694
ci74 Contimprv4	1.000	.728
ci75 Contimprv5	1.000	.743

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.847	71.173	71.173	2.847	71.173	71.173
2	.591	14.785	85.958			
3	.318	7.954	93.913			
4	.243	6.087	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
ci71 Contimprv1	.826
ci73 Contimprv3	.833

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Component Matrix[a]

	Comp...
	1
ci74 Contimprv4	.853
ci75 Contimprv5	.862

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES ci73 ci74 ci75
  /MISSING LISTWISE
  /ANALYSIS ci73 ci74 ci75
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
ci73 Contimprv3	1.000	.652
ci74 Contimprv4	1.000	.803
ci75 Contimprv5	1.000	.813

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.268	75.584	75.584	2.268	75.584	75.584
2	.489	16.299	91.883			
3	.244	8.117	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp...
	1
ci73 Contimprv3	.807
ci74 Contimprv4	.896
ci75 Contimprv5	.902

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES br81 br82 br83 br84 br85 br86 br87 br88
  /MISSING LISTWISE
  /ANALYSIS br81 br82 br83 br84 br85 br86 br87 br88
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] F:\Reem Shameri Last\reemmodel.sav

Communalities

	Initial	Extraction
br81 BusReslt1	1.000	.545
br82 BusReslt2	1.000	.558
br83 BusReslt3	1.000	.513
br84 BusReslt4	1.000	.560
br85 BusReslt5	1.000	.675
br86 BusReslt6	1.000	.742
br87 BusReslt7	1.000	.695
br88 BusReslt8	1.000	.644

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.931	61.638	61.638	4.931	61.638	61.638
2	.854	10.672	72.311			
3	.621	7.757	80.067			
4	.475	5.932	85.999			
5	.330	4.122	90.122			
6	.301	3.758	93.879			
7	.266	3.328	97.207			
8	.223	2.793	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

		Component dimension1
		1
dimension0	br81 BusReslt1	.738
	br82 BusReslt2	.747
	br83 BusReslt3	.716
	br84 BusReslt4	.748
	br85 BusReslt5	.822
	br86 BusReslt6	.861
	br87 BusReslt7	.833
	br88 BusReslt8	.802

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES br81 br82 br84 br85 br86 br87 br88
  /MISSING LISTWISE
  /ANALYSIS br81 br82 br84 br85 br86 br87 br88
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
br81 BusResIt1	1.000	.571
br82 BusResIt2	1.000	.561
br84 BusResIt4	1.000	.526
br85 BusResIt5	1.000	.664
br86 BusResIt6	1.000	.763
br87 BusResIt7	1.000	.719
br88 BusResIt8	1.000	.671

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.476	63.943	63.943	4.476	63.943	63.943
2	.782	11.170	75.113			
3	.504	7.207	82.320			
4	.439	6.278	88.598			
5	.301	4.301	92.899			
6	.274	3.909	96.808			
7	.223	3.192	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
br81 BusResIt1	.756
br82 BusResIt2	.749
br84 BusResIt4	.725
br85 BusResIt5	.815
br86 BusResIt6	.873
br87 BusResIt7	.848
br88 BusResIt8	.819

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES br81 br82 br85 br86 br87 br88
```

```
/MISSING LISTWISE
/ANALYSIS br81 br82 br85 br86 br87 br88
/PRINT INITIAL EXTRACTION ROTATION
/FORMAT BLANK(0.5)
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PC
/CRITERIA ITERATE(25)
/ROTATION VARIMAX
/METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] F:\Reem Shameri Last\reemmodel.sav

Communalities

	Initial	Extraction
br81 BusReslt1	1.000	.598
br82 BusReslt2	1.000	.591
br85 BusReslt5	1.000	.636
br86 BusReslt6	1.000	.771
br87 BusReslt7	1.000	.729
br88 BusReslt8	1.000	.689

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.014	66.899	66.899	4.014	66.899	66.899
2	.713	11.891	78.790			
3	.445	7.414	86.205			
4	.321	5.344	91.549			
5	.283	4.716	96.264			
6	.224	3.736	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
br81 BusReslt1	.773
br82 BusReslt2	.769
br85 BusReslt5	.797
br86 BusReslt6	.878
br87 BusReslt7	.854
br88 BusReslt8	.830

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES br81 br85 br86 br87 br88
  /MISSING LISTWISE
  /ANALYSIS br81 br85 br86 br87 br88
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
br81 BusReslt1	1.000	.574
br85 BusReslt5	1.000	.671
br86 BusReslt6	1.000	.795
br87 BusReslt7	1.000	.755
br88 BusReslt8	1.000	.699

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.494	69.889	69.889	3.494	69.889	69.889
2	.666	13.319	83.209			
3	.323	6.454	89.663			
4	.293	5.853	95.515			
5	.224	4.485	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp…
	1
br81 BusResIt1	.758
br85 BusResIt5	.819
br86 BusResIt6	.892
br87 BusResIt7	.869
br88 BusResIt8	.836

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES br85 br86 br87 br88
  /MISSING LISTWISE
  /ANALYSIS br85 br86 br87 br88
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] F:\Reem Shameri Last\reemmodel.sav
```

Communalities

	Initial	Extraction
br85 BusReslt5	1.000	.728
br86 BusReslt6	1.000	.829
br87 BusReslt7	1.000	.798
br88 BusReslt8	1.000	.651

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.006	75.145	75.145	3.006	75.145	75.145
2	.465	11.619	86.764			
3	.305	7.616	94.380			
4	.225	5.620	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Comp...
	1
br85 BusReslt5	.853
br86 BusReslt6	.910
br87 BusReslt7	.893
br88 BusReslt8	.807

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
SAVE OUTFILE='F:\Reem Shameri Last\Reem_hosnymodel.sav'
  /COMPRESSED.
RELIABILITY
  /VARIABLES=ldr11 ldr12 ldr13 sp22 sp23 sp24 cstmrkt31 cstmrkt32 cstmrkt33 c
stmrkt34 cstmrkt35 Info41 Info42 Info43 hr52 hr53 hr54 hr55 pm61 pm62 pm63 pm
64 pm65 pm66 ci73 ci74 ci75 br85 br86 br87 br88
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Reliability

[DataSet1] F:\Reem Shameri Last\Reem_hosnymodel.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.971	31

Item Statistics

	Mean	Std. Deviation	N
ldr11 Leadership1	3.82	1.214	937
ldr12 Leadership2	3.89	1.141	937
ldr13 Leadership3	3.82	1.173	937
sp22 StrtgicPlanning2	3.71	1.144	937
sp23 StrtgicPlanning3	3.09	1.198	937
sp24 StrtgicPlanning4	3.21	1.158	937
cstmrkt31 CustmrMrktFocus1	3.91	1.193	937
cstmrkt32 CustmrMrktFocus2	3.70	1.310	937
cstmrkt33 CustmrMrktFocus3	3.74	1.461	937
cstmrkt34 CustmrMrktFocus4	3.84	1.289	937
cstmrkt35 CustmrMrktFocus5	3.83	1.335	937
Info41 InfoAnlysis1	3.62	1.257	937
Info42 InfoAnlysis2	3.47	1.271	937
Info43 InfoAnlysis3	3.28	1.176	937
hr52 HumanRes2	3.17	1.296	937
hr53 HumanRes3	3.64	1.160	937
hr54 HumanRes4	3.28	1.247	937
hr55 HumanRes5	3.45	1.227	937
pm61 PrcMngmt1	3.69	1.150	937
pm62 PrcMngmt2	3.60	1.298	937

Item Statistics

	Mean	Std. Deviation	N
pm63 PrcMngmt3	3.68	1.228	937
pm64 PrcMngmt4	3.65	1.230	937
pm65 PrcMngmt5	3.73	1.235	937
pm66 PrcMngmt6	3.76	1.222	937
ci73 Contimprv3	3.69	1.120	937
ci74 Contimprv4	3.61	1.186	937
ci75 Contimprv5	3.62	1.205	937
br85 BusReslt5	3.59	1.228	937
br86 BusReslt6	3.74	1.232	937
br87 BusReslt7	3.71	1.167	937
br88 BusReslt8	3.75	1.338	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ldr11 Leadership1	108.49	742.633	.580	.971
ldr12 Leadership2	108.42	737.013	.713	.970
ldr13 Leadership3	108.49	737.355	.687	.971
sp22 StrtgicPlanning2	108.60	734.364	.755	.970
sp23 StrtgicPlanning3	109.22	738.780	.649	.971
sp24 StrtgicPlanning4	109.10	739.411	.662	.971
cstmrkt31 CustmrMrktFocus1	108.40	734.844	.715	.970
cstmrkt32 CustmrMrktFocus2	108.61	730.465	.710	.970
cstmrkt33 CustmrMrktFocus3	108.57	726.338	.686	.971
cstmrkt34 CustmrMrktFocus4	108.47	729.816	.732	.970
cstmrkt35 CustmrMrktFocus5	108.48	728.416	.725	.970
Info41 InfoAnlysis1	108.69	729.869	.751	.970
Info42 InfoAnlysis2	108.84	732.380	.705	.970
Info43 InfoAnlysis3	109.03	738.194	.671	.971
hr52 HumanRes2	109.14	736.921	.624	.971
hr53 HumanRes3	108.67	735.714	.722	.970
hr54 HumanRes4	109.03	732.619	.715	.970
hr55 HumanRes5	108.86	738.553	.636	.971
pm61 PrcMngmt1	108.62	731.917	.791	.970
pm62 PrcMngmt2	108.71	728.103	.752	.970

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
pm63 PrcMngmt3	108.63	728.100	.798	.970
pm64 PrcMngmt4	108.66	727.941	.799	.970
pm65 PrcMngmt5	108.58	728.472	.787	.970
pm66 PrcMngmt6	108.55	732.173	.738	.970
ci73 Contimprv3	108.62	744.122	.607	.971
ci74 Contimprv4	108.70	732.929	.749	.970
ci75 Contimprv5	108.69	730.792	.771	.970
br85 BusReslt5	108.72	731.793	.740	.970
br86 BusReslt6	108.57	731.954	.735	.970
br87 BusReslt7	108.60	735.036	.728	.970
br88 BusReslt8	108.56	731.401	.681	.971

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
112.31	782.464	27.973	31

```
FACTOR
  /VARIABLES ldr11 ldr12 ldr13 sp22 sp23 sp24 cstmrkt31 cstmrkt32 cstmrkt33 c
stmrkt34 cstmrkt35 Info41 Info42 Info43 hr52 hr53 hr54 hr55 pm61 pm62 pm63 pm
64 pm65 pm66 ci73 ci74 ci75 br85 br86 br87 br88
  /MISSING LISTWISE
  /ANALYSIS ldr11 ldr12 ldr13 sp22 sp23 sp24 cstmrkt31 cstmrkt32 cstmrkt33 cs
tmrkt34 cstmrkt35 Info41 Info42 Info43 hr52 hr53 hr54 hr55 pm61 pm62 pm63 pm6
4 pm65 pm66 ci73 ci74 ci75 br85 br86 br87 br88
  /PRINT INITIAL EXTRACTION ROTATION
  /FORMAT BLANK(0.5)
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] F:\Reem Shameri Last\Reem_hosnymodel.sav

Communalities

	Initial	Extraction
ldr11 Leadership1	1.000	.674
ldr12 Leadership2	1.000	.711
ldr13 Leadership3	1.000	.647
sp22 StrtgicPlanning2	1.000	.623
sp23 StrtgicPlanning3	1.000	.553
sp24 StrtgicPlanning4	1.000	.581
cstmrkt31 CustmrMrktFocus1	1.000	.724
cstmrkt32 CustmrMrktFocus2	1.000	.716
cstmrkt33 CustmrMrktFocus3	1.000	.625
cstmrkt34 CustmrMrktFocus4	1.000	.724
cstmrkt35 CustmrMrktFocus5	1.000	.717
Info41 InfoAnlysis1	1.000	.621
Info42 InfoAnlysis2	1.000	.578
Info43 InfoAnlysis3	1.000	.556
hr52 HumanRes2	1.000	.676
hr53 HumanRes3	1.000	.661
hr54 HumanRes4	1.000	.719
hr55 HumanRes5	1.000	.616
pm61 PrcMngmt1	1.000	.747
pm62 PrcMngmt2	1.000	.762
pm63 PrcMngmt3	1.000	.826
pm64 PrcMngmt4	1.000	.836
pm65 PrcMngmt5	1.000	.793
pm66 PrcMngmt6	1.000	.707
ci73 Contimprv3	1.000	.421
ci74 Contimprv4	1.000	.696
ci75 Contimprv5	1.000	.654
br85 BusReslt5	1.000	.664
br86 BusReslt6	1.000	.755
br87 BusReslt7	1.000	.746
br88 BusReslt8	1.000	.665

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	16.807	54.215	54.215	16.807	54.215	54.215
2	1.840	5.935	60.150	1.840	5.935	60.150
3	1.340	4.323	64.472	1.340	4.323	64.472
4	1.006	3.246	67.719	1.006	3.246	67.719
5	.914	2.950	70.668			
6	.842	2.717	73.385			
7	.726	2.343	75.729			
8	.683	2.204	77.933			
9	.552	1.782	79.715			
10	.459	1.480	81.195			
11	.446	1.438	82.633			
12	.405	1.306	83.938			
13	.386	1.245	85.183			
14	.380	1.227	86.410			
15	.368	1.187	87.596			
16	.343	1.107	88.704			
17	.328	1.057	89.761			
18	.319	1.029	90.790			
19	.302	.974	91.764			
20	.294	.948	92.712			
21	.264	.851	93.563			
22	.259	.837	94.399			
23	.239	.772	95.171			
24	.232	.749	95.921			
25	.220	.710	96.630			
26	.212	.685	97.315			
27	.194	.625	97.940			
28	.180	.582	98.522			
29	.174	.562	99.084			
30	.154	.496	99.580			
31	.130	.420	100.000			

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	6.536	21.083	21.083
2	5.482	17.684	38.766
3	5.099	16.447	55.214
4	3.876	12.505	67.719

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component			
	1	2	3	4
ldr11 Leadership1	.602		.501	
ldr12 Leadership2	.732			
ldr13 Leadership3	.707			
sp22 StrtgicPlanning2	.775			
sp23 StrtgicPlanning3	.671			
sp24 StrtgicPlanning4	.684			
cstmrkt31 CustmrMrktFocus1	.732			
cstmrkt32 CustmrMrktFocus2	.729			
cstmrkt33 CustmrMrktFocus3	.707			
cstmrkt34 CustmrMrktFocus4	.750			
cstmrkt35 CustmrMrktFocus5	.745			
Info41 InfoAnlysis1	.771			
Info42 InfoAnlysis2	.727			
Info43 InfoAnlysis3	.694			
hr52 HumanRes2	.647			
hr53 HumanRes3	.742			
hr54 HumanRes4	.735			
hr55 HumanRes5	.658			
pm61 PrcMngmt1	.811			
pm62 PrcMngmt2	.776			
pm63 PrcMngmt3	.819			
pm64 PrcMngmt4	.820			
pm65 PrcMngmt5	.809			
pm66 PrcMngmt6	.761			

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Component Matrix[a]

	Component			
	1	2	3	4
ci73 Contimprv3	.631			
ci74 Contimprv4	.770			
ci75 Contimprv5	.791			
br85 BusReslt5	.761			
br86 BusReslt6	.755			
br87 BusReslt7	.748			
br88 BusReslt8	.703			

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Rotated Component Matrix[a]

	Component			
	1	2	3	4
ldr11 Leadership1				.744
ldr12 Leadership2				.663
ldr13 Leadership3				.633
sp22 StrtgicPlanning2				
sp23 StrtgicPlanning3	.518			
sp24 StrtgicPlanning4	.505			
cstmrkt31 CustmrMrktFocus1			.566	.530
cstmrkt32 CustmrMrktFocus2			.577	.520
cstmrkt33 CustmrMrktFocus3			.576	
cstmrkt34 CustmrMrktFocus4			.648	
cstmrkt35 CustmrMrktFocus5			.631	
Info41 InfoAnlysis1	.506			
Info42 InfoAnlysis2	.564			
Info43 InfoAnlysis3	.594			
hr52 HumanRes2	.783			
hr53 HumanRes3	.666			
hr54 HumanRes4	.760			
hr55 HumanRes5	.720			
pm61 PrcMngmt1		.670		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 14 iterations.

Rotated Component Matrix[a]

	Component			
	1	2	3	4
pm62 PrcMngmt2		.745		
pm63 PrcMngmt3		.760		
pm64 PrcMngmt4		.764		
pm65 PrcMngmt5		.734		
pm66 PrcMngmt6		.696		
ci73 Contimprv3				
ci74 Contimprv4	.696			
ci75 Contimprv5	.559			
br85 BusReslt5	.509		.552	
br86 BusReslt6			.720	
br87 BusReslt7			.688	
br88 BusReslt8			.705	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 14 iterations.

Component Transformation Matrix

Component	1	2	3	4
1	.563	.522	.492	.410
2	.781	-.135	-.568	-.222
3	.099	-.690	.020	.717
4	.249	-.484	.660	-.518

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
SAVE OUTFILE='D:\my thesis\Dr Hosney work\reem2012\reem2012.sav'
  /COMPRESSED.
RELIABILITY
  /VARIABLES=ldr11 ldr12 ldr13
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Reliability

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	95.9
	Excluded[a]	40	4.1
	Total	977	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.850	3

Item Statistics

	Mean	Std. Deviation	N
Leadership1	3.82	1.214	937
Leadership2	3.89	1.141	937
Leadership3	3.82	1.173	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Leadership1	7.71	4.591	.674	.833
Leadership2	7.64	4.498	.780	.733
Leadership3	7.71	4.637	.705	.803

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
11.53	9.574	3.094	3

```
RELIABILITY
  /VARIABLES=ldr11 ldr12 ldr13
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Scale: ALL VARIABLES

Reliability

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Scale: ALL VARIABLES

Item Statistics

	Mean	Std. Deviation	N
Leadership1	3.82	1.214	937
Leadership2	3.89	1.141	937
Leadership3	3.82	1.173	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Leadership1	7.71	4.591	.674	.833
Leadership2	7.64	4.498	.780	.733
Leadership3	7.71	4.637	.705	.803

Reliability Statistics

Cronbach's Alpha	N of Items
.850	3

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
11.53	9.574	3.094	3

Reliability Statistics

Cronbach's Alpha	N of Items
.850	3

```
RELIABILITY
  /VARIABLES=sp22 sp23 sp24
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
```

```
  /SUMMARY=TOTAL.
```

Reliability

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.817	3

Item Statistics

	Mean	Std. Deviation	N
StrtgicPlanning2	3.71	1.144	937
StrtgicPlanning3	3.09	1.198	937
StrtgicPlanning4	3.21	1.158	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
StrtgicPlanning2	6.30	4.773	.579	.837
StrtgicPlanning3	6.92	4.047	.725	.690
StrtgicPlanning4	6.80	4.241	.711	.706

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
10.01	8.976	2.996	3

```
RELIABILITY
  /VARIABLES=cstmrkt31 cstmrkt32 cstmrkt33 cstmrkt34 cstmrkt35
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Reliability

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.915	5

Item Statistics

	Mean	Std. Deviation	N
CustmrMrktFocus1	3.91	1.193	937
CustmrMrktFocus2	3.70	1.310	937
CustmrMrktFocus3	3.74	1.461	937
CustmrMrktFocus4	3.84	1.289	937
CustmrMrktFocus5	3.83	1.335	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CustmrMrktFocus1	15.12	22.123	.803	.894
CustmrMrktFocus2	15.33	21.429	.775	.898
CustmrMrktFocus3	15.29	20.565	.744	.907
CustmrMrktFocus4	15.19	21.213	.815	.890
CustmrMrktFocus5	15.20	21.028	.796	.894

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
19.03	32.548	5.705	5

```
RELIABILITY
  /VARIABLES=Info41 Info42 Info43
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Reliability

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.862	3

Item Statistics

	Mean	Std. Deviation	N
InfoAnlysis1	3.62	1.257	937
InfoAnlysis2	3.47	1.271	937
InfoAnlysis3	3.28	1.176	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
InfoAnlysis1	6.75	4.986	.748	.797
InfoAnlysis2	6.91	4.739	.798	.749
InfoAnlysis3	7.09	5.623	.674	.863

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
10.38	10.769	3.282	3

```
RELIABILITY
  /VARIABLES=hr52 hr53 hr54 hr55
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Reliability

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.886	4

Item Statistics

	Mean	Std. Deviation	N
HumanRes2	3.17	1.296	937
HumanRes3	3.64	1.160	937
HumanRes4	3.28	1.247	937
HumanRes5	3.45	1.227	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
HumanRes2	10.37	10.210	.753	.853
HumanRes3	9.90	11.281	.705	.870
HumanRes4	10.26	10.002	.832	.821
HumanRes5	10.10	10.831	.716	.866

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
13.54	18.120	4.257	4

```
RELIABILITY
  /VARIABLES=pm61 pm62 pm63 pm64 pm65 pm66
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Reliability

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.946	6

Item Statistics

	Mean	Std. Deviation	N
PrcMngmt1	3.69	1.150	937
PrcMngmt2	3.60	1.298	937
PrcMngmt3	3.68	1.228	937
PrcMngmt4	3.65	1.230	937
PrcMngmt5	3.73	1.235	937
PrcMngmt6	3.76	1.222	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PrcMngmt1	18.43	31.010	.815	.939
PrcMngmt2	18.51	29.413	.830	.937
PrcMngmt3	18.43	29.598	.874	.932
PrcMngmt4	18.46	29.501	.880	.931
PrcMngmt5	18.39	29.799	.849	.935
PrcMngmt6	18.36	30.813	.771	.944

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
22.11	42.772	6.540	6

```
RELIABILITY
  /VARIABLES=ci73 ci74 ci75
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	N of Items
.850	3

Reliability

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.838	3

Item Statistics

	Mean	Std. Deviation	N
Contimprv3	3.69	1.120	937
Contimprv4	3.61	1.186	937
Contimprv5	3.62	1.205	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Contimprv3	7.23	5.022	.608	.861
Contimprv4	7.31	4.263	.746	.730
Contimprv5	7.30	4.154	.757	.719

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
10.92	9.325	3.054	3

```
RELIABILITY
  /VARIABLES=br85 br86 br87 br88
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Reliability

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.887	4

Item Statistics

	Mean	Std. Deviation	N
BusResIt5	3.59	1.228	937
BusResIt6	3.74	1.232	937
BusResIt7	3.71	1.167	937
BusResIt8	3.75	1.338	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
BusResIt5	11.20	10.980	.731	.862
BusResIt6	11.05	10.383	.823	.827
BusResIt7	11.08	10.937	.795	.839
BusResIt8	11.03	10.748	.672	.888

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
14.79	18.435	4.294	4

```
RELIABILITY
  /VARIABLES=ldr11 ldr12 ldr13 sp22 sp23 sp24 cstmrkt31 cstmrkt32 cstmrkt3
3 cstmrkt34 cstmrkt35 Info41 Info42 Info43 hr52 hr53 hr54
   hr55 pm61 pm62 pm63 pm64 pm65 pm66 ci73 ci74 ci75 br85 br86 br87 br88
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Reliability

```
[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.971	31

Item Statistics

	Mean	Std. Deviation	N
Leadership1	3.82	1.214	937
Leadership2	3.89	1.141	937
Leadership3	3.82	1.173	937
StrtgicPlanning2	3.71	1.144	937
StrtgicPlanning3	3.09	1.198	937
StrtgicPlanning4	3.21	1.158	937
CustmrMrktFocus1	3.91	1.193	937
CustmrMrktFocus2	3.70	1.310	937
CustmrMrktFocus3	3.74	1.461	937
CustmrMrktFocus4	3.84	1.289	937
CustmrMrktFocus5	3.83	1.335	937
InfoAnlysis1	3.62	1.257	937
InfoAnlysis2	3.47	1.271	937
InfoAnlysis3	3.28	1.176	937
HumanRes2	3.17	1.296	937
HumanRes3	3.64	1.160	937
HumanRes4	3.28	1.247	937
HumanRes5	3.45	1.227	937
PrcMngmt1	3.69	1.150	937
PrcMngmt2	3.60	1.298	937
PrcMngmt3	3.68	1.228	937
PrcMngmt4	3.65	1.230	937
PrcMngmt5	3.73	1.235	937
PrcMngmt6	3.76	1.222	937
Contimprv3	3.69	1.120	937
Contimprv4	3.61	1.186	937
Contimprv5	3.62	1.205	937
BusReslt5	3.59	1.228	937
BusReslt6	3.74	1.232	937

Item Statistics

	Mean	Std. Deviation	N
BusReslt7	3.71	1.167	937
BusReslt8	3.75	1.338	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Leadership1	108.49	742.633	.580	.971
Leadership2	108.42	737.013	.713	.970
Leadership3	108.49	737.355	.687	.971
StrtgicPlanning2	108.60	734.364	.755	.970
StrtgicPlanning3	109.22	738.780	.649	.971
StrtgicPlanning4	109.10	739.411	.662	.971
CustmrMrktFocus1	108.40	734.844	.715	.970
CustmrMrktFocus2	108.61	730.465	.710	.970
CustmrMrktFocus3	108.57	726.338	.686	.971
CustmrMrktFocus4	108.47	729.816	.732	.970
CustmrMrktFocus5	108.48	728.416	.725	.970
InfoAnlysis1	108.69	729.869	.751	.970
InfoAnlysis2	108.84	732.380	.705	.970
InfoAnlysis3	109.03	738.194	.671	.971
HumanRes2	109.14	736.921	.624	.971
HumanRes3	108.67	735.714	.722	.970
HumanRes4	109.03	732.619	.715	.970
HumanRes5	108.86	738.553	.636	.971
PrcMngmt1	108.62	731.917	.791	.970
PrcMngmt2	108.71	728.103	.752	.970
PrcMngmt3	108.63	728.100	.798	.970
PrcMngmt4	108.66	727.941	.799	.970
PrcMngmt5	108.58	728.472	.787	.970
PrcMngmt6	108.55	732.173	.738	.970
Contimprv3	108.62	744.122	.607	.971
Contimprv4	108.70	732.929	.749	.970
Contimprv5	108.69	730.792	.771	.970
BusReslt5	108.72	731.793	.740	.970
BusReslt6	108.57	731.954	.735	.970
BusReslt7	108.60	735.036	.728	.970
BusReslt8	108.56	731.401	.681	.971

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
112.31	782.464	27.973	31

```
RELIABILITY
  /VARIABLES=TQMfm1 TQMfm3 TQMfm4 TQMfm5
  /SCALE('ALL VARIABLES') ALL
```

```
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE
/SUMMARY=TOTAL.
```

Reliability

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.771	6

Item Statistics

	Mean	Std. Deviation	N
NCQEthcs3	4.21	.973	937
NCQEthcs4	4.22	.962	937
NCQEthcs5	4.08	1.053	937
NCQEthcs7	3.61	1.258	937
NCQEthcs8	3.54	1.255	937
NCQEthcs9	3.53	1.209	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
NCQEthcs3	18.98	16.502	.484	.746
NCQEthcs4	18.97	16.440	.501	.742
NCQEthcs5	19.10	16.786	.392	.766
NCQEthcs7	19.58	14.028	.601	.714
NCQEthcs8	19.65	14.488	.545	.730
NCQEthcs9	19.65	14.458	.583	.719

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
23.19	21.275	4.613	6

Reliability

[DataSet3] D:\my thesis\Dr Hosney work\reem2012\reem2012.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	937	100.0
	Excluded[a]	0	.0
	Total	937	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.863	4

Item Statistics

	Mean	Std. Deviation	N
TQMFmlrtyq1	3.68	1.063	937
TQMFmlrtyq3	3.75	1.135	937
TQMFmlrtyq4	3.89	1.116	937
TQMFmlrtyq5	4.04	1.154	937

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
TQMFmlrtyq1	11.69	8.609	.706	.827
TQMFmlrtyq3	11.61	8.101	.735	.814
TQMFmlrtyq4	11.47	8.119	.751	.808
TQMFmlrtyq5	11.32	8.448	.651	.850

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15.36	14.142	3.761	4

```
RELIABILITY
  /VARIABLES=qethic453 qethic454 qethic455 qethic457 qethic458 qethic459
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

```
NPAR TESTS
  /K-S(NORMAL)=trfmlrty
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

One-Sample Kolmogorov-Smirnov Test

		trfmlrty
	N	937
Normal Parameters [a,,b]	Mean	3.8385
	Std. Deviation	.94074
Most Extreme Differences	Absolute	.124
	Positive	.091
	Negative	-.124
	Kolmogorov-Smirnov Z	3.789
	Asymp. Sig. (2-tailed)	.000

a. Test distribution is Normal.

b. Calculated from data.

```
NPAR TESTS
  /K-S(NORMAL)=trldr trsp trcsmk trinfo trhr trpm trci trbr
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

One-Sample Kolmogorov-Smirnov Test

		trldr	trsp	trcsmk	trinfo
	N	937	937	937	937
Normal Parameters [a,,b]	Mean	3.8433	3.3232	3.8075	3.4615
	Std. Deviation	1.03136	1.00192	1.14011	1.09629
Most Extreme Differences	Absolute	.102	.075	.080	.086
	Positive	.086	.050	.049	.056
	Negative	-.102	-.075	-.080	-.086
	Kolmogorov-Smirnov Z	3.114	2.308	2.438	2.645
	Asymp. Sig. (2-tailed)	.000	.000	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

One-Sample Kolmogorov-Smirnov Test

		trhr	trpm	trci	trbr
	N	937	937	937	937
Normal Parameters [a,,b]	Mean	3.3814	3.6850	3.6387	3.6967
	Std. Deviation	1.06649	1.09130	1.02200	1.07334
Most Extreme Differences	Absolute	.071	.059	.116	.111
	Positive	.056	.059	.078	.058
	Negative	-.071	-.057	-.116	-.111
	Kolmogorov-Smirnov Z	2.178	1.809	3.566	3.398
	Asymp. Sig. (2-tailed)	.000	.003	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

```
NPAR TESTS
  /K-S(NORMAL)=trpwr trunc trcol trqpr trqethic
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

One-Sample Kolmogorov-Smirnov Test

		trpwr	trunc	trcol
	N	937	937	937
Normal Parameters [a,,b]	Mean	2.5218	4.2306	4.1198
	Std. Deviation	1.57989	.88767	.98944
Most Extreme Differences	Absolute	.177	.182	.180
	Positive	.177	.182	.172
	Negative	-.168	-.167	-.180
	Kolmogorov-Smirnov Z	5.414	5.582	5.519
	Asymp. Sig. (2-tailed)	.000	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

One-Sample Kolmogorov-Smirnov Test

		trqpr	trqethic
	N	937	937
Normal Parameters a,,b	Mean	3.2740	3.8465
	Std. Deviation	1.24464	.78037
Most Extreme Differences	Absolute	.085	.066
	Positive	.064	.060
	Negative	-.085	-.066
	Kolmogorov-Smirnov Z	2.604	2.029
	Asymp. Sig. (2-tailed)	.000	.001

a. Test distribution is Normal.

b. Calculated from data.

```
NPAR TESTS
  /K-S(NORMAL)=trpwr trunc trcol trqpr trpersnlethic trworkethic
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

One-Sample Kolmogorov-Smirnov Test

		trpwr	trunc	trcol	trqpr
	N	937	937	937	937
Normal Parameters a,,b	Mean	2.5218	4.2306	4.1198	3.2740
	Std. Deviation	1.57989	.88767	.98944	1.24464
Most Extreme Differences	Absolute	.177	.182	.180	.085
	Positive	.177	.182	.172	.064
	Negative	-.168	-.167	-.180	-.085
	Kolmogorov-Smirnov Z	5.414	5.582	5.519	2.604
	Asymp. Sig. (2-tailed)	.000	.000	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

One-Sample Kolmogorov-Smirnov Test

		trpersnlethic	trworkethic
	N	937	937
Normal Parameters [a,,b]	Mean	4.1699	3.5590
	Std. Deviation	.83156	1.07615
Most Extreme Differences	Absolute	.163	.089
	Positive	.155	.079
	Negative	-.163	-.089
	Kolmogorov-Smirnov Z	4.983	2.712
	Asymp. Sig. (2-tailed)	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

```
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY ctgrypwr(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	ctgrypwr	N	Mean Rank
trldr	Low power distance	202	453.96
	Moderate power distance	301	469.58
	High power distance	200	433.82
	Very high power distance	234	511.31
	Total	937	
trsp	Low power distance	202	418.35
	Moderate power distance	301	453.78
	High power distance	200	465.13
	Very high power distance	234	535.61
	Total	937	
trcsmk	Low power distance	202	467.46
	Moderate power distance	301	462.37
	High power distance	200	446.98
	Very high power distance	234	497.68
	Total	937	
trinfo	Low power distance	202	441.17
	Moderate power distance	301	460.98
	High power distance	200	480.03
	Very high power distance	234	493.91
	Total	937	
trhr	Low power distance	202	442.68
	Moderate power distance	301	464.56
	High power distance	200	461.58
	Very high power distance	234	503.78
	Total	937	
trpm	Low power distance	202	459.91
	Moderate power distance	301	466.34
	High power distance	200	444.72
	Very high power distance	234	501.03
	Total	937	
trci	Low power distance	202	421.35
	Moderate power distance	301	456.88
	High power distance	200	455.70
	Very high power distance	234	537.09
	Total	937	

Ranks

	ctgrypwr	N	Mean Rank
trbr	Low power distance	202	454.00
	Moderate power distance	301	456.08
	High power distance	200	479.41
	Very high power distance	234	489.67
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm
Chi-Square	9.777	22.304	4.145	4.732	6.016	5.155
df	3	3	3	3	3	3
Asymp. Sig.	.021	.000	.246	.193	.111	.161

a. Kruskal Wallis Test

b. Grouping Variable: ctgrypwr

Test Statistics[a,b]

	trci	trbr
Chi-Square	22.304	2.986
df	3	3
Asymp. Sig.	.000	.394

a. Kruskal Wallis Test

b. Grouping Variable: ctgrypwr

```
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY ctgryunc(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	ctgryunc	N	Mean Rank
trldr	Low uncertainity avoidance	235	353.12
	Moderate uncertainity avoidance	248	455.02
	High uncertainity avoidance	444	536.20
	Very high uncertainity avoidance	10	555.20
	Total	937	

Ranks

	ctgryunc	N	Mean Rank
trsp	Low uncertainity avoidance	235	366.20
	Moderate uncertainity avoidance	248	469.28
	High uncertainity avoidance	444	520.00
	Very high uncertainity avoidance	10	613.25
	Total	937	
trcsmk	Low uncertainity avoidance	235	351.96
	Moderate uncertainity avoidance	248	471.79
	High uncertainity avoidance	444	526.99
	Very high uncertainity avoidance	10	575.45
	Total	937	
trinfo	Low uncertainity avoidance	235	358.67
	Moderate uncertainity avoidance	248	461.33
	High uncertainity avoidance	444	526.63
	Very high uncertainity avoidance	10	692.95
	Total	937	
trhr	Low uncertainity avoidance	235	360.79
	Moderate uncertainity avoidance	248	467.05
	High uncertainity avoidance	444	524.48
	Very high uncertainity avoidance	10	597.25
	Total	937	
trpm	Low uncertainity avoidance	235	338.76
	Moderate uncertainity avoidance	248	464.25
	High uncertainity avoidance	444	536.30
	Very high uncertainity avoidance	10	659.20
	Total	937	
trci	Low uncertainity avoidance	235	332.97
	Moderate uncertainity avoidance	248	471.70
	High uncertainity avoidance	444	535.34
	Very high uncertainity avoidance	10	652.95
	Total	937	

Ranks

	ctgryunc	N	Mean Rank
trbr	Low uncertainity avoidance	235	340.69
	Moderate uncertainity avoidance	248	456.03
	High uncertainity avoidance	444	542.22
	Very high uncertainity avoidance	10	554.95
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm
Chi-Square	72.527	52.666	66.001	66.451	58.573	87.066
df	3	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: ctgryunc

Test Statistics[a,b]

	trci	trbr
Chi-Square	91.277	87.425
df	3	3
Asymp. Sig.	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: ctgryunc

```
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY ctgrycol(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	ctgrycol	N	Mean Rank
trldr	Low collectivisim	235	351.12
	Moderate collectivisim	233	442.02
	High collectivisim	455	537.63
	Very high collectivisim	14	666.04
	Total	937	
trsp	Low collectivisim	235	373.33
	Moderate collectivisim	233	485.28
	High collectivisim	455	508.15
	Very high collectivisim	14	531.79
	Total	937	

Ranks

	ctgrycol	N	Mean Rank
trcsmk	Low collectivisim	235	381.62
	Moderate collectivisim	233	456.23
	High collectivisim	455	515.66
	Very high collectivisim	14	631.79
	Total	937	
trinfo	Low collectivisim	235	372.16
	Moderate collectivisim	233	467.47
	High collectivisim	455	512.39
	Very high collectivisim	14	709.82
	Total	937	
trhr	Low collectivisim	235	361.45
	Moderate collectivisim	233	468.77
	High collectivisim	455	517.52
	Very high collectivisim	14	701.14
	Total	937	
trpm	Low collectivisim	235	378.33
	Moderate collectivisim	233	469.37
	High collectivisim	455	510.22
	Very high collectivisim	14	645.25
	Total	937	
trci	Low collectivisim	235	344.83
	Moderate collectivisim	233	460.11
	High collectivisim	455	530.61
	Very high collectivisim	14	698.79
	Total	937	
trbr	Low collectivisim	235	384.37
	Moderate collectivisim	233	464.21
	High collectivisim	455	511.32
	Very high collectivisim	14	593.68
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm
Chi-Square	84.038	40.597	43.671	53.052	62.131	42.957
df	3	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: ctgrycol

Test Statistics [a,b]

	trci	trbr
Chi-Square	83.929	37.376
df	3	3
Asymp. Sig.	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: ctgrycol

```
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY ctgryqpr(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	ctgryqpr	N	Mean Rank
trldr	Low quality performance oriented	236	296.79
	Moderate quality performance oriented	222	419.48
	High quality performance oriented	240	536.13
	Very high quality performance oriented	239	617.63
	Total	937	
trsp	Low quality performance oriented	236	276.77
	Moderate quality performance oriented	222	414.40
	High quality performance oriented	240	538.08
	Very high quality performance oriented	239	640.16
	Total	937	
trcsmk	Low quality performance oriented	236	304.15
	Moderate quality performance oriented	222	415.98
	High quality performance oriented	240	539.94
	Very high quality performance oriented	239	609.79
	Total	937	

Ranks

	ctgryqpr	N	Mean Rank
trinfo	Low quality performance oriented	236	260.57
	Moderate quality performance oriented	222	423.16
	High quality performance oriented	240	523.39
	Very high quality performance oriented	239	662.78
	Total	937	
trhr	Low quality performance oriented	236	210.29
	Moderate quality performance oriented	222	416.08
	High quality performance oriented	240	537.57
	Very high quality performance oriented	239	704.76
	Total	937	
trpm	Low quality performance oriented	236	262.62
	Moderate quality performance oriented	222	421.22
	High quality performance oriented	240	538.05
	Very high quality performance oriented	239	647.83
	Total	937	
trci	Low quality performance oriented	236	251.30
	Moderate quality performance oriented	222	413.08
	High quality performance oriented	240	530.82
	Very high quality performance oriented	239	673.83
	Total	937	
trbr	Low quality performance oriented	236	279.40
	Moderate quality performance oriented	222	415.03
	High quality performance oriented	240	531.59
	Very high quality performance oriented	239	643.50
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci
Chi-Square	190.880	240.015	177.517	279.481	421.552	264.662	313.614
df	3	3	3	3	3	3	3

a. Kruskal Wallis Test

b. Grouping Variable: ctgryqpr

Test Statistics[a,b]

	trbr
Chi-Square	238.297
df	3

a. Kruskal Wallis Test

b. Grouping Variable: ctgryqpr

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: ctgryqpr

Test Statistics[a,b]

	trbr
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: ctgryqpr

```
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY ctgryprsnlethc(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	ctgryprsnlethc	N	Mean Rank
trldr	Low personal ethical values	241	437.87
	Moderate personal ethical values	213	450.00
	High personal ethical values	479	493.07
	Very high personal ethical values	4	474.00
	Total	937	
trsp	Low personal ethical values	241	442.75
	Moderate personal ethical values	213	487.69
	High personal ethical values	479	475.48
	Very high personal ethical values	4	278.88
	Total	937	

Ranks

	ctgryprsnlethc	N	Mean Rank
trcsmk	Low personal ethical values	241	437.48
	Moderate personal ethical values	213	474.32
	High personal ethical values	479	482.83
	Very high personal ethical values	4	428.50
	Total	937	
trinfo	Low personal ethical values	241	441.07
	Moderate personal ethical values	213	465.51
	High personal ethical values	479	486.42
	Very high personal ethical values	4	251.63
	Total	937	
trhr	Low personal ethical values	241	436.34
	Moderate personal ethical values	213	483.64
	High personal ethical values	479	479.59
	Very high personal ethical values	4	389.63
	Total	937	
trpm	Low personal ethical values	241	440.52
	Moderate personal ethical values	213	468.27
	High personal ethical values	479	483.77
	Very high personal ethical values	4	455.50
	Total	937	
trci	Low personal ethical values	241	448.21
	Moderate personal ethical values	213	479.01
	High personal ethical values	479	475.26
	Very high personal ethical values	4	438.63
	Total	937	
trbr	Low personal ethical values	241	446.20
	Moderate personal ethical values	213	460.03
	High personal ethical values	479	483.99
	Very high personal ethical values	4	525.75
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm
Chi-Square	8.073	5.547	4.700	7.189	5.218	4.114
df	3	3	3	3	3	3
Asymp. Sig.	.045	.136	.195	.066	.156	.249

a. Kruskal Wallis Test

b. Grouping Variable: ctgryprsnlethc

Test Statistics[a,b]

	trci	trbr
Chi-Square	2.033	3.612
df	3	3
Asymp. Sig.	.565	.307

a. Kruskal Wallis Test

b. Grouping Variable: ctgryprsnlethc

```
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY ctgrywrkethc(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	ctgrywrkethc	N	Mean Rank
trldr	Low work ethical values	325	459.24
	Moderate work ethical values	164	468.47
	High work ethical values	183	476.20
	Very high work ethical values	265	476.33
	Total	937	
trsp	Low work ethical values	325	472.59
	Moderate work ethical values	164	448.73
	High work ethical values	183	491.40
	Very high work ethical values	265	461.67
	Total	937	
trcsmk	Low work ethical values	325	473.26
	Moderate work ethical values	164	445.07
	High work ethical values	183	498.27
	Very high work ethical values	265	458.37
	Total	937	

Ranks

	ctgrywrkethc	N	Mean Rank
trinfo	Low work ethical values	325	451.13
	Moderate work ethical values	164	449.25
	High work ethical values	183	508.02
	Very high work ethical values	265	476.19
	Total	937	
trhr	Low work ethical values	325	454.47
	Moderate work ethical values	164	483.95
	High work ethical values	183	483.63
	Very high work ethical values	265	467.46
	Total	937	
trpm	Low work ethical values	325	455.46
	Moderate work ethical values	164	456.10
	High work ethical values	183	494.64
	Very high work ethical values	265	475.88
	Total	937	
trci	Low work ethical values	325	459.30
	Moderate work ethical values	164	454.48
	High work ethical values	183	494.55
	Very high work ethical values	265	472.25
	Total	937	
trbr	Low work ethical values	325	454.29
	Moderate work ethical values	164	469.57
	High work ethical values	183	494.08
	Very high work ethical values	265	469.37
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm
Chi-Square	.752	2.433	3.919	6.302	1.983	3.006
df	3	3	3	3	3	3
Asymp. Sig.	.861	.488	.270	.098	.576	.391

a. Kruskal Wallis Test

b. Grouping Variable: ctgrywrkethc

Test Statistics[a,b]

	trci	trbr
Chi-Square	2.576	2.548
df	3	3
Asymp. Sig.	.462	.467

a. Kruskal Wallis Test

b. Grouping Variable: ctgrywrkethc

```
ONEWAY trldr BY ctgrypwr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trldr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.829	3	3.610	3.420	.017
Within Groups	984.800	933	1.056		
Total	995.629	936			

Post Hoc Tests

Homogeneous Subsets

trldr

Duncan[a,,b]

ctgrypwr	N	Subset for alpha = 0.05	
		1	2
Low power distance	202	3.7364	
High power distance	200	3.7379	
Moderate power distance	301	3.8581	3.8581
Very high power distance	234		4.0065
Sig.		.235	.123

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 227.969.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trsp BY ctgrypwr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trsp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21.194	3	7.065	7.177	.000
Within Groups	918.403	933	.984		
Total	939.597	936			

Post Hoc Tests

Homogeneous Subsets

trsp

Duncan[a,,b]

ctgrypwr	N	Subset for alpha = 0.05	
		1	2
Low power distance	202	3.1317	
High power distance	200	3.2883	
Moderate power distance	301	3.2902	
Very high power distance	234		3.5609
Sig.		.108	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 227.969.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trci BY ctgrypwr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trci

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	28.331	3	9.444	9.282	.000
Within Groups	949.297	933	1.017		
Total	977.628	936			

Post Hoc Tests

Homogeneous Subsets

trci

Duncan[a,,b]

ctgrypwr	N	Subset for alpha = 0.05		
		1	2	3
Low power distance	202	3.4055		
Moderate power distance	301		3.6001	
High power distance	200		3.6188	
Very high power distance	234			3.9068
Sig.		1.000	.843	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 227.969.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trldr BY ctgryunc
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trldr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	71.410	3	23.803	24.030	.000
Within Groups	924.219	933	.991		
Total	995.629	936			

Post Hoc Tests

Homogeneous Subsets

trldr

Duncan[a,b]

		Subset for alpha = 0.05	
ctgryunc	N	1	2
Low uncertainity avoidance	235	3.4099	
Moderate uncertainity avoidance	248	3.8083	3.8083
High uncertainity avoidance	444		4.0850
Very high uncertainity avoidance	10		4.1631
Sig.		.089	.154

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 36.186.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trsp BY ctgryunc
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trsp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	53.994	3	17.998	18.961	.000
Within Groups	885.603	933	.949		

ANOVA

trsp

	Sum of Squares	df
Total	939.597	936

Post Hoc Tests

Homogeneous Subsets

trsp

Duncan[a,,b]

ctgryunc	N	Subset for alpha = 0.05		
		1	2	3
Low uncertainity avoidance	235	2.9448		
Moderate uncertainity avoidance	248	3.3250	3.3250	
High uncertainity avoidance	444		3.5057	
Very high uncertainity avoidance	10			4.0685
Sig.		.097	.430	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 36.186.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trcsmk BY ctgryunc
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trcsmk

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	76.763	3	25.588	20.943	.000
Within Groups	1139.893	933	1.222		
Total	1216.655	936			

Post Hoc Tests

Homogeneous Subsets

trcsmk

Duncan[a,,b]

ctgryunc	N	Subset for alpha = 0.05	
		1	2
Low uncertainity avoidance	235	3.3364	
Moderate uncertainity avoidance	248	3.8369	3.8369
High uncertainity avoidance	444		4.0288
Very high uncertainity avoidance	10		4.3229
Sig.		.054	.077

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 36.186.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trinfo BY ctgryunc
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trinfo

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	77.588	3	25.863	23.039	.000
Within Groups	1047.347	933	1.123		
Total	1124.935	936			

Post Hoc Tests

Homogeneous Subsets

trinfo

Duncan[a,,b]

ctgryunc	N	Subset for alpha = 0.05	
		1	2
Low uncertainity avoidance	235	3.0284	
Moderate uncertainity avoidance	248	3.4323	3.4323
High uncertainity avoidance	444		3.6829

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 36.186.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trinfo

Duncan a,,b

ctgryunc	N	Subset for alpha = 0.05 1	2	3
Very high uncertainity avoidance	10			4.5352
Sig.		.105	.315	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 36.186.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trhr BY ctgryunc
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trhr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	72.981	3	24.327	22.889	.000
Within Groups	991.627	933	1.063		
Total	1064.608	936			

Post Hoc Tests

Homogeneous Subsets

trhr

Duncan a,,b

ctgryunc	N	Subset for alpha = 0.05 1	2	3
Low uncertainity avoidance	235	2.9435		
Moderate uncertainity avoidance	248	3.3653	3.3653	
High uncertainity avoidance	444		3.6053	
Very high uncertainity avoidance	10			4.1296
Sig.		.082	.322	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 36.186.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trpm BY ctgryunc
```

```
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trpm

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	94.304	3	31.435	28.742	.000
Within Groups	1020.402	933	1.094		
Total	1114.706	936			

Post Hoc Tests

Homogeneous Subsets

trpm

Duncan[a,b]

		Subset for alpha = 0.05		
ctgryunc	N	1	2	3
Low uncertainity avoidance	235	3.1798		
Moderate uncertainity avoidance	248		3.6828	
High uncertainity avoidance	444		3.9353	
Very high uncertainity avoidance	10			4.4913
Sig.		1.000	.305	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 36.186.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trci BY ctgryunc
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trci

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	98.782	3	32.927	34.956	.000
Within Groups	878.846	933	.942		
Total	977.628	936			

Post Hoc Tests

Homogeneous Subsets

trci

Duncan[a,,b]

ctgryunc	N	Subset for alpha = 0.05		
		1	2	3
Low uncertainity avoidance	235	3.1079		
Moderate uncertainity avoidance	248		3.6777	
High uncertainity avoidance	444		3.8800	
Very high uncertainity avoidance	10			4.4346
Sig.		1.000	.375	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 36.186.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trbr BY ctgryunc
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trbr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	91.279	3	30.426	28.760	.000
Within Groups	987.056	933	1.058		
Total	1078.334	936			

Post Hoc Tests

Homogeneous Subsets

trbr

Duncan[a,,b]

ctgryunc	N	Subset for alpha = 0.05 1	2
Low uncertainity avoidance	235	3.2062	
Moderate uncertainity avoidance	248	3.6594	3.6594
High uncertainity avoidance	444		3.9674
Very high uncertainity avoidance	10		4.1298
Sig.		.061	.065

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 36.186.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trldr BY ctgrycol
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trldr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	85.477	3	28.492	29.208	.000
Within Groups	910.152	933	.976		
Total	995.629	936			

Post Hoc Tests

Homogeneous Subsets

trldr

Duncan[a,,b]

ctgrycol	N	Subset for alpha = 0.05 1	2
Low collectivisim	235	3.3877	
Moderate collectivisim	233	3.7758	3.7758
High collectivisim	455		4.0900

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trldr

Duncan a,,b

ctgrycol	N	Subset for alpha = 0.05 1	2	3
Very high collectivisim	14			4.5967
Sig.		.053	.117	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trsp BY ctgrycol
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trsp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	46.085	3	15.362	16.041	.000
Within Groups	893.512	933	.958		
Total	939.597	936			

Post Hoc Tests

Homogeneous Subsets

trsp

Duncan a,,b

ctgrycol	N	Subset for alpha = 0.05 1	2
Low collectivisim	235	2.9497	
Moderate collectivisim	233		3.3862
High collectivisim	455		3.4711
Very high collectivisim	14		3.7393
Sig.		1.000	.093

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trcsmk BY ctgrycol
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trcsmk

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	54.715	3	18.238	14.645	.000
Within Groups	1161.940	933	1.245		
Total	1216.655	936			

Post Hoc Tests

Homogeneous Subsets

trcsmk

Duncan[a,,b]

		Subset for alpha = 0.05		
ctgrycol	N	1	2	3
Low collectivisim	235	3.4408		
Moderate collectivisim	233	3.7728	3.7728	
High collectivisim	455		3.9925	
Very high collectivisim	14			4.5278
Sig.		.142	.332	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trinfo BY ctgrycol
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trinfo

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	65.648	3	21.883	19.274	.000
Within Groups	1059.287	933	1.135		
Total	1124.935	936			

Post Hoc Tests

Homogeneous Subsets

trinfo

Duncan a,,b

ctgrycol	N	Subset for alpha = 0.05 1	2	3
Low collectivisim	235	3.0727		
Moderate collectivisim	233	3.4636	3.4636	
High collectivisim	455		3.6266	
Very high collectivisim	14			4.5865
Sig.		.071	.450	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trhr BY ctgrycol
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trhr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	79.780	3	26.593	25.194	.000
Within Groups	984.828	933	1.056		
Total	1064.608	936			

Post Hoc Tests

Homogeneous Subsets

trhr

Duncan a,,b

ctgrycol	N	Subset for alpha = 0.05 1	2	3
Low collectivisim	235	2.9381		
Moderate collectivisim	233		3.3714	
High collectivisim	455		3.5836	
Very high collectivisim	14			4.4156
Sig.		1.000	.308	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trpm BY ctgrycol
```

```
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trpm

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	57.134	3	19.045	16.801	.000
Within Groups	1057.572	933	1.134		
Total	1114.706	936			

Post Hoc Tests

Homogeneous Subsets

trpm

Duncan[a,b]

		Subset for alpha = 0.05		
ctgrycol	N	1	2	3
Low collectivisim	235	3.2976		
Moderate collectivisim	233	3.6950	3.6950	
High collectivisim	455		3.8559	
Very high collectivisim	14			4.4666
Sig.		.066	.456	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trci BY ctgrycol
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trci

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	93.409	3	31.136	32.854	.000
Within Groups	884.219	933	.948		
Total	977.628	936			

Post Hoc Tests

Homogeneous Subsets

trci

Duncan[a,,b]

ctgrycol	N	Subset for alpha = 0.05 1	2	3
Low collectivisim	235	3.1533		
Moderate collectivisim	233		3.6100	
High collectivisim	455		3.8753	
Very high collectivisim	14			4.5789
Sig.		1.000	.179	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trbr BY ctgrycol
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet1] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trbr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	46.658	3	15.553	14.065	.000
Within Groups	1031.676	933	1.106		
Total	1078.334	936			

Post Hoc Tests

Homogeneous Subsets

trbr

Duncan a,,b

ctgrycol	N	Subset for alpha = 0.05 1	2
Low collectivisim	235	3.3400	
Moderate collectivisim	233	3.7058	3.7058
High collectivisim	455		3.8581

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trbr

Duncan a,,b

ctgrycol	N	Subset for alpha = 0.05 1	2	3
Very high collectivisim	14			4.2874
Sig.		.086	.475	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 48.677.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trldr BY ctgryqpr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trldr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	186.774	3	62.258	71.814	.000
Within Groups	808.854	933	.867		
Total	995.629	936			

Post Hoc Tests

Homogeneous Subsets

trldr

Duncan [a,b]

ctgryqpr	N	Subset for alpha = 0.05 1	2	3	4
Low quality performance oriented	236	3.1696			
Moderate quality performance oriented	222		3.7320		
High quality performance oriented	240			4.1109	
Very high quality performance oriented	239				4.3432
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 234.020.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trsp BY ctgryqpr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trsp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	229.697	3	76.566	100.628	.000
Within Groups	709.900	933	.761		
Total	939.597	936			

Post Hoc Tests

Homogeneous Subsets

trsp

Duncan [a,b]

ctgryqpr	N	Subset for alpha = 0.05 1	2	3
Low quality performance oriented	236	2.6042		
Moderate quality performance oriented	222		3.1699	
High quality performance oriented	240			3.5672

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 234.020.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trsp

Duncan[a,,b]

ctgryqpr	N	Subset for alpha = 0.05			
		1	2	3	4
Very high quality performance oriented	239				3.9306
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 234.020.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trcsmk BY ctgryqpr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trcsmk

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	207.163	3	69.054	63.822	.000
Within Groups	1009.492	933	1.082		
Total	1216.655	936			

Post Hoc Tests

Homogeneous Subsets

trcsmk

Duncan[a,,b]

ctgryqpr	N	Subset for alpha = 0.05			
		1	2	3	4
Low quality performance oriented	236	3.0967			
Moderate quality performance oriented	222		3.6863		
High quality performance oriented	240			4.1066	
Very high quality performance oriented	239				4.3217
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 234.020.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trinfo BY ctgryqpr
```

```
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet1] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trinfo

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	311.690	3	103.897	119.196	.000
Within Groups	813.245	933	.872		
Total	1124.935	936			

Post Hoc Tests

Homogeneous Subsets

trinfo

Duncan a,,b

ctgryqpr	N	Subset for alpha = 0.05			
		1	2	3	4
Low quality performance oriented	236	2.6078			
Moderate quality performance oriented	222		3.3415		
High quality performance oriented	240			3.6972	
Very high quality performance oriented	239				4.1794
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 234.020.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trhr BY ctgryqpr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trhr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	458.734	3	152.911	235.472	.000
Within Groups	605.873	933	.649		

ANOVA

trhr

	Sum of Squares	df
Total	1064.608	936

Post Hoc Tests

Homogeneous Subsets

trhr

Duncan[a,,b]

ctgryqpr	N	Subset for alpha = 0.05			
		1	2	3	4
Low quality performance oriented	236	2.3517			
Moderate quality performance oriented	222		3.2286		
High quality performance oriented	240			3.6598	
Very high quality performance oriented	239				4.2606
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 234.020.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trpm BY ctgryqpr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trpm

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	269.066	3	89.689	98.954	.000
Within Groups	845.640	933	.906		
Total	1114.706	936			

Post Hoc Tests

Homogeneous Subsets

trpm

Duncan[a,,b]

ctgryqpr	N	Subset for alpha = 0.05 1	2	3	4
Low quality performance oriented	236	2.8739			
Moderate quality performance oriented	222		3.5800		
High quality performance oriented	240			3.9559	
Very high quality performance oriented	239				4.3113
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 234.020.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trci BY ctgryqpr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trci

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	314.236	3	104.745	147.314	.000
Within Groups	663.393	933	.711		
Total	977.628	936			

Post Hoc Tests

Homogeneous Subsets

trci

Duncan[a,,b]

ctgryqpr	N	Subset for alpha = 0.05 1	2	3
Low quality performance oriented	236	2.7875		
Moderate quality performance oriented	222		3.4951	
High quality performance oriented	240			3.8943

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 234.020.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trci

Duncan a,,b

ctgryqpr	N	Subset for alpha = 0.05 1	2	3	4
Very high quality performance oriented	239				4.3560
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 234.020.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trbr BY ctgryqpr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trbr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	245.405	3	81.802	91.630	.000
Within Groups	832.929	933	.893		
Total	1078.334	936			

Post Hoc Tests

Homogeneous Subsets

trbr

Duncan a,,b

ctgryqpr	N	Subset for alpha = 0.05 1	2	3	4
Low quality performance oriented	236	2.9247			
Moderate quality performance oriented	222		3.5876		
High quality performance oriented	240			3.9622	
Very high quality performance oriented	239				4.2937
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 234.020.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trldr BY ctgryprsnlethc
```

```
/MISSING ANALYSIS
/POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet1] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trldr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.455	3	2.818	2.664	.047
Within Groups	987.174	933	1.058		
Total	995.629	936			

Post Hoc Tests

Homogeneous Subsets

trldr

Duncan[a,,b]

		Subset for alpha = 0.05
ctgryprsnlethc	N	1
Low personal ethical values	241	3.7177
Moderate personal ethical values	213	3.7838
High personal ethical values	479	3.9310
Very high personal ethical values	4	4.0752
Sig.		.388

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 15.330.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY Grade(1 3)
  /MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	Grade	N	Mean Rank
trldr	Grade 19 to 18	81	491.75
	Grade 17 to 16	140	539.75
	Grade 15 to 14	716	452.59
	Total	937	
trsp	Grade 19 to 18	81	477.54
	Grade 17 to 16	140	538.58
	Grade 15 to 14	716	454.43
	Total	937	
trcsmk	Grade 19 to 18	81	469.73
	Grade 17 to 16	140	521.63
	Grade 15 to 14	716	458.63
	Total	937	
trinfo	Grade 19 to 18	81	481.16
	Grade 17 to 16	140	525.64
	Grade 15 to 14	716	456.55
	Total	937	
trhr	Grade 19 to 18	81	518.64
	Grade 17 to 16	140	516.42
	Grade 15 to 14	716	454.11
	Total	937	
trpm	Grade 19 to 18	81	490.80
	Grade 17 to 16	140	526.38
	Grade 15 to 14	716	455.31
	Total	937	
trci	Grade 19 to 18	81	510.64
	Grade 17 to 16	140	513.09
	Grade 15 to 14	716	455.67
	Total	937	
trbr	Grade 19 to 18	81	473.98
	Grade 17 to 16	140	534.59
	Grade 15 to 14	716	455.61
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	12.843	11.443	6.357	7.835	9.204	8.667	7.417	10.062
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.002	.003	.042	.020	.010	.013	.025	.007

a. Kruskal Wallis Test

b. Grouping Variable: Grade

```
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY Compny(1 3)
  /MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	Company	N	Mean Rank
trldr	PIC	108	564.90
	KNPC	248	449.48
	KOC	581	459.51
	Total	937	
trsp	PIC	108	553.24
	KNPC	248	436.28
	KOC	581	467.31
	Total	937	
trcsmk	PIC	108	552.16
	KNPC	248	454.23
	KOC	581	459.85
	Total	937	
trinfo	PIC	108	546.94
	KNPC	248	440.25
	KOC	581	466.79
	Total	937	
trhr	PIC	108	485.09
	KNPC	248	403.18
	KOC	581	494.10
	Total	937	
trpm	PIC	108	558.00
	KNPC	248	451.72
	KOC	581	459.83
	Total	937	

Ranks

	Company	N	Mean Rank
trci	PIC	108	563.82
	KNPC	248	433.33
	KOC	581	466.60
	Total	937	
trbr	PIC	108	539.47
	KNPC	248	436.19
	KOC	581	469.91
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	15.651	14.150	11.618	11.833	20.082	13.384	17.726	11.041
df	2	2	2	2	2	2	2	2
Asymp. Sig.	.000	.001	.003	.003	.000	.001	.000	.004

a. Kruskal Wallis Test

b. Grouping Variable: Company

```
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY ExpYrs(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	YearsofExperince	N	Mean Rank
trldr	Less than 5 years	114	444.52
	5 to 10 years	218	448.65
	11 to 15 years	100	472.69
	More than 15 years	505	482.58
	Total	937	
trsp	Less than 5 years	114	462.75
	5 to 10 years	218	454.69
	11 to 15 years	100	474.46
	More than 15 years	505	475.50

Ranks

	YearsofExperince	N	Mean Rank
trsp	Total	937	
trcsmk	Less than 5 years	114	462.32
	5 to 10 years	218	427.77
	11 to 15 years	100	484.54
	More than 15 years	505	485.23
	Total	937	
trinfo	Less than 5 years	114	451.97
	5 to 10 years	218	457.99
	11 to 15 years	100	468.24
	More than 15 years	505	477.75
	Total	937	
trhr	Less than 5 years	114	495.39
	5 to 10 years	218	432.14
	11 to 15 years	100	504.94
	More than 15 years	505	471.84
	Total	937	
trpm	Less than 5 years	114	458.00
	5 to 10 years	218	446.83
	11 to 15 years	100	477.30
	More than 15 years	505	479.41
	Total	937	
trci	Less than 5 years	114	458.04
	5 to 10 years	218	460.04
	11 to 15 years	100	473.71
	More than 15 years	505	474.41
	Total	937	
trbr	Less than 5 years	114	461.30
	5 to 10 years	218	423.84
	11 to 15 years	100	486.81
	More than 15 years	505	486.70
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	3.474	1.005	7.285	1.345	6.957	2.497	.663	8.809
df	3	3	3	3	3	3	3	3
Asymp. Sig.	.324	.800	.063	.718	.073	.476	.882	.032

a. Kruskal Wallis Test

b. Grouping Variable: YearsofExperince

NPAR TESTS

```
/K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY Natinlty(1 5)
/MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	Nationality	N	Mean Rank
trldr	Kuwaiti	612	436.40
	Arabs	42	630.40
	Western (European & U. S.)	32	376.33
	Asians (Indians, Pakistani, etc)	213	524.81
	Others	38	580.95
	Total	937	
trsp	Kuwaiti	612	422.19
	Arabs	42	519.26
	Western (European & U. S.)	32	398.98
	Asians (Indians, Pakistani, etc)	213	583.53
	Others	38	584.30
	Total	937	
trcsmk	Kuwaiti	612	424.90
	Arabs	42	560.36
	Western (European & U. S.)	32	434.13
	Asians (Indians, Pakistani, etc)	213	562.79
	Others	38	581.97
	Total	937	
trinfo	Kuwaiti	612	422.76
	Arabs	42	533.89
	Western (European & U. S.)	32	379.09
	Asians (Indians, Pakistani, etc)	213	575.78
	Others	38	619.11
	Total	937	

Ranks

	Nationality	N	Mean Rank
trhr	Kuwaiti	612	428.76
	Arabs	42	518.21
	Western (European & U. S.)	32	434.30
	Asians (Indians, Pakistani, etc)	213	543.20
	Others	38	675.99
	Total	937	
trpm	Kuwaiti	612	418.86
	Arabs	42	595.25
	Western (European & U. S.)	32	431.53
	Asians (Indians, Pakistani, etc)	213	567.57
	Others	38	616.03
	Total	937	
trci	Kuwaiti	612	434.54
	Arabs	42	527.50
	Western (European & U. S.)	32	376.00
	Asians (Indians, Pakistani, etc)	213	537.52
	Others	38	653.66
	Total	937	
trbr	Kuwaiti	612	415.21
	Arabs	42	567.26
	Western (European & U. S.)	32	459.77
	Asians (Indians, Pakistani, etc)	213	581.20
	Others	38	605.58
	Total	937	

Test Statistics[a,b]

	trldr	trsp	trcsmk	trinfo	trhr	trpm	trci	trbr
Chi-Square	43.368	67.130	53.850	68.885	53.766	70.370	47.312	76.503
df	4	4	4	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: Nationality

```
ONEWAY trldr BY Grade
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trldr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.393	2	5.697	5.406	.005
Within Groups	984.236	934	1.054		
Total	995.629	936			

Post Hoc Tests

Homogeneous Subsets

trldr

Duncan[a,,b]

Grade	N	Subset for alpha = 0.05	
		1	2
Grade 15 to 14	716	3.7866	
Grade 19 to 18	81	3.9140	3.9140
Grade 17 to 16	140		4.0924
Sig.		.293	.141

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 143.642.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trsp BY Grade
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trsp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.682	2	4.341	4.355	.013
Within Groups	930.915	934	.997		
Total	939.597	936			

Post Hoc Tests

```
ONEWAY trldr BY Compny
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trldr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.804	2	7.902	7.533	.001
Within Groups	979.824	934	1.049		
Total	995.629	936			

Post Hoc Tests

Homogeneous Subsets

trldr

Duncan[a,,b]

Company	N	Subset for alpha = 0.05	
		1	2
KNPC	248	3.7690	
KOC	581	3.8087	
PIC	108		4.2000
Sig.		.699	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trsp BY Compny
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trsp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.721	2	7.860	7.946	.000
Within Groups	923.876	934	.989		
Total	939.597	936			

Post Hoc Tests

Homogeneous Subsets

trsp

Duncan[a,,b]

Company	N	Subset for alpha = 0.05	
		1	2
KNPC	248	3.1986	
KOC	581	3.3149	
PIC	108		3.6541
Sig.		.242	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trcsmk BY Compny
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trcsmk

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.117	2	7.558	5.875	.003
Within Groups	1201.539	934	1.286		
Total	1216.655	936			

Post Hoc Tests

Homogeneous Subsets

trcsmk

Duncan a,,b

Company	N	Subset for alpha = 0.05	
		1	2
KNPC	248	3.7468	
KOC	581	3.7682	
PIC	108		4.1585
Sig.		.851	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trinfo BY Compny
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trinfo

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.481	2	6.241	5.240	.005
Within Groups	1112.454	934	1.191		
Total	1124.935	936			

Post Hoc Tests

Homogeneous Subsets

trinfo

Duncan[a,,b]

Company	N	Subset for alpha = 0.05
		1
KNPC	248	3.3449
KOC	581	3.4574

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trinfo

Duncan[a,,b]

Company	N	Subset for alpha = 0.05	
		1	2
PIC	108		3.7517
Sig.		.303	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trhr BY Compny
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trhr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	22.211	2	11.105	9.951	.000
Within Groups	1042.397	934	1.116		
Total	1064.608	936			

Post Hoc Tests

Homogeneous Subsets

trhr

Duncan[a,,b]

Company	N	Subset for alpha = 0.05	
		1	2
KNPC	248	3.1248	
KOC	581		3.4727
PIC	108		3.4796
Sig.		1.000	.948

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trpm BY Compny
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trpm

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.520	2	9.260	7.890	.000
Within Groups	1096.187	934	1.174		
Total	1114.706	936			

Post Hoc Tests

Homogeneous Subsets

trpm

Duncan[a,,b]

Company	N	Subset for alpha = 0.05
		1
KNPC	248	3.6064
KOC	581	3.6466

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trpm

Duncan[a,,b]

Company	N	Subset for alpha = 0.05	
		1	2
PIC	108		4.0715
Sig.		.711	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trci BY Compny
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trci

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	20.912	2	10.456	10.208	.000
Within Groups	956.716	934	1.024		
Total	977.628	936			

Post Hoc Tests

Homogeneous Subsets

trci

Duncan[a,,b]

Company	N	Subset for alpha = 0.05 1	2
KNPC	248	3.5041	
KOC	581	3.6240	
PIC	108		4.0271
Sig.		.236	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trbr BY Compny
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trbr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14.588	2	7.294	6.404	.002
Within Groups	1063.746	934	1.139		
Total	1078.334	936			

Post Hoc Tests

Homogeneous Subsets

trbr

Duncan [a,,b]

Company	N	Subset for alpha = 0.05
		1
KNPC	248	3.5649
KOC	581	3.6956

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trbr

Duncan [a,,b]

Company	N	Subset for alpha = 0.05	
		1	2
PIC	108		4.0052
Sig.		.221	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 199.831.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trldr BY Natinlty
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav

ANOVA

trldr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	41.594	4	10.398	10.158	.000
Within Groups	954.035	932	1.024		
Total	995.629	936			

Post Hoc Tests

Homogeneous Subsets

trldr

Duncan[a,,b]

		Subset for alpha = 0.05		
Nationality	N	1	2	3
Western (European & U. S.)	32	3.5308		
Kuwaiti	612	3.7235	3.7235	
Asians (Indians, Pakistani, etc)	213		4.0421	4.0421
Others	38			4.2895
Arabs	42			4.4146
Sig.		.309	.093	.063

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trsp BY Natinlty
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav

ANOVA

trsp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	58.931	4	14.733	15.591	.000
Within Groups	880.666	932	.945		
Total	939.597	936			

Post Hoc Tests

Homogeneous Subsets

trsp

Duncan[a,,b]

Nationality	N	Subset for alpha = 0.05		
		1	2	3
Western (European & U. S.)	32	3.1285		
Kuwaiti	612	3.1579	3.1579	
Arabs	42		3.5101	3.5101
Asians (Indians, Pakistani, etc)	213			3.7145
Others	38			3.7500
Sig.		.871	.053	.216

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trcsmk BY Natinlty
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trcsmk

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	54.711	4	13.678	10.971	.000
Within Groups	1161.944	932	1.247		
Total	1216.655	936			

Post Hoc Tests

Homogeneous Subsets

trcsmk

Duncan[a,,b]

Nationality	N	Subset for alpha = 0.05	
		1	2
Western (European & U. S.)	32	3.6131	
Kuwaiti	612	3.6468	
Arabs	42		4.1296
Asians (Indians, Pakistani, etc)	213		4.1556
Others	38		4.2524
Sig.		.872	.584

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trinfo BY Natinlty
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trinfo

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	79.056	4	19.764	17.612	.000
Within Groups	1045.879	932	1.122		
Total	1124.935	936			

Post Hoc Tests

Homogeneous Subsets

trinfo

Duncan [a,b]

Nationality	N	Subset for alpha = 0.05
		1
Western (European & U. S.)	32	3.1282
Kuwaiti	612	3.2779

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trinfo

Duncan [a,b]

Nationality	N	Subset for alpha = 0.05	
		1	2
Arabs	42		3.7034
Asians (Indians, Pakistani, etc)	213		3.8770
Others	38		4.1030
Sig.		.451	.056

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trhr BY Natinlty
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trhr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	57.049	4	14.262	13.193	.000
Within Groups	1007.559	932	1.081		
Total	1064.608	936			

Post Hoc Tests

Homogeneous Subsets

trhr

Duncan[a,,b]

Nationality	N	Subset for alpha = 0.05		
		1	2	3
Western (European & U. S.)	32	3.2210		
Kuwaiti	612	3.2302		
Arabs	42	3.6184	3.6184	
Asians (Indians, Pakistani, etc)	213		3.6501	
Others	38			4.1841
Sig.		.053	.871	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trpm BY Natinlty
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trpm

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	72.101	4	18.025	16.113	.000
Within Groups	1042.606	932	1.119		
Total	1114.706	936			

Post Hoc Tests

Homogeneous Subsets

trpm

Duncan[a,,b]

Nationality	N	Subset for alpha = 0.05 1
Kuwaiti	612	3.4979
Western (European & U. S.)	32	3.5201

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trpm

Duncan[a,,b]

		Subset for alpha = 0.05	
Nationality	N	1	2
Asians (Indians, Pakistani, etc)	213		4.0621
Arabs	42		4.1529
Others	38		4.2060
Sig.		.911	.498

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trci BY Natinlty
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trci

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	44.013	4	11.003	10.984	.000
Within Groups	933.616	932	1.002		
Total	977.628	936			

Post Hoc Tests

Homogeneous Subsets

trci

Duncan a,,b

Nationality	N	Subset for alpha = 0.05 1	2	3
Western (European & U. S.)	32	3.2272		
Kuwaiti	612	3.5223	3.5223	
Asians (Indians, Pakistani, etc)	213		3.8701	
Arabs	42		3.8793	
Others	38			4.2970
Sig.		.116	.072	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trbr BY Natinlty
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trbr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	78.571	4	19.643	18.311	.000
Within Groups	999.764	932	1.073		
Total	1078.334	936			

Post Hoc Tests

Homogeneous Subsets

trbr

Duncan[a,,b]

Nationality	N	Subset for alpha = 0.05
		1
Kuwaiti	612	3.4945
Western (European & U. S.)	32	3.6823

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

trbr

Duncan[a,,b]

Nationality	N	Subset for alpha = 0.05	
		1	2
Arabs	42		4.0737
Asians (Indians, Pakistani, etc)	213		4.1054
Others	38		4.2584
Sig.		.333	.373

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 57.010.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trbr BY ExpYrs
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

```
[DataSet2] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

ANOVA

trbr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.630	3	3.210	2.802	.039
Within Groups	1068.704	933	1.145		
Total	1078.334	936			

Post Hoc Tests

Homogeneous Subsets

trbr

Duncan[a,,b]

YearsofExperince	N	Subset for alpha = 0.05
		1
5 to 10 years	218	3.5275
Less than 5 years	114	3.6427
11 to 15 years	100	3.7658
More than 15 years	505	3.7682
Sig.		.068

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 157.858.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
SAVE OUTFILE='D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav'
 /COMPRESSED.
```

```
SAVE OUTFILE='D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav'
 /COMPRESSED.
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY ctgryfmrty(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

Kruskal-Wallis Test

Ranks

	ctgryfmlrty	N	Mean Rank
trldr	Very low familiar	231	289.74
	Moderately familiar	293	454.76
	Very familiar	182	528.85
	Fully Familiar	231	619.17
	Total	937	
trsp	Very low familiar	231	309.33
	Moderately familiar	293	490.53
	Very familiar	182	524.74
	Fully Familiar	231	557.44
	Total	937	
trcsmk	Very low familiar	231	322.65
	Moderately familiar	293	466.20
	Very familiar	182	530.24
	Fully Familiar	231	570.66
	Total	937	
trinfo	Very low familiar	231	328.08
	Moderately familiar	293	465.75
	Very familiar	182	538.90
	Fully Familiar	231	558.97
	Total	937	
trhr	Very low familiar	231	301.84
	Moderately familiar	293	482.56
	Very familiar	182	523.39
	Fully Familiar	231	576.11
	Total	937	
trpm	Very low familiar	231	307.56
	Moderately familiar	293	478.24
	Very familiar	182	530.82
	Fully Familiar	231	570.02

```
ONEWAY trldr BY ctgryfmrty
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trldr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	188.184	3	62.728	72.482	.000
Within Groups	807.445	933	.865		
Total	995.629	936			

Post Hoc Tests

Homogeneous Subsets

trldr

Duncan[a,,b]

		Subset for alpha = 0.05			
ctgryfmlrty	N	1	2	3	4
Very low familiar	231	3.1415			
Moderately familiar	293		3.8350		
Very familiar	182			4.0766	
Fully Familiar	231				4.3717
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 227.719.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trsp BY ctgryfmrty
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trsp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	128.164	3	42.721	49.122	.000
Within Groups	811.433	933	.870		
Total	939.597	936			

Post Hoc Tests

```
NPAR TESTS
  /K-W=trldr trsp trcsmk trinfo trhr trpm trci trbr BY ctgrypwr(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav
```

Kruskal-Wallis Test

Ranks

	ctgrypwr	N	Mean Rank
trldr	Low power distance	202	453.96
	Moderate power distance	301	469.58
	High power distance	200	433.82
	Very high power distance	234	511.31
	Total	937	
trsp	Low power distance	202	418.35
	Moderate power distance	301	453.78
	High power distance	200	465.13
	Very high power distance	234	535.61
	Total	937	
trcsmk	Low power distance	202	467.46
	Moderate power distance	301	462.37
	High power distance	200	446.98
	Very high power distance	234	497.68
	Total	937	
trinfo	Low power distance	202	441.17
	Moderate power distance	301	460.98
	High power distance	200	480.03
	Very high power distance	234	493.91
	Total	937	
trhr	Low power distance	202	442.68
	Moderate power distance	301	464.56
	High power distance	200	461.58
	Very high power distance	234	503.78
	Total	937	
trpm	Low power distance	202	459.91
	Moderate power distance	301	466.34
	High power distance	200	444.72
	Very high power distance	234	501.03

```
ONEWAY trldr BY ctgrypwr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trldr

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.829	3	3.610	3.420	.017
Within Groups	984.800	933	1.056		
Total	995.629	936			

Post Hoc Tests

Homogeneous Subsets

trldr

Duncan[a,,b]

ctgrypwr	N	Subset for alpha = 0.05 1	2
Low power distance	202	3.7364	
High power distance	200	3.7379	
Moderate power distance	301	3.8581	3.8581
Very high power distance	234		4.0065
Sig.		.235	.123

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 227.969.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

```
ONEWAY trsp BY ctgrypwr
  /MISSING ANALYSIS
  /POSTHOC=DUNCAN ALPHA(0.05).
```

Oneway

ANOVA

trsp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21.194	3	7.065	7.177	.000
Within Groups	918.403	933	.984		
Total	939.597	936			

Post Hoc Tests

```
FREQUENCIES VARIABLES=trfmlrty
  /NTILES=4
  /ORDER=ANALYSIS.
```

Frequencies

Statistics

trfmlrty

N	Valid	937
	Missing	40
Percentiles	25	3.2494
	50	4.0000
	75	4.5012

trfmlrty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	12	1.2	1.3	1.3
	1.24	2	.2	.2	1.5
	1.25	1	.1	.1	1.6
	1.26	2	.2	.2	1.8
	1.49	1	.1	.1	1.9
	1.49	1	.1	.1	2.0
	1.50	2	.2	.2	2.2
	1.51	1	.1	.1	2.3
	1.51	1	.1	.1	2.5
	1.72	2	.2	.2	2.7
	1.74	1	.1	.1	2.8
	1.74	2	.2	.2	3.0
	1.75	1	.1	.1	3.1
	1.75	2	.2	.2	3.3
	1.75	1	.1	.1	3.4
	1.76	1	.1	.1	3.5
	1.77	1	.1	.1	3.6
	1.95	1	.1	.1	3.7
	1.99	1	.1	.1	3.8
	1.99	1	.1	.1	3.9
	2.00	8	.8	.9	4.8
	2.00	1	.1	.1	4.9
	2.01	1	.1	.1	5.0
	2.01	1	.1	.1	5.1
	2.01	1	.1	.1	5.2
	2.02	1	.1	.1	5.3
	2.22	1	.1	.1	5.4

trfmlrty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.22	1	.1	.1	5.5
	2.23	1	.1	.1	5.7
	2.23	1	.1	.1	5.8
	2.23	1	.1	.1	5.9
	2.24	6	.6	.6	6.5
	2.25	1	.1	.1	6.6
	2.25	1	.1	.1	6.7
	2.25	2	.2	.2	6.9
	2.26	1	.1	.1	7.0
	2.26	1	.1	.1	7.2
	2.26	1	.1	.1	7.3
	2.27	1	.1	.1	7.4
	2.27	2	.2	.2	7.6
	2.28	1	.1	.1	7.7
	2.29	1	.1	.1	7.8
	2.44	1	.1	.1	7.9
	2.48	3	.3	.3	8.2
	2.48	1	.1	.1	8.3
	2.49	3	.3	.3	8.6
	2.49	3	.3	.3	9.0
	2.49	6	.6	.6	9.6
	2.50	2	.2	.2	9.8
	2.50	1	.1	.1	9.9
	2.50	2	.2	.2	10.1
	2.51	6	.6	.6	10.8
	2.51	2	.2	.2	11.0
	2.52	1	.1	.1	11.1
	2.52	1	.1	.1	11.2
	2.53	1	.1	.1	11.3
	2.69	2	.2	.2	11.5
	2.71	1	.1	.1	11.6
	2.71	1	.1	.1	11.7
	2.72	1	.1	.1	11.8
	2.73	2	.2	.2	12.1
	2.73	1	.1	.1	12.2
	2.74	1	.1	.1	12.3
	2.74	8	.8	.9	13.1
	2.74	7	.7	.7	13.9
	2.75	1	.1	.1	14.0
	2.75	6	.6	.6	14.6
	2.75	1	.1	.1	14.7

trfmlrty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.75	3	.3	.3	15.0
	2.76	1	.1	.1	15.2
	2.76	3	.3	.3	15.5
	2.76	3	.3	.3	15.8
	2.77	1	.1	.1	15.9
	2.77	1	.1	.1	16.0
	2.94	1	.1	.1	16.1
	2.94	1	.1	.1	16.2
	2.94	1	.1	.1	16.3
	2.96	1	.1	.1	16.4
	2.97	1	.1	.1	16.5
	2.98	2	.2	.2	16.8
	2.99	2	.2	.2	17.0
	2.99	1	.1	.1	17.1
	2.99	1	.1	.1	17.2
	2.99	3	.3	.3	17.5
	3.00	1	.1	.1	17.6
	3.00	30	3.1	3.2	20.8
	3.00	5	.5	.5	21.3
	3.01	2	.2	.2	21.6
	3.01	1	.1	.1	21.7
	3.02	1	.1	.1	21.8
	3.03	1	.1	.1	21.9
	3.21	1	.1	.1	22.0
	3.21	1	.1	.1	22.1
	3.21	1	.1	.1	22.2
	3.22	1	.1	.1	22.3
	3.23	1	.1	.1	22.4
	3.23	1	.1	.1	22.5
	3.23	1	.1	.1	22.6
	3.24	1	.1	.1	22.7
	3.24	12	1.2	1.3	24.0
	3.24	1	.1	.1	24.1
	3.24	1	.1	.1	24.2
	3.25	4	.4	.4	24.7
	3.25	8	.8	.9	25.5
	3.26	13	1.3	1.4	26.9
	3.26	7	.7	.7	27.6
	3.26	1	.1	.1	27.7
	3.27	1	.1	.1	27.9
	3.28	3	.3	.3	28.2

trfmlrty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.45	1	.1	.1	28.3
	3.46	1	.1	.1	28.4
	3.47	1	.1	.1	28.5
	3.49	8	.8	.9	29.3
	3.49	1	.1	.1	29.5
	3.49	5	.5	.5	30.0
	3.50	19	1.9	2.0	32.0
	3.50	2	.2	.2	32.2
	3.50	4	.4	.4	32.7
	3.51	8	.8	.9	33.5
	3.51	1	.1	.1	33.6
	3.51	8	.8	.9	34.5
	3.52	1	.1	.1	34.6
	3.55	1	.1	.1	34.7
	3.71	2	.2	.2	34.9
	3.73	3	.3	.3	35.2
	3.73	1	.1	.1	35.3
	3.74	1	.1	.1	35.4
	3.74	2	.2	.2	35.6
	3.74	6	.6	.6	36.3
	3.74	14	1.4	1.5	37.8
	3.75	29	3.0	3.1	40.9
	3.75	1	.1	.1	41.0
	3.76	2	.2	.2	41.2
	3.76	1	.1	.1	41.3
	3.76	7	.7	.7	42.0
	3.77	1	.1	.1	42.2
	3.77	1	.1	.1	42.3
	3.77	3	.3	.3	42.6
	3.78	1	.1	.1	42.7
	3.82	1	.1	.1	42.8
	3.96	1	.1	.1	42.9
	3.96	2	.2	.2	43.1
	3.97	2	.2	.2	43.3
	3.97	2	.2	.2	43.5
	3.98	3	.3	.3	43.9
	3.98	6	.6	.6	44.5
	3.98	1	.1	.1	44.6
	3.99	13	1.3	1.4	46.0
	3.99	1	.1	.1	46.1
	3.99	2	.2	.2	46.3

trfmlrty

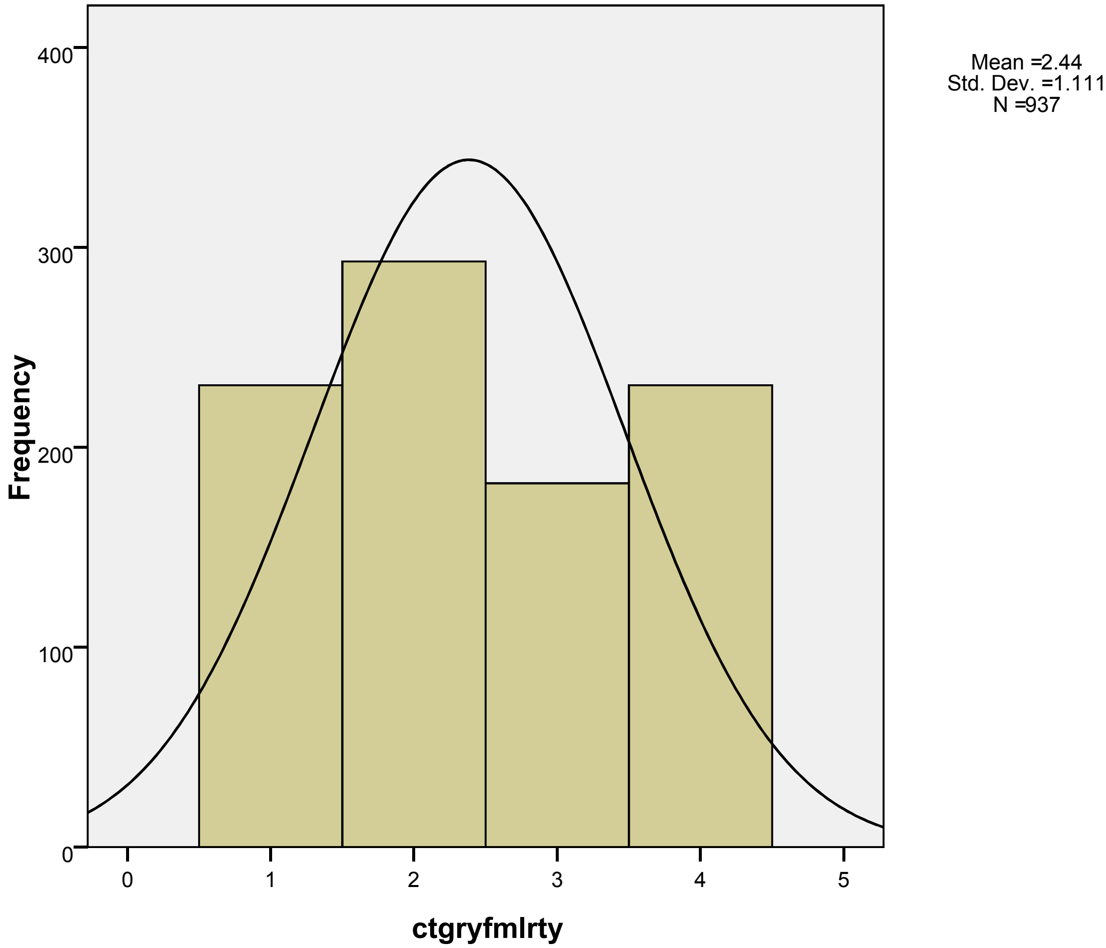
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.99	1	.1	.1	46.4
	3.99	2	.2	.2	46.6
	4.00	87	8.9	9.3	55.9
	4.00	1	.1	.1	56.0
	4.01	3	.3	.3	56.4
	4.01	4	.4	.4	56.8
	4.01	1	.1	.1	56.9
	4.02	2	.2	.2	57.1
	4.02	4	.4	.4	57.5
	4.22	2	.2	.2	57.7
	4.22	4	.4	.4	58.2
	4.23	3	.3	.3	58.5
	4.24	22	2.3	2.3	60.8
	4.24	6	.6	.6	61.5
	4.24	5	.5	.5	62.0
	4.24	1	.1	.1	62.1
	4.25	6	.6	.6	62.8
	4.25	11	1.1	1.2	63.9
	4.25	2	.2	.2	64.1
	4.26	17	1.7	1.8	66.0
	4.26	15	1.5	1.6	67.6
	4.26	1	.1	.1	67.7
	4.27	1	.1	.1	67.8
	4.27	1	.1	.1	67.9
	4.27	1	.1	.1	68.0
	4.28	1	.1	.1	68.1
	4.46	1	.1	.1	68.2
	4.47	6	.6	.6	68.8
	4.48	1	.1	.1	68.9
	4.48	1	.1	.1	69.1
	4.49	5	.5	.5	69.6
	4.49	12	1.2	1.3	70.9
	4.50	38	3.9	4.1	74.9
	4.50	4	.4	.4	75.3
	4.50	5	.5	.5	75.9
	4.51	6	.6	.6	76.5
	4.51	13	1.3	1.4	77.9
	4.52	1	.1	.1	78.0
	4.53	2	.2	.2	78.2
	4.71	1	.1	.1	78.3
	4.72	1	.1	.1	78.4

trfmlrty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.73	4	.4	.4	78.9
	4.74	2	.2	.2	79.1
	4.74	1	.1	.1	79.2
	4.74	6	.6	.6	79.8
	4.74	20	2.0	2.1	82.0
	4.75	34	3.5	3.6	85.6
	4.76	10	1.0	1.1	86.7
	4.98	3	.3	.3	87.0
	4.99	2	.2	.2	87.2
	4.99	1	.1	.1	87.3
	4.99	1	.1	.1	87.4
	5.00	102	10.4	10.9	98.3
	5.01	1	.1	.1	98.4
	5.01	1	.1	.1	98.5
	5.24	2	.2	.2	98.7
	5.24	1	.1	.1	98.8
	5.25	1	.1	.1	98.9
	5.50	2	.2	.2	99.1
	5.53	1	.1	.1	99.3
	6.00	7	.7	.7	100.0
	Total	937	95.9	100.0	
Missing	System	40	4.1		
	Total	977	100.0		

```
IF  (trfmlrty <= 3.249) ctgryfmrty=1.
EXECUTE.
IF  (3.249  < trfmlrty  & trfmlrty <= 4) ctgryfmrty=2.
EXECUTE.
IF  (4 < trfmlrty  & trfmlrty <= 4.5012) ctgryfmrty=3.
EXECUTE.
IF  ( trfmlrty  > 4.5012) ctgryfmrty=4.
EXECUTE.
GRAPH
  /HISTOGRAM(NORMAL)=ctgryfmrty.
```

Graph




```
SAVE OUTFILE='D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav'
 /COMPRESSED.
```

```
FREQUENCIES VARIABLES=trpwr trunc trcol trqpr trpersnlethic trworkethic
  /NTILES=4
  /ORDER=ANALYSIS.
```

Frequencies

Frequency Table

trpwr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	202	20.7	21.6	21.6
	1.32	60	6.1	6.4	28.0
	1.33	45	4.6	4.8	32.8
	1.34	19	1.9	2.0	34.8
	1.64	15	1.5	1.6	36.4
	1.66	26	2.7	2.8	39.2
	1.67	14	1.4	1.5	40.7
	1.67	25	2.6	2.7	43.3
	1.68	14	1.4	1.5	44.8
	1.69	8	.8	.9	45.7
	1.97	7	.7	.7	46.4
	1.98	5	.5	.5	47.0
	1.99	8	.8	.9	47.8
	1.99	6	.6	.6	48.5
	2.00	8	.8	.9	49.3
	2.00	41	4.2	4.4	53.7
	2.01	4	.4	.4	54.1
	2.01	7	.7	.7	54.9
	2.02	4	.4	.4	55.3
	2.29	6	.6	.6	55.9
	2.30	4	.4	.4	56.4
	2.31	5	.5	.5	56.9
	2.31	2	.2	.2	57.1
	2.32	4	.4	.4	57.5
	2.32	4	.4	.4	58.0
	2.33	9	.9	1.0	58.9
	2.33	14	1.4	1.5	60.4
	2.33	5	.5	.5	60.9
	2.34	3	.3	.3	61.3
	2.34	9	.9	1.0	62.2
	2.36	4	.4	.4	62.6
	2.37	1	.1	.1	62.8
	2.38	2	.2	.2	63.0
	2.61	3	.3	.3	63.3
	2.63	1	.1	.1	63.4
	2.64	3	.3	.3	63.7

trpwr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.65	3	.3	.3	64.0
	2.66	5	.5	.5	64.6
	2.66	1	.1	.1	64.7
	2.67	3	.3	.3	65.0
	2.67	4	.4	.4	65.4
	2.67	2	.2	.2	65.6
	2.68	1	.1	.1	65.7
	2.68	1	.1	.1	65.8
	2.69	2	.2	.2	66.1
	2.69	3	.3	.3	66.4
	2.70	2	.2	.2	66.6
	2.71	2	.2	.2	66.8
	2.72	4	.4	.4	67.2
	2.96	1	.1	.1	67.3
	2.97	2	.2	.2	67.6
	2.99	6	.6	.6	68.2
	2.99	1	.1	.1	68.3
	2.99	3	.3	.3	68.6
	3.00	27	2.8	2.9	71.5
	3.01	3	.3	.3	71.8
	3.01	6	.6	.6	72.5
	3.01	3	.3	.3	72.8
	3.02	3	.3	.3	73.1
	3.02	1	.1	.1	73.2
	3.03	1	.1	.1	73.3
	3.04	2	.2	.2	73.5
	3.05	5	.5	.5	74.1
	3.06	2	.2	.2	74.3
	3.29	1	.1	.1	74.4
	3.30	1	.1	.1	74.5
	3.30	1	.1	.1	74.6
	3.31	2	.2	.2	74.8
	3.31	1	.1	.1	74.9
	3.32	1	.1	.1	75.0
	3.32	4	.4	.4	75.5
	3.33	3	.3	.3	75.8
	3.33	4	.4	.4	76.2
	3.33	1	.1	.1	76.3
	3.34	3	.3	.3	76.6
	3.35	1	.1	.1	76.7
	3.35	2	.2	.2	76.9
	3.36	2	.2	.2	77.2
	3.37	1	.1	.1	77.3
	3.37	1	.1	.1	77.4

trpwr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.38	3	.3	.3	77.7
	3.39	4	.4	.4	78.1
	3.63	1	.1	.1	78.2
	3.64	1	.1	.1	78.3
	3.65	1	.1	.1	78.4
	3.66	1	.1	.1	78.5
	3.67	2	.2	.2	78.8
	3.68	1	.1	.1	78.9
	3.68	3	.3	.3	79.2
	3.69	2	.2	.2	79.4
	3.69	1	.1	.1	79.5
	3.70	1	.1	.1	79.6
	3.71	1	.1	.1	79.7
	3.99	1	.1	.1	79.8
	4.00	11	1.1	1.2	81.0
	4.02	1	.1	.1	81.1
	4.03	1	.1	.1	81.2
	4.06	1	.1	.1	81.3
	4.28	2	.2	.2	81.5
	4.29	1	.1	.1	81.6
	4.30	1	.1	.1	81.8
	4.30	1	.1	.1	81.9
	4.31	2	.2	.2	82.1
	4.32	1	.1	.1	82.2
	4.33	2	.2	.2	82.4
	4.33	1	.1	.1	82.5
	4.33	2	.2	.2	82.7
	4.34	1	.1	.1	82.8
	4.34	1	.1	.1	82.9
	4.39	19	1.9	2.0	85.0
	4.62	1	.1	.1	85.1
	4.64	1	.1	.1	85.2
	4.66	1	.1	.1	85.3
	4.67	2	.2	.2	85.5
	4.67	7	.7	.7	86.2
	4.68	1	.1	.1	86.3
	4.70	1	.1	.1	86.4
	4.71	15	1.5	1.6	88.0
	5.00	8	.8	.9	88.9
	5.00	2	.2	.2	89.1
	5.02	1	.1	.1	89.2
	5.03	1	.1	.1	89.3
	5.31	1	.1	.1	89.4
	5.33	1	.1	.1	89.5

trpwr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5.33	3	.3	.3	89.9
	5.36	1	.1	.1	90.0
	5.66	2	.2	.2	90.2
	5.67	4	.4	.4	90.6
	6.00	88	9.0	9.4	100.0
	Total	937	95.9	100.0	
Missing	System	40	4.1		
	Total	977	100.0		

trunc

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	14	1.4	1.5	1.5
	1.25	1	.1	.1	1.6
	1.49	1	.1	.1	1.7
	1.50	1	.1	.1	1.8
	1.75	2	.2	.2	2.0
	1.78	1	.1	.1	2.1
	1.98	1	.1	.1	2.2
	2.00	10	1.0	1.1	3.3
	2.00	1	.1	.1	3.4
	2.24	1	.1	.1	3.5
	2.25	1	.1	.1	3.6
	2.25	4	.4	.4	4.1
	2.27	1	.1	.1	4.2
	2.47	1	.1	.1	4.3
	2.48	1	.1	.1	4.4
	2.49	2	.2	.2	4.6
	2.50	3	.3	.3	4.9
	2.52	1	.1	.1	5.0
	2.71	1	.1	.1	5.1
	2.74	1	.1	.1	5.2
	2.75	1	.1	.1	5.3
	2.75	1	.1	.1	5.4
	2.75	5	.5	.5	6.0
	2.76	4	.4	.4	6.4
	2.78	1	.1	.1	6.5
	2.95	1	.1	.1	6.6
	2.98	1	.1	.1	6.7
	2.99	2	.2	.2	6.9
	3.00	44	4.5	4.7	11.6
	3.00	1	.1	.1	11.7
	3.01	1	.1	.1	11.8
	3.02	1	.1	.1	12.0

trunc

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.02	3	.3	.3	12.3
	3.03	1	.1	.1	12.4
	3.24	1	.1	.1	12.5
	3.24	6	.6	.6	13.1
	3.24	1	.1	.1	13.2
	3.25	5	.5	.5	13.8
	3.25	1	.1	.1	13.9
	3.25	9	.9	1.0	14.8
	3.25	1	.1	.1	14.9
	3.26	1	.1	.1	15.0
	3.26	7	.7	.7	15.8
	3.26	4	.4	.4	16.2
	3.26	2	.2	.2	16.4
	3.27	1	.1	.1	16.5
	3.29	1	.1	.1	16.6
	3.47	1	.1	.1	16.8
	3.48	2	.2	.2	17.0
	3.48	1	.1	.1	17.1
	3.48	1	.1	.1	17.2
	3.48	1	.1	.1	17.3
	3.48	1	.1	.1	17.4
	3.49	3	.3	.3	17.7
	3.49	1	.1	.1	17.8
	3.50	2	.2	.2	18.0
	3.50	5	.5	.5	18.6
	3.50	18	1.8	1.9	20.5
	3.50	2	.2	.2	20.7
	3.51	2	.2	.2	20.9
	3.51	1	.1	.1	21.0
	3.52	6	.6	.6	21.7
	3.52	2	.2	.2	21.9
	3.52	6	.6	.6	22.5
	3.53	1	.1	.1	22.6
	3.71	1	.1	.1	22.7
	3.72	1	.1	.1	22.8
	3.73	1	.1	.1	22.9
	3.73	1	.1	.1	23.1
	3.74	4	.4	.4	23.5
	3.74	1	.1	.1	23.6
	3.75	1	.1	.1	23.7
	3.75	1	.1	.1	23.8
	3.75	2	.2	.2	24.0
	3.75	1	.1	.1	24.1
	3.75	9	.9	1.0	25.1

trunc

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.75	1	.1	.1	25.2
	3.76	17	1.7	1.8	27.0
	3.76	1	.1	.1	27.1
	3.77	2	.2	.2	27.3
	3.78	2	.2	.2	27.5
	3.98	4	.4	.4	28.0
	3.98	2	.2	.2	28.2
	3.99	1	.1	.1	28.3
	3.99	2	.2	.2	28.5
	4.00	1	.1	.1	28.6
	4.00	4	.4	.4	29.0
	4.00	67	6.9	7.2	36.2
	4.00	1	.1	.1	36.3
	4.01	2	.2	.2	36.5
	4.01	3	.3	.3	36.8
	4.02	5	.5	.5	37.4
	4.02	2	.2	.2	37.6
	4.02	9	.9	1.0	38.5
	4.02	1	.1	.1	38.6
	4.02	5	.5	.5	39.2
	4.03	1	.1	.1	39.3
	4.05	2	.2	.2	39.5
	4.21	1	.1	.1	39.6
	4.23	2	.2	.2	39.8
	4.23	1	.1	.1	39.9
	4.24	9	.9	1.0	40.9
	4.24	3	.3	.3	41.2
	4.25	3	.3	.3	41.5
	4.25	10	1.0	1.1	42.6
	4.25	3	.3	.3	42.9
	4.25	11	1.1	1.2	44.1
	4.26	1	.1	.1	44.2
	4.26	8	.8	.9	45.0
	4.27	4	.4	.4	45.5
	4.27	1	.1	.1	45.6
	4.28	5	.5	.5	46.1
	4.29	5	.5	.5	46.6
	4.48	3	.3	.3	47.0
	4.48	4	.4	.4	47.4
	4.49	6	.6	.6	48.0
	4.49	1	.1	.1	48.1
	4.50	1	.1	.1	48.2
	4.50	11	1.1	1.2	49.4
	4.50	20	2.0	2.1	51.5

trunc

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.51	6	.6	.6	52.2
	4.51	4	.4	.4	52.6
	4.52	8	.8	.9	53.5
	4.52	14	1.4	1.5	55.0
	4.74	12	1.2	1.3	56.2
	4.75	13	1.3	1.4	57.6
	4.75	16	1.6	1.7	59.3
	4.76	49	5.0	5.2	64.6
	5.00	322	33.0	34.4	98.9
	5.02	1	.1	.1	99.0
	5.24	3	.3	.3	99.4
	5.25	1	.1	.1	99.5
	5.50	1	.1	.1	99.6
	6.00	4	.4	.4	100.0
	Total	937	95.9	100.0	
Missing	System	40	4.1		
	Total	977	100.0		

trcol

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	14	1.4	1.5	1.5
	1.32	2	.2	.2	1.7
	1.33	3	.3	.3	2.0
	1.35	1	.1	.1	2.1
	1.64	1	.1	.1	2.2
	1.67	2	.2	.2	2.5
	1.67	1	.1	.1	2.6
	1.68	1	.1	.1	2.7
	1.69	1	.1	.1	2.8
	1.96	2	.2	.2	3.0
	1.98	2	.2	.2	3.2
	1.99	7	.7	.7	3.9
	2.00	13	1.3	1.4	5.3
	2.29	2	.2	.2	5.5
	2.31	2	.2	.2	5.8
	2.32	6	.6	.6	6.4
	2.33	2	.2	.2	6.6
	2.33	4	.4	.4	7.0
	2.33	1	.1	.1	7.2
	2.35	4	.4	.4	7.6
	2.36	1	.1	.1	7.7
	2.37	3	.3	.3	8.0
	2.63	1	.1	.1	8.1

trcol

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.63	1	.1	.1	8.2
	2.64	1	.1	.1	8.3
	2.65	2	.2	.2	8.5
	2.65	1	.1	.1	8.6
	2.67	10	1.0	1.1	9.7
	2.68	2	.2	.2	9.9
	2.68	5	.5	.5	10.5
	2.69	1	.1	.1	10.6
	2.69	1	.1	.1	10.7
	2.70	1	.1	.1	10.8
	2.96	1	.1	.1	10.9
	2.98	2	.2	.2	11.1
	2.98	1	.1	.1	11.2
	2.98	1	.1	.1	11.3
	2.99	3	.3	.3	11.6
	3.00	5	.5	.5	12.2
	3.00	50	5.1	5.3	17.5
	3.01	2	.2	.2	17.7
	3.02	3	.3	.3	18.0
	3.04	1	.1	.1	18.1
	3.30	1	.1	.1	18.2
	3.31	6	.6	.6	18.9
	3.31	3	.3	.3	19.2
	3.32	4	.4	.4	19.6
	3.32	6	.6	.6	20.3
	3.33	8	.8	.9	21.1
	3.33	6	.6	.6	21.8
	3.34	1	.1	.1	21.9
	3.35	11	1.1	1.2	23.1
	3.36	4	.4	.4	23.5
	3.38	1	.1	.1	23.6
	3.62	2	.2	.2	23.8
	3.63	3	.3	.3	24.1
	3.64	7	.7	.7	24.9
	3.65	2	.2	.2	25.1
	3.65	8	.8	.9	25.9
	3.67	3	.3	.3	26.3
	3.67	16	1.6	1.7	28.0
	3.67	2	.2	.2	28.2
	3.68	24	2.5	2.6	30.7
	3.69	4	.4	.4	31.2
	3.69	2	.2	.2	31.4
	3.70	2	.2	.2	31.6
	3.71	3	.3	.3	31.9

trcol

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.95	1	.1	.1	32.0
	3.96	1	.1	.1	32.1
	3.98	2	.2	.2	32.3
	3.99	10	1.0	1.1	33.4
	4.00	4	.4	.4	33.8
	4.00	100	10.2	10.7	44.5
	4.00	1	.1	.1	44.6
	4.01	3	.3	.3	44.9
	4.01	4	.4	.4	45.4
	4.02	5	.5	.5	45.9
	4.04	1	.1	.1	46.0
	4.30	1	.1	.1	46.1
	4.31	1	.1	.1	46.2
	4.32	16	1.6	1.7	47.9
	4.32	1	.1	.1	48.0
	4.33	11	1.1	1.2	49.2
	4.33	7	.7	.7	49.9
	4.35	18	1.8	1.9	51.9
	4.36	12	1.2	1.3	53.1
	4.64	1	.1	.1	53.3
	4.65	17	1.7	1.8	55.1
	4.67	43	4.4	4.6	59.7
	4.68	31	3.2	3.3	63.0
	4.69	2	.2	.2	63.2
	4.99	1	.1	.1	63.3
	5.00	330	33.8	35.2	98.5
	5.01	2	.2	.2	98.7
	5.04	1	.1	.1	98.8
	5.32	2	.2	.2	99.0
	5.33	3	.3	.3	99.4
	5.68	1	.1	.1	99.5
	6.00	5	.5	.5	100.0
	Total	937	95.9	100.0	
Missing	System	40	4.1		
	Total	977	100.0		

trqpr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	54	5.5	5.8	5.8
	1.25	2	.2	.2	6.0
	1.25	13	1.3	1.4	7.4
	1.25	5	.5	.5	7.9
	1.25	2	.2	.2	8.1

trqpr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.50	1	.1	.1	8.2
	1.50	3	.3	.3	8.5
	1.50	4	.4	.4	9.0
	1.50	2	.2	.2	9.2
	1.50	7	.7	.7	9.9
	1.50	3	.3	.3	10.2
	1.50	4	.4	.4	10.7
	1.50	3	.3	.3	11.0
	1.51	1	.1	.1	11.1
	1.74	1	.1	.1	11.2
	1.74	1	.1	.1	11.3
	1.75	8	.8	.9	12.2
	1.75	4	.4	.4	12.6
	1.75	5	.5	.5	13.1
	1.75	1	.1	.1	13.2
	1.75	1	.1	.1	13.3
	1.75	2	.2	.2	13.6
	1.75	10	1.0	1.1	14.6
	1.99	1	.1	.1	14.7
	1.99	4	.4	.4	15.2
	1.99	2	.2	.2	15.4
	2.00	1	.1	.1	15.5
	2.00	3	.3	.3	15.8
	2.00	39	4.0	4.2	20.0
	2.00	2	.2	.2	20.2
	2.00	2	.2	.2	20.4
	2.00	6	.6	.6	21.0
	2.00	1	.1	.1	21.1
	2.01	3	.3	.3	21.5
	2.01	1	.1	.1	21.6
	2.24	1	.1	.1	21.7
	2.24	1	.1	.1	21.8
	2.24	2	.2	.2	22.0
	2.25	5	.5	.5	22.5
	2.25	16	1.6	1.7	24.2
	2.25	1	.1	.1	24.3
	2.25	8	.8	.9	25.2
	2.25	4	.4	.4	25.6
	2.25	1	.1	.1	25.7
	2.25	1	.1	.1	25.8
	2.25	2	.2	.2	26.0
	2.26	3	.3	.3	26.4
	2.50	7	.7	.7	27.1
	2.50	2	.2	.2	27.3

trqpr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.50	1	.1	.1	27.4
	2.50	17	1.7	1.8	29.2
	2.50	2	.2	.2	29.5
	2.50	1	.1	.1	29.6
	2.50	2	.2	.2	29.8
	2.50	1	.1	.1	29.9
	2.50	1	.1	.1	30.0
	2.50	4	.4	.4	30.4
	2.50	6	.6	.6	31.1
	2.50	2	.2	.2	31.3
	2.74	1	.1	.1	31.4
	2.74	1	.1	.1	31.5
	2.74	1	.1	.1	31.6
	2.74	1	.1	.1	31.7
	2.74	1	.1	.1	31.8
	2.75	4	.4	.4	32.2
	2.75	2	.2	.2	32.4
	2.75	4	.4	.4	32.9
	2.75	1	.1	.1	33.0
	2.75	4	.4	.4	33.4
	2.75	12	1.2	1.3	34.7
	2.75	2	.2	.2	34.9
	2.75	2	.2	.2	35.1
	2.76	1	.1	.1	35.2
	2.76	1	.1	.1	35.3
	2.77	1	.1	.1	35.4
	2.99	1	.1	.1	35.5
	2.99	3	.3	.3	35.9
	2.99	1	.1	.1	36.0
	2.99	1	.1	.1	36.1
	3.00	1	.1	.1	36.2
	3.00	5	.5	.5	36.7
	3.00	2	.2	.2	36.9
	3.00	1	.1	.1	37.0
	3.00	1	.1	.1	37.1
	3.00	84	8.6	9.0	46.1
	3.00	3	.3	.3	46.4
	3.00	4	.4	.4	46.9
	3.00	1	.1	.1	47.0
	3.00	1	.1	.1	47.1
	3.01	2	.2	.2	47.3
	3.01	5	.5	.5	47.8
	3.01	1	.1	.1	47.9
	3.02	1	.1	.1	48.0

trqpr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.24	2	.2	.2	48.2
	3.25	1	.1	.1	48.3
	3.25	5	.5	.5	48.9
	3.25	17	1.7	1.8	50.7
	3.25	15	1.5	1.6	52.3
	3.25	2	.2	.2	52.5
	3.25	1	.1	.1	52.6
	3.25	1	.1	.1	52.7
	3.25	1	.1	.1	52.8
	3.25	4	.4	.4	53.3
	3.26	1	.1	.1	53.4
	3.26	2	.2	.2	53.6
	3.49	1	.1	.1	53.7
	3.50	1	.1	.1	53.8
	3.50	4	.4	.4	54.2
	3.50	2	.2	.2	54.4
	3.50	5	.5	.5	55.0
	3.50	11	1.1	1.2	56.1
	3.50	1	.1	.1	56.2
	3.50	3	.3	.3	56.6
	3.50	1	.1	.1	56.7
	3.50	4	.4	.4	57.1
	3.50	2	.2	.2	57.3
	3.50	11	1.1	1.2	58.5
	3.50	4	.4	.4	58.9
	3.50	1	.1	.1	59.0
	3.51	1	.1	.1	59.1
	3.51	1	.1	.1	59.2
	3.51	6	.6	.6	59.9
	3.51	1	.1	.1	60.0
	3.73	1	.1	.1	60.1
	3.74	1	.1	.1	60.2
	3.74	1	.1	.1	60.3
	3.75	3	.3	.3	60.6
	3.75	3	.3	.3	60.9
	3.75	2	.2	.2	61.2
	3.75	1	.1	.1	61.3
	3.75	5	.5	.5	61.8
	3.75	5	.5	.5	62.3
	3.75	7	.7	.7	63.1
	3.76	1	.1	.1	63.2
	3.99	1	.1	.1	63.3
	3.99	1	.1	.1	63.4
	4.00	2	.2	.2	63.6

trqpr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.00	2	.2	.2	63.8
	4.00	4	.4	.4	64.2
	4.00	79	8.1	8.4	72.7
	4.00	3	.3	.3	73.0
	4.00	1	.1	.1	73.1
	4.00	1	.1	.1	73.2
	4.01	2	.2	.2	73.4
	4.01	5	.5	.5	74.0
	4.01	1	.1	.1	74.1
	4.02	2	.2	.2	74.3
	4.24	1	.1	.1	74.4
	4.24	1	.1	.1	74.5
	4.25	7	.7	.7	75.2
	4.25	14	1.4	1.5	76.7
	4.25	8	.8	.9	77.6
	4.25	5	.5	.5	78.1
	4.25	2	.2	.2	78.3
	4.26	1	.1	.1	78.4
	4.49	1	.1	.1	78.5
	4.50	3	.3	.3	78.9
	4.50	2	.2	.2	79.1
	4.50	7	.7	.7	79.8
	4.50	7	.7	.7	80.6
	4.50	1	.1	.1	80.7
	4.50	7	.7	.7	81.4
	4.50	1	.1	.1	81.5
	4.51	3	.3	.3	81.9
	4.51	1	.1	.1	82.0
	4.51	1	.1	.1	82.1
	4.75	3	.3	.3	82.4
	4.75	1	.1	.1	82.5
	4.75	2	.2	.2	82.7
	4.75	1	.1	.1	82.8
	4.75	13	1.3	1.4	84.2
	4.99	1	.1	.1	84.3
	5.00	125	12.8	13.3	97.7
	5.01	1	.1	.1	97.8
	5.24	1	.1	.1	97.9
	5.25	2	.2	.2	98.1
	5.50	1	.1	.1	98.2
	5.50	1	.1	.1	98.3
	6.00	16	1.6	1.7	100.0
	Total	937	95.9	100.0	

trqpr

		Frequency	Percent
Missing	System	40	4.1
	Total	977	100.0

trpersnlethic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	8	.8	.9	.9
	1.67	1	.1	.1	1.0
	1.98	1	.1	.1	1.1
	2.00	10	1.0	1.1	2.1
	2.05	1	.1	.1	2.2
	2.32	3	.3	.3	2.6
	2.33	2	.2	.2	2.8
	2.35	5	.5	.5	3.3
	2.64	10	1.0	1.1	4.4
	2.65	3	.3	.3	4.7
	2.65	5	.5	.5	5.2
	2.67	2	.2	.2	5.4
	2.68	6	.6	.6	6.1
	2.70	2	.2	.2	6.3
	2.97	3	.3	.3	6.6
	2.97	9	.9	1.0	7.6
	2.98	3	.3	.3	7.9
	3.00	38	3.9	4.1	12.0
	3.01	6	.6	.6	12.6
	3.02	11	1.1	1.2	13.8
	3.03	1	.1	.1	13.9
	3.05	1	.1	.1	14.0
	3.29	3	.3	.3	14.3
	3.32	6	.6	.6	14.9
	3.32	16	1.6	1.7	16.6
	3.33	15	1.5	1.6	18.2
	3.34	5	.5	.5	18.8
	3.35	7	.7	.7	19.5
	3.35	1	.1	.1	19.6
	3.36	11	1.1	1.2	20.8
	3.37	2	.2	.2	21.0
	3.38	1	.1	.1	21.1
	3.60	1	.1	.1	21.2
	3.62	5	.5	.5	21.8
	3.63	1	.1	.1	21.9
	3.64	7	.7	.7	22.6
	3.65	7	.7	.7	23.4
	3.65	5	.5	.5	23.9
	3.67	2	.2	.2	24.1

trpersnlethic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.67	15	1.5	1.6	25.7
	3.68	29	3.0	3.1	28.8
	3.68	3	.3	.3	29.1
	3.70	9	.9	1.0	30.1
	3.70	1	.1	.1	30.2
	3.97	3	.3	.3	30.5
	3.98	2	.2	.2	30.7
	3.99	6	.6	.6	31.4
	4.00	96	9.8	10.2	41.6
	4.01	7	.7	.7	42.4
	4.02	14	1.4	1.5	43.9
	4.02	5	.5	.5	44.4
	4.03	3	.3	.3	44.7
	4.03	4	.4	.4	45.1
	4.30	1	.1	.1	45.3
	4.32	30	3.1	3.2	48.5
	4.33	24	2.5	2.6	51.0
	4.35	16	1.6	1.7	52.7
	4.35	22	2.3	2.3	55.1
	4.36	4	.4	.4	55.5
	4.65	32	3.3	3.4	58.9
	4.67	48	4.9	5.1	64.0
	4.68	49	5.0	5.2	69.3
	5.00	284	29.1	30.3	99.6
	5.32	2	.2	.2	99.8
	5.33	1	.1	.1	99.9
	5.35	1	.1	.1	100.0
	Total	937	95.9	100.0	
Missing	System	40	4.1		
	Total	977	100.0		

trworkethic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	24	2.5	2.6	2.6
	1.32	9	.9	1.0	3.5
	1.33	5	.5	.5	4.1
	1.35	6	.6	.6	4.7
	1.64	3	.3	.3	5.0
	1.67	12	1.2	1.3	6.3
	1.68	11	1.1	1.2	7.5
	1.97	3	.3	.3	7.8
	1.98	1	.1	.1	7.9
	2.00	1	.1	.1	8.0

trworkethic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	37	3.8	3.9	12.0
	2.00	5	.5	.5	12.5
	2.30	2	.2	.2	12.7
	2.32	6	.6	.6	13.3
	2.33	16	1.6	1.7	15.0
	2.35	1	.1	.1	15.2
	2.35	4	.4	.4	15.6
	2.36	5	.5	.5	16.1
	2.61	5	.5	.5	16.6
	2.62	1	.1	.1	16.8
	2.64	7	.7	.7	17.5
	2.65	5	.5	.5	18.0
	2.65	14	1.4	1.5	19.5
	2.66	1	.1	.1	19.6
	2.67	6	.6	.6	20.3
	2.68	11	1.1	1.2	21.5
	2.71	3	.3	.3	21.8
	2.96	4	.4	.4	22.2
	2.97	3	.3	.3	22.5
	2.98	2	.2	.2	22.7
	3.00	11	1.1	1.2	23.9
	3.00	101	10.3	10.8	34.7
	3.00	3	.3	.3	35.0
	3.01	1	.1	.1	35.1
	3.02	1	.1	.1	35.2
	3.03	5	.5	.5	35.8
	3.03	1	.1	.1	35.9
	3.04	2	.2	.2	36.1
	3.06	1	.1	.1	36.2
	3.29	1	.1	.1	36.3
	3.29	4	.4	.4	36.7
	3.30	3	.3	.3	37.0
	3.32	22	2.3	2.3	39.4
	3.33	23	2.4	2.5	41.8
	3.33	3	.3	.3	42.2
	3.35	12	1.2	1.3	43.4
	3.35	9	.9	1.0	44.4
	3.36	10	1.0	1.1	45.5
	3.58	1	.1	.1	45.6
	3.62	1	.1	.1	45.7
	3.64	14	1.4	1.5	47.2
	3.65	13	1.3	1.4	48.6
	3.65	9	.9	1.0	49.5
	3.67	1	.1	.1	49.6

trworkethic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.67	24	2.5	2.6	52.2
	3.68	26	2.7	2.8	55.0
	3.68	2	.2	.2	55.2
	3.70	2	.2	.2	55.4
	3.71	3	.3	.3	55.7
	3.71	1	.1	.1	55.8
	3.94	1	.1	.1	55.9
	3.94	4	.4	.4	56.4
	3.97	1	.1	.1	56.5
	3.97	4	.4	.4	56.9
	4.00	10	1.0	1.1	58.0
	4.00	73	7.5	7.8	65.7
	4.00	12	1.2	1.3	67.0
	4.02	7	.7	.7	67.8
	4.03	1	.1	.1	67.9
	4.03	16	1.6	1.7	69.6
	4.04	2	.2	.2	69.8
	4.26	1	.1	.1	69.9
	4.29	3	.3	.3	70.2
	4.32	14	1.4	1.5	71.7
	4.33	35	3.6	3.7	75.5
	4.35	4	.4	.4	75.9
	4.35	9	.9	1.0	76.8
	4.36	6	.6	.6	77.5
	4.39	3	.3	.3	77.8
	4.65	16	1.6	1.7	79.5
	4.67	18	1.8	1.9	81.4
	4.68	28	2.9	3.0	84.4
	5.00	135	13.8	14.4	98.8
	5.29	5	.5	.5	99.4
	6.00	6	.6	.6	100.0
	Total	937	95.9	100.0	
Missing	System	40	4.1		
	Total	977	100.0		

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FREQUENCIES VARIABLES=trpwr
  /NTILES=4
  /ORDER=ANALYSIS.
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Statistics

		trpwr	trunc	trcol	trqpr	trpersnlethic	trworkethic
N	Valid	937	937	937	937	937	937
	Missing	40	40	40	40	40	40

Statistics

		trpwr	trunc	trcol	trqpr	trpersnlethic	trworkethic
Percentiles	25	1.3223	3.7538	3.6542	2.2498	3.6729	3.0000
	50	2.0000	4.5003	4.3450	3.2481	4.3271	3.6742
	75	3.3219	5.0000	5.0000	4.2478	5.0000	4.3258

Frequencies

Statistics

trpwr

N	Valid	937
	Missing	40
Percentiles	25	1.3223
	50	2.0000
	75	3.3219

trpwr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	202	20.7	21.6	21.6
	1.32	60	6.1	6.4	28.0
	1.33	45	4.6	4.8	32.8
	1.34	19	1.9	2.0	34.8
	1.64	15	1.5	1.6	36.4
	1.66	26	2.7	2.8	39.2
	1.67	14	1.4	1.5	40.7
	1.67	25	2.6	2.7	43.3
	1.68	14	1.4	1.5	44.8
	1.69	8	.8	.9	45.7
	1.97	7	.7	.7	46.4
	1.98	5	.5	.5	47.0
	1.99	8	.8	.9	47.8
	1.99	6	.6	.6	48.5
	2.00	8	.8	.9	49.3
	2.00	41	4.2	4.4	53.7
	2.01	4	.4	.4	54.1
	2.01	7	.7	.7	54.9
	2.02	4	.4	.4	55.3
	2.29	6	.6	.6	55.9
	2.30	4	.4	.4	56.4
	2.31	5	.5	.5	56.9
	2.31	2	.2	.2	57.1
	2.32	4	.4	.4	57.5
	2.32	4	.4	.4	58.0
	2.33	9	.9	1.0	58.9
	2.33	14	1.4	1.5	60.4
	2.33	5	.5	.5	60.9

trpwr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.34	3	.3	.3	61.3
	2.34	9	.9	1.0	62.2
	2.36	4	.4	.4	62.6
	2.37	1	.1	.1	62.8
	2.38	2	.2	.2	63.0
	2.61	3	.3	.3	63.3
	2.63	1	.1	.1	63.4
	2.64	3	.3	.3	63.7
	2.65	3	.3	.3	64.0
	2.66	5	.5	.5	64.6
	2.66	1	.1	.1	64.7
	2.67	3	.3	.3	65.0
	2.67	4	.4	.4	65.4
	2.67	2	.2	.2	65.6
	2.68	1	.1	.1	65.7
	2.68	1	.1	.1	65.8
	2.69	2	.2	.2	66.1
	2.69	3	.3	.3	66.4
	2.70	2	.2	.2	66.6
	2.71	2	.2	.2	66.8
	2.72	4	.4	.4	67.2
	2.96	1	.1	.1	67.3
	2.97	2	.2	.2	67.6
	2.99	6	.6	.6	68.2
	2.99	1	.1	.1	68.3
	2.99	3	.3	.3	68.6
	3.00	27	2.8	2.9	71.5
	3.01	3	.3	.3	71.8
	3.01	6	.6	.6	72.5
	3.01	3	.3	.3	72.8
	3.02	3	.3	.3	73.1
	3.02	1	.1	.1	73.2
	3.03	1	.1	.1	73.3
	3.04	2	.2	.2	73.5
	3.05	5	.5	.5	74.1
	3.06	2	.2	.2	74.3
	3.29	1	.1	.1	74.4
	3.30	1	.1	.1	74.5
	3.30	1	.1	.1	74.6
	3.31	2	.2	.2	74.8
	3.31	1	.1	.1	74.9
	3.32	1	.1	.1	75.0
	3.32	4	.4	.4	75.5
	3.33	3	.3	.3	75.8

trpwr

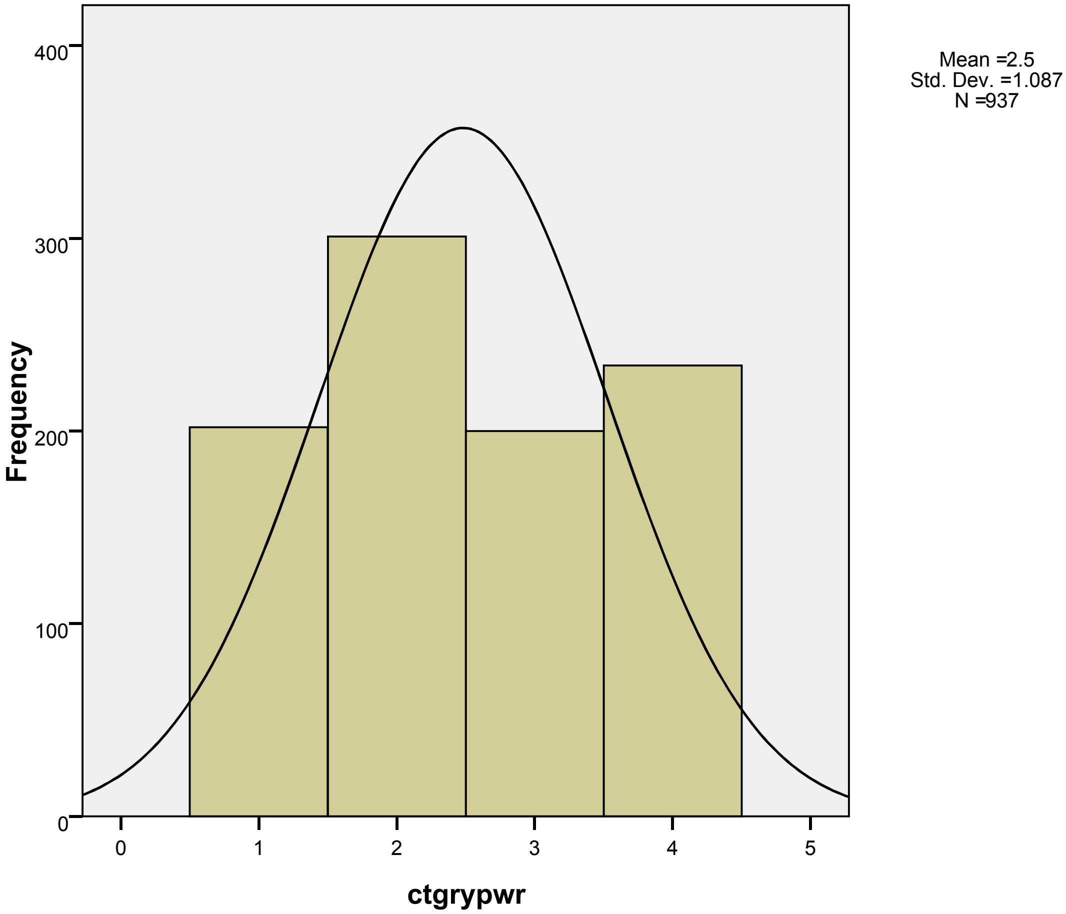
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.33	4	.4	.4	76.2
	3.33	1	.1	.1	76.3
	3.34	3	.3	.3	76.6
	3.35	1	.1	.1	76.7
	3.35	2	.2	.2	76.9
	3.36	2	.2	.2	77.2
	3.37	1	.1	.1	77.3
	3.37	1	.1	.1	77.4
	3.38	3	.3	.3	77.7
	3.39	4	.4	.4	78.1
	3.63	1	.1	.1	78.2
	3.64	1	.1	.1	78.3
	3.65	1	.1	.1	78.4
	3.66	1	.1	.1	78.5
	3.67	2	.2	.2	78.8
	3.68	1	.1	.1	78.9
	3.68	3	.3	.3	79.2
	3.69	2	.2	.2	79.4
	3.69	1	.1	.1	79.5
	3.70	1	.1	.1	79.6
	3.71	1	.1	.1	79.7
	3.99	1	.1	.1	79.8
	4.00	11	1.1	1.2	81.0
	4.02	1	.1	.1	81.1
	4.03	1	.1	.1	81.2
	4.06	1	.1	.1	81.3
	4.28	2	.2	.2	81.5
	4.29	1	.1	.1	81.6
	4.30	1	.1	.1	81.8
	4.30	1	.1	.1	81.9
	4.31	2	.2	.2	82.1
	4.32	1	.1	.1	82.2
	4.33	2	.2	.2	82.4
	4.33	1	.1	.1	82.5
	4.33	2	.2	.2	82.7
	4.34	1	.1	.1	82.8
	4.34	1	.1	.1	82.9
	4.39	19	1.9	2.0	85.0
	4.62	1	.1	.1	85.1
	4.64	1	.1	.1	85.2
	4.66	1	.1	.1	85.3
	4.67	2	.2	.2	85.5
	4.67	7	.7	.7	86.2
	4.68	1	.1	.1	86.3

trpwr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.70	1	.1	.1	86.4
	4.71	15	1.5	1.6	88.0
	5.00	8	.8	.9	88.9
	5.00	2	.2	.2	89.1
	5.02	1	.1	.1	89.2
	5.03	1	.1	.1	89.3
	5.31	1	.1	.1	89.4
	5.33	1	.1	.1	89.5
	5.33	3	.3	.3	89.9
	5.36	1	.1	.1	90.0
	5.66	2	.2	.2	90.2
	5.67	4	.4	.4	90.6
	6.00	88	9.0	9.4	100.0
	Total	937	95.9	100.0	
Missing	System	40	4.1		
	Total	977	100.0		

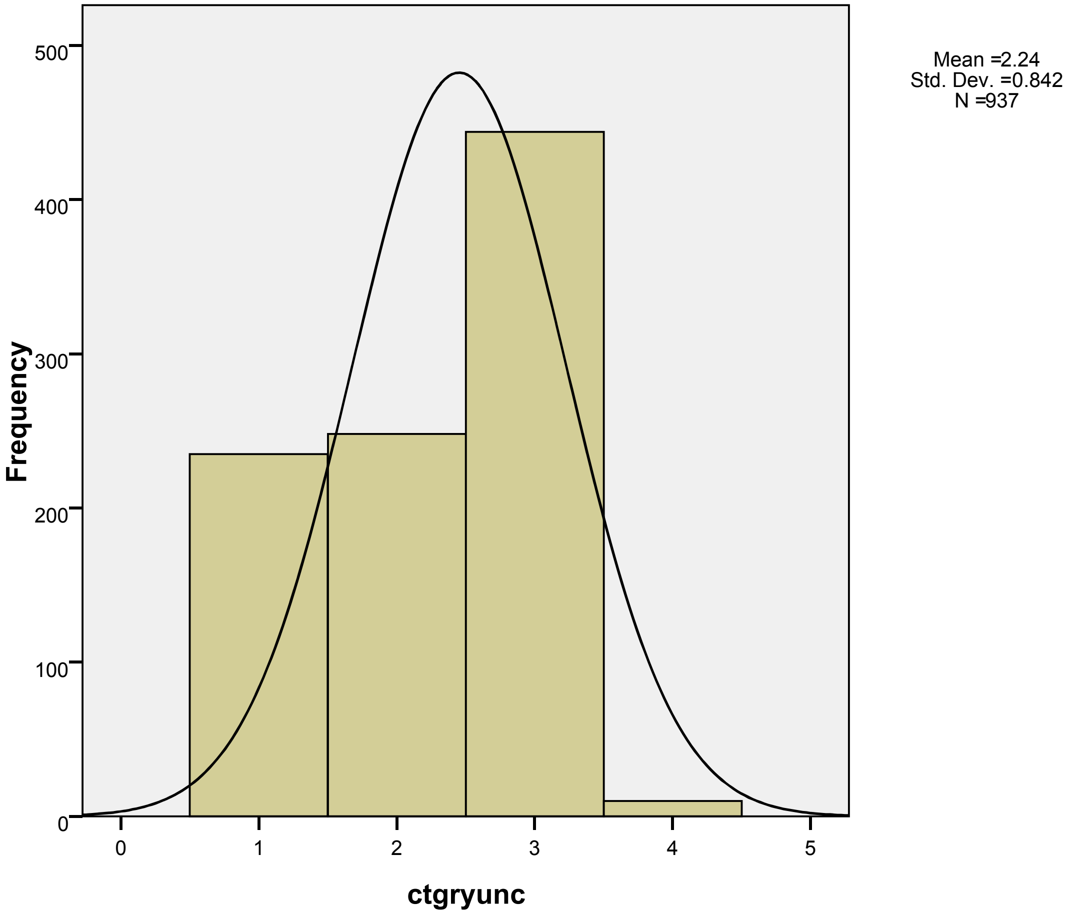
```
IF  (trpwr <= 1.3223) ctgrypwr=1.
EXECUTE.
IF  (1.3223 < trpwr  & trpwr <= 2) ctgrypwr=2.
EXECUTE.
IF  (2 < trpwr  & trpwr <= 3.3219) ctgrypwr=3.
EXECUTE.
IF  (trpwr  >  3.3219) ctgrypwr=4.
EXECUTE.
GRAPH
  /HISTOGRAM(NORMAL)=ctgrypwr.
```

Graph



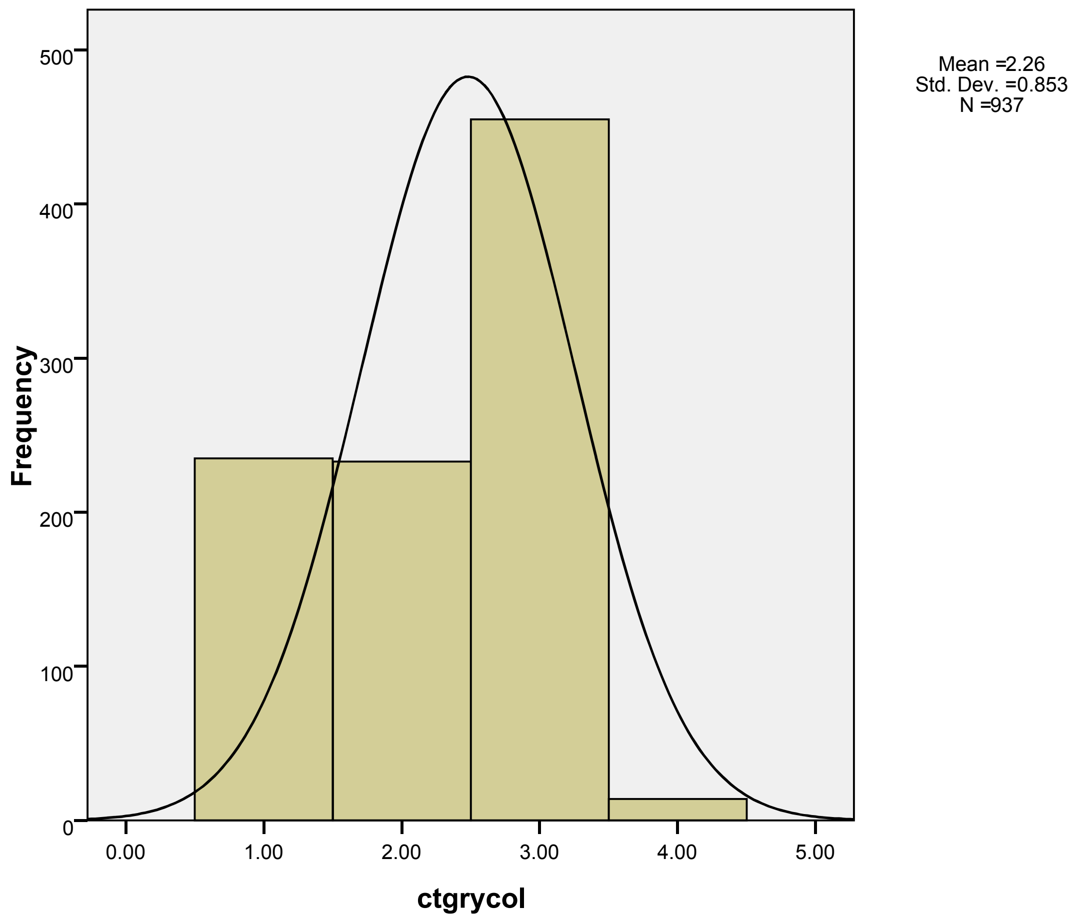

```
IF  (trunc   <= 3.7538) ctgryunc=1.
EXECUTE.
IF  (3.7538 < trunc & trunc   <= 4.5003) ctgryunc=2.
EXECUTE.
IF  (4.5003 < trunc & trunc   <= 5.000) ctgryunc=3.
EXECUTE.
IF  (trunc >  5.000) ctgryunc=4.
EXECUTE.
SAVE OUTFILE='D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav'
 /COMPRESSED.
GRAPH
  /HISTOGRAM(NORMAL)=ctgryunc.
```

Graph



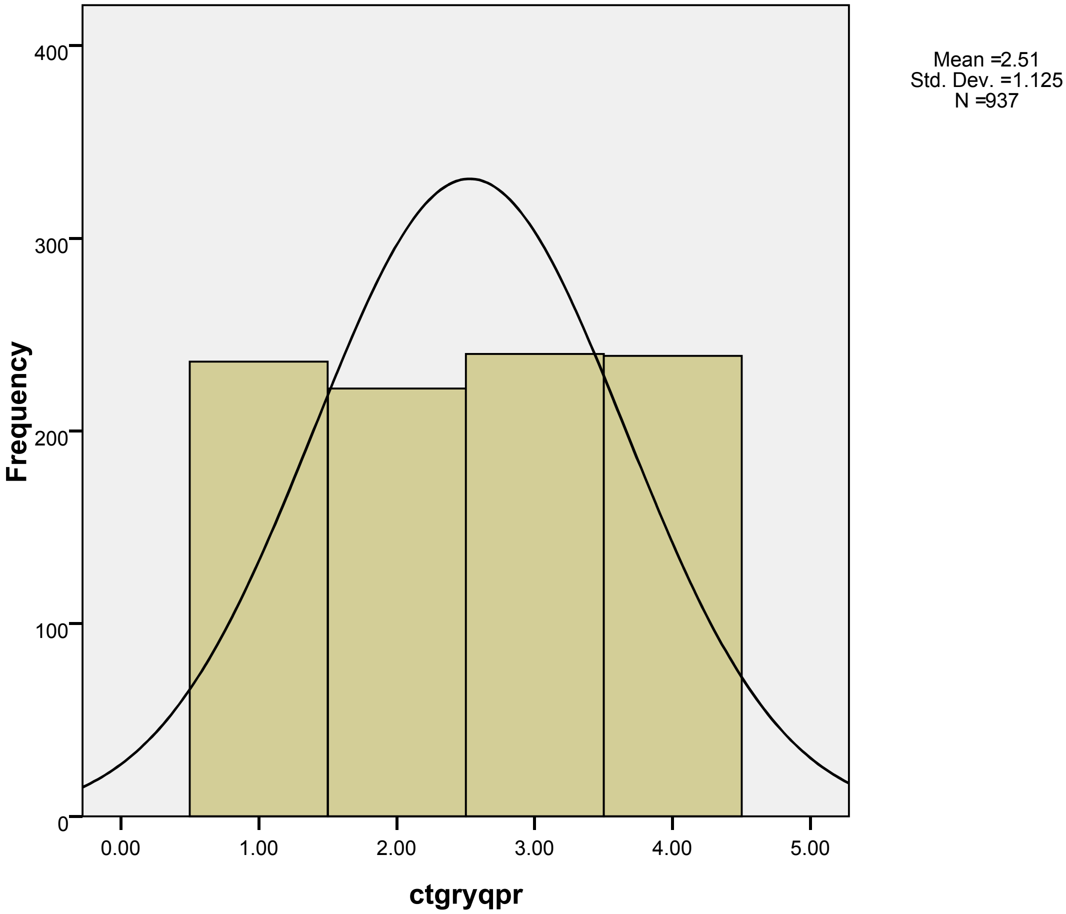

```
IF  (trcol <= 3.6542) ctgrycol=1.
EXECUTE.
IF  (3.6542 < trcol & trcol   <= 4.3450) ctgrycol=2.
EXECUTE.
IF  (4.3450 < trcol & trcol   <= 5.000) ctgrycol=3.
EXECUTE.
IF  (trcol > 5.000) ctgrycol=4.
EXECUTE.
GRAPH
  /HISTOGRAM(NORMAL)=ctgrycol.
```

Graph



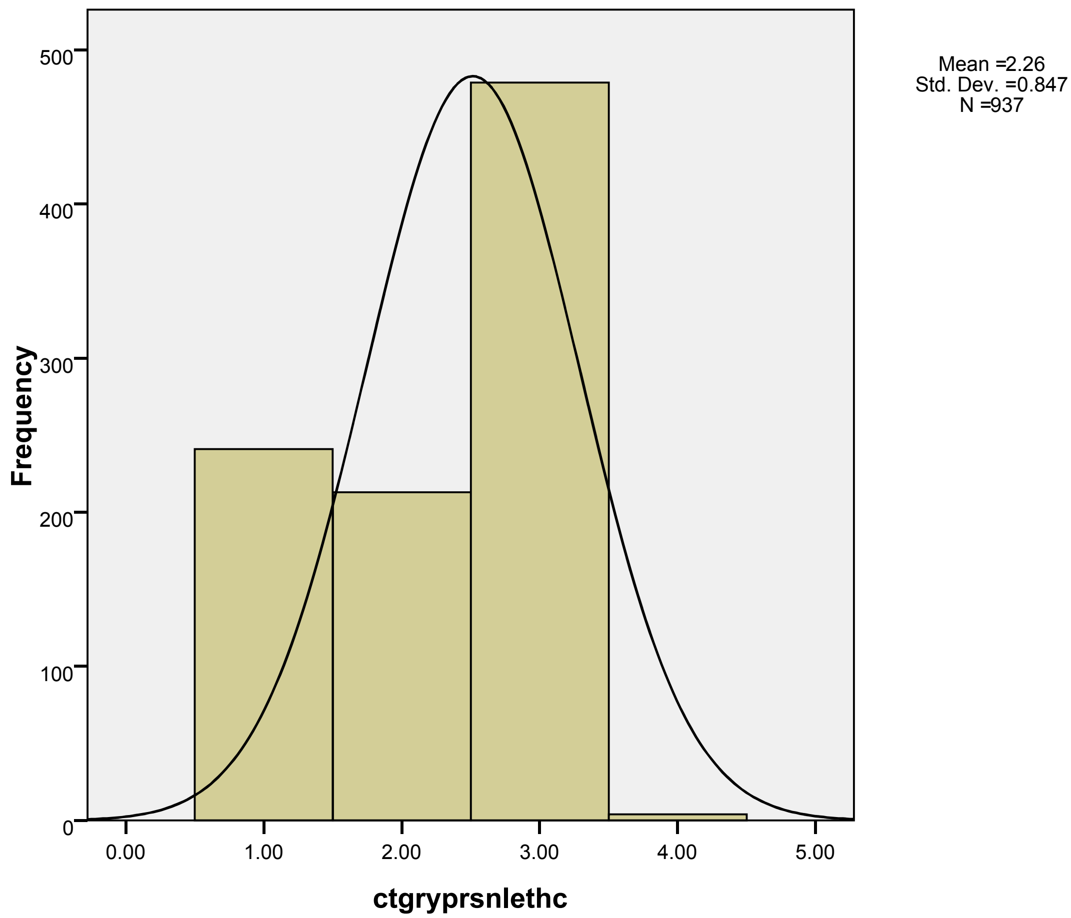

```
SAVE OUTFILE='D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav'
 /COMPRESSED.
SAVE OUTFILE='D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav'
 /COMPRESSED.
IF  (trqpr <= 2.2498) ctgryqpr=1.
EXECUTE.
IF  (2.2498 < trqpr & trqpr   <= 3.2481) ctgryqpr=2.
EXECUTE.
IF  (3.2481 < trqpr & trqpr   <= 4.2478) ctgryqpr=3.
EXECUTE.
IF  (trqpr > 4.2478) ctgryqpr=4.
EXECUTE.
GRAPH
  /HISTOGRAM(NORMAL)=ctgryqpr.
```

Graph



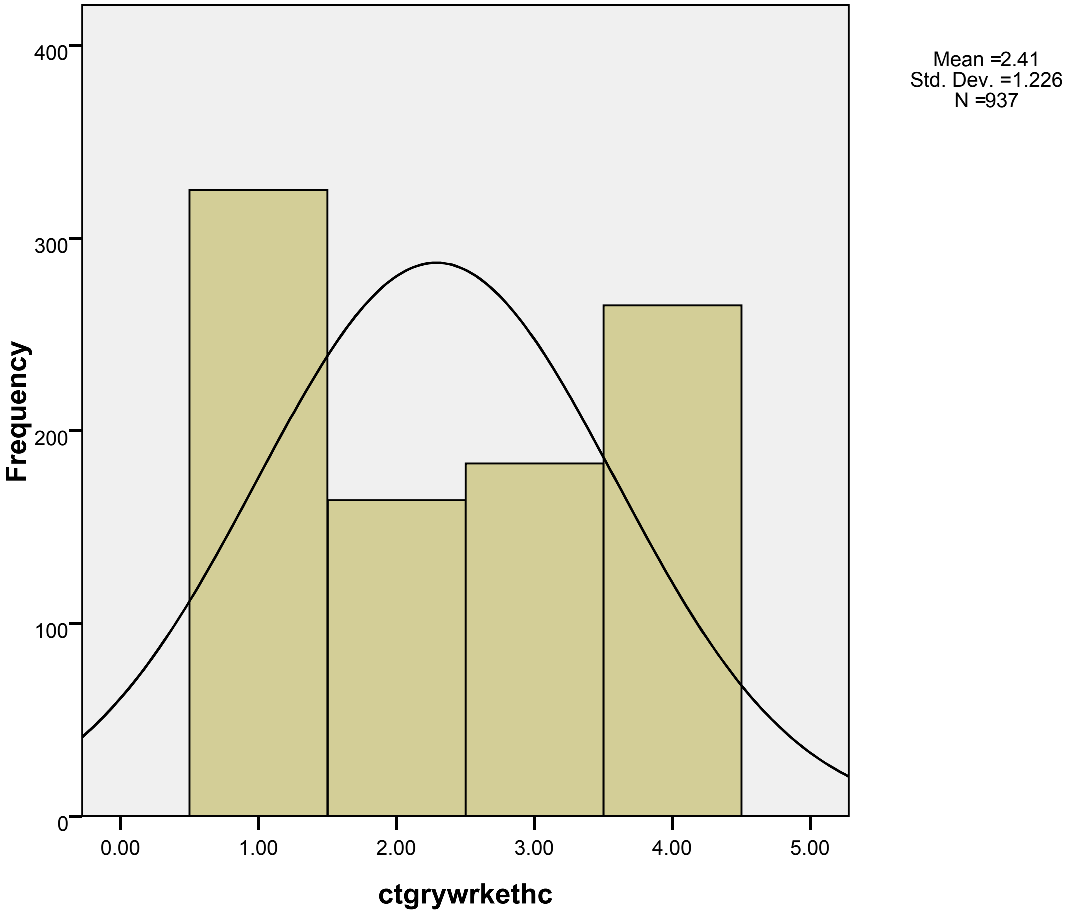

```
SAVE OUTFILE='D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav'
 /COMPRESSED.
IF  (trpersnlethic <= 3.6729) ctgryprsnlethc=1.
EXECUTE.
IF  (3.6729 < trpersnlethic & trpersnlethic   <= 4.3271) ctgryprsnlethc=2.
EXECUTE.
IF  (4.3271 < trpersnlethic & trpersnlethic   <= 5.000) ctgryprsnlethc=3.
EXECUTE.
IF  (trpersnlethic > 5.000) ctgryprsnlethc=4.
EXECUTE.
GRAPH
  /HISTOGRAM(NORMAL)=ctgryprsnlethc.
```

Graph




```
SAVE OUTFILE='D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav'
 /COMPRESSED.
IF  (trworkethic <= 3.000) ctgrywrkethc=1.
EXECUTE.
IF  (3.000 < trworkethic & trworkethic  <= 3.6742) ctgrywrkethc=2.
EXECUTE.
IF  (3.6742 < trworkethic & trworkethic   <= 4.3258) ctgrywrkethc=3.
EXECUTE.
IF  (trworkethic > 4.3258) ctgrywrkethc=4.
EXECUTE.
GRAPH
  /HISTOGRAM(NORMAL)=ctgrywrkethc.
```

Graph




```
SAVE OUTFILE='D:\my thesis\Dr Hosney work\reem2012\reem2012-reduced.sav'
 /COMPRESSED.
```

Appendix-3

Qualitative Analysis

(Interviews)

```
FREQUENCIES VARIABLES=Compny Grade ExpYrs Natinlty
  /PIECHART PERCENT
  /ORDER=ANALYSIS.
```

Frequencies

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Statistics

		Company	Grade	Yearsof Experince	Nationality
N	Valid	30	30	28	30
	Missing	0	0	2	0

Frequency Table

Company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PIC	5	16.7	16.7	16.7
	KNPC	6	20.0	20.0	36.7
	KOC	19	63.3	63.3	100.0
	Total	30	100.0	100.0	

Grade

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Grade 19 to 18	3	10.0	10.0	10.0
	Grade 17 to 16	5	16.7	16.7	26.7
	Grade 15 to 14	22	73.3	73.3	100.0
	Total	30	100.0	100.0	

YearsofExperince

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 5 years	1	3.3	3.6	3.6
	5 to 10 years	7	23.3	25.0	28.6
	11 to 15 years	8	26.7	28.6	57.1
	More than 15 years	12	40.0	42.9	100.0
	Total	28	93.3	100.0	
Missing	System	2	6.7		
	Total	30	100.0		

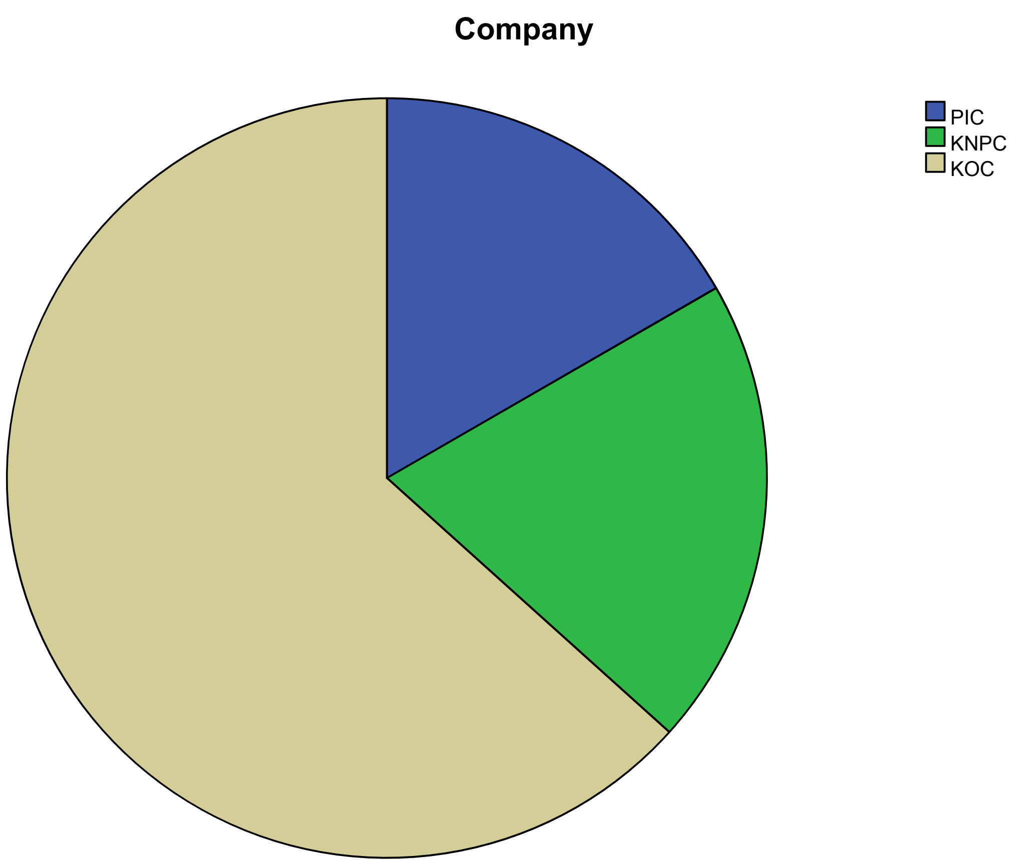
Nationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Kuwaiti	20	66.7	66.7	66.7
	Arabs	2	6.7	6.7	73.3

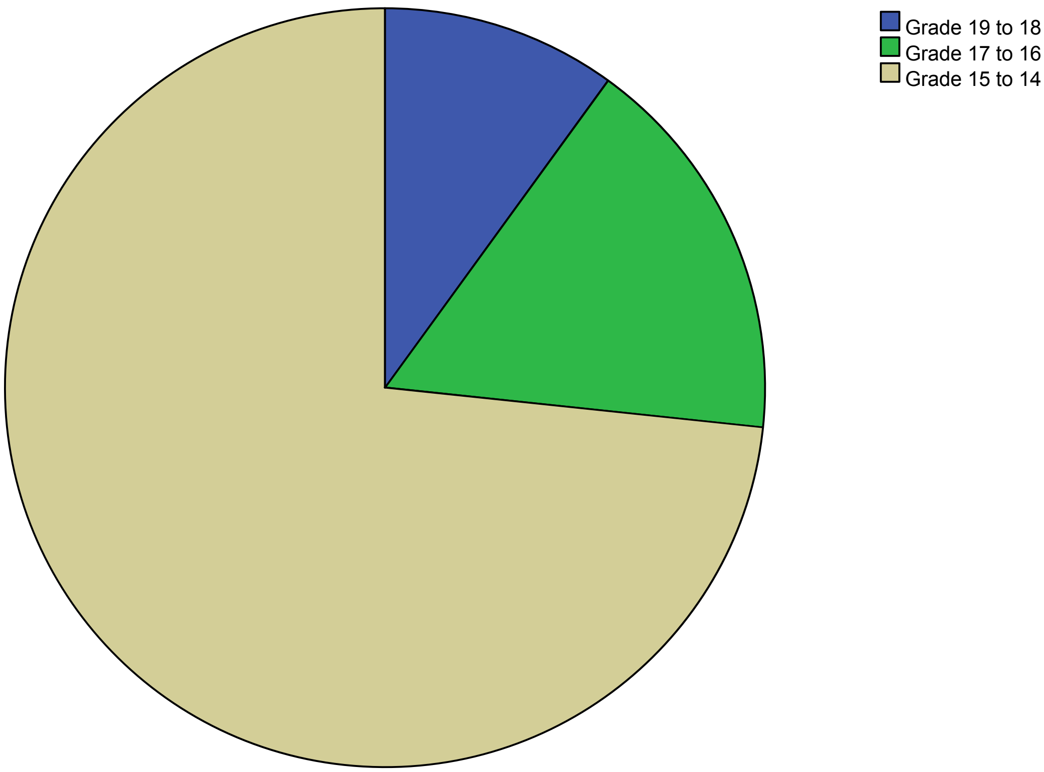
Nationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Western (European & U. S.)	1	3.3	3.3	76.7
	Asians (Indians, Pakistani, etc)	6	20.0	20.0	96.7
	Others	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

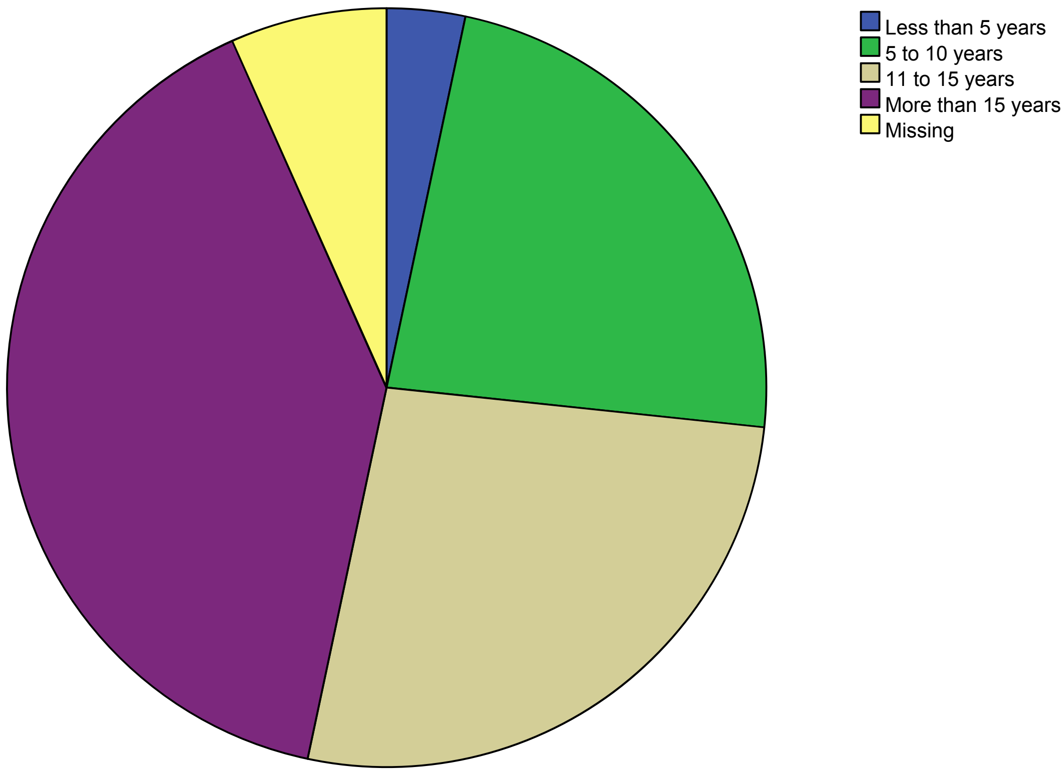
Pie Chart

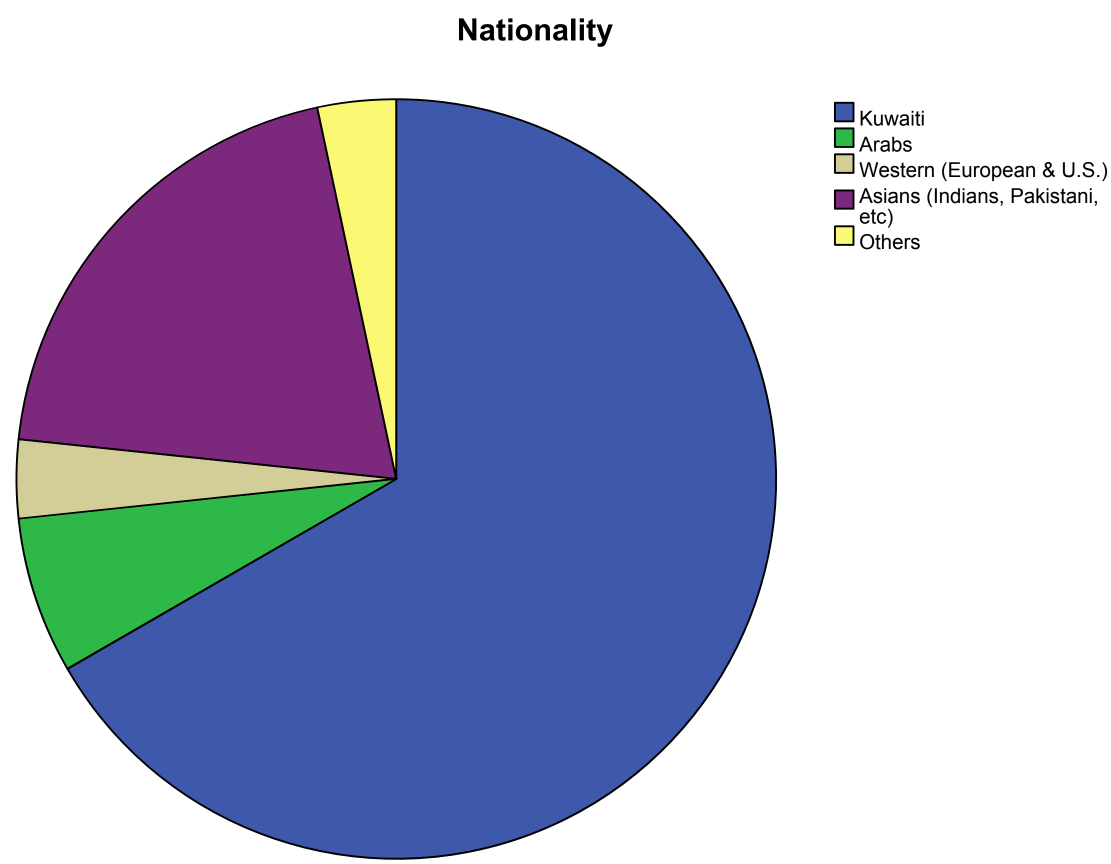


Grade



YearsofExperince




Nationality
Kuwaiti
Arabs
Western (European & U.S.)
Asians (Indians, Pakistani, etc)
Others

```
FREQUENCIES VARIABLES=ldr11 ldr12 ldr13 sp22 sp23 sp24 cstmrkt31 cstmrkt32
 cstmrkt33 cstmrkt34 cstmrkt35 Info41 Info42 Info43 hr52 h
   r53 hr54 hr55 pm61 pm62 pm63 pm64 pm65 pm66 ci73 ci74 ci75 br85 br86 br
87 br88 TQMfm1 TQMfm3 TQMfm4 TQMfm5 pwr411 pwr412
pwr413 unc421 unc422 unc423 unc424 col431 col432 col433 qprf441 qprf442 qp
rf443 qprf444 qethic453 qethic454 qethic455 qethic457 qeth
   ic458 qethic459
  /ORDER=ANALYSIS.
```

Frequencies

[DataSet6] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

Frequency Table

Leadership1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	1	3.3	3.3	3.3
	Average implemented	5	16.7	16.7	20.0
	Frequently implemented	17	56.7	56.7	76.7
	Fully implemented	7	23.3	23.3	100.0
	Total	30	100.0	100.0	

Leadership2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Average implemented	6	20.0	20.0	20.0
	Frequently implemented	9	30.0	30.0	50.0
	Fully implemented	15	50.0	50.0	100.0
	Total	30	100.0	100.0	

Leadership3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Average implemented	9	30.0	30.0	30.0
	Frequently implemented	12	40.0	40.0	70.0
	Fully implemented	9	30.0	30.0	100.0
	Total	30	100.0	100.0	

StrtgicPlanning2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Average implemented	9	30.0	30.0	30.0
	Frequently implemented	8	26.7	26.7	56.7
	Fully implemented	13	43.3	43.3	100.0
	Total	30	100.0	100.0	

StrtgicPlanning3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely implemented	3	10.0	10.0	10.0
	Slightly implemented	6	20.0	20.0	30.0
	Average implemented	6	20.0	20.0	50.0
	Frequently implemented	12	40.0	40.0	90.0
	Fully implemented	3	10.0	10.0	100.0
	Total	30	100.0	100.0	

StrtgicPlanning4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely implemented	1	3.3	3.3	3.3
	Slightly implemented	5	16.7	16.7	20.0
	Average implemented	9	30.0	30.0	50.0
	Frequently implemented	10	33.3	33.3	83.3
	Fully implemented	5	16.7	16.7	100.0
	Total	30	100.0	100.0	

CustmrMrktFocus1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	1	3.3	3.3	3.3
	Average implemented	3	10.0	10.0	13.3
	Frequently implemented	10	33.3	33.3	46.7
	Fully implemented	16	53.3	53.3	100.0
	Total	30	100.0	100.0	

CustmrMrktFocus2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely implemented	2	6.7	6.7	6.7
	Slightly implemented	1	3.3	3.3	10.0
	Average implemented	9	30.0	30.0	40.0
	Frequently implemented	10	33.3	33.3	73.3
	Fully implemented	8	26.7	26.7	100.0
	Total	30	100.0	100.0	

CustmrMrktFocus3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely implemented	1	3.3	3.3	3.3
	Slightly implemented	1	3.3	3.3	6.7
	Average implemented	13	43.3	43.3	50.0
	Frequently implemented	11	36.7	36.7	86.7
	Fully implemented	4	13.3	13.3	100.0
	Total	30	100.0	100.0	

CustmrMrktFocus4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	1	3.3	3.3	3.3
	Average implemented	8	26.7	26.7	30.0
	Frequently implemented	12	40.0	40.0	70.0
	Fully implemented	9	30.0	30.0	100.0
	Total	30	100.0	100.0	

CustmrMrktFocus5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely implemented	2	6.7	6.7	6.7
	Average implemented	6	20.0	20.0	26.7
	Frequently implemented	12	40.0	40.0	66.7
	Fully implemented	10	33.3	33.3	100.0
	Total	30	100.0	100.0	

InfoAnlysis1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	1	3.3	3.3	3.3
	Average implemented	9	30.0	30.0	33.3
	Frequently implemented	8	26.7	26.7	60.0
	Fully implemented	12	40.0	40.0	100.0
	Total	30	100.0	100.0	

InfoAnlysis2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	2	6.7	6.7	6.7
	Average implemented	3	10.0	10.0	16.7
	Frequently implemented	18	60.0	60.0	76.7
	Fully implemented	7	23.3	23.3	100.0
	Total	30	100.0	100.0	

InfoAnlysis3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	2	6.7	6.7	6.7
	Average implemented	11	36.7	36.7	43.3
	Frequently implemented	9	30.0	30.0	73.3
	Fully implemented	8	26.7	26.7	100.0
	Total	30	100.0	100.0	

HumanRes2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely implemented	2	6.7	6.7	6.7
	Slightly implemented	3	10.0	10.0	16.7
	Average implemented	7	23.3	23.3	40.0
	Frequently implemented	12	40.0	40.0	80.0
	Fully implemented	6	20.0	20.0	100.0
	Total	30	100.0	100.0	

HumanRes3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	2	6.7	6.7	6.7
	Average implemented	4	13.3	13.3	20.0
	Frequently implemented	16	53.3	53.3	73.3
	Fully implemented	8	26.7	26.7	100.0
	Total	30	100.0	100.0	

HumanRes4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	1	3.3	3.3	3.3
	Average implemented	10	33.3	33.3	36.7
	Frequently implemented	14	46.7	46.7	83.3
	Fully implemented	5	16.7	16.7	100.0
	Total	30	100.0	100.0	

HumanRes5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	1	3.3	3.3	3.3
	Average implemented	6	20.0	20.0	23.3
	Frequently implemented	8	26.7	26.7	50.0
	Fully implemented	15	50.0	50.0	100.0
	Total	30	100.0	100.0	

PrcMngmt1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	1	3.3	3.3	3.3
	Average implemented	5	16.7	16.7	20.0
	Frequently implemented	14	46.7	46.7	66.7
	Fully implemented	10	33.3	33.3	100.0
	Total	30	100.0	100.0	

PrcMngmt2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely implemented	1	3.3	3.3	3.3
	Slightly implemented	3	10.0	10.0	13.3
	Average implemented	11	36.7	36.7	50.0
	Frequently implemented	7	23.3	23.3	73.3
	Fully implemented	8	26.7	26.7	100.0
	Total	30	100.0	100.0	

PrcMngmt3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	3	10.0	10.0	10.0
	Average implemented	8	26.7	26.7	36.7
	Frequently implemented	13	43.3	43.3	80.0
	Fully implemented	6	20.0	20.0	100.0
	Total	30	100.0	100.0	

PrcMngmt4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	3	10.0	10.0	10.0
	Average implemented	6	20.0	20.0	30.0
	Frequently implemented	14	46.7	46.7	76.7
	Fully implemented	7	23.3	23.3	100.0
	Total	30	100.0	100.0	

PrcMngmt5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	2	6.7	6.7	6.7
	Average implemented	6	20.0	20.0	26.7
	Frequently implemented	15	50.0	50.0	76.7
	Fully implemented	7	23.3	23.3	100.0
	Total	30	100.0	100.0	

PrcMngmt6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Average implemented	6	20.0	20.0	20.0
	Frequently implemented	14	46.7	46.7	66.7
	Fully implemented	10	33.3	33.3	100.0
	Total	30	100.0	100.0	

Contimprv3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	1	3.3	3.3	3.3
	Average implemented	4	13.3	13.3	16.7
	Frequently implemented	14	46.7	46.7	63.3
	Fully implemented	11	36.7	36.7	100.0
	Total	30	100.0	100.0	

Contimprv4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	2	6.7	6.7	6.7
	Average implemented	6	20.0	20.0	26.7
	Frequently implemented	13	43.3	43.3	70.0
	Fully implemented	9	30.0	30.0	100.0
	Total	30	100.0	100.0	

Contimprv5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	1	3.3	3.3	3.3
	Average implemented	2	6.7	6.7	10.0
	Frequently implemented	10	33.3	33.3	43.3
	Fully implemented	17	56.7	56.7	100.0
	Total	30	100.0	100.0	

BusReslt5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	3	10.0	10.0	10.0
	Average implemented	6	20.0	20.0	30.0
	Frequently implemented	12	40.0	40.0	70.0
	Fully implemented	9	30.0	30.0	100.0
	Total	30	100.0	100.0	

BusReslt6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	3	10.0	10.0	10.0
	Average implemented	8	26.7	26.7	36.7
	Frequently implemented	15	50.0	50.0	86.7
	Fully implemented	4	13.3	13.3	100.0
	Total	30	100.0	100.0	

BusReslt7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly implemented	2	6.7	6.7	6.7
	Average implemented	6	20.0	20.0	26.7
	Frequently implemented	17	56.7	56.7	83.3
	Fully implemented	5	16.7	16.7	100.0
	Total	30	100.0	100.0	

BusReslt8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely implemented	2	6.7	6.7	6.7
	Slightly implemented	1	3.3	3.3	10.0
	Average implemented	5	16.7	16.7	26.7
	Frequently implemented	18	60.0	60.0	86.7
	Fully implemented	4	13.3	13.3	100.0
	Total	30	100.0	100.0	

TQMFmlrtyq1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low familiar	1	3.3	3.3	3.3
	Low familiar	1	3.3	3.3	6.7
	Average Level of familiarity	9	30.0	30.0	36.7
	Very familiar	14	46.7	46.7	83.3
	Fully familiar	5	16.7	16.7	100.0
	Total	30	100.0	100.0	

TQMFmlrtyq3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low familiar	3	10.0	10.0	10.0
	Average Level of familiarity	3	10.0	10.0	20.0
	Very familiar	13	43.3	43.3	63.3
	Fully familiar	11	36.7	36.7	100.0
	Total	30	100.0	100.0	

TQMFmlrtyq4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low familiar	1	3.3	3.3	3.3
	Average Level of familiarity	5	16.7	16.7	20.0
	Very familiar	15	50.0	50.0	70.0
	Fully familiar	9	30.0	30.0	100.0
	Total	30	100.0	100.0	

TQMFmlrtyq5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low familiar	1	3.3	3.3	3.3
	Average Level of familiarity	5	16.7	16.7	20.0
	Very familiar	9	30.0	30.0	50.0
	Fully familiar	15	50.0	50.0	100.0
	Total	30	100.0	100.0	

NCPwrdstnc1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree in a low degree	13	43.3	43.3	43.3
	Agree to some extent	9	30.0	30.0	73.3
	Agree to Medium degree	6	20.0	20.0	93.3
	Fully Agree	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

NCPwrdstnc2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree in a low degree	14	46.7	46.7	46.7
	Agree to some extent	9	30.0	30.0	76.7
	Agree to Medium degree	4	13.3	13.3	90.0
	Agree to great extent	2	6.7	6.7	96.7
	Fully Agree	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

NCPwrdstnc3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree in a low degree	15	50.0	50.0	50.0
	Agree to some extent	5	16.7	16.7	66.7
	Agree to Medium degree	6	20.0	20.0	86.7
	Agree to great extent	3	10.0	10.0	96.7
	Fully Agree	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

NCUncrtnty1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree in a low degree	1	3.3	3.3	3.3
	Agree to some extent	3	10.0	10.0	13.3
	Agree to Medium degree	3	10.0	10.0	23.3
	Agree to great extent	6	20.0	20.0	43.3
	Fully Agree	17	56.7	56.7	100.0
	Total	30	100.0	100.0	

NCUncrtnty2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to some extent	3	10.0	10.0	10.0
	Agree to Medium degree	5	16.7	16.7	26.7
	Agree to great extent	6	20.0	20.0	46.7
	Fully Agree	16	53.3	53.3	100.0
	Total	30	100.0	100.0	

NCUncrtnty3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to some extent	2	6.7	6.7	6.7
	Agree to Medium degree	3	10.0	10.0	16.7
	Agree to great extent	10	33.3	33.3	50.0
	Fully Agree	15	50.0	50.0	100.0
	Total	30	100.0	100.0	

NCUncrtnty4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to some extent	4	13.3	13.3	13.3
	Agree to Medium degree	8	26.7	26.7	40.0
	Agree to great extent	7	23.3	23.3	63.3
	Fully Agree	11	36.7	36.7	100.0
	Total	30	100.0	100.0	

NCCollctvsm1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to some extent	2	6.7	6.7	6.7
	Agree to Medium degree	5	16.7	16.7	23.3
	Agree to great extent	7	23.3	23.3	46.7
	Fully Agree	16	53.3	53.3	100.0
	Total	30	100.0	100.0	

NCCollctvsm2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to some extent	2	6.7	6.7	6.7
	Agree to Medium degree	7	23.3	23.3	30.0
	Agree to great extent	8	26.7	26.7	56.7
	Fully Agree	13	43.3	43.3	100.0
	Total	30	100.0	100.0	

NCCollctvsm3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to some extent	4	13.3	13.3	13.3
	Agree to Medium degree	6	20.0	20.0	33.3
	Agree to great extent	10	33.3	33.3	66.7
	Fully Agree	10	33.3	33.3	100.0
	Total	30	100.0	100.0	

NCQPerfm1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree in a low degree	3	10.0	10.0	10.0
	Agree to some extent	5	16.7	16.7	26.7
	Agree to Medium degree	5	16.7	16.7	43.3
	Agree to great extent	10	33.3	33.3	76.7
	Fully Agree	7	23.3	23.3	100.0
	Total	30	100.0	100.0	

NCQPerfm2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to some extent	4	13.3	13.3	13.3
	Agree to Medium degree	9	30.0	30.0	43.3
	Agree to great extent	7	23.3	23.3	66.7
	Fully Agree	10	33.3	33.3	100.0
	Total	30	100.0	100.0	

NCQPerfm3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree in a low degree	2	6.7	6.7	6.7
	Agree to some extent	4	13.3	13.3	20.0
	Agree to Medium degree	7	23.3	23.3	43.3
	Agree to great extent	9	30.0	30.0	73.3
	Fully Agree	8	26.7	26.7	100.0
	Total	30	100.0	100.0	

NCQPerfm4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to some extent	2	6.7	6.7	6.7
	Agree to Medium degree	11	36.7	36.7	43.3
	Agree to great extent	6	20.0	20.0	63.3
	Fully Agree	11	36.7	36.7	100.0
	Total	30	100.0	100.0	

NCQEthcs3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree in a low degree	1	3.3	3.3	3.3
	Agree to great extent	7	23.3	23.3	26.7
	Fully Agree	22	73.3	73.3	100.0
	Total	30	100.0	100.0	

NCQEthcs4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree in a low degree	1	3.3	3.3	3.3
	Agree to Medium degree	1	3.3	3.3	6.7
	Agree to great extent	7	23.3	23.3	30.0
	Fully Agree	21	70.0	70.0	100.0
	Total	30	100.0	100.0	

NCQEthcs5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to Medium degree	1	3.3	3.3	3.3
	Agree to great extent	6	20.0	20.0	23.3
	Fully Agree	23	76.7	76.7	100.0
	Total	30	100.0	100.0	

NCQEthcs7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to Medium degree	2	6.7	6.7	6.7
	Agree to great extent	4	13.3	13.3	20.0
	Fully Agree	24	80.0	80.0	100.0
	Total	30	100.0	100.0	

NCQEthcs8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to some extent	1	3.3	3.3	3.3
	Agree to great extent	8	26.7	26.7	30.0
	Fully Agree	21	70.0	70.0	100.0
	Total	30	100.0	100.0	

NCQEthcs9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree to Medium degree	5	16.7	16.7	16.7
	Agree to great extent	4	13.3	13.3	30.0
	Fully Agree	21	70.0	70.0	100.0
	Total	30	100.0	100.0	

```
NPAR TESTS
  /K-W=ldrfctr spfctr infofctr hrfctr pmfctr cifctr brfctr csmrktfctr BY C
ompny(1 3)
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Kruskal-Wallis Test

Ranks

	Company	N	Mean Rank
ldrfctr	PIC	5	19.10
	KNPC	6	14.00
	KOC	19	15.03
	Total	30	
spfctr	PIC	5	17.10
	KNPC	6	14.67
	KOC	19	15.34
	Total	30	
infofctr	PIC	5	14.00
	KNPC	6	18.08
	KOC	19	15.08
	Total	30	
hrfctr	PIC	5	17.20
	KNPC	6	15.92
	KOC	19	14.92
	Total	30	
pmfctr	PIC	5	19.50
	KNPC	6	12.00
	KOC	19	15.55
	Total	30	
cifctr	PIC	5	15.00
	KNPC	6	15.08
	KOC	19	15.76
	Total	30	
brfctr	PIC	5	15.70
	KNPC	6	9.83
	KOC	19	17.24
	Total	30	
csmrktfctr	PIC	5	20.70
	KNPC	6	12.17
	KOC	19	15.18
	Total	30	

```
SAVE OUTFILE='D:\my thesis\reem2012\reem2012-reduced.sav'
 /COMPRESSED.
FREQUENCIES VARIABLES=trpwr
  /NTILES=4
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```

Frequencies

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Statistics

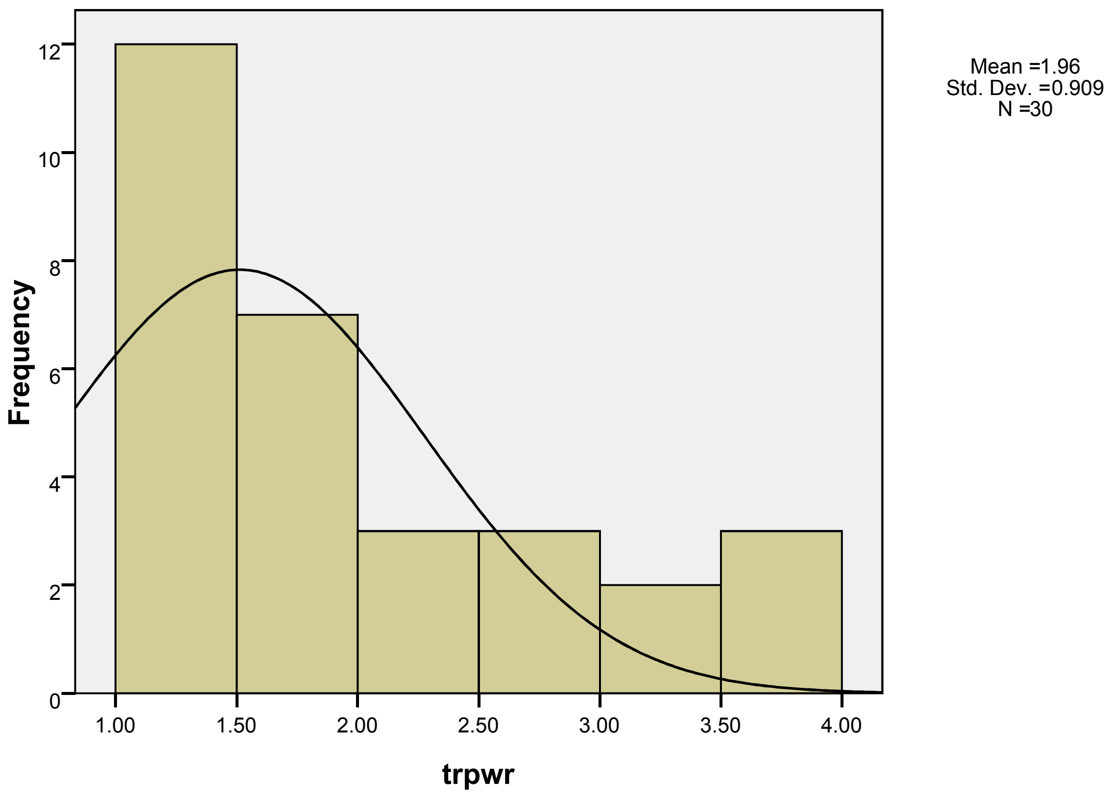
trpwr

N	Valid	30
	Missing	0
Percentiles	25	1.3156
	50	1.6631
	75	2.6419

trpwr

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	6	20.0	20.0	20.0
	1.32	3	10.0	10.0	30.0
	1.33	2	6.7	6.7	36.7
	1.36	1	3.3	3.3	40.0
	1.64	2	6.7	6.7	46.7
	1.65	1	3.3	3.3	50.0
	1.67	1	3.3	3.3	53.3
	1.68	2	6.7	6.7	60.0
	1.97	1	3.3	3.3	63.3
	2.36	1	3.3	3.3	66.7
	2.37	1	3.3	3.3	70.0
	2.39	1	3.3	3.3	73.3
	2.63	1	3.3	3.3	76.7
	2.67	1	3.3	3.3	80.0
	2.71	1	3.3	3.3	83.3
	3.00	2	6.7	6.7	90.0
	3.74	1	3.3	3.3	93.3
	3.97	1	3.3	3.3	96.7
	3.99	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

Histogram

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  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```

Frequencies

[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

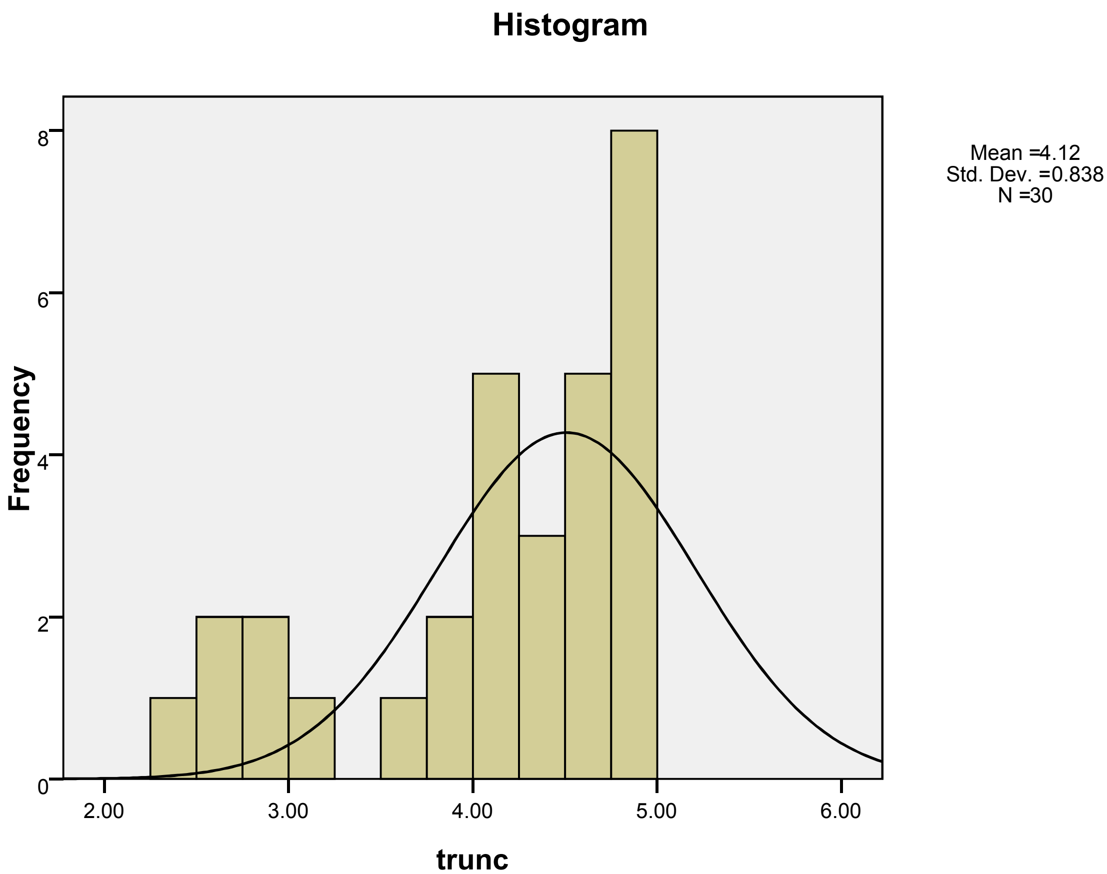
Statistics

trunc

N	Valid	30
	Missing	0
Percentiles	25	3.7752
	50	4.4896
	75	4.7723

trunc

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.31	1	3.3	3.3	3.3
	2.50	1	3.3	3.3	6.7
	2.64	1	3.3	3.3	10.0
	2.77	1	3.3	3.3	13.3
	2.77	1	3.3	3.3	16.7
	3.00	1	3.3	3.3	20.0
	3.69	1	3.3	3.3	23.3
	3.80	1	3.3	3.3	26.7
	3.96	1	3.3	3.3	30.0
	4.00	3	10.0	10.0	40.0
	4.03	1	3.3	3.3	43.3
	4.08	1	3.3	3.3	46.7
	4.48	1	3.3	3.3	50.0
	4.50	2	6.7	6.7	56.7
	4.52	1	3.3	3.3	60.0
	4.53	2	6.7	6.7	66.7
	4.58	1	3.3	3.3	70.0
	4.73	1	3.3	3.3	73.3
	4.77	1	3.3	3.3	76.7
	4.79	1	3.3	3.3	80.0
	5.00	6	20.0	20.0	100.0
	Total	30	100.0	100.0	

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FREQUENCIES VARIABLES=trcol
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  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```

Frequencies

[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

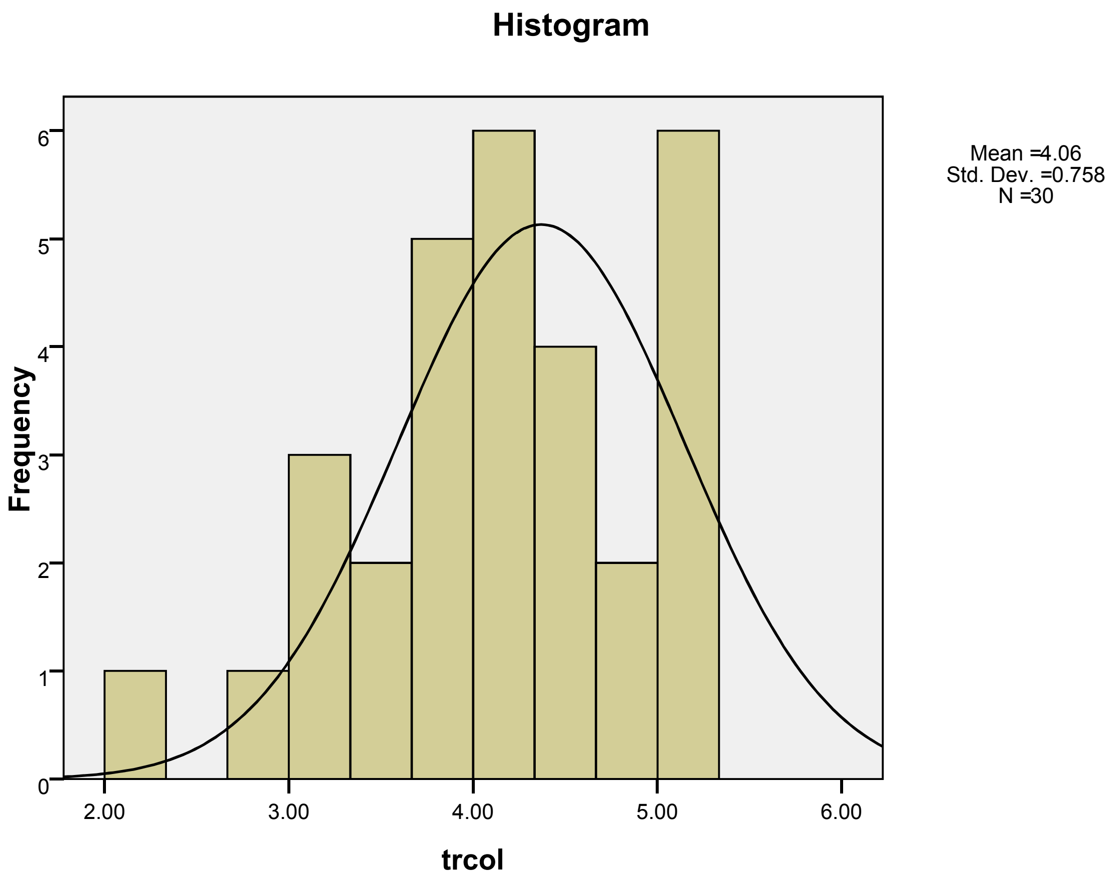
Statistics

trcol

N	Valid	30
	Missing	0
Percentiles	25	3.6674
	50	4.0875
	75	4.7102

trcol

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	1	3.3	3.3	3.3
	2.96	1	3.3	3.3	6.7
	3.00	3	10.0	10.0	16.7
	3.54	1	3.3	3.3	20.0
	3.67	1	3.3	3.3	23.3
	3.67	2	6.7	6.7	30.0
	3.75	1	3.3	3.3	33.3
	3.80	1	3.3	3.3	36.7
	3.96	1	3.3	3.3	40.0
	4.00	2	6.7	6.7	46.7
	4.04	1	3.3	3.3	50.0
	4.13	1	3.3	3.3	53.3
	4.29	1	3.3	3.3	56.7
	4.33	1	3.3	3.3	60.0
	4.33	2	6.7	6.7	66.7
	4.38	1	3.3	3.3	70.0
	4.67	1	3.3	3.3	73.3
	4.71	2	6.7	6.7	80.0
	5.00	6	20.0	20.0	100.0
	Total	30	100.0	100.0	

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  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
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Frequencies

[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

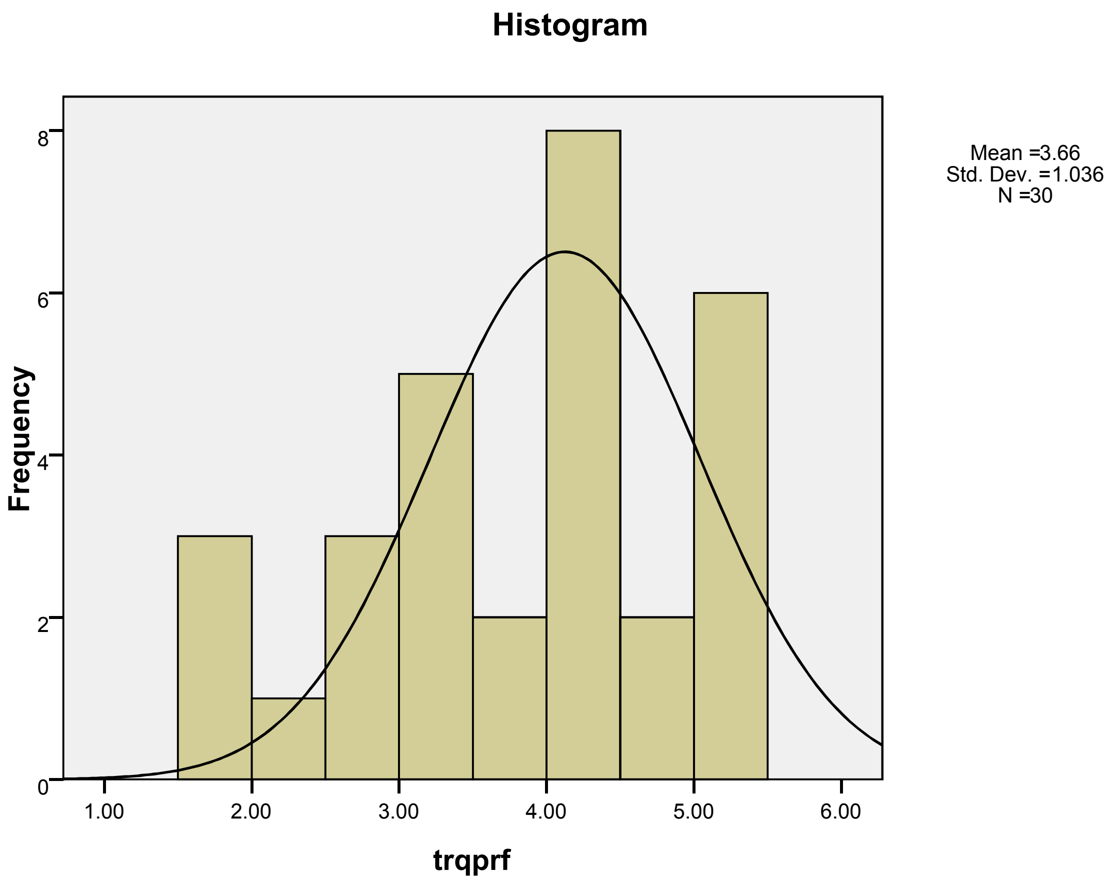
Statistics

trqprf

N	Valid	30
	Missing	0
Percentiles	25	2.9364
	50	4.0000
	75	4.5776

trqprf

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.74	1	3.3	3.3	3.3
	1.78	1	3.3	3.3	6.7
	1.99	1	3.3	3.3	10.0
	2.29	1	3.3	3.3	13.3
	2.51	2	6.7	6.7	20.0
	2.75	1	3.3	3.3	23.3
	3.00	3	10.0	10.0	33.3
	3.03	1	3.3	3.3	36.7
	3.22	1	3.3	3.3	40.0
	3.75	1	3.3	3.3	43.3
	3.97	1	3.3	3.3	46.7
	4.00	5	16.7	16.7	63.3
	4.00	1	3.3	3.3	66.7
	4.02	1	3.3	3.3	70.0
	4.10	1	3.3	3.3	73.3
	4.51	1	3.3	3.3	76.7
	4.78	1	3.3	3.3	80.0
	5.00	6	20.0	20.0	100.0
	Total	30	100.0	100.0	

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  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
<head><style type="text/css">p{color:0;font-family:Monospaced;font-size:14pt;
font-style:normal;font-weight:normal;text-decoration:none}</style></head>
FREQUENCIES VARIABLES=trfmlrty
  /NTILES=4
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```

Frequencies

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

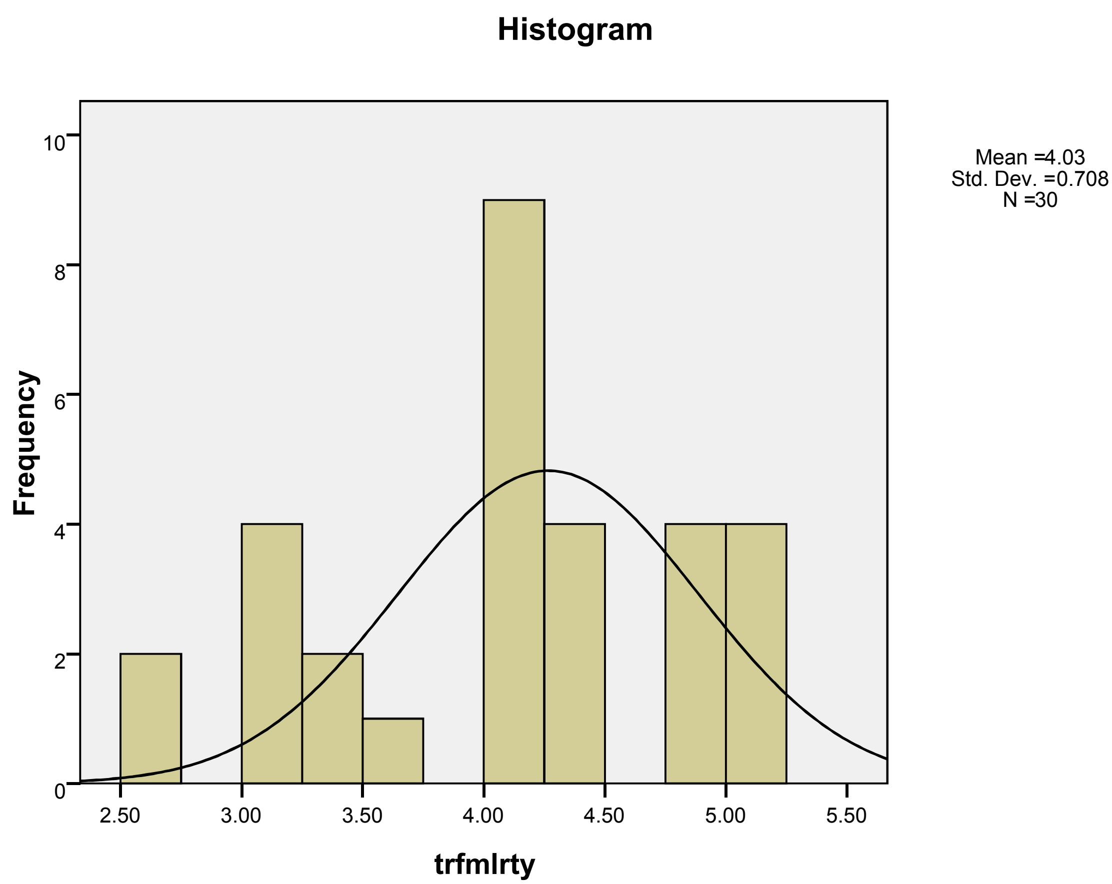
Statistics

trfmlrty

N	Valid	30
	Missing	0
Percentiles	25	3.4402
	50	4.1181
	75	4.7781

trfmlrty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.74	1	3.3	3.3	3.3
	2.74	1	3.3	3.3	6.7
	3.00	2	6.7	6.7	13.3
	3.05	1	3.3	3.3	16.7
	3.22	1	3.3	3.3	20.0
	3.27	1	3.3	3.3	23.3
	3.50	1	3.3	3.3	26.7
	3.54	1	3.3	3.3	30.0
	4.00	5	16.7	16.7	46.7
	4.01	1	3.3	3.3	50.0
	4.22	1	3.3	3.3	53.3
	4.24	2	6.7	6.7	60.0
	4.26	2	6.7	6.7	66.7
	4.27	1	3.3	3.3	70.0
	4.30	1	3.3	3.3	73.3
	4.78	4	13.3	13.3	86.7
	5.00	4	13.3	13.3	100.0
	Total	30	100.0	100.0	




```
FREQUENCIES VARIABLES=npethc nwkethc
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  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```

Frequencies

```
[DataSet3] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Statistics

		npethc	nwkethc
N	Valid	30	30
	Missing	0	0
Percentiles	25	4.2250	4.3658
	50	5.0000	5.0000
	75	5.0000	5.0000

Frequency Table

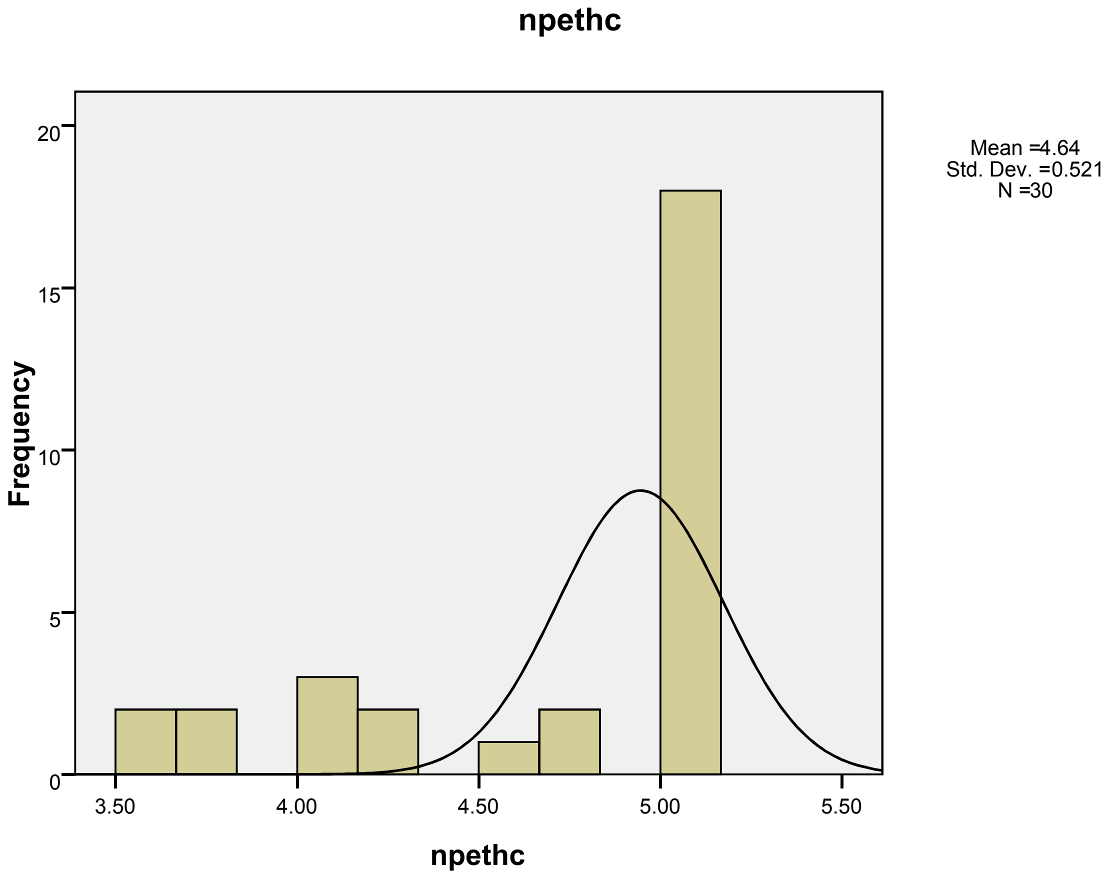
npethc

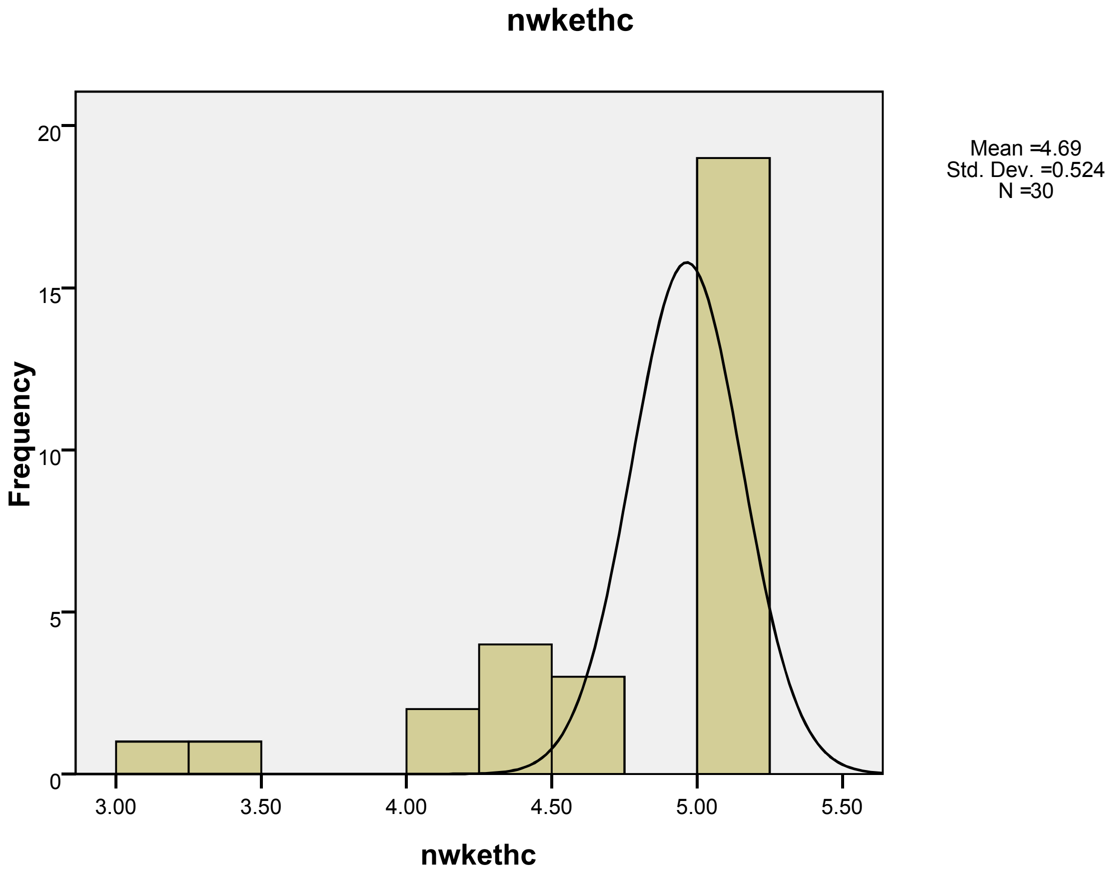
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.53	1	3.3	3.3	3.3
	3.63	1	3.3	3.3	6.7
	3.67	1	3.3	3.3	10.0
	3.70	1	3.3	3.3	13.3
	4.00	3	10.0	10.0	23.3
	4.30	2	6.7	6.7	30.0
	4.63	1	3.3	3.3	33.3
	4.70	2	6.7	6.7	40.0
	5.00	18	60.0	60.0	100.0
	Total	30	100.0	100.0	

nwkethc

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	1	3.3	3.3	3.3
	3.34	1	3.3	3.3	6.7
	4.00	2	6.7	6.7	13.3
	4.31	2	6.7	6.7	20.0
	4.35	1	3.3	3.3	23.3
	4.37	1	3.3	3.3	26.7
	4.66	2	6.7	6.7	33.3
	4.69	1	3.3	3.3	36.7
	5.00	19	63.3	63.3	100.0
	Total	30	100.0	100.0	

Histogram


npethc
Mean =4.64
Std. Dev. =0.521
N =30
Frequency
npethc



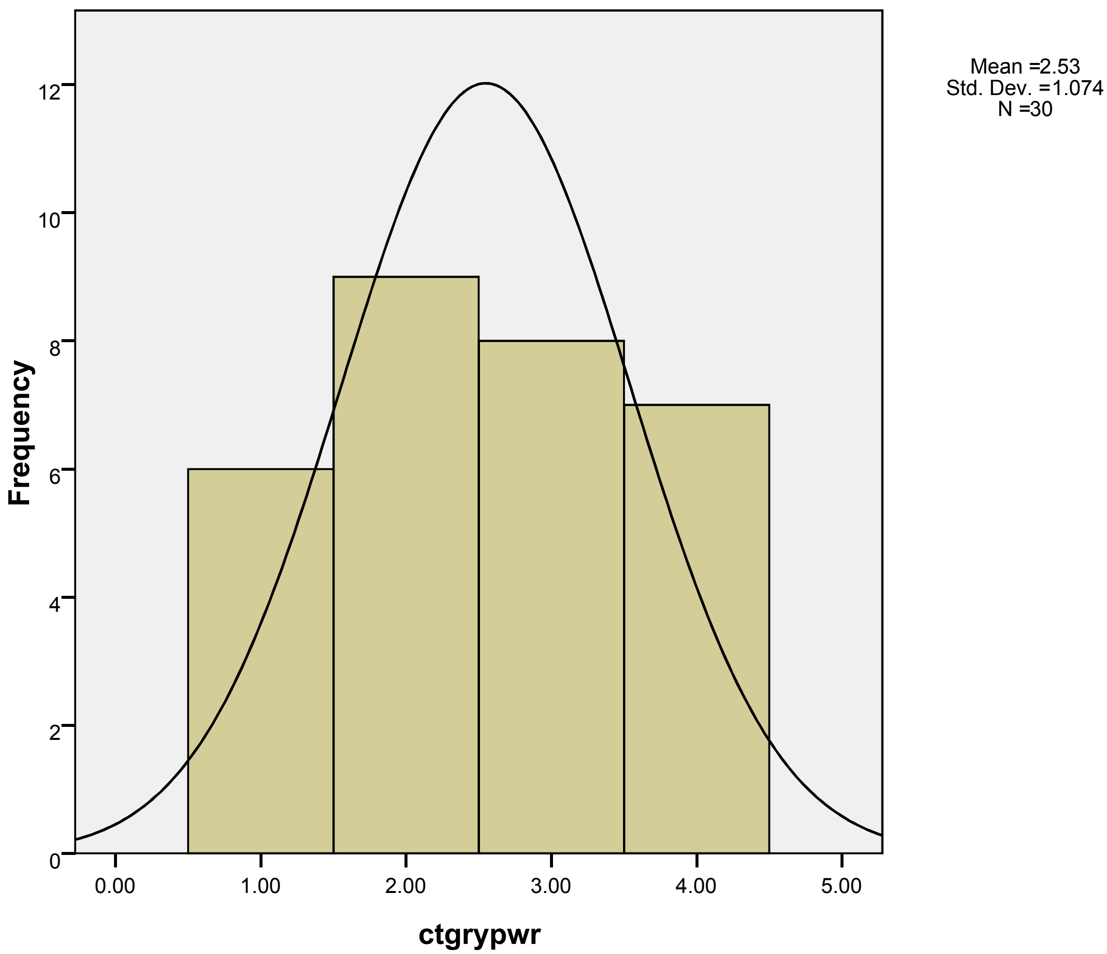

```
IF  (trfmlrty   <= 3.4402) ctgryfmrty=1.
EXECUTE.
IF  (3.4402 < trfmlrty & trfmlrty   <= 4.1181) ctgryfmrty=2.
EXECUTE.
IF  (4.1181 < trfmlrty & trfmlrty   <= 4.7781) ctgryfmrty=3.
EXECUTE.
IF  (trpwr > 4.7781) ctgryfmrty=4.
EXECUTE.
IF  (trfmlrty > 4.7781) ctgryfmrty=4.
EXECUTE.
IF  (trpwr   <= 1.3156) ctgrypwr=1.
EXECUTE.
IF  (1.3156 < trpwr & trpwr   <= 1.6631) ctgrypwr=2.
EXECUTE.
IF  (1.6631 < trpwr & trpwr   <= 2.6419) ctgrypwr=3.
```

```
EXECUTE.
IF  (trpwr > 2.6419
) ctgrypwr=4.
EXECUTE.
IF  (trunc   <= 3.7752) ctgryunc=1.
EXECUTE.
IF  (3.7752 < trunc & trunc   <= 4.4896) ctgryunc=2.
EXECUTE.
IF  (4.4896 < trunc & trunc   <= 4.7723) ctgryunc=3.
EXECUTE.
IF  (trunc > 4.7723) ctgryunc=4.
EXECUTE.
IF  (trcol <= 3.6674) ctgrycol=1.
EXECUTE.
IF  (3.6674 < trcol & trcol   <= 4.0875) ctgrycol=2.
EXECUTE.
IF  (4.0875 < trcol & trcol   <= 4.7102) ctgrycol=3.
EXECUTE.
IF  (trcol > 4.7102) ctgrycol=4.
EXECUTE.
IF  (trqprf <= 2.9364) ctgryqprf=1.
EXECUTE.
IF  (2.9364 < trqprf & trqprf   <= 4.00) ctgryqprf=2.
EXECUTE.
IF  (4.00 < trqprf & trqprf   <= 4.5776) ctgryqprf=3.
EXECUTE.
IF  (trqprf > 4.5776) ctgryqprf=4.
EXECUTE.
IF  (npethc <= 4.225) ctgrynpethc=3.
EXECUTE.
IF  (4.225 < npethc & npethc <= 5.000) nctgrypethc=4.
EXECUTE.
IF  (nwkethc <= 4.3658) ctgrywkethc=3.
EXECUTE.
IF  (4.3658 < nwkethc & nwkethc <= 5.00) ctgrywkethc=4.
EXECUTE.
GET
  FILE='D:\my thesis\reem2012\reem2012-reduced.sav'.
DATASET ACTIVATE DataSet1.
SAVE OUTFILE='D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav'
 /COMPRESSED.
```

```
GRAPH
  /HISTOGRAM(NORMAL)=ctgryfmrty.
```

Graph

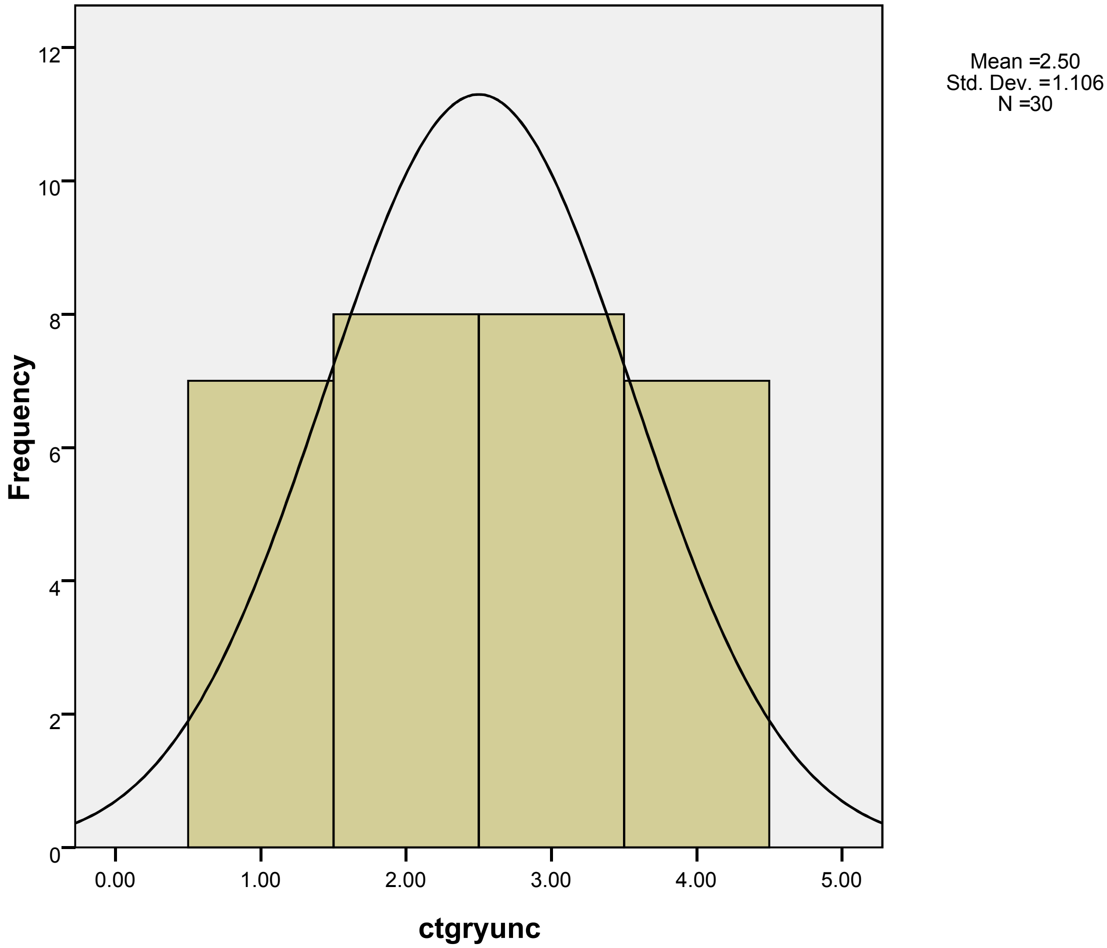
```
[DataSet3] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```




```
GRAPH
  /HISTOGRAM(NORMAL)=ctgryunc.
```

Graph

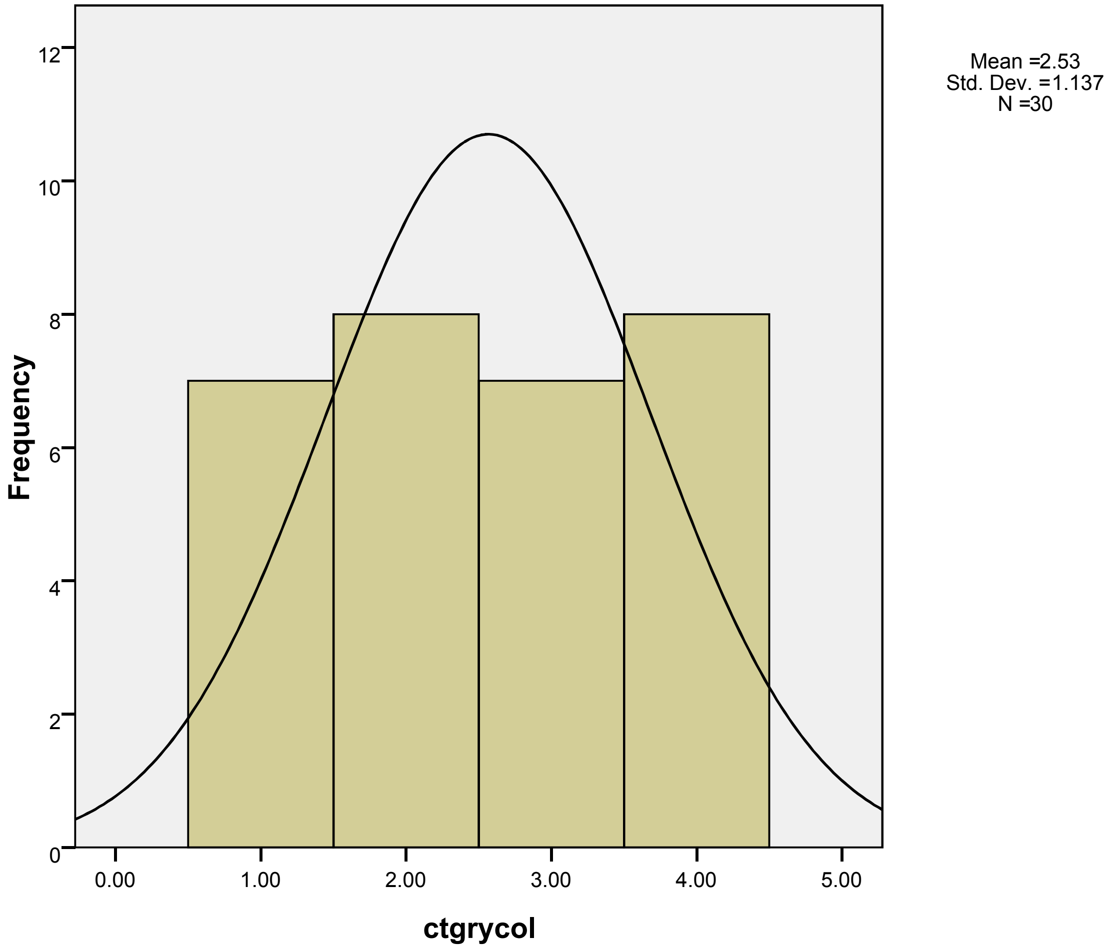
```
[DataSet3] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```




```
GRAPH
  /HISTOGRAM(NORMAL)=ctgrycol.
```

Graph

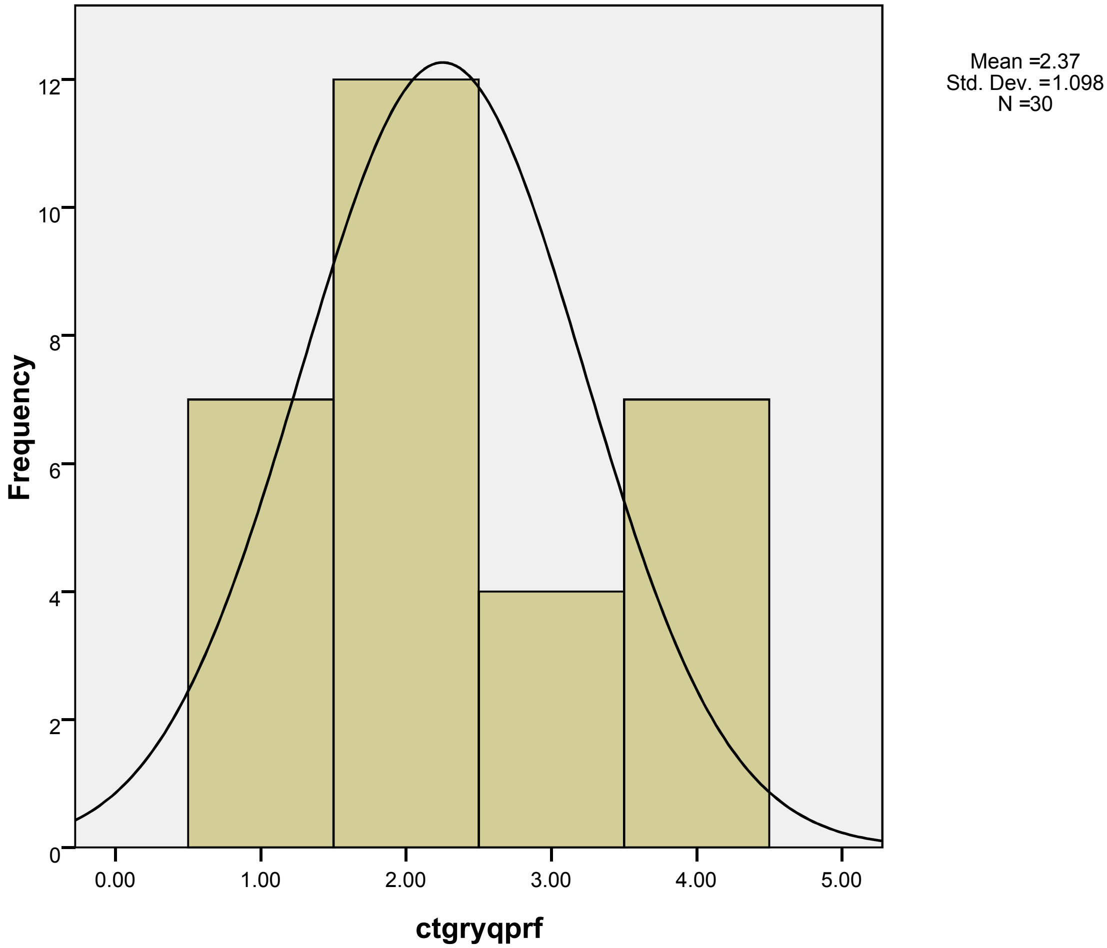
```
[DataSet3] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```




```
GRAPH
  /HISTOGRAM(NORMAL)=ctgryqprf.
```

Graph

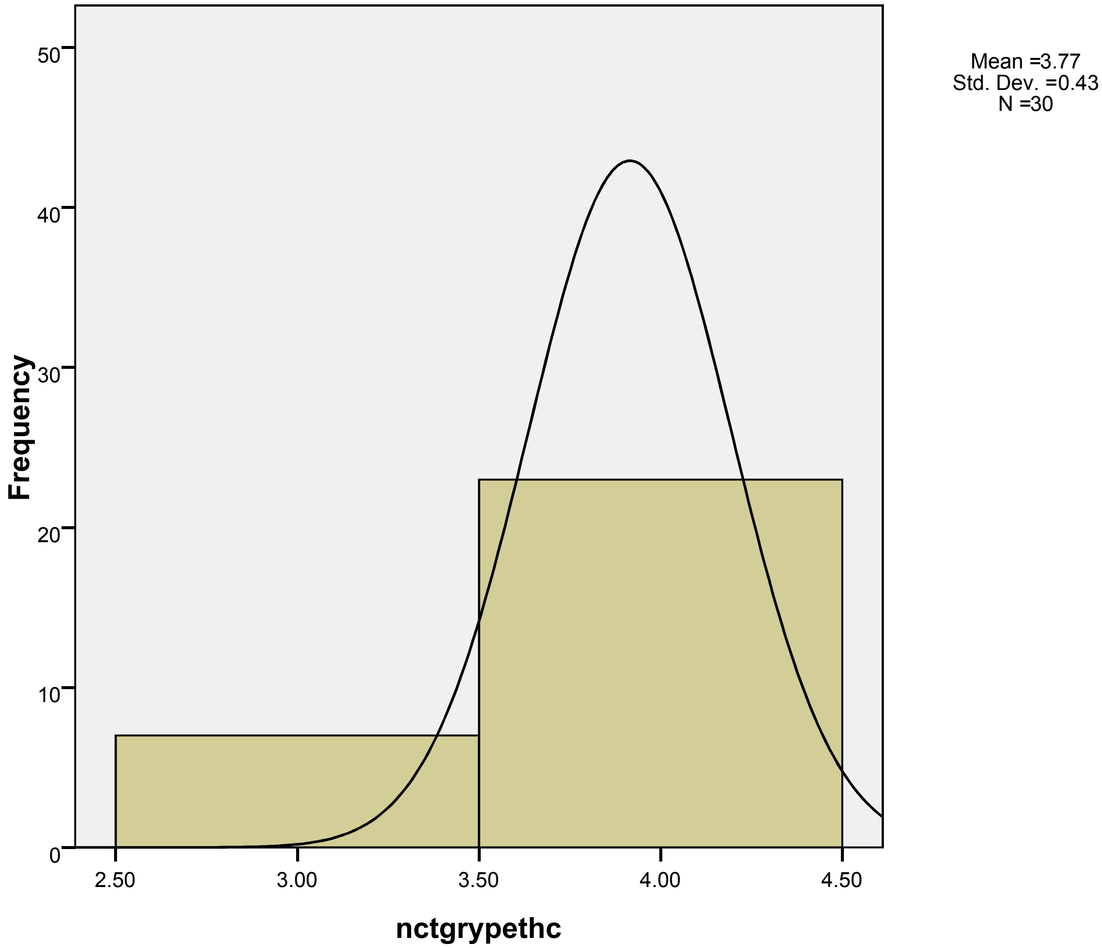
```
[DataSet3] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```




```
GRAPH
  /HISTOGRAM(NORMAL)=nctgrypethc.
```

Graph

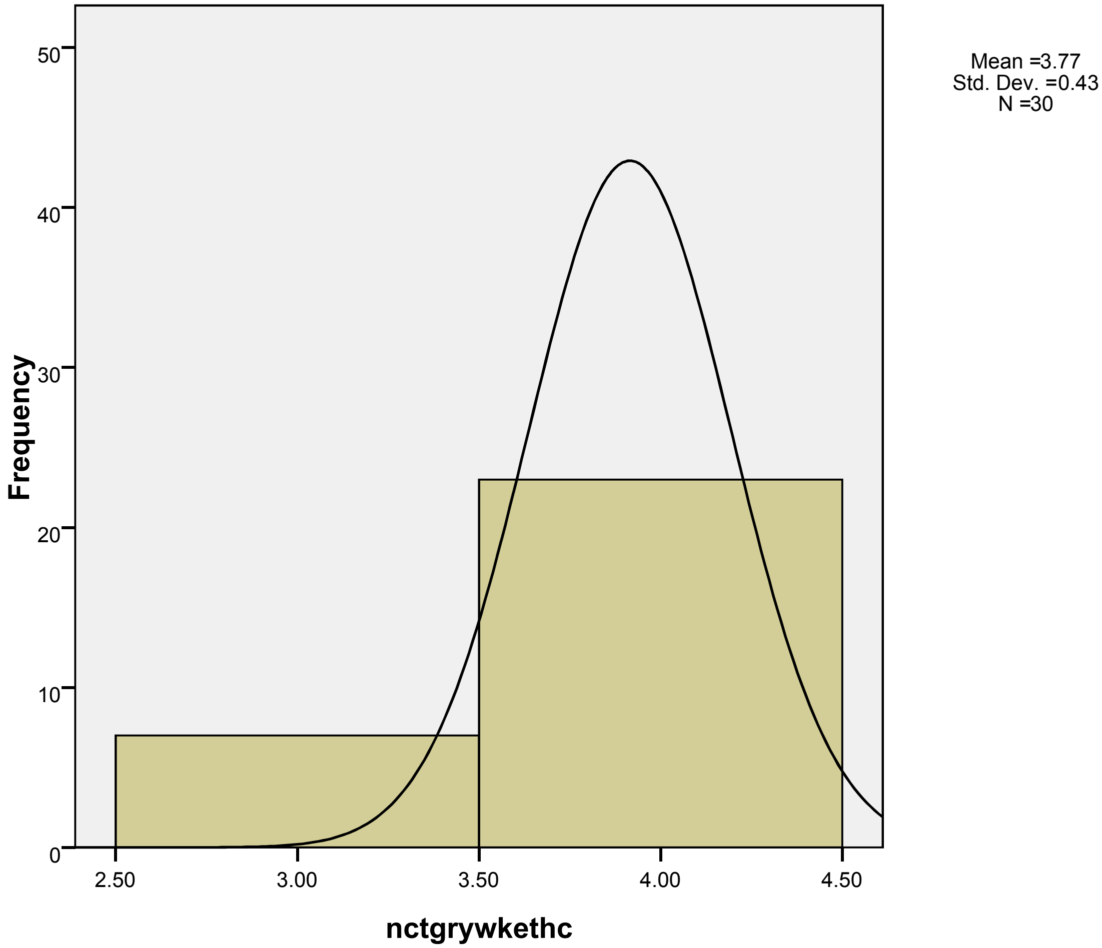
```
[DataSet3] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```




```
GRAPH
  /HISTOGRAM(NORMAL)=nctgrywkethc.
```

Graph

```
[DataSet3] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```


Mean =3.77
Std. Dev. =0.43
N =30
Frequency
0
10
20
30
40
50
2.50
3.00
3.50
4.00
4.50
nctgrywkethc

Factor Analysis

[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

Communalities

	Initial	Extraction
NCQEthcs3	1.000	.443
NCQEthcs4	1.000	.517
NCQEthcs5	1.000	.558
NCQEthcs7	1.000	.660
NCQEthcs8	1.000	.806
NCQEthcs9	1.000	.857

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.492	41.526	41.526	2.492	41.526	41.526
2	1.348	22.472	63.998	1.348	22.472	63.998
3	.842	14.035	78.033			
4	.683	11.382	89.415			
5	.456	7.596	97.011			
6	.179	2.989	100.000			

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.387	39.776	39.776
2	1.453	24.222	63.998

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
NCQEthcs3	.208	.632
NCQEthcs4	.173	.698
NCQEthcs5	.483	.570
NCQEthcs7	.804	-.112

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Component Matrix[a]

	Component	
	1	2
NCQEthcs8	.859	-.259
NCQEthcs9	.894	-.240

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
NCQEthcs3	.007	.665
NCQEthcs4	-.046	.717
NCQEthcs5	.287	.689
NCQEthcs7	.801	.137
NCQEthcs8	.898	.013
NCQEthcs9	.925	.043

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	.953	.303
2	-.303	.953

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
COMPUTE pwrfctr=((pwr411 * .773) + (pwr412* .748) + (pwr413* .849))
/ 2.37.
EXECUTE.
COMPUTE trfmlrty=((tqmfm1 * .714) + (tqmfm3* .836) +
(tqmfm4* .908)+ (tqmfm5* .760)) / 3.218.
EXECUTE.
COMPUTE trunc=((unc421 * .674) + (unc422* .910) +
(unc423 * .853)+ (unc424*.740)) / 3.177.
EXECUTE.
COMPUTE trcol=((col431 * .756) + (col432* .852) +
(col433 * .656)) / 2.264.
```

```
EXECUTE.
COMPUTE trqprf=((qprf441 * .809) + (qprf442* .918) +
(qprf443 * .954)+ (qprf444 *.928)) /
3.609.
EXECUTE.
COMPUTE npethc=((qethic453 * .632) + (qethic454* .698) +
(qethic455 * .570)) /1.9.
EXECUTE.
COMPUTE nwkethc=((qethic457 * .804)+ (qethic458*.859)+
(qethic459*.894)) / 2.557.
EXECUTE.
FREQUENCIES VARIABLES=trfmlrty
  /NTILES=4
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```

```
GET
  FILE='D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav'.
FACTOR
  /VARIABLES ldr11 ldr12 ldr13
  /MISSING LISTWISE
  /ANALYSIS ldr11 ldr12 ldr13
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Communalities

	Initial	Extraction
Leadership1	1.000	.812
Leadership2	1.000	.859
Leadership3	1.000	.821

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.492	83.083	83.083	2.492	83.083	83.083
2	.293	9.782	92.864			
3	.214	7.136	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Leadership1	.901
Leadership2	.927
Leadership3	.906

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES sp22 sp23 sp24
  /MISSING LISTWISE
  /ANALYSIS sp22 sp23 sp24
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Communalities

	Initial	Extraction
StrtgicPlanning2	1.000	.805
StrtgicPlanning3	1.000	.887
StrtgicPlanning4	1.000	.697

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.389	79.644	79.644	2.389	79.644	79.644
2	.448	14.927	94.571			
3	.163	5.429	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
StrtgicPlanning2	.897
StrtgicPlanning3	.942
StrtgicPlanning4	.835

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES cstmrkt31 cstmrkt32 cstmrkt33 cstmrkt34 cstmrkt35
```

```
/MISSING LISTWISE
/ANALYSIS cstmrkt31 cstmrkt32 cstmrkt33 cstmrkt34 cstmrkt35
/PRINT INITIAL EXTRACTION ROTATION
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PC
/CRITERIA ITERATE(25)
/ROTATION VARIMAX
/METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Communalities

	Initial	Extraction
CustmrMrktFocus1	1.000	.595
CustmrMrktFocus2	1.000	.741
CustmrMrktFocus3	1.000	.535
CustmrMrktFocus4	1.000	.851
CustmrMrktFocus5	1.000	.675

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.154	43.072	43.072	2.154	43.072	43.072
2	1.243	24.863	67.935	1.243	24.863	67.935
3	.717	14.338	82.273			
4	.645	12.903	95.175			
5	.241	4.825	100.000			

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	1.802	36.045	36.045
2	1.594	31.890	67.935

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
CustmrMrktFocus1	.599	.486
CustmrMrktFocus2	-.203	.836
CustmrMrktFocus3	.612	.400
CustmrMrktFocus4	.917	-.104
CustmrMrktFocus5	.734	-.369

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
CustmrMrktFocus1	.771	-.009
CustmrMrktFocus2	.360	-.782
CustmrMrktFocus3	.729	.067
CustmrMrktFocus4	.653	.651
CustmrMrktFocus5	.346	.745

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	.784	.621
2	.621	-.784

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
FACTOR
  /VARIABLES Info41 Info42 Info43
  /MISSING LISTWISE
  /ANALYSIS Info41 Info42 Info43
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Communalities

	Initial	Extraction
InfoAnlysis1	1.000	.632
InfoAnlysis2	1.000	.679
InfoAnlysis3	1.000	.818

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.129	70.961	70.961	2.129	70.961	70.961
2	.578	19.262	90.223			
3	.293	9.777	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
InfoAnlysis1	.795
InfoAnlysis2	.824
InfoAnlysis3	.904

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES hr52 hr53 hr54 hr55
  /MISSING LISTWISE
  /ANALYSIS hr52 hr53 hr54 hr55
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Communalities

	Initial	Extraction
HumanRes2	1.000	.716
HumanRes3	1.000	.815
HumanRes4	1.000	.748
HumanRes5	1.000	.764

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.043	76.068	76.068	3.043	76.068	76.068
2	.420	10.502	86.570			
3	.316	7.897	94.467			
4	.221	5.533	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
HumanRes2	.846
HumanRes3	.903
HumanRes4	.865
HumanRes5	.874

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES pm61 pm62 pm63 pm64 pm65 pm66
  /MISSING LISTWISE
  /ANALYSIS pm61 pm62 pm63 pm64 pm65 pm66
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Communalities

	Initial	Extraction
PrcMngmt1	1.000	.520
PrcMngmt2	1.000	.504
PrcMngmt3	1.000	.759
PrcMngmt4	1.000	.694
PrcMngmt5	1.000	.349
PrcMngmt6	1.000	.541

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.366	56.104	56.104	3.366	56.104	56.104
2	.887	14.789	70.893			
3	.652	10.865	81.758			
4	.584	9.736	91.494			
5	.377	6.286	97.780			
6	.133	2.220	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
PrcMngmt1	.721
PrcMngmt2	.710
PrcMngmt3	.871
PrcMngmt4	.833
PrcMngmt5	.591
PrcMngmt6	.736

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES ci73 ci74 ci75
  /MISSING LISTWISE
  /ANALYSIS ci73 ci74 ci75
```

```
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Communalities

	Initial	Extraction
Contimprv3	1.000	.813
Contimprv4	1.000	.817
Contimprv5	1.000	.758

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.388	79.605	79.605	2.388	79.605	79.605
2	.355	11.817	91.422			
3	.257	8.578	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Contimprv3	.901
Contimprv4	.904
Contimprv5	.871

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES br85 br86 br87 br88
  /MISSING LISTWISE
  /ANALYSIS br85 br86 br87 br88
  /PRINT INITIAL EXTRACTION ROTATION
```

```
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PC
/CRITERIA ITERATE(25)
/ROTATION VARIMAX
/METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Communalities

	Initial	Extraction
BusReslt5	1.000	.606
BusReslt6	1.000	.761
BusReslt7	1.000	.848
BusReslt8	1.000	.499

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.714	67.853	67.853	2.714	67.853	67.853
2	.712	17.803	85.655			
3	.353	8.819	94.474			
4	.221	5.526	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
BusReslt5	.778
BusReslt6	.873
BusReslt7	.921
BusReslt8	.706

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
COMPUTE ldrfctr=((ldr11 * .901) + (ldr12 * .927) + (ldr13 * .906)) /
2.632.
EXECUTE.
```

```
COMPUTE spfctr=((sp22 * .897) + (sp23 * .942) + (sp24 * .835)) /
2.674.
EXECUTE.
COMPUTE infofctr=((Info41 * .795) + (Info42 * .824) + (Info43* .904))
/ 2.523.
EXECUTE.
COMPUTE hrfctr=((hr52 * .846) + (hr53 * .903) + (hr54 * .865) +
(hr55 * .874)) / 3.488.
EXECUTE.
COMPUTE pmfctr=((pm61 * .721) + (pm62 * .710) + (pm63 * .871) +
(pm64 * .833) + (pm65* .591) + (pm66* .736)) / 4.462.
EXECUTE.
COMPUTE cifctr=((ci73 * .901) + (ci74 * .904) + (ci75* .871)) /2.676.
EXECUTE.
COMPUTE brfctr=((br85 * .778) + (br86 * .873) + (br87 * .921) +
(br88 * .706)) / 3.278.
EXECUTE.
COMPUTE csmrktfctr=((cstmrkt31 * .599) + (cstmrkt32 * .836) +(cstmrkt33
* .612) + (cstmrkt34 * .917) + (cstmrkt35 * .734)) /
3.698.
EXECUTE.
SAVE OUTFILE='D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav'
 /COMPRESSED.
NPAR TESTS
  /K-W=ldrfctr spfctr infofctr hrfctr pmfctr cifctr brfctr csmrktfctr BY Comp
ny(1 3)
  /MISSING ANALYSIS.
FACTOR
  /VARIABLES TQMfm1 TQMfm3 TQMfm4 TQMfm5
  /MISSING LISTWISE
  /ANALYSIS TQMfm1 TQMfm3 TQMfm4 TQMfm5
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

Communalities

	Initial	Extraction
TQMFmlrtyq1	1.000	.510
TQMFmlrtyq3	1.000	.699
TQMFmlrtyq4	1.000	.824
TQMFmlrtyq5	1.000	.578

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.611	65.284	65.284	2.611	65.284	65.284
2	.999	24.968	90.252			
3	.272	6.793	97.045			
4	.118	2.955	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
TQMFmlrtyq1	.714
TQMFmlrtyq3	.836
TQMFmlrtyq4	.908
TQMFmlrtyq5	.760

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES pwr411 pwr412 pwr413
  /MISSING LISTWISE
  /ANALYSIS pwr411 pwr412 pwr413
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

Communalities

	Initial	Extraction
NCPwrdstnc1	1.000	.598
NCPwrdstnc2	1.000	.560
NCPwrdstnc3	1.000	.720

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.878	62.610	62.610	1.878	62.610	62.610
2	.669	22.313	84.923			
3	.452	15.077	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component 1
NCPwrdstnc1	.773
NCPwrdstnc2	.748
NCPwrdstnc3	.849

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES unc421 unc422 unc423 unc424
  /MISSING LISTWISE
  /ANALYSIS unc421 unc422 unc423 unc424
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

Communalities

	Initial	Extraction
NCUncrtnty1	1.000	.455
NCUncrtnty2	1.000	.828
NCUncrtnty3	1.000	.728
NCUncrtnty4	1.000	.548

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.559	63.973	63.973	2.559	63.973	63.973
2	.817	20.434	84.406			
3	.383	9.566	93.972			
4	.241	6.028	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
NCUncrtnty1	.674
NCUncrtnty2	.910
NCUncrtnty3	.853
NCUncrtnty4	.740

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES col431 col432 col433
  /MISSING LISTWISE
  /ANALYSIS col431 col432 col433
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

Communalities

	Initial	Extraction
NCCollctvsm1	1.000	.572
NCCollctvsm2	1.000	.726
NCCollctvsm3	1.000	.430

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.728	57.587	57.587	1.728	57.587	57.587
2	.806	26.857	84.444			
3	.467	15.556	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
NCCollctvsm1	.756
NCCollctvsm2	.852
NCCollctvsm3	.656

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
FACTOR
  /VARIABLES qprf441 qprf442 qprf443 qprf444
  /MISSING LISTWISE
  /ANALYSIS qprf441 qprf442 qprf443 qprf444
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

Communalities

	Initial	Extraction
NCQPerfm1	1.000	.655
NCQPerfm2	1.000	.843
NCQPerfm3	1.000	.910
NCQPerfm4	1.000	.861

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.267	81.686	81.686	3.267	81.686	81.686
2	.472	11.793	93.479			
3	.136	3.409	96.888			
4	.124	3.112	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
NCQPerfm1	.809
NCQPerfm2	.918
NCQPerfm3	.954
NCQPerfm4	.928

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

```
SAVE OUTFILE='D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav'
 /COMPRESSED.
FACTOR
  /VARIABLES qethic453 qethic454 qethic455 qethic457 qethic458 qethic459
  /MISSING LISTWISE
  /ANALYSIS qethic453 qethic454 qethic455 qethic457 qethic458 qethic459
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Communalities

	Initial	Extraction
NCQEthcs3	1.000	.443
NCQEthcs4	1.000	.517
NCQEthcs5	1.000	.558
NCQEthcs7	1.000	.660
NCQEthcs8	1.000	.806
NCQEthcs9	1.000	.857

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.492	41.526	41.526	2.492	41.526	41.526
2	1.348	22.472	63.998	1.348	22.472	63.998
3	.842	14.035	78.033			
4	.683	11.382	89.415			
5	.456	7.596	97.011			
6	.179	2.989	100.000			

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.387	39.776	39.776
2	1.453	24.222	63.998

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
NCQEthcs3	.208	.632
NCQEthcs4	.173	.698
NCQEthcs5	.483	.570
NCQEthcs7	.804	-.112

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Component Matrix[a]

	Component	
	1	2
NCQEthcs8	.859	-.259
NCQEthcs9	.894	-.240

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
NCQEthcs3	.007	.665
NCQEthcs4	-.046	.717
NCQEthcs5	.287	.689
NCQEthcs7	.801	.137
NCQEthcs8	.898	.013
NCQEthcs9	.925	.043

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	.953	.303
2	-.303	.953

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

```
COMPUTE pwrfctr=((pwr411 * .773) + (pwr412* .748) + (pwr413* .849))
/ 2.37.
EXECUTE.
COMPUTE trfmlrty=((tqmfm1 * .714) + (tqmfm3* .836) +
(tqmfm4* .908)+ (tqmfm5* .760)) / 3.218.
EXECUTE.
COMPUTE trunc=((unc421 * .674) + (unc422* .910) +
(unc423 * .853)+ (unc424*.740)) / 3.177.
EXECUTE.
COMPUTE trcol=((col431 * .756) + (col432* .852) +
(col433 * .656)) / 2.264.
```

```
EXECUTE.
COMPUTE trqprf=((qprf441 * .809) + (qprf442* .918) +
(qprf443 * .954)+ (qprf444 *.928)) /
3.609.
EXECUTE.
COMPUTE npethc=((qethic453 * .632) + (qethic454* .698) +
(qethic455 * .570)) /1.9.
EXECUTE.
COMPUTE nwkethc=((qethic457 * .804)+ (qethic458*.859)+
(qethic459*.894)) / 2.557.
EXECUTE.
FREQUENCIES VARIABLES=trfmlrty
  /NTILES=4
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```

NPar Tests

[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav

Kruskal-Wallis Test

Ranks

	ctgryfmrty	N	Mean Rank
ldrfctr	Very low familiar	7	12.29
	Moderately familiar	8	13.94
	Very familiar	7	17.50
	Fully Familiar	8	18.13
	Total	30	
spfctr	Very low familiar	7	12.79
	Moderately familiar	8	14.69
	Very familiar	7	13.14
	Fully Familiar	8	20.75
	Total	30	
infofctr	Very low familiar	7	11.50
	Moderately familiar	8	15.31
	Very familiar	7	15.86
	Fully Familiar	8	18.88
	Total	30	
hrfctr	Very low familiar	7	11.29
	Moderately familiar	8	16.06
	Very familiar	7	12.71
	Fully Familiar	8	21.06
	Total	30	
pmfctr	Very low familiar	7	11.29
	Moderately familiar	8	15.13
	Very familiar	7	17.36
	Fully Familiar	8	17.94
	Total	30	
cifctr	Very low familiar	7	11.00
	Moderately familiar	8	14.81
	Very familiar	7	14.93
	Fully Familiar	8	20.63
	Total	30	
brfctr	Very low familiar	7	13.21
	Moderately familiar	8	13.50
	Very familiar	7	14.50
	Fully Familiar	8	20.38
	Total	30	

Ranks

	ctgryfmrty	N	Mean Rank
csmrktfctr	Very low familiar	7	14.86
	Moderately familiar	8	14.69
	Very familiar	7	15.64
	Fully Familiar	8	16.75
	Total	30	

Test Statistics[a,b]

	ldrfctr	spfctr	infofctr	hrfctr	pmfctr	cifctr
Chi-Square	2.296	4.118	2.663	5.581	2.549	4.737
df	3	3	3	3	3	3
Asymp. Sig.	.513	.249	.447	.134	.466	.192

a. Kruskal Wallis Test

b. Grouping Variable: ctgryfmrty

Test Statistics[a,b]

	brfctr	csmrktfctr
Chi-Square	3.480	.269
df	3	3
Asymp. Sig.	.323	.966

a. Kruskal Wallis Test

b. Grouping Variable: ctgryfmrty

```
NPAR TESTS
  /K-W=ldrfctr spfctr infofctr hrfctr pmfctr cifctr brfctr csmrktfctr BY ctgr
ypwr(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Kruskal-Wallis Test

Ranks

	ctgrypwr	N	Mean Rank
ldrfctr	Low power distance	6	13.58
	Moderate power distance	9	14.39
	High power distance	8	18.25
	Very high power distance	7	15.43
	Total	30	

Ranks

	ctgrypwr	N	Mean Rank
spfctr	Low power distance	6	14.50
	Moderate power distance	9	13.72
	High power distance	8	16.81
	Very high power distance	7	17.14
	Total	30	
infofctr	Low power distance	6	10.25
	Moderate power distance	9	15.89
	High power distance	8	19.88
	Very high power distance	7	14.50
	Total	30	
hrfctr	Low power distance	6	12.75
	Moderate power distance	9	15.89
	High power distance	8	15.38
	Very high power distance	7	17.50
	Total	30	
pmfctr	Low power distance	6	13.83
	Moderate power distance	9	14.22
	High power distance	8	21.38
	Very high power distance	7	11.86
	Total	30	
cifctr	Low power distance	6	11.67
	Moderate power distance	9	11.44
	High power distance	8	20.38
	Very high power distance	7	18.43
	Total	30	
brfctr	Low power distance	6	12.33
	Moderate power distance	9	15.94
	High power distance	8	15.13
	Very high power distance	7	18.07
	Total	30	
csmrktfctr	Low power distance	6	13.50
	Moderate power distance	9	12.78
	High power distance	8	20.63
	Very high power distance	7	14.86
	Total	30	

Test Statistics[a,b]

	ldrfctr	spfctr	infofctr	hrfctr	pmfctr	cifctr
Chi-Square	1.229	.874	4.260	.975	5.178	6.436

a. Kruskal Wallis Test

b. Grouping Variable: ctgrypwr

Test Statistics[a,b]

	brfctr	csmrktfctr
Chi-Square	1.432	3.924

a. Kruskal Wallis Test

b. Grouping Variable: ctgrypwr

Test Statistics[a,b]

	ldrfctr	spfctr	infofctr	hrfctr	pmfctr	cifctr
df	3	3	3	3	3	3
Asymp. Sig.	.746	.832	.235	.807	.159	.092

a. Kruskal Wallis Test

b. Grouping Variable: ctgrypwr

Test Statistics[a,b]

	brfctr	csmrktfctr
df	3	3
Asymp. Sig.	.698	.270

a. Kruskal Wallis Test

b. Grouping Variable: ctgrypwr

```
NPAR TESTS
  /K-W=ldrfctr spfctr infofctr hrfctr pmfctr cifctr brfctr csmrktfctr BY ctgr
yunc(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Kruskal-Wallis Test

Ranks

	ctgryunc	N	Mean Rank
ldrfctr	Low uncertainity avoidance	7	11.14
	Moderate uncertainity avoidance	8	12.44
	High uncertainity avoidance	8	15.38
	Very high uncertainity avoidance	7	23.50
	Total	30	

Ranks

	ctgryunc	N	Mean Rank
spfctr	Low uncertainity avoidance	7	14.50
	Moderate uncertainity avoidance	8	11.63
	High uncertainity avoidance	8	17.94
	Very high uncertainity avoidance	7	18.14
	Total	30	
infofctr	Low uncertainity avoidance	7	11.00
	Moderate uncertainity avoidance	8	13.38
	High uncertainity avoidance	8	16.75
	Very high uncertainity avoidance	7	21.00
	Total	30	
hrfctr	Low uncertainity avoidance	7	12.14
	Moderate uncertainity avoidance	8	14.63
	High uncertainity avoidance	8	17.50
	Very high uncertainity avoidance	7	17.57
	Total	30	
pmfctr	Low uncertainity avoidance	7	8.29
	Moderate uncertainity avoidance	8	14.75
	High uncertainity avoidance	8	15.50
	Very high uncertainity avoidance	7	23.57
	Total	30	
cifctr	Low uncertainity avoidance	7	8.21
	Moderate uncertainity avoidance	8	13.69
	High uncertainity avoidance	8	18.75
	Very high uncertainity avoidance	7	21.14
	Total	30	

Ranks

	ctgryunc	N	Mean Rank
brfctr	Low uncertainity avoidance	7	13.71
	Moderate uncertainity avoidance	8	13.50
	High uncertainity avoidance	8	17.88
	Very high uncertainity avoidance	7	16.86
	Total	30	
csmrktfctr	Low uncertainity avoidance	7	9.50
	Moderate uncertainity avoidance	8	14.25
	High uncertainity avoidance	8	18.06
	Very high uncertainity avoidance	7	20.00
	Total	30	

Test Statistics[a,b]

	ldrfctr	spfctr	infofctr	hrfctr	pmfctr	cifctr
Chi-Square	8.609	2.911	5.241	1.915	10.667	9.332
df	3	3	3	3	3	3
Asymp. Sig.	.035	.406	.155	.590	.014	.025

a. Kruskal Wallis Test

b. Grouping Variable: ctgryunc

Test Statistics[a,b]

	brfctr	csmrktfctr
Chi-Square	1.471	5.928
df	3	3
Asymp. Sig.	.689	.115

a. Kruskal Wallis Test

b. Grouping Variable: ctgryunc

```
NPAR TESTS
  /K-W=ldrfctr spfctr infofctr hrfctr pmfctr cifctr brfctr csmrktfctr BY ctgr
ycol(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Kruskal-Wallis Test

Ranks

	ctgrycol	N	Mean Rank
ldrfctr	Low collectivisim	7	14.00
	Moderate collectivisim	8	11.13
	High collectivisim	7	18.57
	Very high collectivisim	8	18.50
	Total	30	
spfctr	Low collectivisim	7	14.21
	Moderate collectivisim	8	9.81
	High collectivisim	7	20.36
	Very high collectivisim	8	18.06
	Total	30	
infofctr	Low collectivisim	7	14.43
	Moderate collectivisim	8	11.56
	High collectivisim	7	18.29
	Very high collectivisim	8	17.94
	Total	30	
hrfctr	Low collectivisim	7	12.93
	Moderate collectivisim	8	12.69
	High collectivisim	7	18.00
	Very high collectivisim	8	18.38
	Total	30	
pmfctr	Low collectivisim	7	16.71
	Moderate collectivisim	8	12.19
	High collectivisim	7	15.64
	Very high collectivisim	8	17.63
	Total	30	
cifctr	Low collectivisim	7	16.14
	Moderate collectivisim	8	12.56
	High collectivisim	7	17.21
	Very high collectivisim	8	16.38
	Total	30	
brfctr	Low collectivisim	7	12.36
	Moderate collectivisim	8	15.00
	High collectivisim	7	16.29
	Very high collectivisim	8	18.06

Ranks

	ctgrycol	N	Mean Rank
brfctr	Total	30	
csmrktfctr	Low collectivisim	7	18.07
	Moderate collectivisim	8	15.88
	High collectivisim	7	17.50
	Very high collectivisim	8	11.13
	Total	30	

Test Statistics[a,b]

	ldrfctr	spfctr	infofctr	hrfctr	pmfctr	cifctr
Chi-Square	4.027	6.355	3.049	2.857	1.738	1.305
df	3	3	3	3	3	3
Asymp. Sig.	.259	.096	.384	.414	.629	.728

a. Kruskal Wallis Test

b. Grouping Variable: ctgrycol

Test Statistics[a,b]

	brfctr	csmrktfctr
Chi-Square	1.677	2.953
df	3	3
Asymp. Sig.	.642	.399

a. Kruskal Wallis Test

b. Grouping Variable: ctgrycol

```
NPAR TESTS
  /K-W=ldrfctr spfctr infofctr hrfctr pmfctr cifctr brfctr csmrktfctr BY ctgr
yqprf(1 4)
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Kruskal-Wallis Test

Ranks

	ctgryqprf	N	Mean Rank
ldrfctr	Low quality performance oriented	7	10.86
	Moderate quality performance oriented	12	13.75
	High quality performance oriented	4	19.00

Ranks

	ctgryqprf	N	Mean Rank
ldrfctr	Very high quality performance oriented	7	21.14
	Total	30	
spfctr	Low quality performance oriented	7	6.43
	Moderate quality performance oriented	12	14.63
	High quality performance oriented	4	19.63
	Very high quality performance oriented	7	23.71
	Total	30	
infofctr	Low quality performance oriented	7	8.86
	Moderate quality performance oriented	12	14.46
	High quality performance oriented	4	18.88
	Very high quality performance oriented	7	22.00
	Total	30	
hrfctr	Low quality performance oriented	7	5.36
	Moderate quality performance oriented	12	15.13
	High quality performance oriented	4	18.63
	Very high quality performance oriented	7	24.50
	Total	30	
pmfctr	Low quality performance oriented	7	12.36
	Moderate quality performance oriented	12	12.67
	High quality performance oriented	4	20.00
	Very high quality performance oriented	7	20.93
	Total	30	
cifctr	Low quality performance oriented	7	10.14
	Moderate quality performance oriented	12	13.13
	High quality performance oriented	4	17.00
	Very high quality performance oriented	7	24.07
	Total	30	

Ranks

	ctgryqprf	N	Mean Rank
brfctr	Low quality performance oriented	7	9.57
	Moderate quality performance oriented	12	11.92
	High quality performance oriented	4	20.13
	Very high quality performance oriented	7	24.93
	Total	30	
csmrktfctr	Low quality performance oriented	7	15.36
	Moderate quality performance oriented	12	12.50
	High quality performance oriented	4	20.75
	Very high quality performance oriented	7	17.79
	Total	30	

Test Statistics[a,b]

	ldrfctr	spfctr	infofctr	hrfctr	pmfctr	cifctr
Chi-Square	6.030	14.658	8.644	17.288	5.855	10.479
df	3	3	3	3	3	3
Asymp. Sig.	.110	.002	.034	.001	.119	.015

a. Kruskal Wallis Test

b. Grouping Variable: ctgryqprf

Test Statistics[a,b]

	brfctr	csmrktfctr
Chi-Square	14.513	3.294
df	3	3
Asymp. Sig.	.002	.348

a. Kruskal Wallis Test

b. Grouping Variable: ctgryqprf

```
NPAR TESTS
  /K-W=ldrfctr spfctr infofctr hrfctr pmfctr cifctr brfctr csmrktfctr BY nctg
rypethc(3 4)
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Kruskal-Wallis Test

Ranks

	nctgrypethc	N	Mean Rank
ldrfctr	Moderate personal quality ethical values	7	14.57
	Very high and High personal quality ethical values	23	15.78
	Total	30	
spfctr	Moderate personal quality ethical values	7	13.14
	Very high and High personal quality ethical values	23	16.22
	Total	30	
infofctr	Moderate personal quality ethical values	7	11.43
	Very high and High personal quality ethical values	23	16.74
	Total	30	
hrfctr	Moderate personal quality ethical values	7	11.07
	Very high and High personal quality ethical values	23	16.85
	Total	30	
pmfctr	Moderate personal quality ethical values	7	15.86
	Very high and High personal quality ethical values	23	15.39
	Total	30	
cifctr	Moderate personal quality ethical values	7	12.07
	Very high and High personal quality ethical values	23	16.54
	Total	30	
brfctr	Moderate personal quality ethical values	7	14.79
	Very high and High personal quality ethical values	23	15.72
	Total	30	
csmrktfctr	Moderate personal quality ethical values	7	13.36
	Very high and High personal quality ethical values	23	16.15
	Total	30	

Test Statistics[a,b]

	ldrfctr	spfctr	infofctr	hrfctr	pmfctr	cifctr
Chi-Square	.103	.661	1.973	2.331	.015	1.420
df	1	1	1	1	1	1
Asymp. Sig.	.748	.416	.160	.127	.902	.233

a. Kruskal Wallis Test

b. Grouping Variable: nctgrypethc

Test Statistics[a,b]

	brfctr	csmrktfctr
Chi-Square	.061	.542
df	1	1
Asymp. Sig.	.805	.462

a. Kruskal Wallis Test

b. Grouping Variable: nctgrypethc

```
NPAR TESTS
  /K-W=ldrfctr spfctr infofctr hrfctr pmfctr cifctr brfctr csmrktfctr BY nctg
rywkethc(3 4)
  /MISSING ANALYSIS.
```

NPar Tests

```
[DataSet1] D:\my thesis\09Chapter9\reem2012-Qualtitatve.sav
```

Kruskal-Wallis Test

Ranks

	nctgrywkethc	N	Mean Rank
ldrfctr	Moderate work quality ethical values	7	18.14
	Very high and High work quality ethical values	23	14.70
	Total	30	
spfctr	Moderate work quality ethical values	7	18.64
	Very high and High work quality ethical values	23	14.54
	Total	30	
infofctr	Moderate work quality ethical values	7	14.36
	Very high and High work quality ethical values	23	15.85
	Total	30	

Ranks

	nctgrywkethc	N	Mean Rank
hrfctr	Moderate work quality ethical values	7	16.00
	Very high and High work quality ethical values	23	15.35
	Total	30	
pmfctr	Moderate work quality ethical values	7	17.57
	Very high and High work quality ethical values	23	14.87
	Total	30	
cifctr	Moderate work quality ethical values	7	19.43
	Very high and High work quality ethical values	23	14.30
	Total	30	
brfctr	Moderate work quality ethical values	7	19.21
	Very high and High work quality ethical values	23	14.37
	Total	30	
csmrktfctr	Moderate work quality ethical values	7	21.93
	Very high and High work quality ethical values	23	13.54
	Total	30	

Test Statistics[a,b]

	ldrfctr	spfctr	infofctr	hrfctr	pmfctr	cifctr
Chi-Square	.837	1.174	.155	.030	.507	1.865
df	1	1	1	1	1	1
Asymp. Sig.	.360	.278	.693	.863	.477	.172

a. Kruskal Wallis Test

b. Grouping Variable: nctgrywkethc

Test Statistics[a,b]

	brfctr	csmrktfctr
Chi-Square	1.650	4.875
df	1	1
Asymp. Sig.	.199	.027

a. Kruskal Wallis Test

b. Grouping Variable: nctgrywkethc

Research constructs	Interviewees feedback
TQM awareness	Some interviewees found the second element (process management) in TQM awareness was bit vague and thought rephrasing it will be better. A manager in KOC said *"For KOC, the term manufacturing under process management is bit misleading as it would be more appropriate to rephrase it to upstream/downstream operations. That will be more understandable"*. However, for other TQM element's awareness, interviewees were mostly in between fully and very familiar.
TQM Constructs	
Leadership	Most interviewees thought that senior executives have exercised their leadership roles stated in the questionnaire in frequently and fully implemented for statements 1.1, 1.2, and 1.3. However, many interviewees commented on statements 1.4, 1.5, & 1.6. Some interviewees said about 1.4 that *"Code of ethics is recently adopted by our company, so this concept is kind of new to us and thus not applicable here"*. Other said about 1.5 and 1.6 *that "many employees will give you a reluctant answer to avoid friction with their management."*
Strategic Planning	Most interviewees saw that statements 2.2, 2.3, and 2.4 are between Frequently and average implemented. However, some interviewees saw that statement 2.1 needs to be rephrased; they said that "*Our company and other oil companies in the Kuwaiti oil sector are governed by the head company "KPC" and its strategic objectives, as the budget is being provided by KPC. Thus, KPC is more likely dictates its objects on our companies rather than giving them the freedom to define them."* In addition, many comments were on statements 2.5 and 2.6 as well, *"Many employees are not aware of the selection process since they are not involved in it, thus they would much properly tick the wrong answer".*
Customer & Market Focus	Most interviewees saw that statements 3.3, 3.4, and 3.5 falls between fully, frequently, and average implemented. Some interviewees saw that statement 3.1 and 3.2 needs rephrasing as "customer" term in not clear here some queried *"Do you mean other Kuwaiti oil companies or external customers?".*

Information Analysis	Most interviewees saw that statements 4.1, 4.2 and 4.3 are distributed among average, frequently, and fully implemented. Some commented on statement 4.4 " *as our company changes its policy according to KPC directions, hence it is not flexible from our side to do any changes or adjustments to our strategy.*"
Human Resource Focus	Most Interviewees thought that statements 5.2, 5.4. and 5.5 fall between fully, frequently, and average implemented. On the other hand, some interviewees commented on Statement 5.1 and 5.6 that "*Some employees may not answer these statements properly due to their fear from the management*".
Process Management	Most interviewees thought that statements here falls between average, frequently, and fully implemented. Yet, frequently implemented were more chosen than the others two. A comment on the term "supplier" was raised by some interviewees in statement 6.6. that *"More clarification is required here as more specification is required for what is meant by supplier in our company."*
Continuous Improvement	Most interviewees saw that statements 7.3, 7.4, 7.5 falls between frequently and fully implemented. However, some commented on statements 7.1 and 7.2 that *"The statements are somehow confusing and more clarification is needed here".*
Business Results	Most interviewees thought that these statements mainly fall between average, frequently, and fully implemented. Comments received from some interviewees regarding 8.1 "*the statement is bit unclear, as KOC has no external customer, that's why employees are confused here if they are unable to identify who their customers are.*"
National Culture values:	
Power Distance	Most interviewees expressed low power distance values as their answers were mostly Agree in a low degree. Some interviewees commented that "*Team work and responsibility delegation is very important in any work environments*". All statements were clear here as perceived from interviewees.
Uncertainty Avoidance	Most interviewees expressed high uncertainty values as their answers were mostly Fully agree. Some interviewees commented for statement 4

	that: "*Standardized work procedures don't always apply in some work conditions, some rephrasing might be needed here*".
Collectivisim	Most interviewees expressed high collectivism values as their answers were mostly Fully agree. However, some interviewees commented for statement 2 that: "*to answer this properly, it really depends on the situation. Sometime it is true group well-being is more important than individual rewards, but sometimes the case is reversed were individual reward becomes more important*".
Quality performance Orientation	Most interviewees expressed a high but not very high quality performance orientation values as their answers were mostly Agree to great extent rather than Fully agree. Some interviewees commented that: "*You might face some dissatisfaction by employees which might affect their answers or feedbacks*".
Quality Ethical values	Most interviewees expressed high quality ethical values as their answers were mostly Fully agree. Some interviewees had some conservative comments on statement 1 that: "Using the term religious here is not advised, as it might lead respondents to different wave of thinking". Others also comments on statement 2 that: *"people working hard and for long hours may not be as productive as people working to the point and in less hours. Different understanding to this statement is more likely to happen here. Rephrasing might be suggested here*". The 6th statement had some comments raised as well: "*Using the terms privacy and confidentiality together creates confusion to the reader. As privacy can be seen as personal rights while confidential is more into corporate rights."*

❖ **Some of other interviewees' comments when discussed some outcomes and findings of quantitative analysis:**

- Some interviewee commented on the subject of the research: "*The term quality is somehow new in our business environments as KOC, and some employees might even not yet heard of the term "quality" in his work space. And this is not only in Oil sector; this is the case in most of all Kuwait's governments and organizations as Kuwait has recently introduced quality management into its business environments."*
- Regarding the most positive perception middle management has towards TQM

implementation than top and low management: some commented: "*As middle managers, we are more satisfied in our jobs than those in top and low, the company is good to us,* and *since we are satisfied and have more brighter and positive perceptions towards TQM*. Others verified saying: "*A more positive perception by middle management might be due to that middle management maybe more aware of what action plans are and how they are achieved as compared to the employees in other managerial levels."*

- Regarding PIC employees had more positive perceptions towards TQM implementation than those in KOC and KNPC. Some commented that: *"This can be clearly verified as their company "PIC" had started an earlier journey in adopting quality concept, practices, and programs in its departments and operations than KOC and KNPC, which made its' employees more mature, aware, and optimistic towards these practices and constructs than other interviewees in KOC and KNPC*".

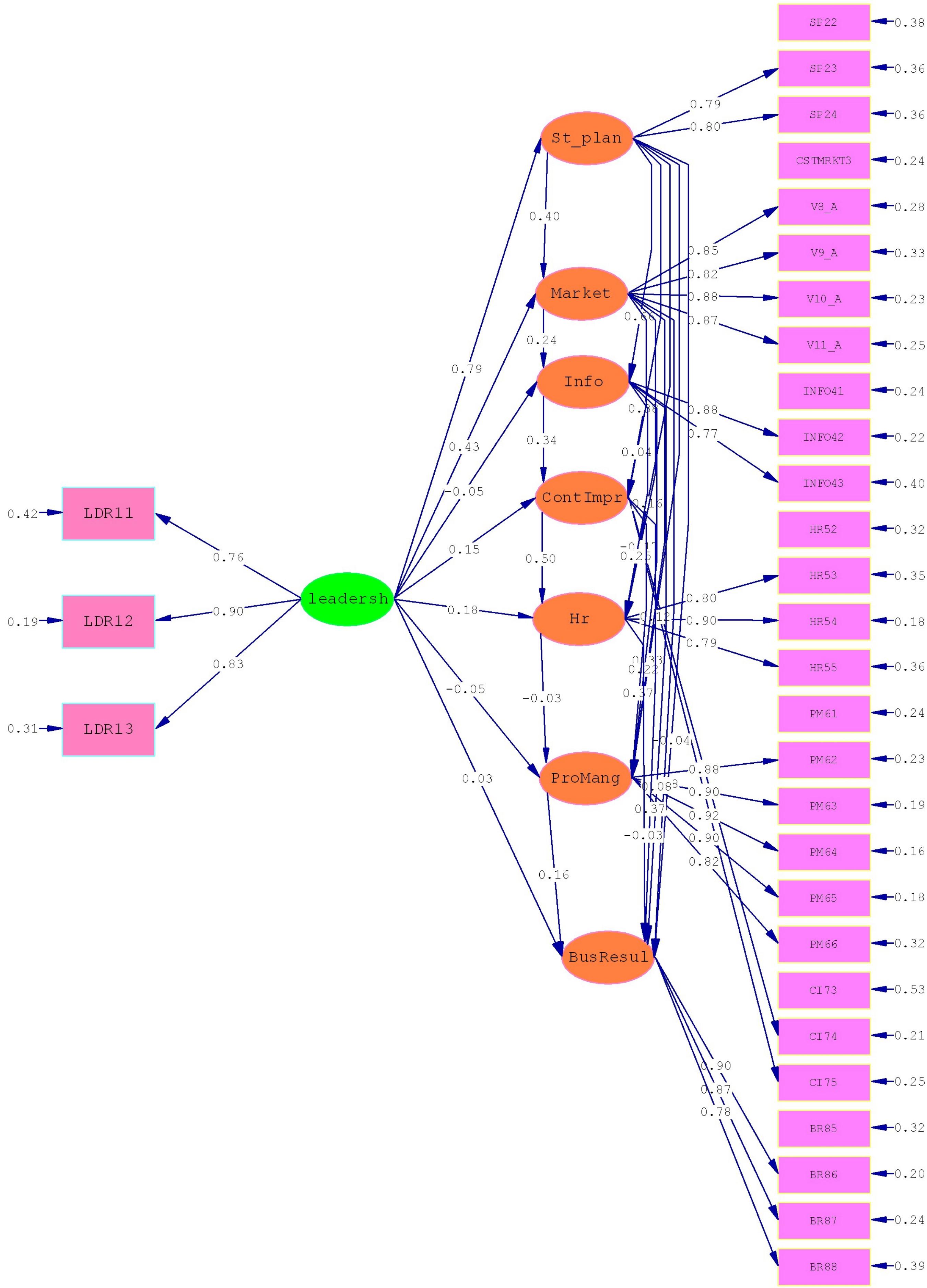
- Regarding Kuwaitis and Western nationalities shares same less positive perception towards TQM implementation than other nationalities; some said "*The reason for that can be due to the fact that Kuwaitis at the managerial levels are more aware of the benefits of quality over the operational and financial performance of their company*." Also, some verified that by saying: "*Kuwaitis manager are being derived by their loyalty to their country as citizens. Which would oblige them to express more frankly towards the quality practices implemented at their companies as their ambition for better business performance drives them to look up for higher quality standards and practices than the existed ones in their companies*". On the other hand, Other interviewees verified the less positive perception by Kuwaitis by saying that: "*some Kuwaitis in the oil industry might feel that they are less privileged than previous generation of employees as life became harder with fewer jobs and opportunities which also lead to a less positive perception than other nationalities*".

- Regarding Arabs and Asians (Pakistani, Indians, ..etc) had more positive perceptions towards TQM implementation, some said that: "*These nationalities did not come from same Western Business environment culture with the high quality standards and more restricted measures. Hence their responses reflected more positive perceptions towards the quality practices underlying TQM constructs*". Other interviewees added that: "*most Asians and Arabs are more satisfied and happy as they live a high style life in Kuwait (no tax is forced in Kuwait) compared with their life style at home countries were taxes are forced, hence they were able to save more money and become more satisfied and happy*. *Furthermore, Asians and Arabs as they reach management level in the oil sector they acquire a higher maturity, enthusiasm, and satisfactory manner which leads to a more positive oriented perception towards their responses in both their interviews and surveys*".

- Regarding Fully TQM familiar employees shared a more positive perception towards TQM implementation, some explained such finding saying: "*When employees become more aware and knowledge of TQM practices and principles, their input and feedback would be more realistic, accurate and positive towards these TQM practices.*"

Appendix-5

SEM-Phase I-Model-Full Output



Chi-Square=2315.62, df=406, P-value=0.00000, RMSEA=0.071

DATE: 10/27/2010
TIME: 13:00

L I S R E L 8.54

BY

Karl G. Jöreskog & Dag Sörbom

The following lines were read from file C:\Users\user\Desktop\Hosny_try\Reemhosny.LPJ:

```
TI
!DA NI=31 NO=937 NG=1 MA=CM
SY='C:\Users\user\Desktop\Hosny_try\Reemhosny.DSF' NG=1
SE
4 5 6 7 8 9 10 11 12 13 14 25 26 27 15 16 17 18
19 20 21 22 23 24 28 29 30 31 1 2 3 /
MO NX=3 NY=28 NK=1 NE=7 LY=FU,FI LX=FU,FI BE=FU,FI GA=FU,FI PH=SY,FR PS=DI,FR TE=DI,FR TD=DI,FR
LE
St_plan Market Info ContImpr Hr ProMang BusResul
LK
leadersh
FI PH(1,1)
FR LY(2,1) LY(3,1) LY(5,2) LY(6,2) LY(7,2) LY(8,2) LY(10,3) LY(11,3) LY(13,4)
FR LY(14,4) LY(16,5) LY(17,5) LY(18,5) LY(20,6) LY(21,6) LY(22,6) LY(23,6) LY(24,6)
FR LY(26,7) LY(27,7) LY(28,7) LX(1,1) LX(2,1) LX(3,1) BE(2,1) BE(3,1) BE(3,2)
FR BE(4,1) BE(4,2) BE(4,3) BE(5,1) BE(5,2) BE(5,3) BE(5,4) BE(6,1) BE(6,2)
FR BE(6,3) BE(6,4) BE(6,5) BE(7,1) BE(7,2) BE(7,3) BE(7,4) BE(7,5) BE(7,6)
FR GA(1,1) GA(2,1) GA(3,1) GA(4,1) GA(5,1) GA(6,1) GA(7,1)
VA 0.78 LY(1,1)
VA 0.87 LY(4,2) LY(9,3)
VA 0.69 LY(12,4)
VA 0.82 LY(15,5)
VA 0.87 LY(19,6)
VA 0.83 LY(25,7)
VA 1.00 PH(1,1)
PD
OU RS EF SC

TI
```

Number of Input Variables 31
Number of Y - Variables 28
Number of X - Variables 3
Number of ETA - Variables 7
Number of KSI - Variables 1
Number of Observations 937

TI

Covariance Matrix

	SP22	SP23	SP24	CSTMRKT3	V8_A	V9_A
SP22	1.00					
SP23	0.58	1.00				
SP24	0.56	0.76	1.00			
CSTMRKT3	0.61	0.43	0.49	1.00		
V8_A	0.58	0.45	0.47	0.79	1.00	
V9_A	0.59	0.47	0.46	0.69	0.67	1.00
V10_A	0.64	0.46	0.46	0.75	0.71	0.77
V11_A	0.62	0.44	0.46	0.75	0.74	0.69
INFO41	0.59	0.53	0.54	0.55	0.52	0.56
INFO42	0.58	0.54	0.53	0.51	0.48	0.52
INFO43	0.51	0.54	0.57	0.44	0.46	0.45
CI73	0.45	0.47	0.51	0.44	0.40	0.43
CI74	0.61	0.54	0.53	0.46	0.47	0.46
CI75	0.59	0.55	0.55	0.52	0.53	0.52
HR52	0.47	0.53	0.51	0.36	0.37	0.36
HR53	0.60	0.55	0.57	0.47	0.47	0.46
HR54	0.58	0.54	0.53	0.45	0.48	0.45
HR55	0.46	0.48	0.45	0.40	0.39	0.40
PM61	0.68	0.52	0.53	0.63	0.62	0.62
PM62	0.60	0.52	0.52	0.54	0.59	0.55
PM63	0.63	0.52	0.52	0.59	0.60	0.61
PM64	0.63	0.51	0.53	0.61	0.59	0.57
PM65	0.62	0.51	0.53	0.60	0.55	0.56
PM66	0.60	0.51	0.53	0.56	0.58	0.58
BR85	0.59	0.51	0.53	0.52	0.54	0.54
BR86	0.58	0.48	0.46	0.56	0.58	0.59
BR87	0.53	0.49	0.48	0.56	0.54	0.55
BR88	0.53	0.43	0.42	0.62	0.66	0.59
LDR11	0.48	0.45	0.45	0.55	0.58	0.45
LDR12	0.61	0.50	0.54	0.57	0.58	0.48
LDR13	0.64	0.51	0.52	0.56	0.55	0.54

Covariance Matrix

	V10_A	V11_A	INFO41	INFO42	INFO43	CI73
V10_A	1.00					
V11_A	0.78	1.00				
INFO41	0.58	0.54	1.00			
INFO42	0.51	0.48	0.79	1.00		
INFO43	0.48	0.45	0.63	0.70	1.00	
CI73	0.45	0.43	0.49	0.46	0.56	1.00

CI74	0.48	0.50	0.61	0.57	0.58	0.60
CI75	0.55	0.56	0.61	0.54	0.57	0.60
HR52	0.39	0.36	0.51	0.52	0.54	0.41
HR53	0.49	0.49	0.55	0.58	0.60	0.50
HR54	0.43	0.47	0.56	0.61	0.56	0.48
HR55	0.39	0.42	0.52	0.53	0.50	0.43
PM61	0.61	0.67	0.63	0.57	0.53	0.52
PM62	0.55	0.59	0.62	0.54	0.52	0.47
PM63	0.58	0.61	0.66	0.59	0.56	0.50
PM64	0.58	0.60	0.65	0.59	0.57	0.50
PM65	0.57	0.59	0.67	0.60	0.57	0.49
PM66	0.55	0.60	0.58	0.56	0.53	0.48
BR85	0.57	0.55	0.61	0.57	0.54	0.46
BR86	0.60	0.63	0.58	0.50	0.49	0.48
BR87	0.60	0.58	0.59	0.53	0.51	0.52
BR88	0.63	0.66	0.52	0.43	0.43	0.45
LDR11	0.46	0.48	0.39	0.37	0.32	0.40
LDR12	0.54	0.58	0.52	0.50	0.46	0.45
LDR13	0.57	0.55	0.52	0.51	0.46	0.42

Covariance Matrix

	CI74	CI75	HR52	HR53	HR54	HR55
CI74	1.00					
CI75	0.77	1.00				
HR52	0.63	0.55	1.00			
HR53	0.69	0.59	0.67	1.00		
HR54	0.70	0.59	0.76	0.71	1.00	
HR55	0.64	0.53	0.65	0.60	0.75	1.00
PM61	0.63	0.63	0.49	0.58	0.58	0.49
PM62	0.58	0.64	0.49	0.53	0.54	0.49
PM63	0.62	0.69	0.47	0.58	0.57	0.48
PM64	0.60	0.69	0.50	0.58	0.58	0.50
PM65	0.61	0.65	0.49	0.56	0.58	0.51
PM66	0.56	0.60	0.42	0.54	0.51	0.43
BR85	0.59	0.60	0.53	0.56	0.52	0.49
BR86	0.57	0.62	0.46	0.50	0.50	0.46
BR87	0.59	0.62	0.48	0.49	0.51	0.49
BR88	0.51	0.57	0.39	0.46	0.47	0.43
LDR11	0.44	0.45	0.35	0.47	0.42	0.41
LDR12	0.56	0.57	0.46	0.60	0.57	0.52
LDR13	0.51	0.52	0.42	0.52	0.52	0.47

Covariance Matrix

	PM61	PM62	PM63	PM64	PM65	PM66
PM61	1.00					
PM62	0.78	1.00				
PM63	0.77	0.82	1.00			
PM64	0.78	0.81	0.81	1.00		
PM65	0.78	0.76	0.80	0.87	1.00	
PM66	0.74	0.71	0.75	0.74	0.75	1.00
BR85	0.61	0.57	0.61	0.62	0.62	0.57

BR86	0.60	0.59	0.63	0.63	0.61	0.55
BR87	0.59	0.58	0.61	0.61	0.61	0.54
BR88	0.63	0.56	0.60	0.62	0.57	0.54
LDR11	0.45	0.40	0.43	0.40	0.42	0.41
LDR12	0.55	0.53	0.56	0.54	0.54	0.53
LDR13	0.54	0.52	0.54	0.52	0.52	0.54

Covariance Matrix

	BR85	BR86	BR87	BR88	LDR11	LDR12
BR85	1.00					
BR86	0.75	1.00				
BR87	0.72	0.79	1.00			
BR88	0.59	0.70	0.67	1.00		
LDR11	0.41	0.43	0.40	0.46	1.00	
LDR12	0.53	0.54	0.51	0.49	0.71	1.00
LDR13	0.56	0.56	0.51	0.49	0.61	0.74

Covariance Matrix

	LDR13
LDR13	1.00

TI

Parameter Specifications

LAMBDA-Y

	St_plan	Market	Info	ContImpr	Hr	ProMang
SP22	0	0	0	0	0	0
SP23	1	0	0	0	0	0
SP24	2	0	0	0	0	0
CSTMRKT3	0	0	0	0	0	0
V8_A	0	3	0	0	0	0
V9_A	0	4	0	0	0	0
V10_A	0	5	0	0	0	0
V11_A	0	6	0	0	0	0
INFO41	0	0	0	0	0	0
INFO42	0	0	7	0	0	0
INFO43	0	0	8	0	0	0
CI73	0	0	0	0	0	0
CI74	0	0	0	9	0	0
CI75	0	0	0	10	0	0
HR52	0	0	0	0	0	0
HR53	0	0	0	0	11	0
HR54	0	0	0	0	12	0
HR55	0	0	0	0	13	0
PM61	0	0	0	0	0	0
PM62	0	0	0	0	0	14
PM63	0	0	0	0	0	15

PM64	0	0	0	0	0	16
PM65	0	0	0	0	0	17
PM66	0	0	0	0	0	18
BR85	0	0	0	0	0	0
BR86	0	0	0	0	0	0
BR87	0	0	0	0	0	0
BR88	0	0	0	0	0	0

LAMBDA-Y

	BusResul
SP22	0
SP23	0
SP24	0
CSTMRKT3	0
V8_A	0
V9_A	0
V10_A	0
V11_A	0
INFO41	0
INFO42	0
INFO43	0
CI73	0
CI74	0
CI75	0
HR52	0
HR53	0
HR54	0
HR55	0
PM61	0
PM62	0
PM63	0
PM64	0
PM65	0
PM66	0
BR85	0
BR86	19
BR87	20
BR88	21

LAMBDA-X

	leadersh
LDR11	22
LDR12	23
LDR13	24

BETA

	St_plan	Market	Info	ContImpr	Hr	ProMang
St_plan	0	0	0	0	0	0
Market	25	0	0	0	0	0

Info	26	27	0	0	0	0
ContImpr	28	29	30	0	0	0
Hr	31	32	33	34	0	0
ProMang	35	36	37	38	39	0
BusResul	40	41	42	43	44	45

BETA

	BusResul
St_plan	0
Market	0
Info	0
ContImpr	0
Hr	0
ProMang	0
BusResul	0

GAMMA

	leadersh
St_plan	46
Market	47
Info	48
ContImpr	49
Hr	50
ProMang	51
BusResul	52

PSI

St_plan	Market	Info	ContImpr	Hr	ProMang
53	54	55	56	57	58

PSI

BusResul
59

THETA-EPS

SP22	SP23	SP24	CSTMRKT3	V8_A	V9_A
60	61	62	63	64	65

THETA-EPS

V10_A	V11_A	INFO41	INFO42	INFO43	CI73
66	67	68	69	70	71

THETA-EPS

CI74	CI75	HR52	HR53	HR54	HR55
72	73	74	75	76	77

THETA-EPS

PM61	PM62	PM63	PM64	PM65	PM66
78	79	80	81	82	83

THETA-EPS

BR85	BR86	BR87	BR88
84	85	86	87

THETA-DELTA

LDR11	LDR12	LDR13
88	89	90

TI

Number of Iterations = 15

LISREL Estimates (Maximum Likelihood)

LAMBDA-Y

	St_plan	Market	Info	ContImpr	Hr	ProMang
SP22	0.78	- -	- -	- -	- -	- -
SP23	0.79 (0.03) 25.98	- -	- -	- -	- -	- -
SP24	0.80 (0.03) 26.01	- -	- -	- -	- -	- -
CSTMRKT3	- -	0.87	- -	- -	- -	- -
V8_A	- -	0.85 (0.02) 34.86	- -	- -	- -	- -
V9_A	- -	0.82 (0.03) 32.56	- -	- -	- -	- -

V10_A	- -	0.88 (0.02) 36.97	- -	- -	- -	- -
V11_A	- -	0.87 (0.02) 36.35	- -	- -	- -	- -
INFO41	- -	- -	0.87	- -	- -	- -
INFO42	- -	- -	0.88 (0.02) 35.39	- -	- -	- -
INFO43	- -	- -	0.77 (0.03) 28.74	- -	- -	- -
CI73	- -	- -	- -	0.69	- -	- -
CI74	- -	- -	- -	0.89 (0.04) 24.43	- -	- -
CI75	- -	- -	- -	0.87 (0.04) 24.01	- -	- -
HR52	- -	- -	- -	- -	0.82	- -
HR53	- -	- -	- -	- -	0.80 (0.03) 28.96	- -
HR54	- -	- -	- -	- -	0.90 (0.03) 34.32	- -
HR55	- -	- -	- -	- -	0.79 (0.03) 28.60	- -
PM61	- -	- -	- -	- -	- -	0.87
PM62	- -	- -	- -	- -	- -	0.88 (0.02) 38.06
PM63	- -	- -	- -	- -	- -	0.90 (0.02) 40.01
PM64	- -	- -	- -	- -	- -	0.92 (0.02) 42.11

PM65	- -	- -	- -	- -	- -	0.90 (0.02) 40.66
PM66	- -	- -	- -	- -	- -	0.82 (0.02) 33.77
BR85	- -	- -	- -	- -	- -	- -
BR86	- -	- -	- -	- -	- -	- -
BR87	- -	- -	- -	- -	- -	- -
BR88	- -	- -	- -	- -	- -	- -

LAMBDA-Y

	BusResul

SP22	- -
SP23	- -
SP24	- -
CSTMRKT3	- -
V8_A	- -
V9_A	- -
V10_A	- -
V11_A	- -
INFO41	- -
INFO42	- -
INFO43	- -
CI73	- -
CI74	- -
CI75	- -
HR52	- -
HR53	- -
HR54	- -

```
 HR55       - -

 PM61       - -

 PM62       - -

 PM63       - -

 PM64       - -

 PM65       - -

 PM66       - -

 BR85      0.83

 BR86      0.90
         (0.03)
          34.07

 BR87      0.87
         (0.03)
          32.69

 BR88      0.78
         (0.03)
          27.77


   LAMBDA-X

      leadersh
      --------
LDR11      0.76
         (0.03)
          26.68

LDR12      0.90
         (0.03)
          34.11

LDR13      0.83
         (0.03)
          30.20


   BETA

        St_plan    Market      Info  ContImpr        Hr   ProMang
       --------  --------  --------  --------  --------  --------
St_plan      - -       - -       - -       - -       - -       - -

 Market     0.40       - -       - -       - -       - -       - -
          (0.05)
```

```
             7.85

     Info     0.66     0.24      - -      - -      - -      - -
            (0.06)   (0.05)
             11.05     5.27

 ContImpr     0.38     0.04     0.34      - -      - -      - -
            (0.07)   (0.04)   (0.05)
              5.61     0.84     6.67

       Hr     0.16    -0.17     0.25     0.50      - -      - -
            (0.07)   (0.04)   (0.05)   (0.05)
              2.46    -4.32     5.01     9.25

  ProMang     0.12     0.33     0.22     0.37    -0.03      - -
            (0.06)   (0.04)   (0.05)   (0.05)   (0.05)
              2.05     8.87     4.89     6.83    -0.64

 BusResul    -0.04     0.38     0.08     0.37    -0.03     0.16
            (0.06)   (0.04)   (0.05)   (0.06)   (0.05)   (0.05)
             -0.60     8.77     1.73     5.85    -0.58     3.37


         BETA

           BusResul
           --------
  St_plan      - -

   Market      - -

     Info      - -

 ContImpr      - -

       Hr      - -

  ProMang      - -

 BusResul      - -


         GAMMA

           leadersh
           --------
  St_plan     0.79
            (0.04)
             21.24

   Market     0.43
            (0.05)
              8.65

     Info    -0.05
```

(0.05)
-0.89

ContImpr	0.15
	(0.05)
	3.03
Hr	0.18
	(0.05)
	3.84
ProMang	-0.05
	(0.04)
	-1.14
BusResul	0.03
	(0.05)
	0.75

Covariance Matrix of ETA and KSI

	St_plan	Market	Info	ContImpr	Hr	ProMang
St_plan	1.02					
Market	0.74	1.00				
Info	0.81	0.70	1.01			
ContImpr	0.81	0.67	0.78	0.99		
Hr	0.79	0.59	0.77	0.83	1.01	
ProMang	0.79	0.77	0.79	0.80	0.71	1.00
BusResul	0.74	0.79	0.73	0.78	0.68	0.79
leadersh	0.79	0.74	0.65	0.70	0.70	0.68

Covariance Matrix of ETA and KSI

	BusResul	leadersh
BusResul	0.99	
leadersh	0.69	1.00

PHI

leadersh
1.00

PSI
Note: This matrix is diagonal.

St_plan	Market	Info	ContImpr	Hr	ProMang
0.39	0.38	0.33	0.28	0.25	0.24
(0.04)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)
10.77	14.20	11.96	9.77	11.65	14.07

PSI
Note: This matrix is diagonal.

BusResul
0.24
(0.02)
12.20

Squared Multiple Correlations for Structural Equations

St_plan	Market	Info	ContImpr	Hr	ProMang
0.61	0.62	0.67	0.71	0.75	0.77

Squared Multiple Correlations for Structural Equations

BusResul
0.76

Squared Multiple Correlations for Reduced Form

St_plan	Market	Info	ContImpr	Hr	ProMang
0.61	0.55	0.42	0.50	0.48	0.46

Squared Multiple Correlations for Reduced Form

BusResul
0.48

Reduced Form

	leadersh
St_plan	0.79
	(0.04)
	21.24
Market	0.74
	(0.03)
	22.54
Info	0.65
	(0.03)
	18.95
ContImpr	0.70
	(0.04)
	17.53

```
      Hr      0.70
            (0.04)
             19.76

 ProMang      0.68
            (0.03)
             20.45

BusResul      0.69
            (0.03)
             19.88


         THETA-EPS

              SP22       SP23       SP24   CSTMRKT3       V8_A       V9_A
          --------   --------   --------   --------   --------   --------
              0.38       0.36       0.36       0.24       0.28       0.33
            (0.02)     (0.02)     (0.02)     (0.01)     (0.02)     (0.02)
             17.40      16.93      16.90      17.51      18.19      18.95


         THETA-EPS

             V10_A      V11_A     INFO41     INFO42     INFO43       CI73
          --------   --------   --------   --------   --------   --------
              0.23       0.25       0.24       0.22       0.40       0.53
            (0.01)     (0.01)     (0.02)     (0.02)     (0.02)     (0.03)
             17.24      17.55      14.79      14.20      18.52      19.93


         THETA-EPS

              CI74       CI75       HR52       HR53       HR54       HR55
          --------   --------   --------   --------   --------   --------
              0.21       0.25       0.32       0.35       0.18       0.36
            (0.02)     (0.02)     (0.02)     (0.02)     (0.01)     (0.02)
             14.20      15.54      17.88      18.37      13.66      18.53


         THETA-EPS

              PM61       PM62       PM63       PM64       PM65       PM66
          --------   --------   --------   --------   --------   --------
              0.24       0.23       0.19       0.16       0.18       0.32
            (0.01)     (0.01)     (0.01)     (0.01)     (0.01)     (0.02)
             18.93      18.79      18.07      16.99      17.78      19.82


         THETA-EPS

              BR85       BR86       BR87       BR88
          --------   --------   --------   --------
              0.32       0.20       0.24       0.39
```

(0.02)	(0.01)	(0.01)	(0.02)
18.09	15.08	16.49	19.10

Squared Multiple Correlations for Y - Variables

SP22	SP23	SP24	CSTMRKT3	V8_A	V9_A
0.62	0.64	0.64	0.76	0.72	0.67

Squared Multiple Correlations for Y - Variables

V10_A	V11_A	INFO41	INFO42	INFO43	CI73
0.77	0.75	0.76	0.78	0.60	0.47

Squared Multiple Correlations for Y - Variables

CI74	CI75	HR52	HR53	HR54	HR55
0.79	0.75	0.68	0.65	0.82	0.64

Squared Multiple Correlations for Y - Variables

PM61	PM62	PM63	PM64	PM65	PM66
0.76	0.77	0.81	0.84	0.82	0.68

Squared Multiple Correlations for Y - Variables

BR85	BR86	BR87	BR88
0.68	0.80	0.76	0.61

THETA-DELTA

LDR11	LDR12	LDR13
0.42	0.19	0.31
(0.02)	(0.02)	(0.02)
18.40	11.75	16.28

Squared Multiple Correlations for X - Variables

LDR11	LDR12	LDR13
0.58	0.81	0.69

Goodness of Fit Statistics

Degrees of Freedom = 406
Minimum Fit Function Chi-Square = 2318.04 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 2315.62 (P = 0.0)

Estimated Non-centrality Parameter (NCP) = 1909.62
90 Percent Confidence Interval for NCP = (1762.09 ; 2064.60)

Minimum Fit Function Value = 2.48
Population Discrepancy Function Value (F0) = 2.04
90 Percent Confidence Interval for F0 = (1.88 ; 2.21)
Root Mean Square Error of Approximation (RMSEA) = 0.071
90 Percent Confidence Interval for RMSEA = (0.068 ; 0.074)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 2.67
90 Percent Confidence Interval for ECVI = (2.51 ; 2.83)
ECVI for Saturated Model = 1.06
ECVI for Independence Model = 144.80

Chi-Square for Independence Model with 465 Degrees of Freedom = 135475.32
Independence AIC = 135537.32
Model AIC = 2495.62
Saturated AIC = 992.00
Independence CAIC = 135718.44
Model CAIC = 3021.46
Saturated CAIC = 3889.97

Normed Fit Index (NFI) = 0.98
Non-Normed Fit Index (NNFI) = 0.98
Parsimony Normed Fit Index (PNFI) = 0.86
Comparative Fit Index (CFI) = 0.99
Incremental Fit Index (IFI) = 0.99
Relative Fit Index (RFI) = 0.98

Critical N (CN) = 192.89

Root Mean Square Residual (RMR) = 0.042
Standardized RMR = 0.042
Goodness of Fit Index (GFI) = 0.86
Adjusted Goodness of Fit Index (AGFI) = 0.83
Parsimony Goodness of Fit Index (PGFI) = 0.71

TI

Fitted Covariance Matrix

	SP22	SP23	SP24	CSTMRKT3	V8_A	V9_A
SP22	1.00					
SP23	0.63	1.00				
SP24	0.63	0.64	1.00			
CSTMRKT3	0.51	0.51	0.51	1.00		
V8_A	0.49	0.50	0.50	0.74	1.00	
V9_A	0.48	0.48	0.48	0.71	0.70	1.00
V10_A	0.51	0.52	0.52	0.76	0.74	0.72
V11_A	0.50	0.51	0.51	0.76	0.74	0.71
INFO41	0.55	0.56	0.56	0.53	0.51	0.50
INFO42	0.56	0.57	0.57	0.53	0.52	0.50

INFO43	0.49	0.50	0.50	0.47	0.46	0.44
CI73	0.44	0.45	0.45	0.40	0.39	0.38
CI74	0.57	0.58	0.58	0.52	0.51	0.49
CI75	0.55	0.56	0.56	0.51	0.50	0.48
HR52	0.51	0.52	0.52	0.42	0.41	0.40
HR53	0.49	0.50	0.50	0.41	0.40	0.39
HR54	0.55	0.56	0.57	0.46	0.45	0.44
HR55	0.49	0.50	0.50	0.41	0.40	0.39
PM61	0.54	0.55	0.55	0.58	0.57	0.55
PM62	0.54	0.55	0.55	0.59	0.57	0.55
PM63	0.55	0.56	0.56	0.60	0.59	0.57
PM64	0.57	0.58	0.58	0.61	0.60	0.58
PM65	0.56	0.57	0.57	0.61	0.59	0.57
PM66	0.51	0.52	0.52	0.55	0.54	0.52
BR85	0.48	0.49	0.49	0.57	0.56	0.54
BR86	0.52	0.53	0.53	0.62	0.60	0.58
BR87	0.51	0.52	0.52	0.60	0.59	0.56
BR88	0.45	0.46	0.46	0.54	0.53	0.51
LDR11	0.47	0.48	0.48	0.49	0.48	0.47
LDR12	0.55	0.56	0.57	0.58	0.57	0.55
LDR13	0.51	0.52	0.52	0.54	0.53	0.51

Fitted Covariance Matrix

	V10_A	V11_A	INFO41	INFO42	INFO43	CI73
	--------	--------	--------	--------	--------	--------
V10_A	1.00					
V11_A	0.76	1.00				
INFO41	0.53	0.53	1.00			
INFO42	0.54	0.53	0.77	1.00		
INFO43	0.47	0.47	0.68	0.68	1.00	
CI73	0.41	0.40	0.47	0.47	0.41	1.00
CI74	0.52	0.52	0.60	0.61	0.54	0.61
CI75	0.51	0.51	0.59	0.60	0.52	0.60
HR52	0.43	0.42	0.55	0.56	0.49	0.47
HR53	0.42	0.41	0.54	0.54	0.48	0.46
HR54	0.47	0.46	0.60	0.61	0.54	0.52
HR55	0.41	0.41	0.53	0.54	0.47	0.46
PM61	0.59	0.58	0.59	0.60	0.53	0.48
PM62	0.59	0.59	0.60	0.60	0.53	0.48
PM63	0.61	0.60	0.61	0.62	0.54	0.50
PM64	0.62	0.61	0.63	0.63	0.56	0.51
PM65	0.61	0.60	0.62	0.62	0.55	0.50
PM66	0.56	0.55	0.56	0.57	0.50	0.46
BR85	0.57	0.57	0.53	0.53	0.47	0.45
BR86	0.62	0.62	0.57	0.58	0.51	0.48
BR87	0.60	0.60	0.56	0.56	0.49	0.47
BR88	0.54	0.54	0.50	0.50	0.44	0.42
LDR11	0.50	0.49	0.43	0.44	0.38	0.37
LDR12	0.59	0.58	0.51	0.52	0.45	0.44
LDR13	0.54	0.54	0.47	0.48	0.42	0.40

Fitted Covariance Matrix

	CI74	CI75	HR52	HR53	HR54	HR55

	--------	--------	--------	--------	--------	--------
CI74	1.00					
CI75	0.77	1.00				
HR52	0.61	0.60	1.00			
HR53	0.60	0.58	0.67	1.00		
HR54	0.67	0.65	0.75	0.73	1.00	
HR55	0.59	0.58	0.66	0.65	0.72	1.00
PM61	0.62	0.61	0.51	0.49	0.55	0.49
PM62	0.63	0.61	0.51	0.50	0.56	0.49
PM63	0.64	0.63	0.52	0.51	0.57	0.50
PM64	0.65	0.64	0.53	0.52	0.58	0.52
PM65	0.64	0.63	0.52	0.51	0.58	0.51
PM66	0.59	0.58	0.48	0.47	0.52	0.46
BR85	0.58	0.57	0.46	0.45	0.50	0.45
BR86	0.63	0.61	0.50	0.49	0.54	0.48
BR87	0.61	0.60	0.48	0.47	0.53	0.47
BR88	0.55	0.53	0.43	0.42	0.48	0.42
LDR11	0.48	0.47	0.44	0.43	0.48	0.42
LDR12	0.56	0.55	0.51	0.50	0.56	0.50
LDR13	0.52	0.51	0.47	0.46	0.52	0.46

Fitted Covariance Matrix

	PM61	PM62	PM63	PM64	PM65	PM66
	--------	--------	--------	--------	--------	--------
PM61	1.00					
PM62	0.77	1.00				
PM63	0.78	0.79	1.00			
PM64	0.80	0.81	0.83	1.00		
PM65	0.79	0.79	0.81	0.83	1.00	
PM66	0.72	0.72	0.74	0.76	0.75	1.00
BR85	0.57	0.57	0.59	0.60	0.59	0.54
BR86	0.61	0.62	0.63	0.65	0.64	0.58
BR87	0.60	0.60	0.62	0.63	0.62	0.57
BR88	0.54	0.54	0.55	0.57	0.56	0.51
LDR11	0.45	0.45	0.46	0.48	0.47	0.43
LDR12	0.53	0.53	0.55	0.56	0.55	0.50
LDR13	0.49	0.49	0.51	0.52	0.51	0.46

Fitted Covariance Matrix

	BR85	BR86	BR87	BR88	LDR11	LDR12
	--------	--------	--------	--------	--------	--------
BR85	1.00					
BR86	0.74	1.00				
BR87	0.72	0.78	1.00			
BR88	0.65	0.70	0.68	1.00		
LDR11	0.44	0.47	0.46	0.41	1.00	
LDR12	0.51	0.56	0.54	0.49	0.69	1.00
LDR13	0.48	0.51	0.50	0.45	0.63	0.75

Fitted Covariance Matrix

	LDR13

LDR13 1.00

Fitted Residuals

	SP22	SP23	SP24	CSTMRKT3	V8_A	V9_A
SP22	0.00					
SP23	-0.05	0.00				
SP24	-0.07	0.12	0.00			
CSTMRKT3	0.10	-0.08	-0.03	0.00		
V8_A	0.09	-0.05	-0.04	0.05	0.00	
V9_A	0.12	-0.01	-0.02	-0.02	-0.02	0.00
V10_A	0.13	-0.06	-0.06	-0.01	-0.04	0.05
V11_A	0.11	-0.07	-0.06	-0.01	0.00	-0.02
INFO41	0.04	-0.03	-0.02	0.03	0.00	0.07
INFO42	0.02	-0.03	-0.04	-0.03	-0.04	0.02
INFO43	0.02	0.04	0.08	-0.03	0.00	0.01
CI73	0.02	0.03	0.07	0.04	0.00	0.06
CI74	0.05	-0.04	-0.05	-0.06	-0.04	-0.03
CI75	0.04	-0.01	-0.01	0.01	0.03	0.04
HR52	-0.03	0.01	-0.01	-0.07	-0.04	-0.04
HR53	0.11	0.04	0.07	0.05	0.07	0.07
HR54	0.02	-0.03	-0.03	-0.02	0.02	0.01
HR55	-0.03	-0.02	-0.05	-0.01	-0.01	0.01
PM61	0.14	-0.02	-0.02	0.04	0.05	0.07
PM62	0.06	-0.03	-0.03	-0.05	0.01	0.00
PM63	0.07	-0.04	-0.04	-0.01	0.01	0.04
PM64	0.07	-0.07	-0.04	0.00	-0.01	-0.01
PM65	0.07	-0.06	-0.04	-0.01	-0.04	-0.01
PM66	0.09	-0.01	0.01	0.01	0.04	0.06
BR85	0.11	0.02	0.04	-0.05	-0.01	0.00
BR86	0.06	-0.05	-0.07	-0.05	-0.02	0.01
BR87	0.03	-0.03	-0.03	-0.04	-0.05	-0.01
BR88	0.07	-0.03	-0.05	0.08	0.14	0.08
LDR11	0.01	-0.03	-0.03	0.06	0.10	-0.01
LDR12	0.05	-0.06	-0.03	-0.01	0.01	-0.07
LDR13	0.12	-0.01	0.00	0.02	0.03	0.03

Fitted Residuals

	V10_A	V11_A	INFO41	INFO42	INFO43	CI73
V10_A	0.00					
V11_A	0.02	0.00				
INFO41	0.05	0.02	0.00			
INFO42	-0.03	-0.05	0.02	0.00		
INFO43	0.01	-0.02	-0.05	0.02	0.00	
CI73	0.04	0.03	0.02	-0.02	0.14	0.00
CI74	-0.04	-0.02	0.00	-0.04	0.04	-0.01
CI75	0.04	0.05	0.02	-0.05	0.04	0.00
HR52	-0.04	-0.06	-0.04	-0.03	0.05	-0.06
HR53	0.08	0.08	0.02	0.04	0.12	0.04
HR54	-0.03	0.00	-0.04	0.00	0.03	-0.04
HR55	-0.03	0.01	-0.01	-0.01	0.02	-0.03
PM61	0.03	0.09	0.03	-0.03	0.00	0.04

PM62	-0.04	0.00	0.02	-0.06	-0.02	-0.01
PM63	-0.03	0.01	0.05	-0.03	0.01	0.01
PM64	-0.04	-0.01	0.02	-0.05	0.01	0.00
PM65	-0.04	-0.02	0.05	-0.03	0.02	-0.01
PM66	0.00	0.05	0.02	-0.01	0.03	0.03
BR85	0.00	-0.02	0.09	0.04	0.07	0.02
BR86	-0.02	0.01	0.01	-0.08	-0.01	0.00
BR87	0.00	-0.02	0.04	-0.03	0.02	0.05
BR88	0.09	0.12	0.02	-0.07	-0.01	0.03
LDR11	-0.04	-0.02	-0.04	-0.06	-0.06	0.03
LDR12	-0.04	-0.01	0.01	-0.02	0.01	0.01
LDR13	0.03	0.01	0.05	0.03	0.04	0.02

Fitted Residuals

	CI74	CI75	HR52	HR53	HR54	HR55
CI74	0.00					
CI75	0.00	0.00				
HR52	0.02	-0.04	0.00			
HR53	0.09	0.00	0.00	0.00		
HR54	0.03	-0.06	0.02	-0.02	0.00	
HR55	0.05	-0.05	-0.01	-0.04	0.02	0.00
PM61	0.01	0.02	-0.02	0.09	0.02	0.00
PM62	-0.04	0.02	-0.02	0.03	-0.02	0.00
PM63	-0.02	0.06	-0.05	0.07	0.00	-0.03
PM64	-0.05	0.05	-0.04	0.06	-0.01	-0.02
PM65	-0.04	0.02	-0.04	0.04	0.00	0.00
PM66	-0.03	0.03	-0.06	0.07	-0.02	-0.04
BR85	0.01	0.03	0.07	0.11	0.02	0.05
BR86	-0.06	0.01	-0.04	0.01	-0.05	-0.02
BR87	-0.01	0.03	-0.01	0.02	-0.02	0.02
BR88	-0.04	0.04	-0.04	0.04	0.00	0.01
LDR11	-0.04	-0.02	-0.08	0.05	-0.05	-0.01
LDR12	0.00	0.02	-0.05	0.09	0.00	0.02
LDR13	-0.01	0.01	-0.06	0.06	0.00	0.01

Fitted Residuals

	PM61	PM62	PM63	PM64	PM65	PM66
PM61	0.00					
PM62	0.01	0.00				
PM63	-0.01	0.04	0.00			
PM64	-0.02	0.01	-0.02	0.00		
PM65	-0.01	-0.03	-0.01	0.04	0.00	
PM66	0.02	-0.02	0.01	-0.02	0.00	0.00
BR85	0.04	0.00	0.03	0.02	0.03	0.03
BR86	-0.02	-0.02	0.00	-0.02	-0.03	-0.03
BR87	-0.01	-0.02	-0.01	-0.03	-0.01	-0.03
BR88	0.09	0.02	0.05	0.06	0.01	0.03
LDR11	0.00	-0.05	-0.03	-0.07	-0.05	-0.02
LDR12	0.02	-0.01	0.02	-0.02	-0.01	0.03
LDR13	0.05	0.03	0.04	0.00	0.01	0.07

Fitted Residuals

	BR85	BR86	BR87	BR88	LDR11	LDR12
BR85	0.00					
BR86	0.01	0.00				
BR87	0.00	0.01	0.00			
BR88	-0.06	0.00	-0.01	0.00		
LDR11	-0.03	-0.05	-0.06	0.05	0.00	
LDR12	0.01	-0.01	-0.03	0.00	0.02	0.00
LDR13	0.08	0.05	0.00	0.04	-0.03	0.00

Fitted Residuals

	LDR13
LDR13	0.00

Summary Statistics for Fitted Residuals

```
Smallest Fitted Residual =   -0.08
  Median Fitted Residual =    0.00
 Largest Fitted Residual =    0.14
```

Stemleaf Plot

```
- 8|30
- 7|954430
- 6|876433220000
- 5|988777664433222110000
- 4|99887777765554444444331111111
- 3|99998887777777666555544433221111000
- 2|999998888877777666655555442222222110000
- 1|9999998888777777666666655555544333322111111110
- 0|99999888777777666666655533333332222111100000000000000000000000000000000+04
  0|11222222333334455556677888888889999
  1|001111122222333333333445555666677778888899999
  2|0111112223334444444555566677777788899999
  3|001112333555566677788899
  4|00112223334444456777888899
  5|000011122455678999
  6|0156788889
  7|12234445668
  8|015788889
  9|147
 10|168
 11|23559
 12|148
 13|8
 14|02
```

Standardized Residuals

SP22	SP23	SP24	CSTMRKT3	V8_A	V9_A

SP22	- -					
SP23	-6.28	- -				
SP24	-9.04	15.19	- -			
CSTMRKT3	6.81	-5.60	-2.08	- -		
V8_A	5.64	-3.44	-2.39	7.57	- -	
V9_A	6.99	-0.84	-1.30	-2.62	-2.70	- -
V10_A	8.82	-3.95	-4.28	-2.13	-6.09	6.78
V11_A	7.56	-5.20	-4.00	-1.56	-0.28	-2.91
INFO41	2.94	-2.74	-1.87	2.05	0.33	4.34
INFO42	1.96	-2.69	-3.09	-2.06	-3.14	1.44
INFO43	1.22	2.59	4.91	-1.63	-0.06	0.67
CI73	0.87	1.56	3.85	1.96	0.24	2.69
CI74	4.05	-3.30	-4.26	-4.53	-2.64	-1.89
CI75	3.14	-1.22	-1.07	0.77	2.38	2.54
HR52	-2.11	0.87	-0.37	-3.86	-2.41	-2.06
HR53	6.76	2.89	4.29	3.10	3.74	3.57
HR54	1.72	-2.34	-2.72	-1.18	1.62	0.88
HR55	-1.81	-1.44	-3.36	-0.41	-0.37	0.51
PM61	9.98	-1.58	-1.22	3.22	3.91	4.65
PM62	4.17	-1.88	-2.26	-3.80	0.91	0.18
PM63	5.64	-3.09	-3.43	-1.17	0.83	3.03
PM64	5.49	-5.88	-3.73	-0.41	-0.61	-0.46
PM65	5.29	-4.55	-3.01	-0.58	-3.19	-0.44
PM66	5.59	-0.61	0.51	0.58	2.69	3.51
BR85	7.12	1.20	2.73	-3.64	-0.99	-0.01
BR86	4.53	-3.58	-5.60	-4.62	-1.57	0.98
BR87	1.90	-1.81	-2.38	-3.63	-3.87	-0.87
BR88	4.13	-2.01	-2.84	5.25	8.95	4.90
LDR11	0.67	-1.60	-1.74	3.73	5.90	-0.65
LDR12	4.44	-5.67	-2.35	-0.85	0.96	-4.99
LDR13	8.71	-0.80	-0.03	1.81	1.93	2.17

Standardized Residuals

	V10_A	V11_A	INFO41	INFO42	INFO43	CI73
V10_A	- -					
V11_A	3.63	- -				
INFO41	3.82	1.33	- -			
INFO42	-2.09	-3.56	5.25	- -		
INFO43	0.52	-1.07	-7.64	2.49	- -	
CI73	2.32	1.46	1.13	-0.98	7.33	- -
CI74	-3.48	-1.69	0.20	-3.83	3.24	-0.81
CI75	2.61	3.61	2.11	-5.10	3.10	0.29
HR52	-2.21	-3.43	-3.35	-2.40	2.88	-3.73
HR53	4.38	4.32	1.12	2.64	7.06	2.11
HR54	-2.52	0.28	-3.92	-0.07	1.97	-2.74
HR55	-1.50	0.54	-0.62	-0.40	1.44	-1.65
PM61	1.97	6.59	2.48	-2.95	0.14	2.56
PM62	-3.41	0.35	1.60	-5.19	-1.08	-0.81
PM63	-2.28	0.55	4.34	-2.78	1.05	0.49
PM64	-3.88	-0.95	2.36	-4.62	0.85	-0.23
PM65	-3.46	-1.39	4.49	-2.42	1.24	-0.36
PM66	-0.13	3.36	1.57	-0.48	2.03	1.63
BR85	-0.21	-1.29	6.14	2.99	4.38	0.88

BR86	-1.54	1.14	0.72	-7.25	-1.01	-0.17
BR87	-0.11	-1.98	2.89	-2.43	1.14	3.08
BR88	6.06	8.13	1.38	-4.51	-0.45	1.39
LDR11	-2.55	-1.01	-2.47	-3.82	-3.06	1.34
LDR12	-3.75	-0.45	1.16	-1.51	0.45	0.72
LDR13	2.34	0.68	3.15	2.19	2.09	0.90

Standardized Residuals

	CI74	CI75	HR52	HR53	HR54	HR55
CI74	- -					
CI75	0.53	- -				
HR52	2.09	-3.76	- -			
HR53	7.70	0.18	0.13	- -		
HR54	4.06	-7.07	3.63	-4.28	- -	
HR55	4.30	-3.71	-0.68	-4.41	4.69	- -
PM61	0.74	1.55	-1.20	5.44	1.64	0.21
PM62	-4.05	2.12	-1.21	1.83	-1.66	-0.15
PM63	-2.44	5.59	-3.14	4.81	0.10	-1.89
PM64	-5.80	5.10	-2.69	4.09	-0.77	-1.38
PM65	-3.58	1.70	-2.48	2.84	0.24	-0.07
PM66	-2.08	2.17	-3.70	4.09	-1.11	-1.98
BR85	1.11	2.49	4.42	6.24	1.15	2.69
BR86	-6.04	1.15	-2.51	0.61	-4.22	-1.28
BR87	-1.40	2.58	-0.42	1.20	-1.49	1.44
BR88	-2.77	2.60	-2.27	2.04	-0.22	0.43
LDR11	-2.67	-1.12	-4.63	2.58	-3.53	-0.81
LDR12	-0.35	2.06	-4.01	6.65	0.45	1.72
LDR13	-1.08	0.59	-3.53	3.59	-0.23	0.77

Standardized Residuals

	PM61	PM62	PM63	PM64	PM65	PM66
PM61	- -					
PM62	2.02	- -				
PM63	-1.91	6.26	- -			
PM64	-3.95	1.68	-3.72	- -		
PM65	-2.02	-5.64	-1.81	9.76	- -	
PM66	3.03	-2.21	0.80	-2.83	0.03	- -
BR85	3.07	-0.12	2.09	2.03	2.08	2.03
BR86	-1.37	-2.13	-0.01	-2.04	-2.76	-2.52
BR87	-0.63	-1.91	-0.95	-2.34	-1.15	-1.83
BR88	5.81	1.00	3.60	4.15	0.95	1.83
LDR11	-0.28	-2.86	-2.11	-4.68	-3.10	-1.00
LDR12	1.70	-0.52	1.41	-1.92	-0.94	1.82
LDR13	3.25	1.91	2.71	0.26	0.43	4.22

Standardized Residuals

	BR85	BR86	BR87	BR88	LDR11	LDR12
BR85	- -					
BR86	2.13	- -				

BR87	0.25	3.23	- -			
BR88	-6.03	0.01	-1.21	- -		
LDR11	-1.71	-2.97	-3.63	2.65	- -	
LDR12	0.81	-1.40	-2.36	0.10	4.23	- -
LDR13	5.11	3.43	0.34	2.09	-3.36	-0.99

Standardized Residuals

	LDR13
LDR13	- -

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -9.04
Median Standardized Residual = 0.00
Largest Standardized Residual = 15.19

Stemleaf Plot

```
- 9|0
- 8|
- 7|631
- 6|3100
- 5|9876662210
- 4|766665543332000
- 3|9999998888777777666666555544444433211111100
- 2|99988888777777766555555444444444433333221111111100000
- 1|99999998888777766666655554444443332222222111111110000000
- 0|9999888888776666655555444444444333222222111111000000000000000000000000000+09
  0|1111222222223333333445555555556666777777888889999999
  1|00001111111222222233444444566666666777778888999
  2|0000000001111111111122233445555666666677777789999
  3|0001111111222244566666677889
  4|01111222223333344445567899
  5|1122345666689
  6|112366888
  7|0113667
  8|178
  9|08
 10|0
 11|
 12|
 13|
 14|
 15|2
```

Largest Negative Standardized Residuals
Residual for SP23 and SP22 -6.28
Residual for SP24 and SP22 -9.04
Residual for CSTMRKT3 and SP23 -5.60
Residual for V8_A and SP23 -3.44
Residual for V9_A and CSTMRKT3 -2.62
Residual for V9_A and V8_A -2.70
Residual for V10_A and SP23 -3.95
Residual for V10_A and SP24 -4.28

Residual for V10_A and V8_A -6.09
Residual for V11_A and SP23 -5.20
Residual for V11_A and SP24 -4.00
Residual for V11_A and V9_A -2.91
Residual for INFO41 and SP23 -2.74
Residual for INFO42 and SP23 -2.69
Residual for INFO42 and SP24 -3.09
Residual for INFO42 and V8_A -3.14
Residual for INFO42 and V11_A -3.56
Residual for INFO43 and INFO41 -7.64
Residual for CI74 and SP23 -3.30
Residual for CI74 and SP24 -4.26
Residual for CI74 and CSTMRKT3 -4.53
Residual for CI74 and V8_A -2.64
Residual for CI74 and V10_A -3.48
Residual for CI74 and INFO42 -3.83
Residual for CI75 and INFO42 -5.10
Residual for HR52 and CSTMRKT3 -3.86
Residual for HR52 and V11_A -3.43
Residual for HR52 and INFO41 -3.35
Residual for HR52 and CI73 -3.73
Residual for HR52 and CI75 -3.76
Residual for HR54 and SP24 -2.72
Residual for HR54 and INFO41 -3.92
Residual for HR54 and CI73 -2.74
Residual for HR54 and CI75 -7.07
Residual for HR54 and HR53 -4.28
Residual for HR55 and SP24 -3.36
Residual for HR55 and CI75 -3.71
Residual for HR55 and HR53 -4.41
Residual for PM61 and INFO42 -2.95
Residual for PM62 and CSTMRKT3 -3.80
Residual for PM62 and V10_A -3.41
Residual for PM62 and INFO42 -5.19
Residual for PM62 and CI74 -4.05
Residual for PM63 and SP23 -3.09
Residual for PM63 and SP24 -3.43
Residual for PM63 and INFO42 -2.78
Residual for PM63 and HR52 -3.14
Residual for PM64 and SP23 -5.88
Residual for PM64 and SP24 -3.73
Residual for PM64 and V10_A -3.88
Residual for PM64 and INFO42 -4.62
Residual for PM64 and CI74 -5.80
Residual for PM64 and HR52 -2.69
Residual for PM64 and PM61 -3.95
Residual for PM64 and PM63 -3.72
Residual for PM65 and SP23 -4.55
Residual for PM65 and SP24 -3.01
Residual for PM65 and V8_A -3.19
Residual for PM65 and V10_A -3.46
Residual for PM65 and CI74 -3.58
Residual for PM65 and PM62 -5.64
Residual for PM66 and HR52 -3.70
Residual for PM66 and PM64 -2.83

Residual for BR85 and CSTMRKT3 -3.64
Residual for BR86 and SP23 -3.58
Residual for BR86 and SP24 -5.60
Residual for BR86 and CSTMRKT3 -4.62
Residual for BR86 and INFO42 -7.25
Residual for BR86 and CI74 -6.04
Residual for BR86 and HR54 -4.22
Residual for BR86 and PM65 -2.76
Residual for BR87 and CSTMRKT3 -3.63
Residual for BR87 and V8_A -3.87
Residual for BR88 and SP24 -2.84
Residual for BR88 and INFO42 -4.51
Residual for BR88 and CI74 -2.77
Residual for BR88 and BR85 -6.03
Residual for LDR11 and INFO42 -3.82
Residual for LDR11 and INFO43 -3.06
Residual for LDR11 and CI74 -2.67
Residual for LDR11 and HR52 -4.63
Residual for LDR11 and HR54 -3.53
Residual for LDR11 and PM62 -2.86
Residual for LDR11 and PM64 -4.68
Residual for LDR11 and PM65 -3.10
Residual for LDR11 and BR86 -2.97
Residual for LDR11 and BR87 -3.63
Residual for LDR12 and SP23 -5.67
Residual for LDR12 and V9_A -4.99
Residual for LDR12 and V10_A -3.75
Residual for LDR12 and HR52 -4.01
Residual for LDR13 and HR52 -3.53
Residual for LDR13 and LDR11 -3.36
Largest Positive Standardized Residuals
Residual for SP24 and SP23 15.19
Residual for CSTMRKT3 and SP22 6.81
Residual for V8_A and SP22 5.64
Residual for V8_A and CSTMRKT3 7.57
Residual for V9_A and SP22 6.99
Residual for V10_A and SP22 8.82
Residual for V10_A and V9_A 6.78
Residual for V11_A and SP22 7.56
Residual for V11_A and V10_A 3.63
Residual for INFO41 and SP22 2.94
Residual for INFO41 and V9_A 4.34
Residual for INFO41 and V10_A 3.82
Residual for INFO42 and INFO41 5.25
Residual for INFO43 and SP23 2.59
Residual for INFO43 and SP24 4.91
Residual for CI73 and SP24 3.85
Residual for CI73 and V9_A 2.69
Residual for CI73 and INFO43 7.33
Residual for CI74 and SP22 4.05
Residual for CI74 and INFO43 3.24
Residual for CI75 and SP22 3.14
Residual for CI75 and V10_A 2.61
Residual for CI75 and V11_A 3.61
Residual for CI75 and INFO43 3.10

Residual for	HR52 and	INFO43	2.88
Residual for	HR53 and	SP22	6.76
Residual for	HR53 and	SP23	2.89
Residual for	HR53 and	SP24	4.29
Residual for	HR53 and	CSTMRKT3	3.10
Residual for	HR53 and	V8_A	3.74
Residual for	HR53 and	V9_A	3.57
Residual for	HR53 and	V10_A	4.38
Residual for	HR53 and	V11_A	4.32
Residual for	HR53 and	INFO42	2.64
Residual for	HR53 and	INFO43	7.06
Residual for	HR53 and	CI74	7.70
Residual for	HR54 and	CI74	4.06
Residual for	HR54 and	HR52	3.63
Residual for	HR55 and	CI74	4.30
Residual for	HR55 and	HR54	4.69
Residual for	PM61 and	SP22	9.98
Residual for	PM61 and	CSTMRKT3	3.22
Residual for	PM61 and	V8_A	3.91
Residual for	PM61 and	V9_A	4.65
Residual for	PM61 and	V11_A	6.59
Residual for	PM61 and	HR53	5.44
Residual for	PM62 and	SP22	4.17
Residual for	PM63 and	SP22	5.64
Residual for	PM63 and	V9_A	3.03
Residual for	PM63 and	INFO41	4.34
Residual for	PM63 and	CI75	5.59
Residual for	PM63 and	HR53	4.81
Residual for	PM63 and	PM62	6.26
Residual for	PM64 and	SP22	5.49
Residual for	PM64 and	CI75	5.10
Residual for	PM64 and	HR53	4.09
Residual for	PM65 and	SP22	5.29
Residual for	PM65 and	INFO41	4.49
Residual for	PM65 and	HR53	2.84
Residual for	PM65 and	PM64	9.76
Residual for	PM66 and	SP22	5.59
Residual for	PM66 and	V8_A	2.69
Residual for	PM66 and	V9_A	3.51
Residual for	PM66 and	V11_A	3.36
Residual for	PM66 and	HR53	4.09
Residual for	PM66 and	PM61	3.03
Residual for	BR85 and	SP22	7.12
Residual for	BR85 and	SP24	2.73
Residual for	BR85 and	INFO41	6.14
Residual for	BR85 and	INFO42	2.99
Residual for	BR85 and	INFO43	4.38
Residual for	BR85 and	HR52	4.42
Residual for	BR85 and	HR53	6.24
Residual for	BR85 and	HR55	2.69
Residual for	BR85 and	PM61	3.07
Residual for	BR86 and	SP22	4.53
Residual for	BR87 and	INFO41	2.89
Residual for	BR87 and	CI73	3.08
Residual for	BR87 and	CI75	2.58

Residual for BR87 and BR86 3.23
Residual for BR88 and SP22 4.13
Residual for BR88 and CSTMRKT3 5.25
Residual for BR88 and V8_A 8.95
Residual for BR88 and V9_A 4.90
Residual for BR88 and V10_A 6.06
Residual for BR88 and V11_A 8.13
Residual for BR88 and CI75 2.60
Residual for BR88 and PM61 5.81
Residual for BR88 and PM63 3.60
Residual for BR88 and PM64 4.15
Residual for LDR11 and CSTMRKT3 3.73
Residual for LDR11 and V8_A 5.90
Residual for LDR11 and HR53 2.58
Residual for LDR11 and BR88 2.65
Residual for LDR12 and SP22 4.44
Residual for LDR12 and HR53 6.65
Residual for LDR12 and LDR11 4.23
Residual for LDR13 and SP22 8.71
Residual for LDR13 and INFO41 3.15
Residual for LDR13 and HR53 3.59
Residual for LDR13 and PM61 3.25
Residual for LDR13 and PM63 2.71
Residual for LDR13 and PM66 4.22
Residual for LDR13 and BR85 5.11
Residual for LDR13 and BR86 3.43

TI

Qplot of Standardized Residuals

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 3.5.........................................................
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    .                                             .          x
    .                                            .           *
    .                                           .            x
    .                                          .             *
N   .                                         .               *
o   .                                       .            x* **
r   .                                      .         x*x*xx   .
m   .                                      .       ** *xx      .
a   .                                    .      x***xx         .
l   .                                  .    x****xx           .
    .                                 . *xxx**                .
Q   .                                ***x*x                    .
u   .                            ***x*                        .
```

```
a   .                     x*xx*xx .                               .
n   .                 *xxxxx    .                                 .
t   .            *x*xx        .                                  .
i   .        **xx*           .                                   .
l   .     **x*x             .                                    .
e   .xxxxx**                 .                                    .
s   **                  .                                        .
    *                 .                                          .
    x                .                                           .
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    x             .                                              .
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    x           .                                                .
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-3.5.............................................................
  -3.5                                                          3.5
                     Standardized Residuals
```

TI

Standardized Solution

LAMBDA-Y

	St_plan	Market	Info	ContImpr	Hr	ProMang
SP22	0.79	- -	- -	- -	- -	- -
SP23	0.80	- -	- -	- -	- -	- -
SP24	0.80	- -	- -	- -	- -	- -
CSTMRKT3	- -	0.87	- -	- -	- -	- -
V8_A	- -	0.85	- -	- -	- -	- -
V9_A	- -	0.82	- -	- -	- -	- -
V10_A	- -	0.88	- -	- -	- -	- -
V11_A	- -	0.87	- -	- -	- -	- -
INFO41	- -	- -	0.87	- -	- -	- -
INFO42	- -	- -	0.88	- -	- -	- -
INFO43	- -	- -	0.77	- -	- -	- -
CI73	- -	- -	- -	0.69	- -	- -
CI74	- -	- -	- -	0.89	- -	- -
CI75	- -	- -	- -	0.87	- -	- -
HR52	- -	- -	- -	- -	0.83	- -
HR53	- -	- -	- -	- -	0.81	- -
HR54	- -	- -	- -	- -	0.91	- -
HR55	- -	- -	- -	- -	0.80	- -
PM61	- -	- -	- -	- -	- -	0.87
PM62	- -	- -	- -	- -	- -	0.88
PM63	- -	- -	- -	- -	- -	0.90
PM64	- -	- -	- -	- -	- -	0.92
PM65	- -	- -	- -	- -	- -	0.90

PM66	- -	- -	- -	- -	- -	0.83
BR85	- -	- -	- -	- -	- -	- -
BR86	- -	- -	- -	- -	- -	- -
BR87	- -	- -	- -	- -	- -	- -
BR88	- -	- -	- -	- -	- -	- -

LAMBDA-Y

	BusResul
SP22	- -
SP23	- -
SP24	- -
CSTMRKT3	- -
V8_A	- -
V9_A	- -
V10_A	- -
V11_A	- -
INFO41	- -
INFO42	- -
INFO43	- -
CI73	- -
CI74	- -
CI75	- -
HR52	- -
HR53	- -
HR54	- -
HR55	- -
PM61	- -
PM62	- -
PM63	- -
PM64	- -
PM65	- -
PM66	- -
BR85	0.83
BR86	0.89
BR87	0.87
BR88	0.78

LAMBDA-X

	leadersh
LDR11	0.76
LDR12	0.90
LDR13	0.83

BETA

	St_plan	Market	Info	ContImpr	Hr	ProMang
St_plan	- -	- -	- -	- -	- -	- -
Market	0.40	- -	- -	- -	- -	- -
Info	0.66	0.24	- -	- -	- -	- -
ContImpr	0.39	0.04	0.34	- -	- -	- -

Hr	0.16	-0.17	0.25	0.50	- -	- -
ProMang	0.12	0.33	0.22	0.37	-0.03	- -
BusResul	-0.04	0.38	0.09	0.37	-0.03	0.16

BETA

	BusResul
St_plan	- -
Market	- -
Info	- -
ContImpr	- -
Hr	- -
ProMang	- -
BusResul	- -

GAMMA

	leadersh
St_plan	0.78
Market	0.43
Info	-0.05
ContImpr	0.15
Hr	0.18
ProMang	-0.05
BusResul	0.03

Correlation Matrix of ETA and KSI

	St_plan	Market	Info	ContImpr	Hr	ProMang
St_plan	1.00					
Market	0.74	1.00				
Info	0.80	0.69	1.00			
ContImpr	0.81	0.67	0.78	1.00		
Hr	0.78	0.59	0.76	0.83	1.00	
ProMang	0.78	0.77	0.78	0.80	0.70	1.00
BusResul	0.74	0.79	0.73	0.79	0.67	0.79
leadersh	0.78	0.74	0.65	0.71	0.69	0.68

Correlation Matrix of ETA and KSI

	BusResul	leadersh
BusResul	1.00	
leadersh	0.69	1.00

PSI
Note: This matrix is diagonal.

St_plan	Market	Info	ContImpr	Hr	ProMang
0.39	0.38	0.33	0.29	0.25	0.23

PSI

Note: This matrix is diagonal.

BusResul
0.24

Regression Matrix ETA on KSI (Standardized)

	leadersh
St_plan	0.78
Market	0.74
Info	0.65
ContImpr	0.71
Hr	0.69
ProMang	0.68
BusResul	0.69

TI

Completely Standardized Solution

LAMBDA-Y

	St_plan	Market	Info	ContImpr	Hr	ProMang
SP22	0.79	- -	- -	- -	- -	- -
SP23	0.80	- -	- -	- -	- -	- -
SP24	0.80	- -	- -	- -	- -	- -
CSTMRKT3	- -	0.87	- -	- -	- -	- -
V8_A	- -	0.85	- -	- -	- -	- -
V9_A	- -	0.82	- -	- -	- -	- -
V10_A	- -	0.88	- -	- -	- -	- -
V11_A	- -	0.87	- -	- -	- -	- -
INFO41	- -	- -	0.87	- -	- -	- -
INFO42	- -	- -	0.88	- -	- -	- -
INFO43	- -	- -	0.77	- -	- -	- -
CI73	- -	- -	- -	0.69	- -	- -
CI74	- -	- -	- -	0.89	- -	- -
CI75	- -	- -	- -	0.87	- -	- -
HR52	- -	- -	- -	- -	0.83	- -
HR53	- -	- -	- -	- -	0.81	- -
HR54	- -	- -	- -	- -	0.91	- -
HR55	- -	- -	- -	- -	0.80	- -
PM61	- -	- -	- -	- -	- -	0.87
PM62	- -	- -	- -	- -	- -	0.88
PM63	- -	- -	- -	- -	- -	0.90
PM64	- -	- -	- -	- -	- -	0.92
PM65	- -	- -	- -	- -	- -	0.90
PM66	- -	- -	- -	- -	- -	0.83
BR85	- -	- -	- -	- -	- -	- -
BR86	- -	- -	- -	- -	- -	- -
BR87	- -	- -	- -	- -	- -	- -
BR88	- -	- -	- -	- -	- -	- -

LAMBDA-Y

	BusResul
SP22	- -
SP23	- -
SP24	- -
CSTMRKT3	- -
V8_A	- -
V9_A	- -
V10_A	- -
V11_A	- -
INFO41	- -
INFO42	- -
INFO43	- -
CI73	- -
CI74	- -
CI75	- -
HR52	- -
HR53	- -
HR54	- -
HR55	- -
PM61	- -
PM62	- -
PM63	- -
PM64	- -
PM65	- -
PM66	- -
BR85	0.83
BR86	0.89
BR87	0.87
BR88	0.78

LAMBDA-X

	leadersh
LDR11	0.76
LDR12	0.90
LDR13	0.83

BETA

	St_plan	Market	Info	ContImpr	Hr	ProMang
St_plan	- -	- -	- -	- -	- -	- -
Market	0.40	- -	- -	- -	- -	- -
Info	0.66	0.24	- -	- -	- -	- -
ContImpr	0.39	0.04	0.34	- -	- -	- -
Hr	0.16	-0.17	0.25	0.50	- -	- -
ProMang	0.12	0.33	0.22	0.37	-0.03	- -
BusResul	-0.04	0.38	0.09	0.37	-0.03	0.16

BETA

	BusResul
St_plan	- -
Market	- -
Info	- -
ContImpr	- -
Hr	- -
ProMang	- -
BusResul	- -

GAMMA

	leadersh
St_plan	0.78
Market	0.43
Info	-0.05
ContImpr	0.15
Hr	0.18
ProMang	-0.05
BusResul	0.03

Correlation Matrix of ETA and KSI

	St_plan	Market	Info	ContImpr	Hr	ProMang
St_plan	1.00					
Market	0.74	1.00				
Info	0.80	0.69	1.00			
ContImpr	0.81	0.67	0.78	1.00		
Hr	0.78	0.59	0.76	0.83	1.00	
ProMang	0.78	0.77	0.78	0.80	0.70	1.00
BusResul	0.74	0.79	0.73	0.79	0.67	0.79
leadersh	0.78	0.74	0.65	0.71	0.69	0.68

Correlation Matrix of ETA and KSI

	BusResul	leadersh
BusResul	1.00	
leadersh	0.69	1.00

PSI
Note: This matrix is diagonal.

St_plan	Market	Info	ContImpr	Hr	ProMang
0.39	0.38	0.33	0.29	0.25	0.23

PSI
Note: This matrix is diagonal.

BusResul

0.24

THETA-EPS

SP22	SP23	SP24	CSTMRKT3	V8_A	V9_A
0.38	0.36	0.36	0.24	0.28	0.33

THETA-EPS

V10_A	V11_A	INFO41	INFO42	INFO43	CI73
0.23	0.25	0.24	0.22	0.40	0.53

THETA-EPS

CI74	CI75	HR52	HR53	HR54	HR55
0.21	0.25	0.32	0.35	0.18	0.36

THETA-EPS

PM61	PM62	PM63	PM64	PM65	PM66
0.24	0.23	0.19	0.16	0.18	0.32

THETA-EPS

BR85	BR86	BR87	BR88
0.32	0.20	0.24	0.39

THETA-DELTA

LDR11	LDR12	LDR13
0.42	0.19	0.31

Regression Matrix ETA on KSI (Standardized)

	leadersh
St_plan	0.78
Market	0.74
Info	0.65
ContImpr	0.71
Hr	0.69
ProMang	0.68
BusResul	0.69

TI

Total and Indirect Effects

Total Effects of KSI on ETA

	leadersh

St_plan	0.79
	(0.04)
	21.24
Market	0.74
	(0.03)
	22.54
Info	0.65
	(0.03)
	18.95
ContImpr	0.70
	(0.04)
	17.53
Hr	0.70
	(0.04)
	19.76
ProMang	0.68
	(0.03)
	20.45
BusResul	0.69
	(0.03)
	19.88

Indirect Effects of KSI on ETA

	leadersh

St_plan	- -
Market	0.31
	(0.04)
	7.71
Info	0.70
	(0.05)
	13.19
ContImpr	0.55
	(0.05)
	11.16
Hr	0.52
	(0.05)
	11.34
ProMang	0.73

	(0.05)
	15.90
BusResul	0.66
	(0.05)
	14.05

Total Effects of ETA on ETA

	St_plan	Market	Info	ContImpr	Hr	ProMang
St_plan	- -	- -	- -	- -	- -	- -
Market	0.40	- -	- -	- -	- -	- -
	(0.05)					
	7.85					
Info	0.76	0.24	- -	- -	- -	- -
	(0.06)	(0.05)				
	12.86	5.27				
ContImpr	0.66	0.12	0.34	- -	- -	- -
	(0.06)	(0.04)	(0.05)			
	11.16	2.63	6.67			
Hr	0.61	-0.05	0.42	0.50	- -	- -
	(0.06)	(0.05)	(0.05)	(0.05)		
	10.96	-1.15	8.10	9.25		
ProMang	0.64	0.43	0.34	0.36	-0.03	- -
	(0.05)	(0.04)	(0.04)	(0.05)	(0.05)	
	11.99	10.61	7.61	7.69	-0.64	
BusResul	0.50	0.51	0.25	0.41	-0.03	0.16
	(0.05)	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)
	9.22	12.00	5.33	7.96	-0.66	3.37

Total Effects of ETA on ETA

	BusResul
St_plan	- -
Market	- -
Info	- -
ContImpr	- -
Hr	- -
ProMang	- -

BusResul	- -

Largest Eigenvalue of B*B' (Stability Index) is 1.027

Indirect Effects of ETA on ETA

	St_plan	Market	Info	ContImpr	Hr	ProMang
St_plan	- -	- -	- -	- -	- -	- -
Market	- -	- -	- -	- -	- -	- -
Info	0.10 (0.02) 4.96	- -	- -	- -	- -	- -
ContImpr	0.27 (0.04) 6.57	0.08 (0.02) 4.00	- -	- -	- -	- -
Hr	0.45 (0.05) 8.34	0.12 (0.03) 3.78	0.17 (0.03) 5.68	- -	- -	- -
ProMang	0.52 (0.05) 10.18	0.10 (0.02) 3.93	0.11 (0.03) 4.50	-0.01 (0.02) -0.63	- -	- -
BusResul	0.54 (0.06) 9.36	0.13 (0.03) 4.63	0.17 (0.03) 5.48	0.04 (0.03) 1.30	0.00 (0.01) -0.63	- -

Indirect Effects of ETA on ETA

	BusResul
St_plan	- -
Market	- -
Info	- -
ContImpr	- -
Hr	- -
ProMang	- -
BusResul	- -

Total Effects of ETA on Y

	St_plan	Market	Info	ContImpr	Hr	ProMang
SP22	0.78	- -	- -	- -	- -	- -
SP23	0.79	- -	- -	- -	- -	- -
	(0.03)					
	25.98					
SP24	0.80	- -	- -	- -	- -	- -
	(0.03)					
	26.01					
CSTMRKT3	0.35	0.87	- -	- -	- -	- -
	(0.04)					
	7.85					
V8_A	0.34	0.85	- -	- -	- -	- -
	(0.04)	(0.02)				
	7.83	34.86				
V9_A	0.32	0.82	- -	- -	- -	- -
	(0.04)	(0.03)				
	7.80	32.56				
V10_A	0.35	0.88	- -	- -	- -	- -
	(0.04)	(0.02)				
	7.85	36.97				
V11_A	0.34	0.87	- -	- -	- -	- -
	(0.04)	(0.02)				
	7.85	36.35				
INFO41	0.66	0.21	0.87	- -	- -	- -
	(0.05)	(0.04)				
	12.86	5.27				
INFO42	0.66	0.21	0.88	- -	- -	- -
	(0.05)	(0.04)	(0.02)			
	12.90	5.28	35.39			
INFO43	0.58	0.19	0.77	- -	- -	- -
	(0.05)	(0.04)	(0.03)			
	12.44	5.24	28.74			
CI73	0.45	0.08	0.24	0.69	- -	- -
	(0.04)	(0.03)	(0.04)			
	11.16	2.63	6.67			
CI74	0.58	0.10	0.30	0.89	- -	- -
	(0.05)	(0.04)	(0.04)	(0.04)		
	11.93	2.64	6.83	24.43		
CI75	0.57	0.10	0.30	0.87	- -	- -
	(0.05)	(0.04)	(0.04)	(0.04)		
	11.87	2.63	6.81	24.01		

HR52	0.50	-0.04	0.34	0.41	0.82	- -
	(0.05)	(0.04)	(0.04)	(0.04)		
	10.96	-1.15	8.10	9.25		
HR53	0.49	-0.04	0.34	0.40	0.80	- -
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	
	10.91	-1.15	8.08	9.22	28.96	
HR54	0.55	-0.05	0.38	0.45	0.90	- -
	(0.05)	(0.04)	(0.05)	(0.05)	(0.03)	
	11.16	-1.15	8.18	9.37	34.32	
HR55	0.49	-0.04	0.33	0.40	0.79	- -
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	
	10.89	-1.15	8.07	9.21	28.60	
PM61	0.56	0.37	0.29	0.31	-0.03	0.87
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	
	11.99	10.61	7.61	7.69	-0.64	
PM62	0.56	0.38	0.29	0.31	-0.03	0.88
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
	12.00	10.62	7.61	7.69	-0.64	38.06
PM63	0.58	0.38	0.30	0.32	-0.03	0.90
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
	12.06	10.66	7.63	7.71	-0.64	40.01
PM64	0.59	0.39	0.31	0.33	-0.03	0.92
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
	12.12	10.70	7.64	7.72	-0.64	42.11
PM65	0.58	0.39	0.30	0.32	-0.03	0.90
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)
	12.08	10.67	7.63	7.71	-0.64	40.66
PM66	0.53	0.35	0.28	0.29	-0.02	0.82
	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)	(0.02)
	11.84	10.51	7.57	7.65	-0.64	33.77
BR85	0.42	0.43	0.21	0.34	-0.03	0.13
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
	9.22	12.00	5.33	7.96	-0.66	3.37
BR86	0.45	0.46	0.23	0.37	-0.03	0.14
	(0.05)	(0.04)	(0.04)	(0.05)	(0.05)	(0.04)
	9.31	12.22	5.35	8.02	-0.66	3.37
BR87	0.44	0.45	0.22	0.36	-0.03	0.14
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
	9.28	12.15	5.34	8.00	-0.66	3.37
BR88	0.39	0.40	0.20	0.32	-0.03	0.12
	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)

9.14	11.83	5.32	7.91	-0.66	3.36

Total Effects of ETA on Y

	BusResul
SP22	- -
SP23	- -
SP24	- -
CSTMRKT3	- -
V8_A	- -
V9_A	- -
V10_A	- -
V11_A	- -
INFO41	- -
INFO42	- -
INFO43	- -
CI73	- -
CI74	- -
CI75	- -
HR52	- -
HR53	- -
HR54	- -
HR55	- -
PM61	- -
PM62	- -
PM63	- -
PM64	- -
PM65	- -
PM66	- -

```
   BR85       0.83

   BR86       0.90
            (0.03)
             34.07

   BR87       0.87
            (0.03)
             32.69

   BR88       0.78
            (0.03)
             27.77


     Indirect Effects of ETA on Y

         St_plan     Market      Info   ContImpr       Hr    ProMang
        --------   --------   --------   --------   --------   --------
   SP22       - -        - -        - -        - -        - -        - -

   SP23       - -        - -        - -        - -        - -        - -

   SP24       - -        - -        - -        - -        - -        - -

CSTMRKT3       0.35        - -        - -        - -        - -        - -
            (0.04)
              7.85

   V8_A       0.34        - -        - -        - -        - -        - -
            (0.04)
              7.83

   V9_A       0.32        - -        - -        - -        - -        - -
            (0.04)
              7.80

  V10_A       0.35        - -        - -        - -        - -        - -
            (0.04)
              7.85

  V11_A       0.34        - -        - -        - -        - -        - -
            (0.04)
              7.85

 INFO41       0.66       0.21        - -        - -        - -        - -
            (0.05)     (0.04)
             12.86       5.27

 INFO42       0.66       0.21        - -        - -        - -        - -
            (0.05)     (0.04)
             12.90       5.28

 INFO43       0.58       0.19        - -        - -        - -        - -
            (0.05)     (0.04)
```

	12.44	5.24				
CI73	0.45	0.08	0.24	- -	- -	- -
	(0.04)	(0.03)	(0.04)			
	11.16	2.63	6.67			
CI74	0.58	0.10	0.30	- -	- -	- -
	(0.05)	(0.04)	(0.04)			
	11.93	2.64	6.83			
CI75	0.57	0.10	0.30	- -	- -	- -
	(0.05)	(0.04)	(0.04)			
	11.87	2.63	6.81			
HR52	0.50	-0.04	0.34	0.41	- -	- -
	(0.05)	(0.04)	(0.04)	(0.04)		
	10.96	-1.15	8.10	9.25		
HR53	0.49	-0.04	0.34	0.40	- -	- -
	(0.04)	(0.04)	(0.04)	(0.04)		
	10.91	-1.15	8.08	9.22		
HR54	0.55	-0.05	0.38	0.45	- -	- -
	(0.05)	(0.04)	(0.05)	(0.05)		
	11.16	-1.15	8.18	9.37		
HR55	0.49	-0.04	0.33	0.40	- -	- -
	(0.04)	(0.04)	(0.04)	(0.04)		
	10.89	-1.15	8.07	9.21		
PM61	0.56	0.37	0.29	0.31	-0.03	- -
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	
	11.99	10.61	7.61	7.69	-0.64	
PM62	0.56	0.38	0.29	0.31	-0.03	- -
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	
	12.00	10.62	7.61	7.69	-0.64	
PM63	0.58	0.38	0.30	0.32	-0.03	- -
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	
	12.06	10.66	7.63	7.71	-0.64	
PM64	0.59	0.39	0.31	0.33	-0.03	- -
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	
	12.12	10.70	7.64	7.72	-0.64	
PM65	0.58	0.39	0.30	0.32	-0.03	- -
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	
	12.08	10.67	7.63	7.71	-0.64	
PM66	0.53	0.35	0.28	0.29	-0.02	- -
	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)	
	11.84	10.51	7.57	7.65	-0.64	
BR85	0.42	0.43	0.21	0.34	-0.03	0.13

	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
	9.22	12.00	5.33	7.96	-0.66	3.37
BR86	0.45	0.46	0.23	0.37	-0.03	0.14
	(0.05)	(0.04)	(0.04)	(0.05)	(0.05)	(0.04)
	9.31	12.22	5.35	8.02	-0.66	3.37
BR87	0.44	0.45	0.22	0.36	-0.03	0.14
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
	9.28	12.15	5.34	8.00	-0.66	3.37
BR88	0.39	0.40	0.20	0.32	-0.03	0.12
	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
	9.14	11.83	5.32	7.91	-0.66	3.36

Indirect Effects of ETA on Y

	BusResul
SP22	- -
SP23	- -
SP24	- -
CSTMRKT3	- -
V8_A	- -
V9_A	- -
V10_A	- -
V11_A	- -
INFO41	- -
INFO42	- -
INFO43	- -
CI73	- -
CI74	- -
CI75	- -
HR52	- -
HR53	- -
HR54	- -
HR55	- -

```
 PM61       - -

 PM62       - -

 PM63       - -

 PM64       - -

 PM65       - -

 PM66       - -

 BR85       - -

 BR86       - -

 BR87       - -

 BR88       - -

     Total Effects of KSI on Y

       leadersh
       --------
 SP22      0.62
         (0.03)
          21.24

 SP23      0.63
         (0.03)
          21.58

 SP24      0.63
         (0.03)
          21.60

CSTMRKT3      0.65
         (0.03)
          22.54

 V8_A      0.63
         (0.03)
          22.14

 V9_A      0.61
         (0.03)
          21.51

V10_A      0.65
         (0.03)
          22.66

V11_A      0.65
```

	(0.03)
	22.51
INFO41	0.57
	(0.03)
	18.95
INFO42	0.57
	(0.03)
	19.06
INFO43	0.50
	(0.03)
	17.67
CI73	0.49
	(0.03)
	17.53
CI74	0.63
	(0.03)
	21.06
CI75	0.61
	(0.03)
	20.73
HR52	0.57
	(0.03)
	19.76
HR53	0.56
	(0.03)
	19.47
HR54	0.63
	(0.03)
	20.99
HR55	0.55
	(0.03)
	19.36
PM61	0.59
	(0.03)
	20.45
PM62	0.59
	(0.03)
	20.52
PM63	0.61
	(0.03)
	20.81

PM64 0.62
(0.03)
21.10

PM65 0.61
(0.03)
20.91

PM66 0.56
(0.03)
19.76

BR85 0.57
(0.03)
19.88

BR86 0.62
(0.03)
20.91

BR87 0.60
(0.03)
20.55

BR88 0.54
(0.03)
19.11

TI

Standardized Total and Indirect Effects

Standardized Total Effects of KSI on ETA

	leadersh
St_plan	0.78
Market	0.74
Info	0.65
ContImpr	0.71
Hr	0.69
ProMang	0.68
BusResul	0.69

Standardized Indirect Effects of KSI on ETA

	leadersh
St_plan	- -
Market	0.31
Info	0.70
ContImpr	0.56
Hr	0.51
ProMang	0.73

BusResul	0.66

Standardized Total Effects of ETA on ETA

	St_plan	Market	Info	ContImpr	Hr	ProMang
St_plan	- -	- -	- -	- -	- -	- -
Market	0.40	- -	- -	- -	- -	- -
Info	0.76	0.24	- -	- -	- -	- -
ContImpr	0.66	0.12	0.34	- -	- -	- -
Hr	0.61	-0.05	0.42	0.50	- -	- -
ProMang	0.65	0.43	0.34	0.35	-0.03	- -
BusResul	0.51	0.52	0.25	0.41	-0.03	0.16

Standardized Total Effects of ETA on ETA

	BusResul
St_plan	- -
Market	- -
Info	- -
ContImpr	- -
Hr	- -
ProMang	- -
BusResul	- -

Standardized Indirect Effects of ETA on ETA

	St_plan	Market	Info	ContImpr	Hr	ProMang
St_plan	- -	- -	- -	- -	- -	- -
Market	- -	- -	- -	- -	- -	- -
Info	0.10	- -	- -	- -	- -	- -
ContImpr	0.28	0.08	- -	- -	- -	- -
Hr	0.45	0.12	0.17	- -	- -	- -
ProMang	0.53	0.10	0.11	-0.01	- -	- -
BusResul	0.55	0.13	0.17	0.04	0.00	- -

Standardized Indirect Effects of ETA on ETA

	BusResul
St_plan	- -
Market	- -
Info	- -
ContImpr	- -
Hr	- -
ProMang	- -
BusResul	- -

Standardized Total Effects of ETA on Y

	St_plan	Market	Info	ContImpr	Hr	ProMang
SP22	0.79	- -	- -	- -	- -	- -

SP23	0.80	- -	- -	- -	- -	- -
SP24	0.80	- -	- -	- -	- -	- -
CSTMRKT3	0.35	0.87	- -	- -	- -	- -
V8_A	0.34	0.85	- -	- -	- -	- -
V9_A	0.33	0.82	- -	- -	- -	- -
V10_A	0.35	0.88	- -	- -	- -	- -
V11_A	0.35	0.87	- -	- -	- -	- -
INFO41	0.66	0.21	0.87	- -	- -	- -
INFO42	0.67	0.21	0.88	- -	- -	- -
INFO43	0.59	0.19	0.77	- -	- -	- -
CI73	0.46	0.08	0.24	0.69	- -	- -
CI74	0.59	0.10	0.31	0.89	- -	- -
CI75	0.58	0.10	0.30	0.87	- -	- -
HR52	0.51	-0.04	0.35	0.41	0.83	- -
HR53	0.50	-0.04	0.34	0.40	0.81	- -
HR54	0.56	-0.05	0.38	0.45	0.91	- -
HR55	0.49	-0.04	0.33	0.40	0.80	- -
PM61	0.57	0.37	0.29	0.31	-0.03	0.87
PM62	0.57	0.38	0.29	0.31	-0.03	0.88
PM63	0.58	0.38	0.30	0.32	-0.03	0.90
PM64	0.60	0.39	0.31	0.33	-0.03	0.92
PM65	0.59	0.39	0.30	0.32	-0.03	0.90
PM66	0.54	0.35	0.28	0.29	-0.02	0.83
BR85	0.42	0.43	0.21	0.34	-0.03	0.13
BR86	0.46	0.46	0.23	0.37	-0.03	0.14
BR87	0.44	0.45	0.22	0.36	-0.03	0.14
BR88	0.40	0.40	0.20	0.32	-0.03	0.12

Standardized Total Effects of ETA on Y

	BusResul

SP22	- -
SP23	- -
SP24	- -
CSTMRKT3	- -
V8_A	- -
V9_A	- -
V10_A	- -
V11_A	- -
INFO41	- -
INFO42	- -
INFO43	- -
CI73	- -
CI74	- -
CI75	- -
HR52	- -
HR53	- -
HR54	- -
HR55	- -
PM61	- -
PM62	- -
PM63	- -
PM64	- -
PM65	- -

PM66	- -
BR85	0.83
BR86	0.89
BR87	0.87
BR88	0.78

Completely Standardized Total Effects of ETA on Y

	St_plan	Market	Info	ContImpr	Hr	ProMang
SP22	0.79	- -	- -	- -	- -	- -
SP23	0.80	- -	- -	- -	- -	- -
SP24	0.80	- -	- -	- -	- -	- -
CSTMRKT3	0.35	0.87	- -	- -	- -	- -
V8_A	0.34	0.85	- -	- -	- -	- -
V9_A	0.33	0.82	- -	- -	- -	- -
V10_A	0.35	0.88	- -	- -	- -	- -
V11_A	0.35	0.87	- -	- -	- -	- -
INFO41	0.66	0.21	0.87	- -	- -	- -
INFO42	0.67	0.21	0.88	- -	- -	- -
INFO43	0.59	0.19	0.77	- -	- -	- -
CI73	0.46	0.08	0.24	0.69	- -	- -
CI74	0.59	0.10	0.31	0.89	- -	- -
CI75	0.58	0.10	0.30	0.87	- -	- -
HR52	0.51	-0.04	0.35	0.41	0.83	- -
HR53	0.50	-0.04	0.34	0.40	0.81	- -
HR54	0.56	-0.05	0.38	0.45	0.91	- -
HR55	0.49	-0.04	0.33	0.40	0.80	- -
PM61	0.57	0.37	0.29	0.31	-0.03	0.87
PM62	0.57	0.38	0.29	0.31	-0.03	0.88
PM63	0.58	0.38	0.30	0.32	-0.03	0.90
PM64	0.60	0.39	0.31	0.33	-0.03	0.92
PM65	0.59	0.39	0.30	0.32	-0.03	0.90
PM66	0.54	0.35	0.28	0.29	-0.02	0.83
BR85	0.42	0.43	0.21	0.34	-0.03	0.13
BR86	0.46	0.46	0.23	0.37	-0.03	0.14
BR87	0.44	0.45	0.22	0.36	-0.03	0.14
BR88	0.40	0.40	0.20	0.32	-0.03	0.12

Completely Standardized Total Effects of ETA on Y

	BusResul
SP22	- -
SP23	- -
SP24	- -
CSTMRKT3	- -
V8_A	- -
V9_A	- -
V10_A	- -
V11_A	- -
INFO41	- -
INFO42	- -
INFO43	- -
CI73	- -

CI74	- -
CI75	- -
HR52	- -
HR53	- -
HR54	- -
HR55	- -
PM61	- -
PM62	- -
PM63	- -
PM64	- -
PM65	- -
PM66	- -
BR85	0.83
BR86	0.89
BR87	0.87
BR88	0.78

Standardized Indirect Effects of ETA on Y

	St_plan	Market	Info	ContImpr	Hr	ProMang
SP22	- -	- -	- -	- -	- -	- -
SP23	- -	- -	- -	- -	- -	- -
SP24	- -	- -	- -	- -	- -	- -
CSTMRKT3	0.35	- -	- -	- -	- -	- -
V8_A	0.34	- -	- -	- -	- -	- -
V9_A	0.33	- -	- -	- -	- -	- -
V10_A	0.35	- -	- -	- -	- -	- -
V11_A	0.35	- -	- -	- -	- -	- -
INFO41	0.66	0.21	- -	- -	- -	- -
INFO42	0.67	0.21	- -	- -	- -	- -
INFO43	0.59	0.19	- -	- -	- -	- -
CI73	0.46	0.08	0.24	- -	- -	- -
CI74	0.59	0.10	0.31	- -	- -	- -
CI75	0.58	0.10	0.30	- -	- -	- -
HR52	0.51	-0.04	0.35	0.41	- -	- -
HR53	0.50	-0.04	0.34	0.40	- -	- -
HR54	0.56	-0.05	0.38	0.45	- -	- -
HR55	0.49	-0.04	0.33	0.40	- -	- -
PM61	0.57	0.37	0.29	0.31	-0.03	- -
PM62	0.57	0.38	0.29	0.31	-0.03	- -
PM63	0.58	0.38	0.30	0.32	-0.03	- -
PM64	0.60	0.39	0.31	0.33	-0.03	- -
PM65	0.59	0.39	0.30	0.32	-0.03	- -
PM66	0.54	0.35	0.28	0.29	-0.02	- -
BR85	0.42	0.43	0.21	0.34	-0.03	0.13
BR86	0.46	0.46	0.23	0.37	-0.03	0.14
BR87	0.44	0.45	0.22	0.36	-0.03	0.14
BR88	0.40	0.40	0.20	0.32	-0.03	0.12

Standardized Indirect Effects of ETA on Y

	BusResul
SP22	- -

SP23	- -
SP24	- -
CSTMRKT3	- -
V8_A	- -
V9_A	- -
V10_A	- -
V11_A	- -
INFO41	- -
INFO42	- -
INFO43	- -
CI73	- -
CI74	- -
CI75	- -
HR52	- -
HR53	- -
HR54	- -
HR55	- -
PM61	- -
PM62	- -
PM63	- -
PM64	- -
PM65	- -
PM66	- -
BR85	- -
BR86	- -
BR87	- -
BR88	- -

Completely Standardized Indirect Effects of ETA on Y

	St_plan	Market	Info	ContImpr	Hr	ProMang
SP22	- -	- -	- -	- -	- -	- -
SP23	- -	- -	- -	- -	- -	- -
SP24	- -	- -	- -	- -	- -	- -
CSTMRKT3	0.35	- -	- -	- -	- -	- -
V8_A	0.34	- -	- -	- -	- -	- -
V9_A	0.33	- -	- -	- -	- -	- -
V10_A	0.35	- -	- -	- -	- -	- -
V11_A	0.35	- -	- -	- -	- -	- -
INFO41	0.66	0.21	- -	- -	- -	- -
INFO42	0.67	0.21	- -	- -	- -	- -
INFO43	0.59	0.19	- -	- -	- -	- -
CI73	0.46	0.08	0.24	- -	- -	- -
CI74	0.59	0.10	0.31	- -	- -	- -
CI75	0.58	0.10	0.30	- -	- -	- -
HR52	0.51	-0.04	0.35	0.41	- -	- -
HR53	0.50	-0.04	0.34	0.40	- -	- -
HR54	0.56	-0.05	0.38	0.45	- -	- -
HR55	0.49	-0.04	0.33	0.40	- -	- -
PM61	0.57	0.37	0.29	0.31	-0.03	- -
PM62	0.57	0.38	0.29	0.31	-0.03	- -
PM63	0.58	0.38	0.30	0.32	-0.03	- -
PM64	0.60	0.39	0.31	0.33	-0.03	- -
PM65	0.59	0.39	0.30	0.32	-0.03	- -

PM66	0.54	0.35	0.28	0.29	-0.02	- -
BR85	0.42	0.43	0.21	0.34	-0.03	0.13
BR86	0.46	0.46	0.23	0.37	-0.03	0.14
BR87	0.44	0.45	0.22	0.36	-0.03	0.14
BR88	0.40	0.40	0.20	0.32	-0.03	0.12

Completely Standardized Indirect Effects of ETA on Y

	BusResul
SP22	- -
SP23	- -
SP24	- -
CSTMRKT3	- -
V8_A	- -
V9_A	- -
V10_A	- -
V11_A	- -
INFO41	- -
INFO42	- -
INFO43	- -
CI73	- -
CI74	- -
CI75	- -
HR52	- -
HR53	- -
HR54	- -
HR55	- -
PM61	- -
PM62	- -
PM63	- -
PM64	- -
PM65	- -
PM66	- -
BR85	- -
BR86	- -
BR87	- -
BR88	- -

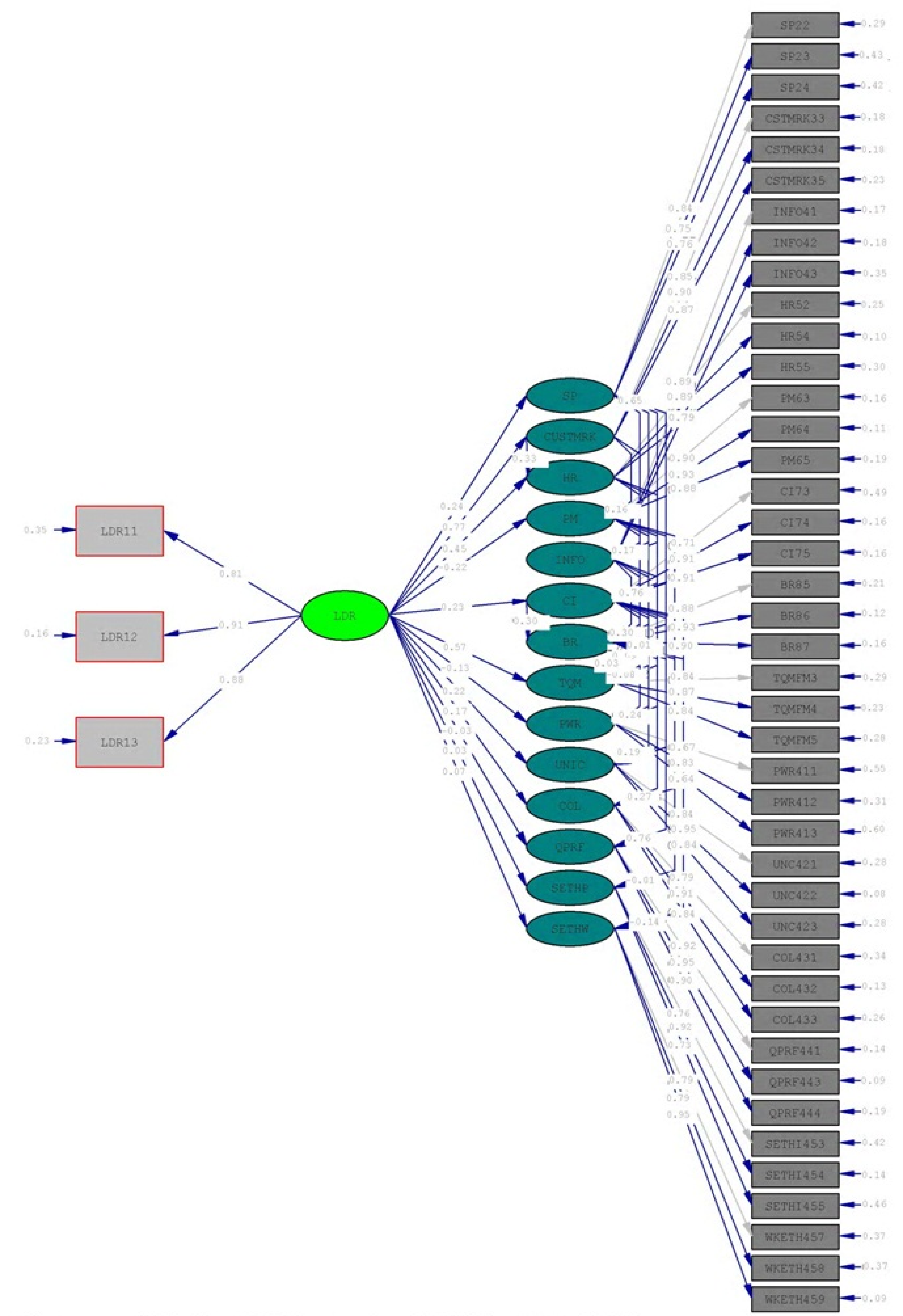
Standardized Total Effects of KSI on Y

	leadersh
SP22	0.62
SP23	0.63
SP24	0.63
CSTMRKT3	0.65
V8_A	0.63
V9_A	0.61
V10_A	0.65
V11_A	0.65
INFO41	0.57
INFO42	0.57
INFO43	0.50
CI73	0.49

```
    CI74       0.63
    CI75       0.61
    HR52       0.57
    HR53       0.56
    HR54       0.63
    HR55       0.55
    PM61       0.59
    PM62       0.59
    PM63       0.61
    PM64       0.62
    PM65       0.61
    PM66       0.56
    BR85       0.57
    BR86       0.62
    BR87       0.60
    BR88       0.54

     Completely Standardized Total Effects of KSI on Y

         leadersh
         --------
    SP22       0.62
    SP23       0.63
    SP24       0.63
CSTMRKT3       0.65
    V8_A       0.63
    V9_A       0.61
   V10_A       0.65
   V11_A       0.65
  INFO41       0.57
  INFO42       0.57
  INFO43       0.50
    CI73       0.49
    CI74       0.63
    CI75       0.61
    HR52       0.57
    HR53       0.56
    HR54       0.63
    HR55       0.55
    PM61       0.59
    PM62       0.59
    PM63       0.61
    PM64       0.62
    PM65       0.61
    PM66       0.56
    BR85       0.57
    BR86       0.62
    BR87       0.60
    BR88       0.54

                         Time used:    0.359 Seconds
```

Appendix-6

SEM-PhaseII-Model-Full Output



LDR11
LDR12
LDR13
LDR
SP
CUSTMRK
HR
PM
INFO
CI
BR
TQM
PWR
UNIC
COL
QPRF
SETHP
SETHW
SP22
SP23
SP24
CSTMRK33
CSTMRK34
CSTMRK35
INFO41
INFO42
INFO43
HR52
HR54
HR55
PM63
PM64
PM65
CI73
CI74
CI75
BR85
BR86
BR87
TQMFM3
TQMFM4
TQMFM5
PWR411
PWR412
PWR413
UNC421
UNC422
UNC423
COL431
COL432
COL433
QPRF441
QPRF443
QPRF444
SETHI453
SETHI454
SETHI455
WKETH457
WKETH458
WKETH459

DATE: 6/21/2012
TIME: 15:08

L I S R E L 8.54

BY

Karl G. J÷reskog & Dag S÷rbom

The following lines were read from file H:\Reemmodel5\reemmodel5.LPJ:

```
TI
!DA NI=45 NO=937 NG=1 MA=CM
SY='H:\Reemmodel5\reemmodel5.DSF' NG=1
SE
4 5 6 7 8 9 13 14 15 16 17 18 10 11 12 19 20 21
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
40 41 42 43 44 45 1 2 3 /
MO NX=3 NY=42 NK=1 NE=14 LY=FU,FI LX=FU,FI BE=FU,FI GA=FU,FI PH=SY,FR PS=DI,FR TE=DI,FR TD=DI,FR
LE
SP CUSTMRK HR PM INFO CI BR TQM PWR
UNIC COL QPRF SETHP SETHW
LK
LDR
FI PH(1,1)
FR LY(2,1) LY(3,1) LY(5,2) LY(6,2) LY(8,3) LY(9,3) LY(11,4) LY(12,4) LY(14,5)
FR LY(15,5) LY(17,6) LY(18,6) LY(20,7) LY(21,7) LY(23,8) LY(24,8) LY(26,9) LY(27,9)
FR LY(29,10) LY(30,10) LY(32,11) LY(33,11) LY(35,12) LY(36,12) LY(38,13) LY(39,13) LY(41,14)
FR LY(42,14) LX(1,1) LX(2,1) LX(3,1) BE(1,5) BE(1,6) BE(3,2) BE(4,1) BE(4,2)
FR BE(5,1) BE(5,2) BE(6,2) BE(6,3) BE(6,4) BE(7,1) BE(7,3) BE(7,4) BE(7,5)
FR BE(7,6) BE(7,8) BE(7,9) BE(7,10) BE(7,11) BE(7,12) BE(7,13) BE(7,14) BE(8,3)
FR BE(8,4) BE(8,5) BE(8,7) BE(9,4) BE(9,5) BE(9,6) BE(10,4) BE(10,5) BE(10,6)
FR BE(10,9) BE(11,4) BE(11,6) BE(11,9) BE(11,10) BE(12,6) BE(12,9) BE(12,10) BE(13,4)
FR BE(13,6) BE(13,9) BE(13,10) BE(13,11) BE(14,4) BE(14,6) BE(14,9) BE(14,10) BE(14,11)
FR GA(1,1) GA(2,1) GA(3,1) GA(4,1) GA(6,1) GA(8,1) GA(9,1) GA(10,1) GA(11,1)
FR GA(12,1) GA(13,1) GA(14,1)
VA 0.84 LY(1,1)
VA 0.85 LY(4,2)
VA 0.86 LY(7,3)
VA 0.90 LY(10,4)
VA 0.89 LY(13,5)
```

VA 0.71 LY(16,6)
VA 0.88 LY(19,7)
VA 0.84 LY(22,8)
VA 0.67 LY(25,9)
VA 0.84 LY(28,10)
VA 0.79 LY(31,11)
VA 0.92 LY(34,12)
VA 0.76 LY(37,13)
VA 0.79 LY(40,14)
VA 1.00 PH(1,1)
PD
OU PC EF SS

TI

Number of Input Variables 45
Number of Y - Variables 42
Number of X - Variables 3
Number of ETA - Variables 14
Number of KSI - Variables 1
Number of Observations 937

TI

Covariance Matrix

	SP22	SP23	SP24	CSTMRK33	CSTMRK34	CSTMRK35
SP22	1.00					
SP23	0.65	1.00				
SP24	0.63	0.79	1.00			
CSTMRK33	0.65	0.55	0.55	1.00		
CSTMRK34	0.73	0.54	0.58	0.78	1.00	
CSTMRK35	0.69	0.54	0.58	0.74	0.79	1.00
HR52	0.61	0.57	0.57	0.52	0.53	0.51
HR54	0.66	0.59	0.58	0.57	0.55	0.57
HR55	0.59	0.53	0.51	0.50	0.53	0.52
PM63	0.70	0.59	0.59	0.67	0.67	0.68
PM64	0.75	0.61	0.63	0.68	0.70	0.69
PM65	0.73	0.60	0.61	0.63	0.68	0.68
INFO41	0.71	0.59	0.61	0.64	0.70	0.67
INFO42	0.67	0.61	0.59	0.58	0.61	0.59
INFO43	0.59	0.62	0.63	0.57	0.57	0.55
CI73	0.51	0.49	0.56	0.49	0.49	0.50
CI74	0.70	0.59	0.59	0.58	0.60	0.61
CI75	0.69	0.61	0.63	0.63	0.65	0.66
BR85	0.67	0.60	0.61	0.61	0.66	0.61
BR86	0.68	0.59	0.59	0.68	0.67	0.65
BR87	0.65	0.57	0.58	0.61	0.67	0.63
TQMFM3	0.48	0.36	0.34	0.34	0.39	0.36
TQMFM4	0.44	0.36	0.34	0.32	0.38	0.34
TQMFM5	0.43	0.33	0.33	0.35	0.39	0.37
PWR411	0.06	0.15	0.10	0.10	0.05	0.07
PWR412	0.01	0.12	0.12	0.03	0.05	0.06
PWR413	0.04	0.12	0.15	0.12	0.09	0.10

UNC421	0.28	0.20	0.25	0.18	0.28	0.26
UNC422	0.35	0.18	0.28	0.23	0.36	0.30
UNC423	0.40	0.26	0.32	0.31	0.36	0.35
COL431	0.31	0.19	0.26	0.24	0.27	0.26
COL432	0.32	0.19	0.26	0.27	0.28	0.28
COL433	0.31	0.20	0.25	0.24	0.29	0.27
QPRF441	0.54	0.52	0.50	0.48	0.49	0.48
QPRF443	0.53	0.50	0.52	0.44	0.48	0.46
QPRF444	0.61	0.54	0.57	0.53	0.56	0.55
SETHI453	0.05	0.03	0.03	0.04	0.07	0.05
SETHI454	0.02	0.00	-0.01	0.02	-0.01	0.02
SETHI455	0.06	0.03	0.03	0.06	0.03	0.05
WKETH457	0.02	-0.01	-0.02	0.04	0.02	0.00
WKETH458	0.03	-0.03	-0.03	0.03	0.00	-0.02
WKETH459	0.00	-0.03	-0.03	-0.01	-0.01	-0.03
LDR11	0.57	0.52	0.53	0.49	0.52	0.52
LDR12	0.66	0.55	0.58	0.54	0.62	0.62
LDR13	0.70	0.57	0.59	0.61	0.66	0.62

Covariance Matrix

	HR52	HR54	HR55	PM63	PM64	PM65
HR52	1.00					
HR54	0.82	1.00				
HR55	0.71	0.80	1.00			
PM63	0.63	0.69	0.61	1.00		
PM64	0.66	0.71	0.65	0.88	1.00	
PM65	0.65	0.70	0.64	0.82	0.85	1.00
INFO41	0.62	0.65	0.61	0.75	0.76	0.75
INFO42	0.64	0.67	0.61	0.69	0.71	0.70
INFO43	0.61	0.61	0.58	0.65	0.67	0.66
CI73	0.48	0.54	0.48	0.57	0.59	0.55
CI74	0.70	0.75	0.69	0.70	0.72	0.73
CI75	0.64	0.71	0.63	0.73	0.76	0.72
BR85	0.67	0.64	0.60	0.70	0.73	0.70
BR86	0.61	0.63	0.57	0.74	0.74	0.70
BR87	0.59	0.62	0.56	0.72	0.73	0.70
TQMFM3	0.38	0.43	0.49	0.40	0.43	0.43
TQMFM4	0.38	0.37	0.35	0.38	0.41	0.37
TQMFM5	0.32	0.36	0.37	0.41	0.43	0.43
PWR411	0.08	0.09	0.03	0.07	0.08	0.05
PWR412	0.05	0.06	0.04	0.04	0.04	0.04
PWR413	0.04	0.04	0.03	0.08	0.10	0.06
UNC421	0.24	0.22	0.24	0.30	0.31	0.31
UNC422	0.28	0.25	0.27	0.33	0.36	0.35
UNC423	0.32	0.33	0.36	0.38	0.40	0.42
COL431	0.22	0.22	0.25	0.29	0.28	0.27
COL432	0.24	0.28	0.28	0.27	0.30	0.25
COL433	0.23	0.24	0.25	0.23	0.25	0.24
QPRF441	0.73	0.72	0.61	0.57	0.60	0.61
QPRF443	0.73	0.70	0.59	0.57	0.59	0.62
QPRF444	0.69	0.72	0.65	0.64	0.66	0.65
SETHI453	0.04	0.02	0.06	0.06	0.04	0.03
SETHI454	0.06	0.04	0.03	0.06	0.03	0.02

SETHI455	0.08	0.08	0.07	0.10	0.06	0.05
WKETH457	0.00	0.02	0.02	0.06	0.04	0.00
WKETH458	-0.02	0.01	0.02	0.08	0.06	0.00
WKETH459	0.00	-0.01	0.01	0.06	0.03	-0.01
LDR11	0.49	0.52	0.49	0.54	0.54	0.53
LDR12	0.55	0.61	0.57	0.67	0.66	0.65
LDR13	0.54	0.58	0.54	0.64	0.64	0.61

Covariance Matrix

	INFO41	INFO42	INFO43	CI73	CI74	CI75
INFO41	1.00					
INFO42	0.83	1.00				
INFO43	0.69	0.76	1.00			
CI73	0.54	0.50	0.60	1.00		
CI74	0.68	0.66	0.64	0.65	1.00	
CI75	0.71	0.66	0.66	0.68	0.86	1.00
BR85	0.69	0.67	0.63	0.50	0.68	0.70
BR86	0.68	0.62	0.60	0.56	0.68	0.71
BR87	0.67	0.62	0.61	0.58	0.67	0.71
TQMFM3	0.44	0.40	0.33	0.30	0.42	0.42
TQMFM4	0.37	0.35	0.28	0.31	0.39	0.39
TQMFM5	0.38	0.36	0.32	0.37	0.40	0.43
PWR411	0.08	0.11	0.11	0.05	0.09	0.14
PWR412	0.03	0.04	0.05	0.14	0.04	0.09
PWR413	0.11	0.09	0.14	0.10	0.08	0.11
UNC421	0.28	0.22	0.23	0.28	0.32	0.29
UNC422	0.31	0.27	0.24	0.33	0.36	0.34
UNC423	0.38	0.33	0.33	0.35	0.44	0.40
COL431	0.27	0.26	0.26	0.37	0.32	0.30
COL432	0.26	0.26	0.25	0.38	0.34	0.33
COL433	0.26	0.25	0.24	0.33	0.30	0.30
QPRF441	0.59	0.59	0.53	0.45	0.67	0.63
QPRF443	0.59	0.56	0.53	0.49	0.64	0.60
QPRF444	0.63	0.61	0.59	0.54	0.71	0.68
SETHI453	0.10	0.02	0.03	0.07	0.06	0.04
SETHI454	0.04	0.03	0.00	0.00	0.04	0.02
SETHI455	0.11	0.09	0.01	0.02	0.07	0.05
WKETH457	0.08	0.02	-0.03	0.05	0.03	0.02
WKETH458	0.08	0.03	-0.01	0.01	0.01	0.04
WKETH459	0.06	0.00	-0.03	0.02	0.00	0.02
LDR11	0.52	0.50	0.45	0.45	0.57	0.58
LDR12	0.63	0.59	0.54	0.49	0.65	0.67
LDR13	0.62	0.59	0.54	0.48	0.61	0.62

Covariance Matrix

	BR85	BR86	BR87	TQMFM3	TQMFM4	TQMFM5
BR85	1.00					
BR86	0.83	1.00				
BR87	0.80	0.87	1.00			
TQMFM3	0.45	0.42	0.39	1.00		
TQMFM4	0.41	0.37	0.38	0.74	1.00	

TQMFM5	0.40	0.39	0.36	0.70	0.75	1.00
PWR411	0.05	0.06	0.07	0.02	0.03	0.03
PWR412	0.01	0.03	0.05	-0.08	0.01	-0.03
PWR413	0.06	0.09	0.09	-0.04	0.00	0.01
UNC421	0.29	0.30	0.28	0.31	0.27	0.29
UNC422	0.33	0.33	0.34	0.31	0.31	0.29
UNC423	0.41	0.40	0.38	0.37	0.36	0.33
COL431	0.22	0.28	0.25	0.27	0.23	0.21
COL432	0.24	0.32	0.30	0.25	0.20	0.20
COL433	0.21	0.32	0.31	0.24	0.24	0.19
QPRF441	0.61	0.59	0.56	0.34	0.32	0.26
QPRF443	0.59	0.58	0.57	0.34	0.34	0.28
QPRF444	0.66	0.63	0.61	0.39	0.38	0.34
SETHI453	0.07	0.05	0.06	0.03	0.06	0.09
SETHI454	0.07	0.06	0.01	0.05	0.08	0.08
SETHI455	0.03	0.06	0.03	0.04	0.06	0.07
WKETH457	0.02	0.08	0.03	0.10	0.12	0.11
WKETH458	0.03	0.04	-0.01	0.09	0.10	0.14
WKETH459	0.00	0.04	-0.02	0.06	0.05	0.07
LDR11	0.51	0.50	0.48	0.44	0.42	0.50
LDR12	0.62	0.62	0.61	0.50	0.47	0.48
LDR13	0.60	0.61	0.58	0.48	0.46	0.48

Covariance Matrix

	PWR411	PWR412	PWR413	UNC421	UNC422	UNC423
	--------	--------	--------	--------	--------	--------
PWR411	1.00					
PWR412	0.56	1.00				
PWR413	0.41	0.53	1.00			
UNC421	-0.01	0.00	0.02	1.00		
UNC422	-0.06	-0.07	-0.01	0.82	1.00	
UNC423	-0.03	-0.12	-0.08	0.69	0.82	1.00
COL431	-0.03	-0.06	0.00	0.56	0.60	0.59
COL432	-0.02	-0.04	-0.03	0.50	0.54	0.59
COL433	-0.02	-0.02	0.00	0.44	0.48	0.52
QPRF441	0.15	0.10	0.10	0.28	0.31	0.37
QPRF443	0.11	0.11	0.11	0.31	0.33	0.35
QPRF444	0.11	0.08	0.13	0.32	0.35	0.38
SETHI453	0.04	0.06	0.07	0.04	0.03	0.06
SETHI454	0.02	0.02	0.06	0.04	0.01	0.00
SETHI455	0.00	-0.03	0.04	0.06	0.06	0.02
WKETH457	0.01	0.02	0.00	0.01	0.04	0.06
WKETH458	0.04	0.02	0.02	0.04	0.05	0.09
WKETH459	0.02	0.02	-0.02	0.04	0.05	0.07
LDR11	0.08	0.04	0.01	0.28	0.31	0.33
LDR12	0.05	0.03	0.01	0.31	0.34	0.38
LDR13	0.09	0.01	-0.01	0.27	0.33	0.39

Covariance Matrix

	COL431	COL432	COL433	QPRF441	QPRF443	QPRF444
	--------	--------	--------	--------	--------	--------
COL431	1.00					
COL432	0.75	1.00				

COL433	0.68	0.81	1.00			
QPRF441	0.23	0.30	0.25	1.00		
QPRF443	0.27	0.30	0.25	0.89	1.00	
QPRF444	0.29	0.32	0.26	0.81	0.86	1.00
SETHI453	0.01	0.02	0.02	0.07	0.04	0.06
SETHI454	-0.05	-0.02	0.00	0.07	0.06	0.05
SETHI455	0.04	0.04	0.02	0.05	0.03	0.04
WKETH457	0.05	0.07	0.03	0.01	-0.01	0.00
WKETH458	0.08	0.08	0.02	0.03	0.00	0.01
WKETH459	0.04	0.04	-0.01	0.00	-0.01	0.00
LDR11	0.28	0.32	0.31	0.47	0.45	0.49
LDR12	0.34	0.33	0.31	0.49	0.48	0.56
LDR13	0.30	0.32	0.31	0.50	0.47	0.55

Covariance Matrix

	SETHI453	SETHI454	SETHI455	WKETH457	WKETH458	WKETH459
	--------	--------	--------	--------	--------	--------
SETHI453	1.00					
SETHI454	0.71	1.00				
SETHI455	0.56	0.68	1.00			
WKETH457	0.33	0.34	0.25	1.00		
WKETH458	0.33	0.26	0.23	0.63	1.00	
WKETH459	0.25	0.25	0.19	0.76	0.76	1.00
LDR11	0.01	0.04	0.09	0.07	0.05	0.01
LDR12	0.03	0.01	0.10	0.08	0.06	0.04
LDR13	0.06	0.01	0.10	0.04	0.06	0.03

Covariance Matrix

	LDR11	LDR12	LDR13
	--------	--------	--------
LDR11	1.00		
LDR12	0.76	1.00	
LDR13	0.68	0.80	1.00

TI

Parameter Specifications

LAMBDA-Y

	SP	CUSTMRK	HR	PM	INFO	CI
	--------	--------	--------	--------	--------	--------
SP22	0	0	0	0	0	0
SP23	1	0	0	0	0	0
SP24	2	0	0	0	0	0
CSTMRK33	0	0	0	0	0	0
CSTMRK34	0	3	0	0	0	0
CSTMRK35	0	4	0	0	0	0
HR52	0	0	0	0	0	0
HR54	0	0	5	0	0	0
HR55	0	0	6	0	0	0
PM63	0	0	0	0	0	0

PM64	0	0	0	7	0	0
PM65	0	0	0	8	0	0
INFO41	0	0	0	0	0	0
INFO42	0	0	0	0	9	0
INFO43	0	0	0	0	10	0
CI73	0	0	0	0	0	0
CI74	0	0	0	0	0	11
CI75	0	0	0	0	0	12
BR85	0	0	0	0	0	0
BR86	0	0	0	0	0	0
BR87	0	0	0	0	0	0
TQMFM3	0	0	0	0	0	0
TQMFM4	0	0	0	0	0	0
TQMFM5	0	0	0	0	0	0
PWR411	0	0	0	0	0	0
PWR412	0	0	0	0	0	0
PWR413	0	0	0	0	0	0
UNC421	0	0	0	0	0	0
UNC422	0	0	0	0	0	0
UNC423	0	0	0	0	0	0
COL431	0	0	0	0	0	0
COL432	0	0	0	0	0	0
COL433	0	0	0	0	0	0
QPRF441	0	0	0	0	0	0
QPRF443	0	0	0	0	0	0
QPRF444	0	0	0	0	0	0
SETHI453	0	0	0	0	0	0
SETHI454	0	0	0	0	0	0
SETHI455	0	0	0	0	0	0
WKETH457	0	0	0	0	0	0
WKETH458	0	0	0	0	0	0
WKETH459	0	0	0	0	0	0

LAMBDA-Y

	BR	TQM	PWR	UNIC	COL	QPRF
SP22	0	0	0	0	0	0
SP23	0	0	0	0	0	0
SP24	0	0	0	0	0	0
CSTMRK33	0	0	0	0	0	0
CSTMRK34	0	0	0	0	0	0
CSTMRK35	0	0	0	0	0	0
HR52	0	0	0	0	0	0
HR54	0	0	0	0	0	0
HR55	0	0	0	0	0	0
PM63	0	0	0	0	0	0
PM64	0	0	0	0	0	0
PM65	0	0	0	0	0	0
INFO41	0	0	0	0	0	0
INFO42	0	0	0	0	0	0
INFO43	0	0	0	0	0	0
CI73	0	0	0	0	0	0
CI74	0	0	0	0	0	0
CI75	0	0	0	0	0	0

BR85	0	0	0	0	0	0
BR86	13	0	0	0	0	0
BR87	14	0	0	0	0	0
TQMFM3	0	0	0	0	0	0
TQMFM4	0	15	0	0	0	0
TQMFM5	0	16	0	0	0	0
PWR411	0	0	0	0	0	0
PWR412	0	0	17	0	0	0
PWR413	0	0	18	0	0	0
UNC421	0	0	0	0	0	0
UNC422	0	0	0	19	0	0
UNC423	0	0	0	20	0	0
COL431	0	0	0	0	0	0
COL432	0	0	0	0	21	0
COL433	0	0	0	0	22	0
QPRF441	0	0	0	0	0	0
QPRF443	0	0	0	0	0	23
QPRF444	0	0	0	0	0	24
SETHI453	0	0	0	0	0	0
SETHI454	0	0	0	0	0	0
SETHI455	0	0	0	0	0	0
WKETH457	0	0	0	0	0	0
WKETH458	0	0	0	0	0	0
WKETH459	0	0	0	0	0	0

LAMBDA-Y

	SETHP	SETHW
SP22	0	0
SP23	0	0
SP24	0	0
CSTMRK33	0	0
CSTMRK34	0	0
CSTMRK35	0	0
HR52	0	0
HR54	0	0
HR55	0	0
PM63	0	0
PM64	0	0
PM65	0	0
INFO41	0	0
INFO42	0	0
INFO43	0	0
CI73	0	0
CI74	0	0
CI75	0	0
BR85	0	0
BR86	0	0
BR87	0	0
TQMFM3	0	0
TQMFM4	0	0
TQMFM5	0	0
PWR411	0	0
PWR412	0	0

PWR413	0	0
UNC421	0	0
UNC422	0	0
UNC423	0	0
COL431	0	0
COL432	0	0
COL433	0	0
QPRF441	0	0
QPRF443	0	0
QPRF444	0	0
SETHI453	0	0
SETHI454	25	0
SETHI455	26	0
WKETH457	0	0
WKETH458	0	27
WKETH459	0	28

LAMBDA-X

	LDR
LDR11	29
LDR12	30
LDR13	31

BETA

	SP	CUSTMRK	HR	PM	INFO	CI
SP	0	0	0	0	32	33
CUSTMRK	0	0	0	0	0	0
HR	0	34	0	0	0	0
PM	35	36	0	0	0	0
INFO	37	38	0	0	0	0
CI	0	39	40	41	0	0
BR	42	0	43	44	45	46
TQM	0	0	54	55	56	0
PWR	0	0	0	58	59	60
UNIC	0	0	0	61	62	63
COL	0	0	0	65	0	66
QPRF	0	0	0	0	0	69
SETHP	0	0	0	72	0	73
SETHW	0	0	0	77	0	78

BETA

	BR	TQM	PWR	UNIC	COL	QPRF
SP	0	0	0	0	0	0
CUSTMRK	0	0	0	0	0	0
HR	0	0	0	0	0	0
PM	0	0	0	0	0	0
INFO	0	0	0	0	0	0
CI	0	0	0	0	0	0
BR	0	47	48	49	50	51

TQM	57	0	0	0	0	0
PWR	0	0	0	0	0	0
UNIC	0	0	64	0	0	0
COL	0	0	67	68	0	0
QPRF	0	0	70	71	0	0
SETHP	0	0	74	75	76	0
SETHW	0	0	79	80	81	0

BETA

	SETHP	SETHW
SP	0	0
CUSTMRK	0	0
HR	0	0
PM	0	0
INFO	0	0
CI	0	0
BR	52	53
TQM	0	0
PWR	0	0
UNIC	0	0
COL	0	0
QPRF	0	0
SETHP	0	0
SETHW	0	0

GAMMA

	LDR
SP	82
CUSTMRK	83
HR	84
PM	85
INFO	0
CI	86
BR	0
TQM	87
PWR	88
UNIC	89
COL	90
QPRF	91
SETHP	92
SETHW	93

PSI

SP	CUSTMRK	HR	PM	INFO	CI
94	95	96	97	98	99

PSI

BR	TQM	PWR	UNIC	COL	QPRF

```
    --------  --------  --------  --------  --------  --------
         100       101       102       103       104       105

 PSI

       SETHP     SETHW
    --------  --------
         106       107

 THETA-EPS

        SP22      SP23      SP24  CSTMRK33  CSTMRK34  CSTMRK35
    --------  --------  --------  --------  --------  --------
         108       109       110       111       112       113

 THETA-EPS

        HR52      HR54      HR55      PM63      PM64      PM65
    --------  --------  --------  --------  --------  --------
         114       115       116       117       118       119

 THETA-EPS

      INFO41    INFO42    INFO43      CI73      CI74      CI75
    --------  --------  --------  --------  --------  --------
         120       121       122       123       124       125

 THETA-EPS

        BR85      BR86      BR87    TQMFM3    TQMFM4    TQMFM5
    --------  --------  --------  --------  --------  --------
         126       127       128       129       130       131

 THETA-EPS

      PWR411    PWR412    PWR413    UNC421    UNC422    UNC423
    --------  --------  --------  --------  --------  --------
         132       133       134       135       136       137

 THETA-EPS

      COL431    COL432    COL433   QPRF441   QPRF443   QPRF444
    --------  --------  --------  --------  --------  --------
         138       139       140       141       142       143

 THETA-EPS

    SETHI453  SETHI454  SETHI455  WKETH457  WKETH458  WKETH459
    --------  --------  --------  --------  --------  --------
         144       145       146       147       148       149

 THETA-DELTA

       LDR11     LDR12     LDR13
    --------  --------  --------
```

```
         150      151      152


TI

Number of Iterations = 35

LISREL Estimates (Maximum Likelihood)

    LAMBDA-Y

               SP  CUSTMRK       HR       PM     INFO       CI
         -------- -------- -------- -------- -------- --------
     SP22     0.84       - -      - -      - -      - -      - -

     SP23     0.75       - -      - -      - -      - -      - -
            (0.03)
             27.48

     SP24     0.76       - -      - -      - -      - -      - -
            (0.03)
             27.77

CSTMRK33       - -     0.85       - -      - -      - -      - -

CSTMRK34       - -     0.90       - -      - -      - -      - -
                     (0.02)
                      37.14

CSTMRK35       - -     0.87       - -      - -      - -      - -
                     (0.02)
                      35.04

    HR52       - -      - -     0.86       - -      - -      - -

    HR54       - -      - -     0.94       - -      - -      - -
                              (0.02)
                               42.07

    HR55       - -      - -     0.83       - -      - -      - -
                              (0.02)
                               33.65

    PM63       - -      - -      - -     0.90       - -      - -

    PM64       - -      - -      - -     0.93       - -      - -
                                       (0.02)
                                        52.53

    PM65       - -      - -      - -     0.88       - -      - -
                                       (0.02)
                                        45.41

  INFO41       - -      - -      - -      - -     0.89       - -
```

INFO42	- -	- -	- -	- -	0.89	- -
					(0.02)	
					43.15	
INFO43	- -	- -	- -	- -	0.79	- -
					(0.02)	
					33.70	
CI73	- -	- -	- -	- -	- -	0.71
CI74	- -	- -	- -	- -	- -	0.91
						(0.03)
						27.52
CI75	- -	- -	- -	- -	- -	0.91
						(0.03)
						27.55
BR85	- -	- -	- -	- -	- -	- -
BR86	- -	- -	- -	- -	- -	- -
BR87	- -	- -	- -	- -	- -	- -
TQMFM3	- -	- -	- -	- -	- -	- -
TQMFM4	- -	- -	- -	- -	- -	- -
TQMFM5	- -	- -	- -	- -	- -	- -
PWR411	- -	- -	- -	- -	- -	- -
PWR412	- -	- -	- -	- -	- -	- -
PWR413	- -	- -	- -	- -	- -	- -
UNC421	- -	- -	- -	- -	- -	- -
UNC422	- -	- -	- -	- -	- -	- -
UNC423	- -	- -	- -	- -	- -	- -
COL431	- -	- -	- -	- -	- -	- -
COL432	- -	- -	- -	- -	- -	- -
COL433	- -	- -	- -	- -	- -	- -
QPRF441	- -	- -	- -	- -	- -	- -
QPRF443	- -	- -	- -	- -	- -	- -
QPRF444	- -	- -	- -	- -	- -	- -

SETHI453	- -	- -	- -	- -	- -	- -
SETHI454	- -	- -	- -	- -	- -	- -
SETHI455	- -	- -	- -	- -	- -	- -
WKETH457	- -	- -	- -	- -	- -	- -
WKETH458	- -	- -	- -	- -	- -	- -
WKETH459	- -	- -	- -	- -	- -	- -

LAMBDA-Y

	BR	TQM	PWR	UNIC	COL	QPRF
SP22	- -	- -	- -	- -	- -	- -
SP23	- -	- -	- -	- -	- -	- -
SP24	- -	- -	- -	- -	- -	- -
CSTMRK33	- -	- -	- -	- -	- -	- -
CSTMRK34	- -	- -	- -	- -	- -	- -
CSTMRK35	- -	- -	- -	- -	- -	- -
HR52	- -	- -	- -	- -	- -	- -
HR54	- -	- -	- -	- -	- -	- -
HR55	- -	- -	- -	- -	- -	- -
PM63	- -	- -	- -	- -	- -	- -
PM64	- -	- -	- -	- -	- -	- -
PM65	- -	- -	- -	- -	- -	- -
INFO41	- -	- -	- -	- -	- -	- -
INFO42	- -	- -	- -	- -	- -	- -
INFO43	- -	- -	- -	- -	- -	- -
CI73	- -	- -	- -	- -	- -	- -
CI74	- -	- -	- -	- -	- -	- -
CI75	- -	- -	- -	- -	- -	- -
BR85	0.88	- -	- -	- -	- -	- -

BR86	0.93	- -	- -	- -	- -	- -
	(0.02)					
	45.94					
BR87	0.90	- -	- -	- -	- -	- -
	(0.02)					
	43.16					
TQMFM3	- -	0.84	- -	- -	- -	- -
TQMFM4	- -	0.87	- -	- -	- -	- -
		(0.03)				
		31.84				
TQMFM5	- -	0.84	- -	- -	- -	- -
		(0.03)				
		30.70				
PWR411	- -	- -	0.67	- -	- -	- -
PWR412	- -	- -	0.83	- -	- -	- -
			(0.05)			
			15.38			
PWR413	- -	- -	0.64	- -	- -	- -
			(0.04)			
			15.48			
UNC421	- -	- -	- -	0.84	- -	- -
UNC422	- -	- -	- -	0.95	- -	- -
				(0.02)		
				39.52		
UNC423	- -	- -	- -	0.84	- -	- -
				(0.03)		
				33.60		
COL431	- -	- -	- -	- -	0.79	- -
COL432	- -	- -	- -	- -	0.91	- -
					(0.03)	
					33.44	
COL433	- -	- -	- -	- -	0.84	- -
					(0.03)	
					30.82	
QPRF441	- -	- -	- -	- -	- -	0.92
QPRF443	- -	- -	- -	- -	- -	0.95
						(0.02)
						54.53
QPRF444	- -	- -	- -	- -	- -	0.90

(0.02)
46.25

SETHI453	- -	- -	- -	- -	- -	- -
SETHI454	- -	- -	- -	- -	- -	- -
SETHI455	- -	- -	- -	- -	- -	- -
WKETH457	- -	- -	- -	- -	- -	- -
WKETH458	- -	- -	- -	- -	- -	- -
WKETH459	- -	- -	- -	- -	- -	- -

LAMBDA-Y

	SETHP	SETHW
SP22	- -	- -
SP23	- -	- -
SP24	- -	- -
CSTMRK33	- -	- -
CSTMRK34	- -	- -
CSTMRK35	- -	- -
HR52	- -	- -
HR54	- -	- -
HR55	- -	- -
PM63	- -	- -
PM64	- -	- -
PM65	- -	- -
INFO41	- -	- -
INFO42	- -	- -
INFO43	- -	- -
CI73	- -	- -
CI74	- -	- -
CI75	- -	- -

BR85	- -	- -
BR86	- -	- -
BR87	- -	- -
TQMFM3	- -	- -
TQMFM4	- -	- -
TQMFM5	- -	- -
PWR411	- -	- -
PWR412	- -	- -
PWR413	- -	- -
UNC421	- -	- -
UNC422	- -	- -
UNC423	- -	- -
COL431	- -	- -
COL432	- -	- -
COL433	- -	- -
QPRF441	- -	- -
QPRF443	- -	- -
QPRF444	- -	- -
SETHI453	0.76	- -
SETHI454	0.92 (0.04) 24.15	- -
SETHI455	0.73 (0.03) 22.76	- -
WKETH457	- -	0.79
WKETH458	- -	0.79 (0.03) 27.16
WKETH459	- -	0.95 (0.03)

29.70

LAMBDA-X

	LDR
LDR11	0.81
	(0.03)
	29.22
LDR12	0.91
	(0.03)
	35.74
LDR13	0.88
	(0.03)
	33.30

BETA

	SP	CUSTMRK	HR	PM	INFO	CI
SP	- -	- -	- -	- -	0.14	0.65
					(0.05)	(0.05)
					2.98	13.16
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	0.33	- -	- -	- -	- -
		(0.05)				
		7.38				
PM	1.04	0.16	- -	- -	- -	- -
	(0.06)	(0.04)				
	16.20	3.88				
INFO	0.77	0.17	- -	- -	- -	- -
	(0.04)	(0.04)				
	17.87	4.29				
CI	- -	0.54	0.76	-0.52	- -	- -
		(0.06)	(0.06)	(0.10)		
		8.68	12.72	-5.14		
BR	0.18	- -	-0.15	0.42	0.05	0.30
	(0.18)		(0.05)	(0.07)	(0.07)	(0.10)
	1.03		-3.24	5.95	0.78	3.11
TQM	- -	- -	0.09	0.05	-0.08	- -
			(0.06)	(0.11)	(0.07)	
			1.55	0.48	-1.04	

PWR	- -	- -	- -	-0.09 (0.10) -0.89	0.08 (0.09) 0.85	0.24 (0.09) 2.59
UNIC	- -	- -	- -	0.19 (0.08) 2.29	-0.16 (0.08) -2.02	0.23 (0.08) 2.90
COL	- -	- -	- -	-0.26 (0.07) -4.04	- -	0.27 (0.07) 3.99
QPRF	- -	- -	- -	- -	- -	0.76 (0.05) 15.39
SETHP	- -	- -	- -	0.03 (0.08) 0.32	- -	-0.01 (0.09) -0.07
SETHW	- -	- -	- -	0.07 (0.08) 0.80	- -	-0.14 (0.09) -1.64

BETA

	BR	TQM	PWR	UNIC	COL	QPRF
SP	- -	- -	- -	- -	- -	- -
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	- -	- -	- -	- -	- -
PM	- -	- -	- -	- -	- -	- -
INFO	- -	- -	- -	- -	- -	- -
CI	- -	- -	- -	- -	- -	- -
BR	- -	0.02 (0.06) 0.37	-0.03 (0.02) -1.27	0.01 (0.03) 0.24	0.01 (0.03) 0.37	0.09 (0.03) 2.79
TQM	0.03 (0.14) 0.21	- -	- -	- -	- -	- -
PWR	- -	- -	- -	- -	- -	- -
UNIC	- -	- -	-0.12 (0.04) -3.30	- -	- -	- -

```
   COL        - -       - -     -0.02      0.58       - -       - -
                              (0.03)     (0.04)
                               -0.77      16.13

  QPRF        - -       - -      0.06      0.08       - -       - -
                              (0.03)     (0.03)
                                2.45       3.15

 SETHP        - -       - -      0.05      0.04     -0.05       - -
                              (0.04)     (0.05)     (0.05)
                                1.18       0.88      -1.03

 SETHW        - -       - -      0.04      0.06      0.01       - -
                              (0.04)     (0.05)     (0.05)
                                0.99       1.16       0.23


     BETA

            SETHP     SETHW
          --------  --------
    SP        - -       - -

 CUSTMRK      - -       - -

    HR        - -       - -

    PM        - -       - -

  INFO        - -       - -

    CI        - -       - -

    BR       0.02     -0.01
           (0.02)    (0.02)
             0.85     -0.27

   TQM        - -       - -

   PWR        - -       - -

  UNIC        - -       - -

   COL        - -       - -

  QPRF        - -       - -

 SETHP        - -       - -

 SETHW        - -       - -


     GAMMA

             LDR
```

```
        --------
     SP       0.24
            (0.03)
             7.08

CUSTMRK       0.77
            (0.03)
             23.02

     HR       0.45
            (0.05)
             9.72

     PM      -0.22
            (0.05)
            -4.62

   INFO        - -

     CI       0.23
            (0.05)
             4.95

     BR        - -

    TQM       0.57
            (0.06)
             9.34

    PWR      -0.13
            (0.07)
            -1.83

   UNIC       0.22
            (0.06)
             3.54

    COL       0.17
            (0.05)
             3.20

   QPRF      -0.03
            (0.04)
            -0.65

  SETHP       0.03
            (0.07)
             0.50

  SETHW       0.07
            (0.07)
             1.09
```

Covariance Matrix of ETA and KSI

	SP	CUSTMRK	HR	PM	INFO	CI
SP	1.00					
CUSTMRK	0.82	1.01				
HR	0.85	0.69	1.01			
PM	0.94	0.84	0.83	1.03		
INFO	0.93	0.80	0.77	0.89	1.04	
CI	0.93	0.81	0.87	0.87	0.85	1.01
BR	0.87	0.76	0.73	0.87	0.81	0.85
TQM	0.56	0.50	0.50	0.53	0.51	0.52
PWR	0.10	0.08	0.10	0.08	0.10	0.13
UNIC	0.42	0.38	0.38	0.42	0.36	0.42
COL	0.40	0.35	0.36	0.34	0.34	0.42
QPRF	0.73	0.63	0.69	0.69	0.66	0.80
SETHP	0.05	0.05	0.04	0.05	0.05	0.05
SETHW	0.03	0.03	0.01	0.03	0.03	0.01
LDR	0.86	0.77	0.71	0.79	0.79	0.78

Covariance Matrix of ETA and KSI

	BR	TQM	PWR	UNIC	COL	QPRF
BR	1.02					
TQM	0.51	1.01				
PWR	0.07	0.03	0.99			
UNIC	0.40	0.28	-0.08	1.02		
COL	0.36	0.27	-0.05	0.67	1.05	
QPRF	0.70	0.41	0.16	0.39	0.36	1.01
SETHP	0.06	0.03	0.05	0.03	-0.01	0.04
SETHW	0.02	0.03	0.02	0.06	0.04	0.01
LDR	0.73	0.63	0.05	0.42	0.42	0.60

Covariance Matrix of ETA and KSI

	SETHP	SETHW	LDR
SETHP	1.01		
SETHW	0.00	1.02	
LDR	0.05	0.05	1.00

PHI

LDR
1.00

PSI
Note: This matrix is diagonal.

SP	CUSTMRK	HR	PM	INFO	CI
0.07	0.42	0.46	0.14	0.18	0.27
(0.01)	(0.03)	(0.03)	(0.01)	(0.02)	(0.04)

4.76	13.69	15.03	10.04	10.69	6.66

PSI
Note: This matrix is diagonal.

BR	TQM	PWR	UNIC	COL	QPRF
0.23	0.60	0.97	0.80	0.57	0.38
(0.02)	(0.04)	(0.10)	(0.05)	(0.04)	(0.02)
14.02	14.26	9.74	15.59	13.78	16.07

PSI
Note: This matrix is diagonal.

SETHP	SETHW
1.00	1.01
(0.08)	(0.07)
12.81	14.01

Squared Multiple Correlations for Structural Equations

SP	CUSTMRK	HR	PM	INFO	CI
0.93	0.59	0.54	0.87	0.83	0.74

Squared Multiple Correlations for Structural Equations

BR	TQM	PWR	UNIC	COL	QPRF
0.78	0.40	0.03	0.22	0.46	0.63

Squared Multiple Correlations for Structural Equations

SETHP	SETHW
0.01	0.01

Squared Multiple Correlations for Reduced Form

SP	CUSTMRK	HR	PM	INFO	CI
0.73	0.59	0.50	0.60	0.60	0.59

Squared Multiple Correlations for Reduced Form

BR	TQM	PWR	UNIC	COL	QPRF
0.52	0.39	0.00	0.17	0.16	0.36

Squared Multiple Correlations for Reduced Form

```
         SETHP      SETHW
       --------   --------
          0.00       0.00

 Reduced Form

           LDR
       --------
     SP      0.86
          (0.03)
           25.68

CUSTMRK      0.77
          (0.03)
           23.02

     HR      0.71
          (0.03)
           21.22

     PM      0.79
          (0.03)
           25.05

   INFO      0.79
          (0.03)
           25.43

     CI      0.78
          (0.04)
           19.97

     BR      0.73
          (0.03)
           22.88

    TQM      0.63
          (0.04)
           18.03

    PWR      0.05
          (0.04)
            1.22

   UNIC      0.42
          (0.04)
           11.91

    COL      0.42
          (0.04)
           11.44

   QPRF      0.60
          (0.03)
           18.48
```

SETHP 0.05
(0.04)
1.35

SETHW 0.05
(0.04)
1.30

THETA-EPS

SP22	SP23	SP24	CSTMRK33	CSTMRK34	CSTMRK35
0.29	0.43	0.42	0.27	0.18	0.23
(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)
18.90	20.20	20.14	17.03	13.62	15.94

THETA-EPS

HR52	HR54	HR55	PM63	PM64	PM65
0.25	0.10	0.30	0.16	0.11	0.19
(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
17.33	9.84	18.36	16.66	13.59	17.60

THETA-EPS

INFO41	INFO42	INFO43	CI73	CI74	CI75
0.17	0.18	0.35	0.49	0.16	0.16
(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)
14.18	14.63	18.85	20.43	15.38	15.28

THETA-EPS

BR85	BR86	BR87	TQMFM3	TQMFM4	TQMFM5
0.21	0.12	0.16	0.29	0.23	0.28
(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
17.17	12.85	15.56	15.16	12.97	14.94

THETA-EPS

PWR411	PWR412	PWR413	UNC421	UNC422	UNC423
0.55	0.31	0.60	0.28	0.08	0.28
(0.04)	(0.04)	(0.04)	(0.02)	(0.01)	(0.02)
15.60	7.70	16.77	17.37	6.45	17.25

THETA-EPS

COL431	COL432	COL433	QPRF441	QPRF443	QPRF444
0.34	0.13	0.26	0.14	0.09	0.19
(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
17.76	8.82	15.48	14.88	10.85	16.98

THETA-EPS

SETHI453	SETHI454	SETHI455	WKETH457	WKETH458	WKETH459
0.42	0.14	0.46	0.37	0.37	0.09
(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
15.98	5.15	17.15	16.78	16.80	4.28

Squared Multiple Correlations for Y - Variables

SP22	SP23	SP24	CSTMRK33	CSTMRK34	CSTMRK35
0.71	0.57	0.58	0.73	0.82	0.77

Squared Multiple Correlations for Y - Variables

HR52	HR54	HR55	PM63	PM64	PM65
0.75	0.90	0.70	0.84	0.89	0.81

Squared Multiple Correlations for Y - Variables

INFO41	INFO42	INFO43	CI73	CI74	CI75
0.83	0.82	0.65	0.51	0.84	0.84

Squared Multiple Correlations for Y - Variables

BR85	BR86	BR87	TQMFM3	TQMFM4	TQMFM5
0.79	0.88	0.84	0.71	0.77	0.72

Squared Multiple Correlations for Y - Variables

PWR411	PWR412	PWR413	UNC421	UNC422	UNC423
0.45	0.69	0.40	0.72	0.92	0.72

Squared Multiple Correlations for Y - Variables

COL431	COL432	COL433	QPRF441	QPRF443	QPRF444
0.66	0.87	0.74	0.86	0.91	0.81

Squared Multiple Correlations for Y - Variables

SETHI453	SETHI454	SETHI455	WKETH457	WKETH458	WKETH459
0.58	0.86	0.54	0.63	0.63	0.91

THETA-DELTA

LDR11	LDR12	LDR13
0.35	0.16	0.23
(0.02)	(0.01)	(0.01)
18.46	12.70	15.78

Squared Multiple Correlations for X - Variables

LDR11	LDR12	LDR13
0.65	0.84	0.77

Goodness of Fit Statistics

Degrees of Freedom = 883
Minimum Fit Function Chi-Square = 4257.48 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 4237.66 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 3354.66
90 Percent Confidence Interval for NCP = (3155.61 ; 3561.13)

Minimum Fit Function Value = 4.55
Population Discrepancy Function Value (F0) = 3.58
90 Percent Confidence Interval for F0 = (3.37 ; 3.80)
Root Mean Square Error of Approximation (RMSEA) = 0.064
90 Percent Confidence Interval for RMSEA = (0.062 ; 0.066)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 4.85
90 Percent Confidence Interval for ECVI = (4.64 ; 5.07)
ECVI for Saturated Model = 2.21
ECVI for Independence Model = 178.92

Chi-Square for Independence Model with 990 Degrees of Freedom = 167376.27
Independence AIC = 167466.27
Model AIC = 4541.66
Saturated AIC = 2070.00
Independence CAIC = 167729.19
Model CAIC = 5429.75
Saturated CAIC = 8117.18

Normed Fit Index (NFI) = 0.97
Non-Normed Fit Index (NNFI) = 0.98
Parsimony Normed Fit Index (PNFI) = 0.87
Comparative Fit Index (CFI) = 0.98
Incremental Fit Index (IFI) = 0.98
Relative Fit Index (RFI) = 0.97

Critical N (CN) = 217.27

Root Mean Square Residual (RMR) = 0.048
Standardized RMR = 0.048
Goodness of Fit Index (GFI) = 0.83
Adjusted Goodness of Fit Index (AGFI) = 0.80
Parsimony Goodness of Fit Index (PGFI) = 0.71

Covariance Matrix of Parameter Estimates

	LY 2,1	LY 3,1	LY 5,2	LY 6,2	LY 8,3	LY 9,3
LY 2,1	0.00					
LY 3,1	0.00	0.00				
LY 5,2	0.00	0.00	0.00			
LY 6,2	0.00	0.00	0.00	0.00		
LY 8,3	0.00	0.00	0.00	0.00	0.00	
LY 9,3	0.00	0.00	0.00	0.00	0.00	0.00
LY 11,4	0.00	0.00	0.00	0.00	0.00	0.00
LY 12,4	0.00	0.00	0.00	0.00	0.00	0.00
LY 14,5	0.00	0.00	0.00	0.00	0.00	0.00
LY 15,5	0.00	0.00	0.00	0.00	0.00	0.00
LY 17,6	0.00	0.00	0.00	0.00	0.00	0.00
LY 18,6	0.00	0.00	0.00	0.00	0.00	0.00
LY 20,7	0.00	0.00	0.00	0.00	0.00	0.00
LY 21,7	0.00	0.00	0.00	0.00	0.00	0.00
LY 23,8	0.00	0.00	0.00	0.00	0.00	0.00
LY 24,8	0.00	0.00	0.00	0.00	0.00	0.00
LY 26,9	0.00	0.00	0.00	0.00	0.00	0.00
LY 27,9	0.00	0.00	0.00	0.00	0.00	0.00
LY 29,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 30,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 32,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 33,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 35,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 36,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 38,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 39,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 41,14	0.00	0.00	0.00	0.00	0.00	0.00
LY 42,14	0.00	0.00	0.00	0.00	0.00	0.00
LX 1,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 2,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 3,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 3,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,4	0.00	0.00	0.00	0.00	0.00	0.00

BE 7,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,8	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00

PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00

TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	LY 11,4	LY 12,4	LY 14,5	LY 15,5	LY 17,6	LY 18,6
LY 11,4	0.00					
LY 12,4	0.00	0.00				
LY 14,5	0.00	0.00	0.00			
LY 15,5	0.00	0.00	0.00	0.00		
LY 17,6	0.00	0.00	0.00	0.00	0.00	
LY 18,6	0.00	0.00	0.00	0.00	0.00	0.00
LY 20,7	0.00	0.00	0.00	0.00	0.00	0.00
LY 21,7	0.00	0.00	0.00	0.00	0.00	0.00
LY 23,8	0.00	0.00	0.00	0.00	0.00	0.00
LY 24,8	0.00	0.00	0.00	0.00	0.00	0.00
LY 26,9	0.00	0.00	0.00	0.00	0.00	0.00
LY 27,9	0.00	0.00	0.00	0.00	0.00	0.00
LY 29,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 30,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 32,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 33,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 35,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 36,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 38,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 39,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 41,14	0.00	0.00	0.00	0.00	0.00	0.00
LY 42,14	0.00	0.00	0.00	0.00	0.00	0.00
LX 1,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 2,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 3,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 3,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,8	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00

BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00

TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	LY 20,7	LY 21,7	LY 23,8	LY 24,8	LY 26,9	LY 27,9
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LY 20,7	0.00					
LY 21,7	0.00	0.00				
LY 23,8	0.00	0.00	0.00			
LY 24,8	0.00	0.00	0.00	0.00		
LY 26,9	0.00	0.00	0.00	0.00	0.00	
LY 27,9	0.00	0.00	0.00	0.00	0.00	0.00
LY 29,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 30,10	0.00	0.00	0.00	0.00	0.00	0.00

LY 32,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 33,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 35,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 36,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 38,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 39,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 41,14	0.00	0.00	0.00	0.00	0.00	0.00
LY 42,14	0.00	0.00	0.00	0.00	0.00	0.00
LX 1,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 2,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 3,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 3,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,8	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00

BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00

TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	LY 29,10	LY 30,10	LY 32,11	LY 33,11	LY 35,12	LY 36,12
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LY 29,10	0.00					
LY 30,10	0.00	0.00				
LY 32,11	0.00	0.00	0.00			
LY 33,11	0.00	0.00	0.00	0.00		
LY 35,12	0.00	0.00	0.00	0.00	0.00	
LY 36,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 38,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 39,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 41,14	0.00	0.00	0.00	0.00	0.00	0.00
LY 42,14	0.00	0.00	0.00	0.00	0.00	0.00
LX 1,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 2,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 3,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 3,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,6	0.00	0.00	0.00	0.00	0.00	0.00

BE 7,8	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00

PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	LY 38,13	LY 39,13	LY 41,14	LY 42,14	LX 1,1	LX 2,1

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LY 38,13	0.00					
LY 39,13	0.00	0.00				
LY 41,14	0.00	0.00	0.00			
LY 42,14	0.00	0.00	0.00	0.00		
LX 1,1	0.00	0.00	0.00	0.00	0.00	
LX 2,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 3,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 3,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,8	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00

BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00

TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	LX 3,1	BE 1,5	BE 1,6	BE 3,2	BE 4,1	BE 4,2
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LX 3,1	0.00					
BE 1,5	0.00	0.00				
BE 1,6	0.00	0.00	0.00			
BE 3,2	0.00	0.00	0.00	0.00		
BE 4,1	0.00	0.00	0.00	0.00	0.00	
BE 4,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,8	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00

BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00

TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	BE 5,1	BE 5,2	BE 6,2	BE 6,3	BE 6,4	BE 7,1
BE 5,1	0.00					
BE 5,2	0.00	0.00				
BE 6,2	0.00	0.00	0.00			
BE 6,3	0.00	0.00	0.00	0.00		
BE 6,4	0.00	0.00	0.00	0.00	0.01	
BE 7,1	0.00	0.00	0.00	0.00	0.00	0.03
BE 7,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,4	0.00	0.00	0.00	0.00	0.00	-0.01
BE 7,5	0.00	0.00	0.00	0.00	0.00	-0.01
BE 7,6	0.00	0.00	0.00	0.00	0.00	-0.01
BE 7,8	0.00	0.00	0.00	0.00	0.00	-0.01
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00

BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	-0.01
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.01
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00

PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	BE 7,3	BE 7,4	BE 7,5	BE 7,6	BE 7,8	BE 7,9
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BE 7,3	0.00					
BE 7,4	0.00	0.00				
BE 7,5	0.00	0.00	0.00			

BE 7,6	0.00	0.00	0.00	0.01		
BE 7,8	0.00	0.00	0.00	0.00	0.00	
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	-0.01	0.00
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00

PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	BE 7,10	BE 7,11	BE 7,12	BE 7,13	BE 7,14	BE 8,3
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BE 7,10	0.00					
BE 7,11	0.00	0.00				
BE 7,12	0.00	0.00	0.00			
BE 7,13	0.00	0.00	0.00	0.00		
BE 7,14	0.00	0.00	0.00	0.00	0.00	
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00

PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	BE 8,4	BE 8,5	BE 8,7	BE 9,4	BE 9,5	BE 9,6

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BE 8,4	0.01					
BE 8,5	0.00	0.01				
BE 8,7	-0.01	0.00	0.02			
BE 9,4	0.00	0.00	0.00	0.01		
BE 9,5	0.00	0.00	0.00	0.00	0.01	
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.01
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00

TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	BE 10,4	BE 10,5	BE 10,6	BE 10,9	BE 11,4	BE 11,6
BE 10,4	0.01					
BE 10,5	0.00	0.01				
BE 10,6	0.00	0.00	0.01			
BE 10,9	0.00	0.00	0.00	0.00		
BE 11,4	0.00	0.00	0.00	0.00	0.00	
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00

BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00

TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	BE 11,9	BE 11,10	BE 12,6	BE 12,9	BE 12,10	BE 13,4
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BE 11,9	0.00					
BE 11,10	0.00	0.00				
BE 12,6	0.00	0.00	0.00			
BE 12,9	0.00	0.00	0.00	0.00		
BE 12,10	0.00	0.00	0.00	0.00	0.00	
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.01
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00

GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00

TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	BE 13,6	BE 13,9	BE 13,10	BE 13,11	BE 14,4	BE 14,6
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BE 13,6	0.01					
BE 13,9	0.00	0.00				
BE 13,10	0.00	0.00	0.00			
BE 13,11	0.00	0.00	0.00	0.00		
BE 14,4	0.00	0.00	0.00	0.00	0.01	
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.01
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00

TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	BE 14,9	BE 14,10	BE 14,11	GA 1,1	GA 2,1	GA 3,1
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BE 14,9	0.00					
BE 14,10	0.00	0.00				
BE 14,11	0.00	0.00	0.00			
GA 1,1	0.00	0.00	0.00	0.00		
GA 2,1	0.00	0.00	0.00	0.00	0.00	
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00

GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00

TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	GA 4,1	GA 6,1	GA 8,1	GA 9,1	GA 10,1	GA 11,1
GA 4,1	0.00					
GA 6,1	0.00	0.00				
GA 8,1	0.00	0.00	0.00			
GA 9,1	0.00	0.00	0.00	0.01		
GA 10,1	0.00	0.00	0.00	0.00	0.00	
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00

TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	GA 12,1	GA 13,1	GA 14,1	PS 1,1	PS 2,2	PS 3,3
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GA 12,1	0.00					
GA 13,1	0.00	0.00				
GA 14,1	0.00	0.00	0.00			
PS 1,1	0.00	0.00	0.00	0.00		
PS 2,2	0.00	0.00	0.00	0.00	0.00	
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00

TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	PS 4,4	PS 5,5	PS 6,6	PS 7,7	PS 8,8	PS 9,9
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PS 4,4	0.00					
PS 5,5	0.00	0.00				
PS 6,6	0.00	0.00	0.00			
PS 7,7	0.00	0.00	0.00	0.00		
PS 8,8	0.00	0.00	0.00	0.00	0.00	
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.01
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00

PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	PS 10,10	PS 11,11	PS 12,12	PS 13,13	PS 14,14	TE 1,1
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PS 10,10	0.00					
PS 11,11	0.00	0.00				
PS 12,12	0.00	0.00	0.00			

PS 13,13	0.00	0.00	0.00	0.01		
PS 14,14	0.00	0.00	0.00	0.00	0.01	
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	TE 2,2	TE 3,3	TE 4,4	TE 5,5	TE 6,6	TE 7,7
TE 2,2	0.00					
TE 3,3	0.00	0.00				
TE 4,4	0.00	0.00	0.00			

TE 5,5	0.00	0.00	0.00	0.00		
TE 6,6	0.00	0.00	0.00	0.00	0.00	
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	TE 8,8	TE 9,9	TE 10,10	TE 11,11	TE 12,12	TE 13,13
TE 8,8	0.00					
TE 9,9	0.00	0.00				
TE 10,10	0.00	0.00	0.00			
TE 11,11	0.00	0.00	0.00	0.00		
TE 12,12	0.00	0.00	0.00	0.00	0.00	
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00

TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	TE 14,14	TE 15,15	TE 16,16	TE 17,17	TE 18,18	TE 19,19
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TE 14,14	0.00					
TE 15,15	0.00	0.00				
TE 16,16	0.00	0.00	0.00			
TE 17,17	0.00	0.00	0.00	0.00		
TE 18,18	0.00	0.00	0.00	0.00	0.00	
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00

TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	TE 20,20	TE 21,21	TE 22,22	TE 23,23	TE 24,24	TE 25,25
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TE 20,20	0.00					
TE 21,21	0.00	0.00				
TE 22,22	0.00	0.00	0.00			
TE 23,23	0.00	0.00	0.00	0.00		
TE 24,24	0.00	0.00	0.00	0.00	0.00	
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	TE 26,26	TE 27,27	TE 28,28	TE 29,29	TE 30,30	TE 31,31
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TE 26,26	0.00					
TE 27,27	0.00	0.00				
TE 28,28	0.00	0.00	0.00			
TE 29,29	0.00	0.00	0.00	0.00		
TE 30,30	0.00	0.00	0.00	0.00	0.00	
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00

TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	TE 32,32	TE 33,33	TE 34,34	TE 35,35	TE 36,36	TE 37,37
TE 32,32	0.00					
TE 33,33	0.00	0.00				
TE 34,34	0.00	0.00	0.00			
TE 35,35	0.00	0.00	0.00	0.00		
TE 36,36	0.00	0.00	0.00	0.00	0.00	
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	TE 38,38	TE 39,39	TE 40,40	TE 41,41	TE 42,42	TD 1,1
TE 38,38	0.00					
TE 39,39	0.00	0.00				
TE 40,40	0.00	0.00	0.00			
TE 41,41	0.00	0.00	0.00	0.00		
TE 42,42	0.00	0.00	0.00	0.00	0.00	
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix of Parameter Estimates

	TD 2,2	TD 3,3
TD 2,2	0.00	
TD 3,3	0.00	0.00

TI

Correlation Matrix of Parameter Estimates

	LY 2,1	LY 3,1	LY 5,2	LY 6,2	LY 8,3	LY 9,3
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LY 2,1	1.00					
LY 3,1	0.36	1.00				
LY 5,2	0.00	0.00	1.00			
LY 6,2	0.00	0.00	0.58	1.00		
LY 8,3	0.00	0.00	0.00	0.00	1.00	
LY 9,3	0.00	0.00	0.00	0.00	0.55	1.00
LY 11,4	0.00	0.00	0.00	0.00	0.00	0.00
LY 12,4	0.00	0.00	0.00	0.00	0.00	0.00
LY 14,5	0.00	0.00	0.00	0.00	0.00	0.00
LY 15,5	0.00	0.00	0.00	0.00	0.00	0.00
LY 17,6	0.00	0.00	0.00	0.00	0.00	0.00
LY 18,6	0.00	0.00	0.00	0.00	0.00	0.00
LY 20,7	0.00	0.00	0.00	0.00	0.00	0.00
LY 21,7	0.00	0.00	0.00	0.00	0.00	0.00
LY 23,8	0.00	0.00	0.00	0.00	0.00	0.00
LY 24,8	0.00	0.00	0.00	0.00	0.00	0.00
LY 26,9	0.00	0.00	0.00	0.00	0.00	0.00
LY 27,9	0.00	0.00	0.00	0.00	0.00	0.00
LY 29,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 30,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 32,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 33,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 35,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 36,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 38,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 39,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 41,14	0.00	0.00	0.00	0.00	0.00	0.00
LY 42,14	0.00	0.00	0.00	0.00	0.00	0.00
LX 1,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 2,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 3,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,5	-0.04	-0.04	0.00	0.00	0.00	0.00
BE 1,6	-0.17	-0.18	0.00	0.00	0.00	0.00
BE 3,2	0.00	0.00	0.12	0.11	-0.13	-0.10
BE 4,1	0.21	0.22	0.00	0.00	0.00	0.00
BE 4,2	0.00	0.00	0.06	0.06	0.00	0.00
BE 5,1	0.23	0.24	0.00	0.00	0.00	0.00
BE 5,2	0.00	0.00	0.07	0.07	0.00	0.00
BE 6,2	0.00	0.00	0.14	0.13	0.01	0.00
BE 6,3	0.00	0.00	0.00	0.00	0.19	0.17
BE 6,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,1	0.02	0.02	0.00	0.00	0.00	0.00
BE 7,3	0.00	0.00	0.00	0.00	-0.04	-0.04
BE 7,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,8	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00

BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.02	0.02
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	-0.09	-0.09	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	-0.39	-0.36	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	-0.17	-0.13
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.01	0.00	0.02	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	-0.13	-0.13	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	-0.45	-0.43	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	-0.49	-0.39
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.02	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00

TE 1,1	0.07	0.07	0.00	0.00	0.00	0.00
TE 2,2	-0.06	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	-0.06	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.19	0.16	0.00	0.00
TE 5,5	0.00	0.00	-0.22	0.01	0.00	0.00
TE 6,6	0.00	0.00	0.02	-0.17	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.20	0.11
TE 8,8	0.00	0.00	0.00	0.00	-0.28	-0.01
TE 9,9	0.00	0.00	0.00	0.00	0.04	-0.11
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	LY 11,4	LY 12,4	LY 14,5	LY 15,5	LY 17,6	LY 18,6
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LY 11,4	1.00					
LY 12,4	0.52	1.00				
LY 14,5	0.00	0.00	1.00			
LY 15,5	0.00	0.00	0.38	1.00		
LY 17,6	0.00	0.00	0.00	0.00	1.00	

LY 18,6	0.00	0.00	0.00	0.00	0.83	1.00
LY 20,7	0.00	0.00	0.00	0.00	0.00	0.00
LY 21,7	0.00	0.00	0.00	0.00	0.00	0.00
LY 23,8	0.00	0.00	0.00	0.00	0.00	0.00
LY 24,8	0.00	0.00	0.00	0.00	0.00	0.00
LY 26,9	0.00	0.00	0.00	0.00	0.00	0.00
LY 27,9	0.00	0.00	0.00	0.00	0.00	0.00
LY 29,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 30,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 32,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 33,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 35,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 36,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 38,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 39,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 41,14	0.00	0.00	0.00	0.00	0.00	0.00
LY 42,14	0.00	0.00	0.00	0.00	0.00	0.00
LX 1,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 2,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 3,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,5	0.00	0.00	0.03	0.03	0.00	0.00
BE 1,6	0.00	0.00	0.00	0.00	0.39	0.39
BE 3,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,1	-0.19	-0.16	0.00	0.00	0.00	0.00
BE 4,2	-0.05	-0.04	0.00	0.00	0.00	0.00
BE 5,1	0.00	0.00	-0.20	-0.15	0.00	0.00
BE 5,2	0.00	0.00	-0.05	-0.04	0.00	0.00
BE 6,2	0.00	0.00	0.00	0.00	-0.26	-0.26
BE 6,3	0.00	0.00	0.00	0.00	-0.38	-0.38
BE 6,4	-0.05	-0.05	0.00	0.00	0.15	0.15
BE 7,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,4	0.06	0.06	0.00	0.00	0.00	0.00
BE 7,5	0.00	0.00	0.01	0.01	0.00	0.00
BE 7,6	0.00	0.00	0.00	0.00	0.09	0.09
BE 7,8	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.01	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	-0.01	-0.01	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,4	-0.01	-0.01	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.01	0.01	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.08	0.08
BE 10,4	0.02	0.02	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	-0.02	-0.02	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.09	0.09
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	-0.04	-0.04	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.12	0.12

BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.46	0.46
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.01	0.01	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	-0.05	-0.05
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.05	0.05	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	-0.15	-0.15
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.01	0.01
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	-0.22	-0.20	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	-0.24	-0.20	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	-0.39	-0.39
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.15	0.12	0.00	0.00	0.00	0.00
TE 11,11	-0.18	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.01	-0.11	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.24	0.16	0.00	0.00
TE 14,14	0.00	0.00	-0.23	-0.02	0.00	0.00

TE 15,15	0.00	0.00	0.00	-0.13	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.07	0.07
TE 17,17	0.00	0.00	0.00	0.00	-0.10	0.01
TE 18,18	0.00	0.00	0.00	0.00	0.01	-0.10
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	LY 20,7	LY 21,7	LY 23,8	LY 24,8	LY 26,9	LY 27,9
LY 20,7	1.00					
LY 21,7	0.60	1.00				
LY 23,8	0.00	0.00	1.00			
LY 24,8	0.00	0.00	0.52	1.00		
LY 26,9	0.00	0.00	0.00	0.00	1.00	
LY 27,9	0.00	0.00	0.00	0.00	0.48	1.00
LY 29,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 30,10	0.00	0.00	0.00	0.00	0.00	0.00
LY 32,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 33,11	0.00	0.00	0.00	0.00	0.00	0.00
LY 35,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 36,12	0.00	0.00	0.00	0.00	0.00	0.00
LY 38,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 39,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 41,14	0.00	0.00	0.00	0.00	0.00	0.00
LY 42,14	0.00	0.00	0.00	0.00	0.00	0.00
LX 1,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 2,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 3,1	0.00	0.00	0.00	0.00	0.00	0.00

BE 1,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 3,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,1	-0.01	-0.01	0.00	0.00	0.00	0.00
BE 7,3	0.05	0.04	0.00	0.00	0.00	0.00
BE 7,4	-0.08	-0.08	0.00	0.00	0.00	0.00
BE 7,5	-0.01	-0.01	0.00	0.00	0.00	0.00
BE 7,6	-0.04	-0.04	0.00	0.00	0.00	0.00
BE 7,8	-0.01	0.00	0.01	0.01	0.00	0.00
BE 7,9	0.02	0.02	0.00	0.00	-0.04	-0.04
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	-0.01	0.00	0.00	0.00	0.00	0.00
BE 7,12	-0.04	-0.04	0.00	0.00	0.00	0.00
BE 7,13	-0.01	-0.01	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	-0.03	-0.03	0.00	0.00
BE 8,4	0.00	0.00	-0.01	-0.01	0.00	0.00
BE 8,5	0.00	0.00	0.02	0.02	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,4	0.00	0.00	0.00	0.00	0.04	0.03
BE 9,5	0.00	0.00	0.00	0.00	-0.04	-0.03
BE 9,6	0.00	0.00	0.00	0.00	-0.12	-0.08
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	-0.11	-0.10
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	-0.03	-0.02
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.08	0.07
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.04	0.04
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.03	0.03
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00

GA 8,1	0.00	0.00	-0.17	-0.15	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.08	0.06
GA 10,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	-0.38	-0.37	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	-0.49	-0.47	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	-0.76	-0.59
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.16	0.14	0.00	0.00	0.00	0.00
TE 20,20	-0.20	0.01	0.00	0.00	0.00	0.00
TE 21,21	0.03	-0.15	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.29	0.25	0.00	0.00
TE 23,23	0.00	0.00	-0.32	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.03	-0.25	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.47	0.25
TE 26,26	0.00	0.00	0.00	0.00	-0.63	-0.03
TE 27,27	0.00	0.00	0.00	0.00	0.19	-0.23
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00

TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	LY 29,10	LY 30,10	LY 32,11	LY 33,11	LY 35,12	LY 36,12
LY 29,10	1.00					
LY 30,10	0.59	1.00				
LY 32,11	0.00	0.00	1.00			
LY 33,11	0.00	0.00	0.63	1.00		
LY 35,12	0.00	0.00	0.00	0.00	1.00	
LY 36,12	0.00	0.00	0.00	0.00	0.50	1.00
LY 38,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 39,13	0.00	0.00	0.00	0.00	0.00	0.00
LY 41,14	0.00	0.00	0.00	0.00	0.00	0.00
LY 42,14	0.00	0.00	0.00	0.00	0.00	0.00
LX 1,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 2,1	0.00	0.00	0.00	0.00	0.00	0.00
LX 3,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 3,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 4,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,8	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.01	0.01	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.03	0.03
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.00

BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	-0.05	-0.03	0.00	0.00	0.00	0.00
BE 10,5	0.04	0.03	0.00	0.00	0.00	0.00
BE 10,6	-0.06	-0.04	0.00	0.00	0.00	0.00
BE 10,9	0.07	0.05	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.09	0.08	0.00	0.00
BE 11,6	0.01	0.00	-0.09	-0.08	0.00	0.00
BE 11,9	-0.01	0.00	0.02	0.01	0.00	0.00
BE 11,10	0.28	0.24	-0.36	-0.31	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	-0.18	-0.14
BE 12,9	0.00	0.00	0.00	0.00	-0.03	-0.02
BE 12,10	0.06	0.05	0.00	0.00	-0.04	-0.03
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.01	0.01	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	-0.02	-0.02	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.02	0.02	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	-0.07	-0.05	0.00	0.00	0.00	0.00
GA 11,1	0.01	0.00	-0.07	-0.06	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.01	0.01
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	-0.59	-0.47	0.00	0.00	0.00	0.00
PS 11,11	0.02	0.00	-0.58	-0.53	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	-0.35	-0.30
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00

TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.25	0.10	0.00	0.00	0.00	0.00
TE 29,29	-0.39	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.13	-0.10	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.22	0.14	0.00	0.00
TE 32,32	0.00	0.00	-0.34	0.03	0.00	0.00
TE 33,33	0.00	0.00	0.12	-0.16	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.24	0.15
TE 35,35	0.00	0.00	0.00	0.00	-0.28	-0.02
TE 36,36	0.00	0.00	0.00	0.00	0.04	-0.13
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	LY 38,13	LY 39,13	LY 41,14	LY 42,14	LX 1,1	LX 2,1
LY 38,13	1.00					
LY 39,13	0.50	1.00				
LY 41,14	0.00	0.00	1.00			
LY 42,14	0.00	0.00	0.55	1.00		
LX 1,1	0.00	0.00	0.00	0.00	1.00	
LX 2,1	0.00	0.00	0.00	0.00	0.55	1.00
LX 3,1	0.00	0.00	0.00	0.00	0.52	0.62
BE 1,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 1,6	0.00	0.00	0.00	0.00	0.00	0.01
BE 3,2	0.00	0.00	0.00	0.00	0.00	0.02

BE 4,1	0.00	0.00	0.00	0.00	0.00	-0.01
BE 4,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 5,2	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,2	0.00	0.00	0.00	0.00	0.00	0.01
BE 6,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 6,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,1	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,8	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.02	0.02	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	-0.01	0.00	0.00
BE 8,3	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,5	0.00	0.00	0.00	0.00	0.00	0.01
BE 8,7	0.00	0.00	0.00	0.00	0.00	0.01
BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,4	-0.01	-0.01	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	-0.04	-0.02	0.00	0.00	0.00	0.00
BE 13,10	-0.03	-0.02	0.00	0.00	0.00	0.00
BE 13,11	0.03	0.02	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	-0.01	-0.02	0.00	0.00
BE 14,6	0.00	0.00	0.03	0.05	0.00	0.00
BE 14,9	0.00	0.00	-0.02	-0.03	0.00	0.00
BE 14,10	0.00	0.00	-0.02	-0.03	0.00	0.00
BE 14,11	0.00	0.00	0.00	-0.01	0.00	0.00
GA 1,1	0.00	0.00	0.00	0.00	0.11	0.12
GA 2,1	0.00	0.00	0.00	0.00	0.36	0.43
GA 3,1	0.00	0.00	0.00	0.00	0.15	0.17
GA 4,1	0.00	0.00	0.00	0.00	-0.07	-0.08
GA 6,1	0.00	0.00	0.00	0.00	0.07	0.08
GA 8,1	0.00	0.00	0.00	0.00	0.14	0.16
GA 9,1	0.00	0.00	0.00	0.00	-0.03	-0.03
GA 10,1	0.00	0.00	0.00	0.00	0.05	0.06

GA 11,1	0.00	0.00	0.00	0.00	0.05	0.05
GA 12,1	0.00	0.00	0.00	0.00	-0.01	-0.01
GA 13,1	-0.02	-0.01	0.00	0.00	0.01	0.01
GA 14,1	0.00	0.00	-0.02	-0.03	0.02	0.02
PS 1,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.02
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.01
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.01
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	-0.71	-0.52	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	-0.52	-0.69	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.42	0.14	0.00	0.00	0.00	0.00

TE 38,38	-0.61	-0.02	0.00	0.00	0.00	0.00
TE 39,39	0.24	-0.12	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.09	0.36	0.00	0.00
TE 41,41	0.00	0.00	-0.09	0.26	0.00	0.00
TE 42,42	0.00	0.00	0.00	-0.55	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	-0.12	0.02
TD 2,2	0.00	0.00	0.00	0.00	0.04	-0.18
TD 3,3	0.00	0.00	0.00	0.00	0.01	0.05

Correlation Matrix of Parameter Estimates

	LX 3,1	BE 1,5	BE 1,6	BE 3,2	BE 4,1	BE 4,2
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LX 3,1	1.00					
BE 1,5	0.00	1.00				
BE 1,6	0.00	-0.61	1.00			
BE 3,2	0.01	0.01	0.02	1.00		
BE 4,1	0.00	0.03	-0.16	-0.05	1.00	
BE 4,2	0.00	-0.14	-0.01	0.04	-0.54	1.00
BE 5,1	0.00	-0.12	-0.07	-0.03	0.31	-0.17
BE 5,2	0.00	0.04	-0.02	0.05	-0.20	0.23
BE 6,2	0.00	-0.06	0.06	0.00	0.31	-0.21
BE 6,3	0.00	-0.03	-0.02	-0.07	0.32	-0.23
BE 6,4	0.00	0.06	-0.19	0.01	-0.44	0.34
BE 7,1	0.00	0.05	-0.06	-0.01	0.04	-0.03
BE 7,3	0.00	0.00	-0.01	0.00	0.00	0.00
BE 7,4	0.00	0.01	0.02	0.01	-0.04	0.01
BE 7,5	0.00	-0.07	0.05	0.01	-0.01	0.02
BE 7,6	0.00	-0.05	0.08	0.01	-0.04	0.03
BE 7,8	0.00	-0.02	0.04	0.00	-0.02	0.03
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,12	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,13	0.00	0.00	0.00	0.00	0.00	0.00
BE 7,14	0.00	0.00	0.00	0.00	0.00	0.00
BE 8,3	0.00	-0.01	0.01	0.05	-0.01	0.00
BE 8,4	0.00	-0.01	0.02	0.00	0.01	0.03
BE 8,5	0.00	0.01	0.02	0.01	-0.04	0.00
BE 8,7	0.00	0.01	-0.03	0.00	0.01	-0.03
BE 9,4	0.00	-0.02	0.01	0.00	0.00	0.00
BE 9,5	0.00	0.02	-0.02	0.00	0.01	0.00
BE 9,6	0.00	0.00	0.05	-0.01	0.00	0.00
BE 10,4	0.00	0.01	0.00	0.00	0.01	0.00
BE 10,5	0.00	0.02	0.00	0.00	-0.01	0.00
BE 10,6	0.00	-0.02	0.06	0.01	-0.02	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.00	0.00	0.01	0.00	0.03	0.01
BE 11,6	0.00	0.00	0.07	0.01	0.00	-0.01
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.26	0.00	0.00	0.00
BE 12,9	0.00	0.00	-0.01	0.00	0.00	0.00
BE 12,10	0.00	-0.01	0.01	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00

BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	-0.03	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.12	-0.35	-0.23	-0.03	0.04	0.15
GA 2,1	0.41	-0.01	-0.01	-0.10	0.00	-0.02
GA 3,1	0.17	0.00	-0.02	-0.75	0.04	-0.02
GA 4,1	-0.08	0.03	0.12	0.04	-0.68	-0.02
GA 6,1	0.08	-0.01	0.06	0.04	0.17	-0.14
GA 8,1	0.16	-0.01	-0.01	-0.04	0.02	0.01
GA 9,1	-0.03	0.00	0.00	0.01	-0.01	0.00
GA 10,1	0.06	-0.01	-0.02	-0.02	0.02	0.00
GA 11,1	0.05	0.00	-0.02	-0.02	-0.01	0.00
GA 12,1	-0.01	0.00	-0.06	0.00	0.00	0.00
GA 13,1	0.01	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.02	0.00	0.01	-0.01	0.00	0.00
PS 1,1	0.00	-0.73	0.64	0.01	-0.25	0.18
PS 2,2	0.01	0.01	0.01	-0.06	0.00	-0.09
PS 3,3	0.00	-0.01	0.02	0.07	0.00	-0.01
PS 4,4	0.00	0.24	-0.10	0.00	0.16	-0.16
PS 5,5	0.00	-0.40	0.25	0.00	0.01	0.05
PS 6,6	0.00	-0.03	-0.02	-0.01	0.37	-0.26
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	-0.01	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.10	-0.12	-0.01	0.12	-0.07
TE 2,2	0.00	0.06	-0.04	0.00	0.04	-0.04
TE 3,3	0.00	0.06	-0.05	0.00	0.04	-0.04
TE 4,4	0.00	0.00	0.00	0.04	-0.01	0.03
TE 5,5	0.00	0.00	0.00	0.03	-0.01	0.02
TE 6,6	0.00	0.00	0.00	0.01	-0.01	0.01
TE 7,7	0.00	0.00	0.00	-0.03	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.03	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	-0.04	-0.01
TE 11,11	0.00	0.00	0.01	0.00	0.01	0.01
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.04	-0.02	0.00	0.00	0.00
TE 14,14	0.00	0.02	-0.02	0.00	0.00	0.00
TE 15,15	0.00	0.01	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.04	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.01	0.00	-0.03	0.01
TE 18,18	0.00	0.00	0.01	0.00	-0.03	0.01
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00

TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.01	0.00	0.00	-0.01	0.00	0.00
TD 2,2	0.06	-0.01	-0.03	-0.06	0.03	0.01
TD 3,3	-0.15	0.00	-0.01	-0.02	0.01	0.00

Correlation Matrix of Parameter Estimates

	BE 5,1	BE 5,2	BE 6,2	BE 6,3	BE 6,4	BE 7,1
BE 5,1	1.00					
BE 5,2	-0.78	1.00				
BE 6,2	0.11	-0.11	1.00			
BE 6,3	0.10	-0.10	0.46	1.00		
BE 6,4	-0.14	0.15	-0.72	-0.72	1.00	
BE 7,1	0.05	-0.04	0.05	0.02	-0.01	1.00
BE 7,3	0.00	-0.01	0.04	-0.08	-0.01	0.02
BE 7,4	-0.01	0.01	-0.01	0.04	-0.06	-0.66
BE 7,5	-0.06	0.06	-0.04	-0.01	0.01	-0.74
BE 7,6	-0.02	0.02	-0.11	-0.08	0.07	-0.70
BE 7,8	-0.02	0.02	-0.03	0.00	0.01	-0.53
BE 7,9	0.00	0.00	0.00	0.00	0.00	0.03
BE 7,10	0.00	0.00	0.00	0.00	0.00	-0.02
BE 7,11	0.00	0.00	0.00	0.00	0.00	-0.04
BE 7,12	0.00	0.00	0.01	0.01	-0.01	0.06
BE 7,13	0.00	0.00	0.00	0.00	0.00	-0.01
BE 7,14	0.00	0.00	0.00	0.00	0.00	-0.02
BE 8,3	0.01	-0.01	-0.02	0.02	0.00	-0.08
BE 8,4	-0.01	0.02	0.00	0.00	0.00	-0.32
BE 8,5	-0.02	0.03	-0.01	0.00	0.01	-0.16
BE 8,7	0.02	-0.02	0.03	0.00	-0.01	0.46
BE 9,4	0.00	0.00	0.01	0.01	-0.02	0.00
BE 9,5	-0.01	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	-0.04	-0.05	0.03	-0.01
BE 10,4	0.00	0.00	0.02	0.02	-0.04	0.00

BE 10,5	-0.02	0.02	0.00	0.00	0.00	0.00
BE 10,6	0.01	-0.01	-0.04	-0.06	0.05	0.00
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,4	-0.01	0.01	0.02	0.02	-0.02	0.00
BE 11,6	0.00	-0.01	-0.05	-0.07	0.04	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	-0.18	-0.26	0.11	-0.01
BE 12,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,10	0.00	0.00	0.01	0.01	-0.01	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	-0.01	0.01	0.00
BE 14,6	0.00	0.00	0.02	0.03	-0.02	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	-0.02	-0.04	-0.14	-0.14	0.24	0.00
GA 2,1	0.00	-0.04	-0.08	0.00	0.00	0.00
GA 3,1	0.02	-0.02	0.02	-0.01	-0.01	0.02
GA 4,1	-0.08	0.10	-0.21	-0.21	0.29	-0.02
GA 6,1	0.04	-0.04	-0.06	0.08	-0.38	-0.07
GA 8,1	0.01	0.00	-0.02	-0.01	0.00	-0.13
GA 9,1	0.00	0.00	0.01	0.01	0.00	0.01
GA 10,1	0.01	-0.01	0.00	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.05	0.07	-0.03	0.01
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	-0.01	-0.01	0.00	0.00
PS 1,1	-0.09	0.05	0.08	0.06	-0.10	-0.08
PS 2,2	0.01	-0.06	-0.13	0.01	-0.01	0.00
PS 3,3	0.01	-0.01	0.02	-0.15	-0.01	0.00
PS 4,4	0.01	-0.03	0.02	0.03	-0.03	0.03
PS 5,5	-0.11	0.17	0.02	0.02	-0.03	-0.04
PS 6,6	0.10	-0.11	0.62	0.65	-0.81	0.01
PS 7,7	0.00	0.00	0.00	0.00	0.00	-0.04
PS 8,8	0.00	0.00	0.00	0.00	0.00	-0.03
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.01	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.07	-0.04	0.01	0.01	-0.01	0.05
TE 2,2	0.02	-0.02	0.01	0.01	-0.01	0.03
TE 3,3	0.02	-0.02	0.01	0.01	-0.01	0.03
TE 4,4	-0.01	0.03	0.05	0.00	0.00	0.00
TE 5,5	-0.03	0.02	0.04	-0.01	-0.01	0.00
TE 6,6	-0.01	0.01	0.02	-0.01	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.04	0.00	0.00
TE 8,8	0.00	0.00	-0.04	0.06	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00

TE 10,10	0.00	0.00	0.01	0.01	-0.03	-0.01
TE 11,11	0.01	-0.01	0.03	0.03	-0.04	-0.01
TE 12,12	0.00	0.00	0.01	0.01	-0.01	0.00
TE 13,13	-0.05	-0.02	0.00	0.00	0.00	0.00
TE 14,14	0.04	0.01	0.00	0.00	0.00	0.00
TE 15,15	0.01	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	-0.03	-0.04	0.02	0.00
TE 17,17	0.00	0.00	-0.05	-0.05	0.08	-0.01
TE 18,18	0.00	0.00	-0.05	-0.05	0.08	-0.01
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.01	-0.01	-0.02	-0.02	0.00	-0.01
TD 3,3	0.00	0.00	-0.01	-0.01	0.00	0.00

Correlation Matrix of Parameter Estimates

	BE 7,3	BE 7,4	BE 7,5	BE 7,6	BE 7,8	BE 7,9
BE 7,3	1.00					
BE 7,4	-0.17	1.00				
BE 7,5	0.06	0.24	1.00			
BE 7,6	-0.39	0.34	0.38	1.00		
BE 7,8	-0.09	0.24	0.32	0.29	1.00	
BE 7,9	0.01	0.01	-0.04	-0.07	0.03	1.00
BE 7,10	0.00	-0.13	0.07	0.06	-0.01	0.11
BE 7,11	0.03	0.17	0.02	-0.10	-0.06	0.04
BE 7,12	0.09	0.00	-0.01	-0.41	0.01	-0.10
BE 7,13	0.00	0.00	0.00	0.01	-0.01	-0.05
BE 7,14	-0.01	-0.01	0.01	0.06	-0.02	-0.05
BE 8,3	-0.02	0.04	0.05	0.04	0.15	0.00
BE 8,4	-0.05	0.14	0.19	0.17	0.63	0.02
BE 8,5	-0.03	0.07	0.09	0.09	0.32	0.01

BE 8,7	0.07	-0.20	-0.27	-0.24	-0.90	-0.03
BE 9,4	0.00	0.01	0.00	0.00	0.00	-0.04
BE 9,5	0.00	0.00	0.01	0.00	0.00	0.03
BE 9,6	0.00	0.00	0.00	0.03	0.00	-0.03
BE 10,4	0.00	0.02	-0.01	0.00	0.00	0.00
BE 10,5	0.00	-0.01	0.01	0.00	0.00	0.00
BE 10,6	0.00	-0.01	-0.01	0.02	-0.01	-0.01
BE 10,9	0.00	0.00	0.00	0.00	0.00	0.03
BE 11,4	0.00	-0.01	0.00	0.00	0.01	0.00
BE 11,6	0.00	0.00	0.00	0.01	-0.01	0.00
BE 11,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	0.00	0.09	-0.02	0.00
BE 12,9	0.00	0.00	0.00	-0.01	0.00	0.02
BE 12,10	0.00	0.00	0.00	-0.01	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.00	0.00	-0.01
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	0.00	-0.01	0.00	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.00	-0.01
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.01	-0.03	0.02	0.00	-0.03	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.01	0.00
GA 3,1	0.01	-0.01	-0.01	-0.01	0.00	0.00
GA 4,1	0.00	0.02	-0.01	0.02	0.00	0.00
GA 6,1	0.03	0.08	0.04	0.02	0.01	0.00
GA 8,1	-0.02	0.06	0.08	0.07	0.24	0.01
GA 9,1	0.00	-0.01	-0.01	-0.01	0.00	0.03
GA 10,1	0.00	-0.01	0.00	-0.01	0.02	0.01
GA 11,1	0.00	0.01	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	-0.04	0.04	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.01	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.00	0.01	0.07	0.07	0.05	0.00
PS 2,2	0.00	0.00	0.00	0.00	-0.01	0.00
PS 3,3	0.06	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	-0.04	-0.02	-0.02	-0.02	0.00
PS 5,5	0.00	0.00	0.07	0.02	0.01	0.00
PS 6,6	0.06	0.03	0.00	-0.12	0.01	0.00
PS 7,7	0.10	0.02	0.08	-0.02	0.02	0.01
PS 8,8	0.00	0.01	0.02	0.01	0.05	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.05
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	-0.02	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	-0.03	-0.04	-0.04	-0.03	0.00
TE 2,2	0.00	-0.02	-0.02	-0.02	-0.02	0.00
TE 3,3	0.00	-0.02	-0.02	-0.02	-0.02	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00

TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	-0.01	0.00	0.00	0.00	0.00	0.00
TE 8,8	-0.04	0.01	0.00	0.01	0.01	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	-0.01	0.04	-0.01	0.00	0.00	0.00
TE 11,11	-0.01	0.05	-0.01	-0.01	0.00	0.00
TE 12,12	0.00	0.02	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.01	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.01	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.02	0.00	0.00
TE 17,17	-0.03	-0.01	0.00	0.05	0.00	0.00
TE 18,18	-0.03	-0.01	0.00	0.05	0.00	0.00
TE 19,19	0.01	-0.02	0.00	-0.01	0.00	0.00
TE 20,20	-0.01	0.01	0.00	0.01	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	-0.02
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.01
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.02	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.01	0.00

Correlation Matrix of Parameter Estimates

	BE 7,10	BE 7,11	BE 7,12	BE 7,13	BE 7,14	BE 8,3
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BE 7,10	1.00					
BE 7,11	-0.61	1.00				
BE 7,12	-0.11	0.04	1.00			
BE 7,13	-0.04	0.04	0.00	1.00		
BE 7,14	-0.04	-0.01	-0.01	0.00	1.00	
BE 8,3	0.00	-0.01	0.00	0.00	0.00	1.00
BE 8,4	-0.01	-0.04	0.01	-0.01	-0.01	-0.20
BE 8,5	0.00	-0.02	0.00	0.00	-0.01	-0.03
BE 8,7	0.01	0.06	-0.01	0.01	0.02	-0.14

BE 9,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,5	0.00	0.00	0.00	0.00	0.00	0.00
BE 9,6	0.00	0.00	0.00	0.00	0.00	0.00
BE 10,4	-0.03	0.00	0.00	0.00	0.00	0.00
BE 10,5	0.03	0.00	0.00	0.00	0.00	0.00
BE 10,6	-0.03	0.00	0.00	0.00	0.00	0.01
BE 10,9	0.01	0.00	0.00	0.00	0.00	0.00
BE 11,4	0.02	-0.03	0.00	0.00	0.00	0.00
BE 11,6	0.01	-0.02	0.00	0.00	0.00	0.01
BE 11,9	-0.01	0.02	0.00	0.00	0.00	0.00
BE 11,10	-0.01	0.01	0.00	0.00	0.00	0.00
BE 12,6	0.00	0.00	-0.06	0.00	0.00	0.00
BE 12,9	0.00	0.00	0.02	0.00	0.00	0.00
BE 12,10	0.02	0.00	0.01	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	-0.03	0.00	0.00
BE 13,6	0.00	0.00	0.00	-0.02	0.00	0.00
BE 13,9	0.00	0.00	0.00	0.02	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.01	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	0.00	-0.03	0.00
BE 14,6	0.00	0.00	0.00	0.00	-0.02	0.00
BE 14,9	0.00	0.00	0.00	0.00	0.02	0.00
BE 14,10	0.00	0.00	0.00	0.00	0.01	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	0.01	0.00	0.00	0.01
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	-0.07
GA 4,1	0.00	0.01	0.00	0.00	0.00	0.02
GA 6,1	0.00	-0.01	-0.01	0.00	0.00	0.01
GA 8,1	0.00	-0.02	0.00	0.00	0.00	-0.09
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 10,1	0.03	0.00	0.00	0.00	0.00	0.00
GA 11,1	-0.03	0.04	0.00	0.00	0.00	0.00
GA 12,1	-0.01	0.00	0.05	0.00	0.00	0.01
GA 13,1	0.00	0.00	0.00	0.04	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.05	0.00
PS 1,1	0.00	0.01	0.00	0.00	0.00	0.01
PS 2,2	0.00	0.00	0.00	0.00	0.00	-0.01
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.01
PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.01	0.00	0.00	-0.01
PS 7,7	0.02	0.01	0.06	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.03
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.01	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	-0.01	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.03	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	-0.02	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	-0.01
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00

TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.01
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	-0.01	0.00	0.00	0.00	0.00	0.00
TE 11,11	-0.01	0.01	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	-0.01	-0.03	0.00	0.00	0.00
TE 18,18	0.00	-0.01	-0.03	0.00	0.00	0.00
TE 19,19	0.00	0.00	-0.01	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.01	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	-0.01
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.01
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.01	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.01	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.01	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	-0.01
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	BE 8,4	BE 8,5	BE 8,7	BE 9,4	BE 9,5	BE 9,6
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BE 8,4	1.00					
BE 8,5	-0.10	1.00				
BE 8,7	-0.73	-0.35	1.00			
BE 9,4	-0.01	0.00	0.00	1.00		
BE 9,5	0.00	-0.01	0.00	-0.47	1.00	
BE 9,6	0.00	0.00	0.00	-0.46	-0.25	1.00
BE 10,4	0.01	-0.01	-0.01	0.03	-0.01	-0.02
BE 10,5	-0.01	0.01	0.00	-0.01	0.03	-0.01
BE 10,6	-0.01	-0.01	0.01	-0.01	-0.01	0.04
BE 10,9	0.00	0.00	0.00	-0.02	0.05	-0.01

BE 11,4	0.01	0.00	-0.01	0.01	0.00	-0.01
BE 11,6	-0.01	0.00	0.01	-0.02	0.00	0.03
BE 11,9	0.00	0.00	0.00	0.06	0.00	-0.05
BE 11,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 12,6	-0.02	-0.01	0.02	-0.01	-0.01	0.06
BE 12,9	0.00	0.00	0.00	0.07	0.03	-0.16
BE 12,10	0.00	0.00	0.00	0.00	0.00	-0.01
BE 13,4	0.00	0.00	0.00	-0.01	0.00	0.01
BE 13,6	0.00	0.00	0.00	0.01	0.00	-0.01
BE 13,9	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,4	0.00	0.00	0.00	-0.01	0.00	0.01
BE 14,6	0.00	0.00	0.00	0.01	0.00	-0.02
BE 14,9	0.00	0.00	0.00	-0.01	0.00	0.02
BE 14,10	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,11	0.00	0.00	0.00	0.00	0.00	0.00
GA 1,1	-0.03	-0.05	0.03	0.01	0.00	-0.02
GA 2,1	-0.01	-0.01	-0.01	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.01
GA 4,1	-0.04	0.06	0.01	0.01	-0.02	-0.01
GA 6,1	-0.01	0.00	-0.01	0.01	0.00	-0.01
GA 8,1	0.06	-0.21	-0.26	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	-0.15	-0.27	-0.26
GA 10,1	0.01	0.00	-0.02	-0.01	0.00	-0.01
GA 11,1	0.00	0.00	0.00	0.00	0.00	-0.01
GA 12,1	0.03	0.01	-0.04	0.01	0.00	-0.02
GA 13,1	0.00	0.00	-0.01	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.01
PS 1,1	0.03	0.02	-0.04	0.02	-0.01	-0.01
PS 2,2	0.01	0.01	0.01	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	-0.03	0.01	0.02	0.03	-0.01	-0.01
PS 5,5	0.00	0.04	-0.01	0.01	-0.02	0.01
PS 6,6	0.01	0.00	0.00	0.01	0.00	-0.06
PS 7,7	0.01	0.01	-0.02	0.00	0.00	0.00
PS 8,8	0.06	0.06	-0.06	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	-0.01	0.02	0.07
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	-0.02	-0.01	0.03	0.00	0.00	0.00
TE 2,2	-0.01	-0.01	0.01	0.00	0.00	0.00
TE 3,3	-0.01	-0.01	0.01	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	-0.01	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	-0.01	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00

TE 13,13	0.00	-0.01	0.00	0.00	0.01	0.00
TE 14,14	0.00	-0.01	0.00	0.00	0.01	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.01
TE 17,17	0.00	0.00	0.00	-0.01	-0.01	0.02
TE 18,18	0.00	0.00	0.00	-0.01	-0.01	0.02
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.01	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.02	-0.02	-0.06
TE 26,26	0.00	0.00	0.00	-0.02	0.02	0.06
TE 27,27	0.00	0.00	0.00	0.00	0.00	-0.01
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	-0.02	-0.02	0.00	0.00	0.00
TD 3,3	0.00	-0.01	-0.01	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	BE 10,4	BE 10,5	BE 10,6	BE 10,9	BE 11,4	BE 11,6
BE 10,4	1.00					
BE 10,5	-0.47	1.00				
BE 10,6	-0.45	-0.25	1.00			
BE 10,9	0.06	-0.04	-0.15	1.00		
BE 11,4	-0.04	0.00	0.02	0.00	1.00	
BE 11,6	0.02	0.00	-0.02	0.01	-0.66	1.00
BE 11,9	0.01	0.00	0.00	-0.03	0.04	-0.18
BE 11,10	0.04	0.02	-0.06	0.03	-0.07	-0.05
BE 12,6	-0.01	-0.01	0.08	0.00	0.00	0.09
BE 12,9	0.01	0.01	-0.02	-0.01	0.00	-0.01
BE 12,10	0.07	0.04	-0.15	0.00	0.00	0.00
BE 13,4	0.00	0.00	0.00	0.00	0.01	0.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	0.01
BE 13,9	0.00	0.00	0.00	-0.01	0.00	0.00
BE 13,10	0.00	0.00	0.00	-0.01	0.00	0.00
BE 13,11	0.00	0.00	0.00	0.00	0.00	0.01
BE 14,4	0.00	0.00	0.00	0.00	-0.01	0.01

BE 14,6	0.00	0.00	-0.01	0.00	0.00	-0.01
BE 14,9	0.00	0.00	0.00	-0.01	0.00	0.00
BE 14,10	-0.01	0.00	0.02	-0.01	0.01	-0.02
BE 14,11	0.00	0.00	0.00	0.00	-0.01	0.03
GA 1,1	-0.02	-0.02	0.00	0.00	-0.02	-0.01
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	-0.01	0.00	0.00	-0.01
GA 4,1	-0.02	0.02	0.03	0.00	-0.03	0.01
GA 6,1	0.01	0.00	-0.03	0.00	0.01	-0.03
GA 8,1	0.00	-0.01	0.00	0.00	0.00	-0.01
GA 9,1	-0.01	-0.01	0.00	-0.04	0.00	0.00
GA 10,1	-0.15	-0.27	-0.26	0.10	0.01	0.01
GA 11,1	0.00	0.00	0.02	0.00	-0.33	-0.32
GA 12,1	-0.01	0.00	0.01	0.00	0.00	-0.02
GA 13,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	0.00	0.00
PS 1,1	0.01	-0.01	0.00	0.00	0.03	-0.03
PS 2,2	0.01	0.00	0.00	0.00	0.01	0.01
PS 3,3	0.00	0.00	0.01	0.00	0.00	0.01
PS 4,4	-0.03	0.01	0.02	0.00	0.06	-0.04
PS 5,5	-0.03	0.06	-0.02	0.00	0.00	0.00
PS 6,6	0.02	0.00	-0.07	0.00	0.02	-0.08
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.13	0.00	0.00
PS 10,10	0.02	0.03	0.01	-0.01	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.02	0.01
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	-0.01	0.01
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.01	0.00	0.00	0.00	-0.02	0.01
TE 11,11	0.02	-0.01	-0.01	0.00	-0.02	0.02
TE 12,12	0.00	0.00	0.00	0.00	-0.01	0.01
TE 13,13	0.01	-0.03	0.01	0.00	0.00	0.00
TE 14,14	0.01	-0.01	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.01	0.00	0.00	0.01
TE 17,17	-0.01	0.00	0.02	0.00	-0.02	0.02
TE 18,18	-0.01	0.00	0.02	0.00	-0.02	0.02
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	-0.06	0.00	0.00

TE 26,26	0.00	0.00	0.01	0.02	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	-0.01	0.01	-0.01	0.02	0.00	0.00
TE 29,29	0.02	-0.01	0.02	-0.02	-0.01	-0.01
TE 30,30	0.00	0.00	-0.01	0.01	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.02	-0.02
TE 32,32	0.00	0.00	0.00	0.00	-0.02	0.02
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	-0.01	-0.01	-0.01	0.00	-0.01	-0.01
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	BE 11,9	BE 11,10	BE 12,6	BE 12,9	BE 12,10	BE 13,4
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BE 11,9	1.00					
BE 11,10	0.13	1.00				
BE 12,6	-0.01	0.00	1.00			
BE 12,9	0.03	0.00	-0.16	1.00		
BE 12,10	0.01	0.05	-0.14	0.15	1.00	
BE 13,4	0.00	0.00	0.00	0.00	0.00	1.00
BE 13,6	0.00	0.00	0.00	0.00	0.00	-0.68
BE 13,9	0.00	0.00	0.00	0.01	0.00	0.05
BE 13,10	0.01	0.01	0.00	0.00	0.00	-0.17
BE 13,11	-0.01	0.00	0.00	0.00	0.00	0.23
BE 14,4	0.00	0.00	0.00	0.00	0.00	0.00
BE 14,6	0.00	0.00	-0.03	0.00	0.00	0.00
BE 14,9	0.00	0.00	0.00	-0.01	0.00	0.00
BE 14,10	0.01	0.01	0.00	0.00	-0.01	0.00
BE 14,11	-0.01	-0.01	0.00	0.00	0.00	0.00
GA 1,1	0.00	0.00	-0.08	0.00	0.00	0.00
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 6,1	0.00	0.00	-0.01	0.00	0.00	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	-0.03	0.00	-0.01	0.05	0.00	0.00
GA 10,1	-0.01	-0.04	-0.02	0.01	0.04	0.00
GA 11,1	0.07	-0.08	-0.02	0.00	0.00	0.00
GA 12,1	0.00	0.00	-0.67	0.09	-0.14	0.00
GA 13,1	0.00	0.00	0.00	0.00	0.00	-0.35
GA 14,1	0.00	0.00	0.01	0.00	0.00	0.00
PS 1,1	0.00	0.00	0.00	0.00	0.01	0.00
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00

PS 4,4	0.00	0.00	0.00	0.00	0.00	0.00
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	-0.27	0.00	0.00	0.00
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.03	0.00	0.00	-0.08	0.00	0.00
PS 10,10	0.00	-0.23	0.00	0.00	-0.03	0.00
PS 11,11	0.00	0.19	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	-0.06	0.01	0.03	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.01
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.05	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.05	-0.01	-0.01	0.00
TE 18,18	0.00	0.00	0.05	-0.01	-0.01	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	-0.01	0.00	0.00	0.04	0.00	0.00
TE 26,26	0.00	0.00	-0.01	-0.01	0.01	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.04	0.00	0.00	0.01	0.00
TE 29,29	0.02	0.01	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	-0.08	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.09	0.00	0.00	0.00	0.00
TE 33,33	0.00	-0.01	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	-0.04	-0.01	-0.01	0.00
TE 35,35	0.00	0.00	0.04	0.01	0.01	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.01
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00

TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	BE 13,6	BE 13,9	BE 13,10	BE 13,11	BE 14,4	BE 14,6
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BE 13,6	1.00					
BE 13,9	-0.18	1.00				
BE 13,10	0.05	0.10	1.00			
BE 13,11	-0.21	0.04	-0.61	1.00		
BE 14,4	0.00	0.00	0.00	0.00	1.00	
BE 14,6	0.00	0.00	0.00	0.00	-0.68	1.00
BE 14,9	0.00	0.00	0.00	0.00	0.05	-0.18
BE 14,10	0.00	0.00	0.00	0.00	-0.17	0.04
BE 14,11	0.00	0.00	0.00	0.00	0.23	-0.21
GA 1,1	0.00	0.00	0.00	0.00	0.00	0.01
GA 2,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 3,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 4,1	0.00	0.00	0.00	0.00	0.00	0.01
GA 6,1	0.00	0.00	0.00	0.00	-0.01	0.00
GA 8,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 9,1	0.00	0.00	0.00	0.00	0.00	0.01
GA 10,1	0.00	0.00	-0.01	0.00	0.00	0.00
GA 11,1	0.00	0.00	0.00	0.00	0.00	0.00
GA 12,1	0.00	0.00	0.00	0.00	0.00	0.01
GA 13,1	-0.30	0.07	-0.01	-0.15	0.00	0.00
GA 14,1	0.00	0.00	0.00	0.00	-0.34	-0.30
PS 1,1	0.00	0.00	0.00	0.00	-0.01	0.01
PS 2,2	0.00	0.00	0.00	0.00	0.00	0.00
PS 3,3	0.00	0.00	0.00	0.00	0.00	0.00
PS 4,4	0.00	0.00	0.00	0.00	-0.02	0.01
PS 5,5	0.00	0.00	0.00	0.00	0.00	0.00
PS 6,6	0.00	0.00	0.00	0.00	-0.01	0.03
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	-0.05	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	-0.01	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.02	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.02	0.01	-0.02	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	-0.01
TE 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00

TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	-0.01
TE 17,17	0.00	0.00	0.00	0.00	0.01	-0.01
TE 18,18	0.00	0.00	0.00	0.00	0.01	-0.01
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.02	0.00	0.00	0.00	0.00
TE 26,26	0.00	-0.01	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	-0.01	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.01	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	-0.02	-0.01	0.01	0.00	0.00
TE 38,38	0.00	0.02	0.02	-0.02	0.00	0.00
TE 39,39	0.00	-0.01	-0.01	0.01	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	-0.01	0.02
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.01
TE 42,42	0.00	0.00	0.00	0.00	0.01	-0.02
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	BE 14,9	BE 14,10	BE 14,11	GA 1,1	GA 2,1	GA 3,1
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BE 14,9	1.00					
BE 14,10	0.10	1.00				
BE 14,11	0.04	-0.61	1.00			
GA 1,1	0.00	0.00	0.00	1.00		
GA 2,1	0.00	0.00	0.00	0.10	1.00	
GA 3,1	0.00	0.00	0.00	0.07	0.13	1.00
GA 4,1	0.00	0.00	0.00	-0.31	-0.08	-0.06
GA 6,1	0.00	0.00	0.00	-0.16	0.03	-0.03
GA 8,1	0.00	0.00	0.00	0.07	0.14	0.10
GA 9,1	-0.01	0.00	0.00	0.01	-0.03	-0.02
GA 10,1	0.00	-0.01	0.00	0.06	0.05	0.04
GA 11,1	0.00	0.01	-0.01	0.05	0.05	0.03
GA 12,1	0.00	0.00	0.00	0.11	-0.01	-0.01
GA 13,1	0.00	0.00	0.00	0.00	0.01	0.01
GA 14,1	0.07	0.00	-0.15	-0.01	0.02	0.01
PS 1,1	0.00	0.00	0.00	0.10	0.00	-0.02
PS 2,2	0.00	0.00	0.00	-0.02	0.12	0.00
PS 3,3	0.00	0.00	0.00	-0.02	0.00	0.05
PS 4,4	0.00	0.00	0.00	-0.14	0.00	0.00

PS 5,5	0.00	0.00	0.00	0.16	0.00	0.00
PS 6,6	0.00	0.00	0.00	-0.15	0.00	0.01
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	-0.01	0.00	0.00
PS 9,9	-0.04	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	-0.02	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	-0.01	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.01	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.01	0.02	0.00	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	-0.01	0.00	0.01
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	-0.08	-0.01
TE 5,5	0.00	0.00	0.00	0.00	0.06	-0.03
TE 6,6	0.00	0.00	0.00	0.00	0.03	-0.02
TE 7,7	0.00	0.00	0.00	0.00	0.00	-0.03
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.04
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	-0.01	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	-0.01	0.00	0.00
TE 14,14	0.00	0.00	0.00	-0.01	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	-0.03	0.00	0.00
TE 18,18	0.00	0.00	0.00	-0.03	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.02	0.00	0.00	0.00	0.00	0.00
TE 26,26	-0.01	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.01	-0.01	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	-0.01	-0.01	0.00	0.00	0.00	0.00
TE 41,41	-0.01	-0.01	0.00	0.00	0.00	0.00
TE 42,42	0.01	0.02	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.01	0.01	0.01
TD 2,2	0.00	0.00	0.00	0.05	0.04	0.06
TD 3,3	0.00	0.00	0.00	0.02	0.01	0.02

Correlation Matrix of Parameter Estimates

	GA 4,1	GA 6,1	GA 8,1	GA 9,1	GA 10,1	GA 11,1
GA 4,1	1.00					
GA 6,1	-0.09	1.00				
GA 8,1	-0.05	0.06	1.00			
GA 9,1	0.02	-0.03	-0.02	1.00		
GA 10,1	-0.04	-0.01	0.03	0.02	1.00	
GA 11,1	0.02	0.00	0.02	0.01	-0.03	1.00
GA 12,1	0.00	-0.10	0.00	0.01	0.00	0.03
GA 13,1	0.00	0.00	0.01	-0.01	0.00	0.01
GA 14,1	-0.01	0.02	0.01	-0.01	0.00	0.00
PS 1,1	0.13	0.03	0.00	0.00	-0.01	-0.01
PS 2,2	0.03	0.05	-0.04	0.01	-0.02	-0.01
PS 3,3	0.01	0.03	-0.02	0.00	-0.01	-0.01
PS 4,4	-0.03	0.02	0.00	0.00	0.00	-0.01
PS 5,5	-0.06	0.01	0.00	0.00	-0.01	0.00
PS 6,6	-0.25	0.36	0.00	0.01	0.01	0.01
PS 7,7	0.00	0.00	0.01	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.02	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	-0.05	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.02	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.02
PS 12,12	0.00	-0.01	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	-0.06	0.00	0.00	0.00	0.00	0.00
TE 2,2	-0.03	0.00	0.00	0.00	0.00	0.00
TE 3,3	-0.03	0.00	0.00	0.00	0.00	0.00
TE 4,4	0.00	-0.02	0.00	0.00	0.00	0.00
TE 5,5	0.00	-0.04	0.00	0.00	0.00	0.00
TE 6,6	0.00	-0.02	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	-0.07	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.02	0.01	0.00	0.00	0.00	0.00
TE 11,11	0.01	0.02	0.00	0.00	0.00	0.01
TE 12,12	0.00	0.01	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.01	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	-0.01	0.00	0.00	0.00	0.00
TE 17,17	0.03	-0.01	0.00	-0.01	-0.01	-0.01
TE 18,18	0.03	-0.01	0.00	-0.01	-0.01	-0.01
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	-0.06	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.04	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.02	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.04	0.00	0.00
TE 26,26	0.00	0.00	0.00	-0.05	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.01	0.00	0.00

TE 28,28	0.00	0.00	0.00	0.00	-0.02	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.02	-0.01
TE 30,30	0.00	0.00	0.00	0.00	-0.01	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	-0.02
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.02
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	-0.01	0.01	0.01	0.00	0.00	0.00
TD 2,2	-0.04	0.04	0.08	-0.01	0.03	0.02
TD 3,3	-0.01	0.01	0.03	-0.01	0.01	0.01

Correlation Matrix of Parameter Estimates

	GA 12,1	GA 13,1	GA 14,1	PS 1,1	PS 2,2	PS 3,3
GA 12,1	1.00					
GA 13,1	0.00	1.00				
GA 14,1	-0.01	0.00	1.00			
PS 1,1	0.00	0.00	0.00	1.00		
PS 2,2	0.00	0.00	0.00	0.00	1.00	
PS 3,3	0.00	0.00	0.00	0.01	0.00	1.00
PS 4,4	0.00	0.00	0.00	-0.31	0.01	0.00
PS 5,5	0.00	0.00	0.00	0.25	-0.01	0.00
PS 6,6	0.07	0.00	-0.01	0.06	0.01	0.01
PS 7,7	0.00	0.00	0.00	0.00	0.00	0.00
PS 8,8	0.00	0.00	0.00	0.00	0.00	0.00
PS 9,9	0.00	0.00	0.00	0.00	0.00	0.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.12	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.01	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.01	0.00	0.00	0.00
TE 1,1	0.00	0.00	0.00	-0.17	0.00	0.00
TE 2,2	0.00	0.00	0.00	-0.07	0.00	0.00
TE 3,3	0.00	0.00	0.00	-0.08	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	-0.13	0.00
TE 5,5	0.00	0.00	0.00	0.00	-0.01	-0.01
TE 6,6	0.00	0.00	0.00	0.00	-0.01	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	-0.10
TE 8,8	0.00	0.00	0.00	0.00	0.00	-0.01
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.01	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	-0.02	0.00	0.00
TE 14,14	0.00	0.00	0.00	-0.01	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00

TE 16,16	-0.01	0.00	0.00	0.00	0.00	0.00
TE 17,17	-0.07	0.00	0.00	-0.03	0.00	0.00
TE 18,18	-0.07	0.00	0.00	-0.04	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	-0.01	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.01	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	-0.01	0.00	0.00	0.00
TE 41,41	0.00	0.00	-0.01	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.02	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	-0.01	0.00
TD 2,2	0.00	0.00	0.01	-0.01	-0.06	-0.02
TD 3,3	0.00	0.00	0.00	-0.01	-0.02	-0.01

Correlation Matrix of Parameter Estimates

	PS 4,4	PS 5,5	PS 6,6	PS 7,7	PS 8,8	PS 9,9
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PS 4,4	1.00					
PS 5,5	-0.10	1.00				
PS 6,6	0.03	0.02	1.00			
PS 7,7	0.00	0.00	0.00	1.00		
PS 8,8	0.00	0.00	0.00	0.00	1.00	
PS 9,9	0.00	0.00	0.00	0.00	0.00	1.00
PS 10,10	0.00	0.00	0.00	0.00	0.00	0.00
PS 11,11	0.00	0.00	0.00	0.00	0.00	0.00
PS 12,12	0.00	0.00	0.00	0.00	0.00	0.00
PS 13,13	0.00	0.00	0.00	0.00	0.00	0.00
PS 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 1,1	0.01	-0.05	0.01	-0.01	0.00	0.00
TE 2,2	0.01	-0.02	0.01	0.00	0.00	0.00
TE 3,3	0.01	-0.03	0.01	0.00	0.00	0.00
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	-0.01	0.00	0.00	0.00
TE 6,6	0.00	0.00	-0.01	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	-0.06	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00

TE 10,10	-0.09	0.00	0.01	-0.01	0.00	0.00
TE 11,11	-0.10	0.00	0.03	-0.02	0.00	0.00
TE 12,12	-0.03	0.00	0.01	-0.01	0.00	0.00
TE 13,13	0.00	-0.20	0.00	0.00	0.00	0.00
TE 14,14	0.00	-0.07	0.00	0.00	0.00	0.00
TE 15,15	0.00	-0.02	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	-0.05	0.00	0.00	0.00
TE 17,17	0.00	0.00	-0.09	-0.01	0.00	0.00
TE 18,18	0.00	0.00	-0.09	-0.01	0.00	0.00
TE 19,19	0.00	0.00	0.00	-0.10	0.00	0.00
TE 20,20	0.00	0.00	0.00	-0.06	0.00	0.00
TE 21,21	0.00	0.00	0.00	-0.02	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	-0.21	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.05	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.03	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	-0.37
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.30
TE 27,27	0.00	0.00	0.00	0.00	0.00	-0.06
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	-0.01	0.00	-0.02	0.00
TD 3,3	0.00	0.00	0.00	0.00	-0.01	0.00

Correlation Matrix of Parameter Estimates

	PS 10,10	PS 11,11	PS 12,12	PS 13,13	PS 14,14	TE 1,1
PS 10,10	1.00					
PS 11,11	0.00	1.00				
PS 12,12	0.00	0.00	1.00			
PS 13,13	0.00	0.00	0.00	1.00		
PS 14,14	0.00	0.00	0.00	0.00	1.00	
TE 1,1	0.00	0.00	0.00	0.00	0.00	1.00
TE 2,2	0.00	0.00	0.00	0.00	0.00	0.01
TE 3,3	0.00	0.00	0.00	0.00	0.00	0.01
TE 4,4	0.00	0.00	0.00	0.00	0.00	0.00
TE 5,5	0.00	0.00	0.00	0.00	0.00	0.00
TE 6,6	0.00	0.00	0.00	0.00	0.00	0.00
TE 7,7	0.00	0.00	0.00	0.00	0.00	0.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	0.00
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00

TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	-0.03	0.00	0.00	0.00
TE 18,18	0.00	0.00	-0.03	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	-0.12	0.01	0.00	0.00	0.00	0.00
TE 29,29	0.09	-0.05	0.00	0.00	0.00	0.00
TE 30,30	-0.03	0.01	0.00	0.00	0.00	0.00
TE 31,31	0.00	-0.13	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.03	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	-0.10	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.01	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	-0.26	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.27	0.00	0.00
TE 39,39	0.00	0.00	0.00	-0.10	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	-0.19	0.00
TE 41,41	0.00	0.00	0.00	0.00	-0.10	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.22	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	TE 2,2	TE 3,3	TE 4,4	TE 5,5	TE 6,6	TE 7,7
TE 2,2	1.00					
TE 3,3	0.00	1.00				
TE 4,4	0.00	0.00	1.00			
TE 5,5	0.00	0.00	-0.12	1.00		
TE 6,6	0.00	0.00	-0.06	-0.16	1.00	
TE 7,7	0.00	0.00	0.00	0.00	0.00	1.00
TE 8,8	0.00	0.00	0.00	0.00	0.00	-0.22
TE 9,9	0.00	0.00	0.00	0.00	0.00	0.00
TE 10,10	0.00	0.00	0.00	0.00	0.00	0.00
TE 11,11	0.00	0.00	0.00	0.00	0.00	0.00
TE 12,12	0.00	0.00	0.00	0.00	0.00	0.00
TE 13,13	0.00	0.00	0.00	0.00	0.00	0.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	0.00
TE 15,15	0.00	0.00	0.00	0.00	0.00	0.00

TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	TE 8,8	TE 9,9	TE 10,10	TE 11,11	TE 12,12	TE 13,13
TE 8,8	1.00					
TE 9,9	-0.16	1.00				
TE 10,10	0.00	0.00	1.00			
TE 11,11	0.00	0.00	-0.13	1.00		
TE 12,12	0.00	0.00	-0.04	-0.10	1.00	
TE 13,13	0.00	0.00	0.00	0.00	0.00	1.00
TE 14,14	0.00	0.00	0.00	0.00	0.00	-0.19
TE 15,15	0.00	0.00	0.00	0.00	0.00	-0.05
TE 16,16	0.00	0.00	0.00	0.00	0.00	0.00
TE 17,17	0.00	0.00	0.00	0.00	0.00	0.00
TE 18,18	0.00	0.00	0.00	0.00	0.00	0.00
TE 19,19	0.00	0.00	0.00	0.00	0.00	0.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	0.00
TE 21,21	0.00	0.00	0.00	0.00	0.00	0.00
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00

TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	TE 14,14	TE 15,15	TE 16,16	TE 17,17	TE 18,18	TE 19,19
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TE 14,14	1.00					
TE 15,15	-0.05	1.00				
TE 16,16	0.00	0.00	1.00			
TE 17,17	0.00	0.00	-0.01	1.00		
TE 18,18	0.00	0.00	-0.02	-0.11	1.00	
TE 19,19	0.00	0.00	0.00	0.00	0.00	1.00
TE 20,20	0.00	0.00	0.00	0.00	0.00	-0.13
TE 21,21	0.00	0.00	0.00	0.00	0.00	-0.05
TE 22,22	0.00	0.00	0.00	0.00	0.00	0.00
TE 23,23	0.00	0.00	0.00	0.00	0.00	0.00
TE 24,24	0.00	0.00	0.00	0.00	0.00	0.00
TE 25,25	0.00	0.00	0.00	0.00	0.00	0.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	0.00
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.00
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	TE 20,20	TE 21,21	TE 22,22	TE 23,23	TE 24,24	TE 25,25
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TE 20,20	1.00					
TE 21,21	-0.20	1.00				
TE 22,22	0.00	0.00	1.00			
TE 23,23	0.00	0.00	-0.20	1.00		
TE 24,24	0.00	0.00	-0.11	-0.21	1.00	
TE 25,25	0.00	0.00	0.00	0.00	0.00	1.00
TE 26,26	0.00	0.00	0.00	0.00	0.00	-0.40
TE 27,27	0.00	0.00	0.00	0.00	0.00	0.07
TE 28,28	0.00	0.00	0.00	0.00	0.00	0.00
TE 29,29	0.00	0.00	0.00	0.00	0.00	0.00
TE 30,30	0.00	0.00	0.00	0.00	0.00	0.00
TE 31,31	0.00	0.00	0.00	0.00	0.00	0.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	0.00
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.00
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	TE 26,26	TE 27,27	TE 28,28	TE 29,29	TE 30,30	TE 31,31
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TE 26,26	1.00					
TE 27,27	-0.32	1.00				
TE 28,28	0.00	0.00	1.00			
TE 29,29	0.00	0.00	-0.34	1.00		
TE 30,30	0.00	0.00	0.09	-0.35	1.00	
TE 31,31	0.00	0.00	0.00	0.00	0.00	1.00
TE 32,32	0.00	0.00	0.00	0.00	0.00	-0.22
TE 33,33	0.00	0.00	0.00	0.00	0.00	0.03
TE 34,34	0.00	0.00	0.00	0.00	0.00	0.00
TE 35,35	0.00	0.00	0.00	0.00	0.00	0.00
TE 36,36	0.00	0.00	0.00	0.00	0.00	0.00
TE 37,37	0.00	0.00	0.00	0.00	0.00	0.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	0.00
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.00
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00

TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	TE 32,32	TE 33,33	TE 34,34	TE 35,35	TE 36,36	TE 37,37
TE 32,32	1.00					
TE 33,33	-0.36	1.00				
TE 34,34	0.00	0.00	1.00			
TE 35,35	0.00	0.00	-0.31	1.00		
TE 36,36	0.00	0.00	-0.03	-0.19	1.00	
TE 37,37	0.00	0.00	0.00	0.00	0.00	1.00
TE 38,38	0.00	0.00	0.00	0.00	0.00	-0.48
TE 39,39	0.00	0.00	0.00	0.00	0.00	0.17
TE 40,40	0.00	0.00	0.00	0.00	0.00	0.00
TE 41,41	0.00	0.00	0.00	0.00	0.00	0.00
TE 42,42	0.00	0.00	0.00	0.00	0.00	0.00
TD 1,1	0.00	0.00	0.00	0.00	0.00	0.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	0.00
TD 3,3	0.00	0.00	0.00	0.00	0.00	0.00

Correlation Matrix of Parameter Estimates

	TE 38,38	TE 39,39	TE 40,40	TE 41,41	TE 42,42	TD 1,1
TE 38,38	1.00					
TE 39,39	-0.40	1.00				
TE 40,40	0.00	0.00	1.00			
TE 41,41	0.00	0.00	0.20	1.00		
TE 42,42	0.00	0.00	-0.47	-0.46	1.00	
TD 1,1	0.00	0.00	0.00	0.00	0.00	1.00
TD 2,2	0.00	0.00	0.00	0.00	0.00	-0.09
TD 3,3	0.00	0.00	0.00	0.00	0.00	-0.03

Correlation Matrix of Parameter Estimates

	TD 2,2	TD 3,3
TD 2,2	1.00	
TD 3,3	-0.20	1.00

TI

Standardized Solution

LAMBDA-Y

	SP	CUSTMRK	HR	PM	INFO	CI
SP22	0.84	- -	- -	- -	- -	- -
SP23	0.76	- -	- -	- -	- -	- -
SP24	0.76	- -	- -	- -	- -	- -
CSTMRK33	- -	0.85	- -	- -	- -	- -
CSTMRK34	- -	0.91	- -	- -	- -	- -
CSTMRK35	- -	0.88	- -	- -	- -	- -

HR52	- -	- -	0.87	- -	- -	- -
HR54	- -	- -	0.95	- -	- -	- -
HR55	- -	- -	0.84	- -	- -	- -
PM63	- -	- -	- -	0.92	- -	- -
PM64	- -	- -	- -	0.94	- -	- -
PM65	- -	- -	- -	0.90	- -	- -
INFO41	- -	- -	- -	- -	0.91	- -
INFO42	- -	- -	- -	- -	0.90	- -
INFO43	- -	- -	- -	- -	0.81	- -
CI73	- -	- -	- -	- -	- -	0.71
CI74	- -	- -	- -	- -	- -	0.92
CI75	- -	- -	- -	- -	- -	0.92
BR85	- -	- -	- -	- -	- -	- -
BR86	- -	- -	- -	- -	- -	- -
BR87	- -	- -	- -	- -	- -	- -
TQMFM3	- -	- -	- -	- -	- -	- -
TQMFM4	- -	- -	- -	- -	- -	- -
TQMFM5	- -	- -	- -	- -	- -	- -
PWR411	- -	- -	- -	- -	- -	- -
PWR412	- -	- -	- -	- -	- -	- -
PWR413	- -	- -	- -	- -	- -	- -
UNC421	- -	- -	- -	- -	- -	- -
UNC422	- -	- -	- -	- -	- -	- -
UNC423	- -	- -	- -	- -	- -	- -
COL431	- -	- -	- -	- -	- -	- -
COL432	- -	- -	- -	- -	- -	- -
COL433	- -	- -	- -	- -	- -	- -
QPRF441	- -	- -	- -	- -	- -	- -
QPRF443	- -	- -	- -	- -	- -	- -
QPRF444	- -	- -	- -	- -	- -	- -
SETHI453	- -	- -	- -	- -	- -	- -
SETHI454	- -	- -	- -	- -	- -	- -
SETHI455	- -	- -	- -	- -	- -	- -
WKETH457	- -	- -	- -	- -	- -	- -
WKETH458	- -	- -	- -	- -	- -	- -
WKETH459	- -	- -	- -	- -	- -	- -

LAMBDA-Y

	BR	TQM	PWR	UNIC	COL	QPRF
SP22	- -	- -	- -	- -	- -	- -
SP23	- -	- -	- -	- -	- -	- -
SP24	- -	- -	- -	- -	- -	- -
CSTMRK33	- -	- -	- -	- -	- -	- -
CSTMRK34	- -	- -	- -	- -	- -	- -
CSTMRK35	- -	- -	- -	- -	- -	- -
HR52	- -	- -	- -	- -	- -	- -
HR54	- -	- -	- -	- -	- -	- -
HR55	- -	- -	- -	- -	- -	- -
PM63	- -	- -	- -	- -	- -	- -
PM64	- -	- -	- -	- -	- -	- -
PM65	- -	- -	- -	- -	- -	- -
INFO41	- -	- -	- -	- -	- -	- -
INFO42	- -	- -	- -	- -	- -	- -

INFO43	- -	- -	- -	- -	- -	- -
CI73	- -	- -	- -	- -	- -	- -
CI74	- -	- -	- -	- -	- -	- -
CI75	- -	- -	- -	- -	- -	- -
BR85	0.89	- -	- -	- -	- -	- -
BR86	0.94	- -	- -	- -	- -	- -
BR87	0.91	- -	- -	- -	- -	- -
TQMFM3	- -	0.84	- -	- -	- -	- -
TQMFM4	- -	0.88	- -	- -	- -	- -
TQMFM5	- -	0.85	- -	- -	- -	- -
PWR411	- -	- -	0.67	- -	- -	- -
PWR412	- -	- -	0.83	- -	- -	- -
PWR413	- -	- -	0.64	- -	- -	- -
UNC421	- -	- -	- -	0.85	- -	- -
UNC422	- -	- -	- -	0.96	- -	- -
UNC423	- -	- -	- -	0.85	- -	- -
COL431	- -	- -	- -	- -	0.81	- -
COL432	- -	- -	- -	- -	0.93	- -
COL433	- -	- -	- -	- -	0.86	- -
QPRF441	- -	- -	- -	- -	- -	0.93
QPRF443	- -	- -	- -	- -	- -	0.95
QPRF444	- -	- -	- -	- -	- -	0.90
SETHI453	- -	- -	- -	- -	- -	- -
SETHI454	- -	- -	- -	- -	- -	- -
SETHI455	- -	- -	- -	- -	- -	- -
WKETH457	- -	- -	- -	- -	- -	- -
WKETH458	- -	- -	- -	- -	- -	- -
WKETH459	- -	- -	- -	- -	- -	- -

LAMBDA-Y

	SETHP	SETHW
SP22	- -	- -
SP23	- -	- -
SP24	- -	- -
CSTMRK33	- -	- -
CSTMRK34	- -	- -
CSTMRK35	- -	- -
HR52	- -	- -
HR54	- -	- -
HR55	- -	- -
PM63	- -	- -
PM64	- -	- -
PM65	- -	- -
INFO41	- -	- -
INFO42	- -	- -
INFO43	- -	- -
CI73	- -	- -
CI74	- -	- -
CI75	- -	- -
BR85	- -	- -
BR86	- -	- -
BR87	- -	- -
TQMFM3	- -	- -

TQMFM4	- -	- -
TQMFM5	- -	- -
PWR411	- -	- -
PWR412	- -	- -
PWR413	- -	- -
UNC421	- -	- -
UNC422	- -	- -
UNC423	- -	- -
COL431	- -	- -
COL432	- -	- -
COL433	- -	- -
QPRF441	- -	- -
QPRF443	- -	- -
QPRF444	- -	- -
SETHI453	0.76	- -
SETHI454	0.93	- -
SETHI455	0.74	- -
WKETH457	- -	0.80
WKETH458	- -	0.80
WKETH459	- -	0.96

LAMBDA-X

	LDR
LDR11	0.81
LDR12	0.91
LDR13	0.88

BETA

	SP	CUSTMRK	HR	PM	INFO	CI
SP	- -	- -	- -	- -	0.14	0.66
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	0.33	- -	- -	- -	- -
PM	1.02	0.15	- -	- -	- -	- -
INFO	0.76	0.16	- -	- -	- -	- -
CI	- -	0.54	0.76	-0.52	- -	- -
BR	0.18	- -	-0.15	0.42	0.05	0.30
TQM	- -	- -	0.09	0.05	-0.08	- -
PWR	- -	- -	- -	-0.09	0.08	0.24
UNIC	- -	- -	- -	0.19	-0.16	0.23
COL	- -	- -	- -	-0.26	- -	0.27
QPRF	- -	- -	- -	- -	- -	0.76
SETHP	- -	- -	- -	0.03	- -	-0.01
SETHW	- -	- -	- -	0.07	- -	-0.14

BETA

	BR	TQM	PWR	UNIC	COL	QPRF
SP	- -	- -	- -	- -	- -	- -
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	- -	- -	- -	- -	- -

PM	- -	- -	- -	- -	- -	- -
INFO	- -	- -	- -	- -	- -	- -
CI	- -	- -	- -	- -	- -	- -
BR	- -	0.02	-0.03	0.01	0.01	0.09
TQM	0.03	- -	- -	- -	- -	- -
PWR	- -	- -	- -	- -	- -	- -
UNIC	- -	- -	-0.12	- -	- -	- -
COL	- -	- -	-0.02	0.57	- -	- -
QPRF	- -	- -	0.06	0.08	- -	- -
SETHP	- -	- -	0.05	0.05	-0.05	- -
SETHW	- -	- -	0.04	0.06	0.01	- -

BETA

	SETHP	SETHW
SP	- -	- -
CUSTMRK	- -	- -
HR	- -	- -
PM	- -	- -
INFO	- -	- -
CI	- -	- -
BR	0.02	-0.01
TQM	- -	- -
PWR	- -	- -
UNIC	- -	- -
COL	- -	- -
QPRF	- -	- -
SETHP	- -	- -
SETHW	- -	- -

GAMMA

	LDR
SP	0.24
CUSTMRK	0.77
HR	0.45
PM	-0.22
INFO	- -
CI	0.23
BR	- -
TQM	0.56
PWR	-0.13
UNIC	0.22
COL	0.17
QPRF	-0.03
SETHP	0.03
SETHW	0.07

Correlation Matrix of ETA and KSI

	SP	CUSTMRK	HR	PM	INFO	CI
SP	1.00					

CUSTMRK	0.82	1.00				
HR	0.84	0.68	1.00			
PM	0.92	0.82	0.81	1.00		
INFO	0.91	0.78	0.75	0.85	1.00	
CI	0.93	0.80	0.86	0.85	0.82	1.00
BR	0.86	0.75	0.72	0.85	0.79	0.83
TQM	0.56	0.50	0.49	0.52	0.49	0.52
PWR	0.10	0.08	0.10	0.08	0.10	0.13
UNIC	0.42	0.37	0.37	0.41	0.35	0.41
COL	0.38	0.34	0.35	0.33	0.32	0.40
QPRF	0.73	0.62	0.68	0.67	0.64	0.79
SETHP	0.05	0.05	0.04	0.05	0.05	0.05
SETHW	0.03	0.03	0.01	0.03	0.03	0.01
LDR	0.86	0.77	0.70	0.77	0.77	0.77

Correlation Matrix of ETA and KSI

	BR	TQM	PWR	UNIC	COL	QPRF
BR	1.00					
TQM	0.50	1.00				
PWR	0.07	0.03	1.00			
UNIC	0.39	0.27	-0.08	1.00		
COL	0.35	0.26	-0.05	0.65	1.00	
QPRF	0.69	0.40	0.16	0.38	0.35	1.00
SETHP	0.06	0.03	0.05	0.03	-0.01	0.04
SETHW	0.02	0.03	0.02	0.06	0.04	0.01
LDR	0.72	0.63	0.05	0.41	0.41	0.60

Correlation Matrix of ETA and KSI

	SETHP	SETHW	LDR
SETHP	1.00		
SETHW	0.00	1.00	
LDR	0.05	0.05	1.00

PSI
Note: This matrix is diagonal.

SP	CUSTMRK	HR	PM	INFO	CI
0.07	0.41	0.46	0.13	0.17	0.26

PSI
Note: This matrix is diagonal.

BR	TQM	PWR	UNIC	COL	QPRF
0.22	0.60	0.97	0.78	0.54	0.37

PSI
Note: This matrix is diagonal.

SETHP SETHW

```
         --------   --------
            0.99       0.99

       Regression Matrix ETA on KSI (Standardized)

              LDR
         --------
     SP       0.86
 CUSTMRK       0.77
     HR       0.70
     PM       0.77
   INFO       0.77
     CI       0.77
     BR       0.72
    TQM       0.63
    PWR       0.05
   UNIC       0.41
    COL       0.41
   QPRF       0.60
  SETHP       0.05
  SETHW       0.05
```

TI

Total and Indirect Effects

```
       Total Effects of KSI on ETA

              LDR
         --------
     SP       0.86
            (0.03)
             25.68

 CUSTMRK       0.77
            (0.03)
             23.02

     HR       0.71
            (0.03)
             21.22

     PM       0.79
            (0.03)
             25.05

   INFO       0.79
            (0.03)
             25.43

     CI       0.78
            (0.04)
             19.97

     BR       0.73
```

```
         (0.03)
          22.88

    TQM       0.63
         (0.04)
          18.03

    PWR       0.05
         (0.04)
           1.22

   UNIC       0.42
         (0.04)
          11.91

    COL       0.42
         (0.04)
          11.44

   QPRF       0.60
         (0.03)
          18.48

  SETHP       0.05
         (0.04)
           1.35

  SETHW       0.05
         (0.04)
           1.30


         Indirect Effects of KSI on ETA

                LDR
             --------
     SP       0.62
         (0.04)
          16.93

CUSTMRK         - -

     HR       0.26
         (0.04)
           7.23

     PM       1.01
         (0.06)
          17.91

   INFO       0.79
         (0.03)
          25.43

     CI       0.54
```

(0.05)
11.21

BR	0.73
	(0.03)
	22.88
TQM	0.06
	(0.05)
	1.38
PWR	0.18
	(0.06)
	3.05
UNIC	0.20
	(0.05)
	3.93
COL	0.25
	(0.05)
	5.21
QPRF	0.63
	(0.04)
	15.07
SETHP	0.02
	(0.05)
	0.28
SETHW	-0.03
	(0.05)
	-0.50

Total Effects of ETA on ETA

	SP	CUSTMRK	HR	PM	INFO	CI
SP	-0.20	0.39	0.40	-0.27	0.11	0.53
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)
	-3.04	11.84	15.70	-6.69	2.60	13.83
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	0.33	- -	- -	- -	- -
		(0.05)				
		7.38				
PM	0.84	0.56	0.41	-0.28	0.11	0.55
	(0.06)	(0.04)	(0.03)	(0.05)	(0.04)	(0.03)
	13.04	14.67	14.09	-5.69	2.59	18.01
INFO	0.62	0.47	0.31	-0.21	0.09	0.41

	(0.06)	(0.04)	(0.02)	(0.03)	(0.03)	(0.03)
	10.83	12.27	12.59	-6.10	2.62	12.27
CI	-0.43	0.50	0.54	-0.37	-0.06	-0.28
	(0.07)	(0.04)	(0.03)	(0.05)	(0.02)	(0.05)
	-5.96	11.85	15.87	-7.71	-2.47	-5.69
BR	0.37	0.47	0.32	0.11	0.10	0.62
	(0.12)	(0.04)	(0.03)	(0.08)	(0.06)	(0.05)
	2.97	12.85	9.35	1.32	1.57	11.86
TQM	0.01	0.04	0.10	0.06	-0.07	0.02
	(0.06)	(0.03)	(0.05)	(0.07)	(0.08)	(0.05)
	0.12	1.21	2.11	0.77	-1.00	0.33
PWR	-0.13	0.11	0.12	-0.17	0.06	0.16
	(0.11)	(0.04)	(0.04)	(0.10)	(0.10)	(0.05)
	-1.19	2.75	3.24	-1.71	0.63	3.16
UNIC	-0.02	0.13	0.14	0.10	-0.17	0.19
	(0.09)	(0.03)	(0.03)	(0.08)	(0.08)	(0.04)
	-0.25	3.93	4.49	1.24	-2.05	4.43
COL	-0.35	0.06	0.12	-0.22	-0.15	0.15
	(0.09)	(0.04)	(0.03)	(0.08)	(0.05)	(0.05)
	-3.67	1.78	3.57	-2.78	-2.78	3.43
QPRF	-0.34	0.40	0.43	-0.29	-0.06	0.57
	(0.06)	(0.04)	(0.03)	(0.04)	(0.02)	(0.05)
	-5.75	10.96	13.85	-7.01	-2.63	10.77
SETHP	0.04	0.02	0.01	0.03	0.01	0.02
	(0.10)	(0.04)	(0.03)	(0.08)	(0.02)	(0.04)
	0.37	0.55	0.40	0.36	0.40	0.40
SETHW	0.11	-0.02	-0.03	0.10	0.01	-0.05
	(0.10)	(0.04)	(0.03)	(0.08)	(0.02)	(0.04)
	1.10	-0.58	-1.05	1.17	0.40	-1.05

Total Effects of ETA on ETA

	BR	TQM	PWR	UNIC	COL	QPRF
SP	- -	- -	- -	- -	- -	- -
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	- -	- -	- -	- -	- -
PM	- -	- -	- -	- -	- -	- -
INFO	- -	- -	- -	- -	- -	- -
CI	- -	- -	- -	- -	- -	- -

BR	0.00	0.02	-0.02	0.02	0.01	0.09
	(0.00)	(0.06)	(0.02)	(0.02)	(0.03)	(0.03)
	0.38	0.37	-1.09	0.92	0.34	2.79
TQM	0.03	0.00	0.00	0.00	0.00	0.00
	(0.14)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
	0.21	0.38	-0.20	0.20	0.17	0.21
PWR	- -	- -	- -	- -	- -	- -
UNIC	- -	- -	-0.12	- -	- -	- -
			(0.04)			
			-3.30			
COL	- -	- -	-0.09	0.58	- -	- -
			(0.04)	(0.04)		
			-2.51	16.13		
QPRF	- -	- -	0.05	0.08	- -	- -
			(0.03)	(0.03)		
			2.09	3.15		
SETHP	- -	- -	0.05	0.01	-0.05	- -
			(0.04)	(0.04)	(0.05)	
			1.18	0.35	-1.03	
SETHW	- -	- -	0.03	0.06	0.01	- -
			(0.04)	(0.04)	(0.05)	
			0.80	1.64	0.23	

Total Effects of ETA on ETA

	SETHP	SETHW
SP	- -	- -
CUSTMRK	- -	- -
HR	- -	- -
PM	- -	- -
INFO	- -	- -
CI	- -	- -
BR	0.02	-0.01
	(0.02)	(0.02)
	0.85	-0.27
TQM	0.00	0.00
	(0.00)	(0.00)
	0.20	-0.17

PWR	- -	- -
UNIC	- -	- -
COL	- -	- -
QPRF	- -	- -
SETHP	- -	- -
SETHW	- -	- -

Largest Eigenvalue of B*B' (Stability Index) is 1.788

Indirect Effects of ETA on ETA

	SP	CUSTMRK	HR	PM	INFO	CI
SP	-0.20	0.39	0.40	-0.27	-0.03	-0.13
	(0.06)	(0.03)	(0.03)	(0.04)	(0.01)	(0.05)
	-3.04	11.84	15.70	-6.69	-3.13	-2.64
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	- -	- -	- -	- -	- -
PM	-0.21	0.41	0.41	-0.28	0.11	0.55
	(0.07)	(0.04)	(0.03)	(0.05)	(0.04)	(0.03)
	-2.77	10.25	14.09	-5.69	2.59	18.01
INFO	-0.15	0.30	0.31	-0.21	0.09	0.41
	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
	-2.93	10.67	12.59	-6.10	2.62	12.27
CI	-0.43	-0.04	-0.21	0.15	-0.06	-0.28
	(0.07)	(0.05)	(0.05)	(0.05)	(0.02)	(0.05)
	-5.96	-0.70	-4.27	2.73	-2.47	-5.69
BR	0.19	0.47	0.47	-0.31	0.04	0.31
	(0.11)	(0.04)	(0.04)	(0.05)	(0.03)	(0.09)
	1.77	12.85	12.61	-6.08	1.56	3.65
TQM	0.01	0.04	0.01	0.00	0.00	0.02
	(0.06)	(0.03)	(0.03)	(0.05)	(0.01)	(0.05)
	0.12	1.21	0.29	0.09	0.31	0.33
PWR	-0.13	0.11	0.12	-0.08	-0.02	-0.08
	(0.11)	(0.04)	(0.04)	(0.03)	(0.02)	(0.07)
	-1.19	2.75	3.24	-3.07	-1.09	-1.19
UNIC	-0.02	0.13	0.14	-0.09	-0.01	-0.04
	(0.09)	(0.03)	(0.03)	(0.03)	(0.02)	(0.06)
	-0.25	3.93	4.49	-3.11	-0.73	-0.72

COL	-0.35	0.06	0.12	0.04	-0.15	-0.12
	(0.09)	(0.04)	(0.03)	(0.05)	(0.05)	(0.06)
	-3.67	1.78	3.57	0.73	-2.78	-1.97
QPRF	-0.34	0.40	0.43	-0.29	-0.06	-0.19
	(0.06)	(0.04)	(0.03)	(0.04)	(0.02)	(0.04)
	-5.75	10.96	13.85	-7.01	-2.63	-4.45
SETHP	0.04	0.02	0.01	0.00	0.01	0.02
	(0.10)	(0.04)	(0.03)	(0.03)	(0.02)	(0.07)
	0.37	0.55	0.40	0.11	0.40	0.36
SETHW	0.11	-0.02	-0.03	0.03	0.01	0.09
	(0.10)	(0.04)	(0.03)	(0.03)	(0.02)	(0.07)
	1.10	-0.58	-1.05	1.08	0.40	1.42

Indirect Effects of ETA on ETA

	BR	TQM	PWR	UNIC	COL	QPRF
SP	- -	- -	- -	- -	- -	- -
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	- -	- -	- -	- -	- -
PM	- -	- -	- -	- -	- -	- -
INFO	- -	- -	- -	- -	- -	- -
CI	- -	- -	- -	- -	- -	- -
BR	0.00	0.00	0.00	0.01	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.02)	(0.00)	(0.00)
	0.38	0.42	0.91	0.83	-0.67	0.37
TQM	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
	0.14	0.38	-0.20	0.20	0.17	0.21
PWR	- -	- -	- -	- -	- -	- -
UNIC	- -	- -	- -	- -	- -	- -
COL	- -	- -	-0.07	- -	- -	- -
			(0.02)			
			-3.25			
QPRF	- -	- -	-0.01	- -	- -	- -
			(0.00)			
			-2.28			
SETHP	- -	- -	0.00	-0.03	- -	- -

			(0.01)	(0.03)		
			-0.07	-1.03		
SETHW	- -	- -	-0.01	0.01	- -	- -
			(0.01)	(0.03)		
			-1.49	0.23		

Indirect Effects of ETA on ETA

	SETHP	SETHW
SP	- -	- -
CUSTMRK	- -	- -
HR	- -	- -
PM	- -	- -
INFO	- -	- -
CI	- -	- -
BR	0.00	0.00
	(0.00)	(0.00)
	0.34	-0.22
TQM	0.00	0.00
	(0.00)	(0.00)
	0.20	-0.17
PWR	- -	- -
UNIC	- -	- -
COL	- -	- -
QPRF	- -	- -
SETHP	- -	- -
SETHW	- -	- -

Total Effects of ETA on Y

	SP	CUSTMRK	HR	PM	INFO	CI
SP22	0.67	0.33	0.33	-0.23	0.09	0.44
	(0.05)	(0.03)	(0.02)	(0.03)	(0.04)	(0.03)
	12.36	11.84	15.70	-6.69	2.60	13.83
SP23	0.61	0.30	0.30	-0.20	0.08	0.40
	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)

	11.27	11.54	15.03	-6.63	2.59	13.37
SP24	0.61	0.30	0.30	-0.21	0.08	0.40
	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
	11.29	11.56	15.08	-6.64	2.59	13.40
CSTMRK33	- -	0.85	- -	- -	- -	- -
CSTMRK34	- -	0.90	- -	- -	- -	- -
		(0.02)				
		37.14				
CSTMRK35	- -	0.87	- -	- -	- -	- -
		(0.02)				
		35.04				
HR52	- -	0.29	0.86	- -	- -	- -
		(0.04)				
		7.38				
HR54	- -	0.31	0.94	- -	- -	- -
		(0.04)	(0.02)			
		7.43	42.07			
HR55	- -	0.28	0.83	- -	- -	- -
		(0.04)	(0.02)			
		7.36	33.65			
PM63	0.75	0.51	0.37	0.65	0.10	0.49
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)
	13.04	14.67	14.09	14.47	2.59	18.01
PM64	0.78	0.52	0.38	0.67	0.11	0.51
	(0.06)	(0.04)	(0.03)	(0.05)	(0.04)	(0.03)
	13.11	14.80	14.21	13.94	2.59	18.22
PM65	0.74	0.50	0.37	0.63	0.10	0.48
	(0.06)	(0.03)	(0.03)	(0.05)	(0.04)	(0.03)
	12.99	14.59	14.02	13.79	2.59	17.88
INFO41	0.55	0.42	0.27	-0.19	0.97	0.36
	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
	10.83	12.27	12.59	-6.10	33.39	12.27
INFO42	0.55	0.42	0.27	-0.19	0.96	0.36
	(0.05)	(0.03)	(0.02)	(0.03)	(0.04)	(0.03)
	10.81	12.25	12.57	-6.10	26.39	12.25
INFO43	0.49	0.37	0.24	-0.17	0.86	0.32
	(0.05)	(0.03)	(0.02)	(0.03)	(0.04)	(0.03)
	10.59	11.93	12.23	-6.06	23.67	11.93
CI73	-0.31	0.35	0.39	-0.26	-0.04	0.51
	(0.05)	(0.03)	(0.02)	(0.03)	(0.02)	(0.04)
	-5.96	11.85	15.87	-7.71	-2.47	14.47

CI74	-0.39	0.46	0.49	-0.34	-0.05	0.65
	(0.06)	(0.04)	(0.03)	(0.04)	(0.02)	(0.05)
	-6.05	12.65	17.94	-7.90	-2.48	12.84
CI75	-0.39	0.46	0.49	-0.34	-0.05	0.65
	(0.06)	(0.04)	(0.03)	(0.04)	(0.02)	(0.05)
	-6.05	12.65	17.95	-7.90	-2.48	12.84
BR85	0.32	0.41	0.28	0.09	0.09	0.54
	(0.11)	(0.03)	(0.03)	(0.07)	(0.05)	(0.05)
	2.97	12.85	9.35	1.32	1.57	11.86
BR86	0.34	0.44	0.30	0.10	0.09	0.57
	(0.12)	(0.03)	(0.03)	(0.08)	(0.06)	(0.05)
	2.97	13.01	9.41	1.32	1.57	11.98
BR87	0.33	0.43	0.29	0.10	0.09	0.56
	(0.11)	(0.03)	(0.03)	(0.07)	(0.06)	(0.05)
	2.97	12.93	9.38	1.32	1.57	11.92
TQMFM3	0.01	0.03	0.08	0.05	-0.06	0.01
	(0.05)	(0.03)	(0.04)	(0.06)	(0.06)	(0.04)
	0.12	1.21	2.11	0.77	-1.00	0.33
TQMFM4	0.01	0.03	0.08	0.05	-0.07	0.01
	(0.05)	(0.03)	(0.04)	(0.07)	(0.07)	(0.04)
	0.12	1.21	2.11	0.77	-1.00	0.33
TQMFM5	0.01	0.03	0.08	0.05	-0.06	0.01
	(0.05)	(0.03)	(0.04)	(0.06)	(0.06)	(0.04)
	0.12	1.21	2.11	0.77	-1.00	0.33
PWR411	-0.09	0.07	0.08	-0.11	0.04	0.11
	(0.07)	(0.03)	(0.02)	(0.07)	(0.07)	(0.03)
	-1.19	2.75	3.24	-1.71	0.63	3.16
PWR412	-0.11	0.09	0.10	-0.14	0.05	0.13
	(0.09)	(0.03)	(0.03)	(0.08)	(0.08)	(0.04)
	-1.19	2.77	3.26	-1.72	0.63	3.19
PWR413	-0.08	0.07	0.08	-0.11	0.04	0.10
	(0.07)	(0.03)	(0.02)	(0.06)	(0.06)	(0.03)
	-1.19	2.75	3.23	-1.71	0.63	3.16
UNC421	-0.02	0.11	0.12	0.09	-0.14	0.16
	(0.08)	(0.03)	(0.03)	(0.07)	(0.07)	(0.04)
	-0.25	3.93	4.49	1.24	-2.05	4.43
UNC422	-0.02	0.13	0.13	0.10	-0.16	0.18
	(0.09)	(0.03)	(0.03)	(0.08)	(0.08)	(0.04)
	-0.25	3.94	4.50	1.24	-2.05	4.45
UNC423	-0.02	0.11	0.12	0.09	-0.14	0.16
	(0.08)	(0.03)	(0.03)	(0.07)	(0.07)	(0.04)

	-0.25	3.93	4.49	1.24	-2.05	4.43
COL431	-0.27	0.05	0.09	-0.18	-0.12	0.12
	(0.07)	(0.03)	(0.03)	(0.06)	(0.04)	(0.04)
	-3.67	1.78	3.57	-2.78	-2.78	3.43
COL432	-0.32	0.06	0.11	-0.20	-0.13	0.14
	(0.09)	(0.03)	(0.03)	(0.07)	(0.05)	(0.04)
	-3.68	1.79	3.58	-2.79	-2.78	3.44
COL433	-0.29	0.05	0.10	-0.19	-0.12	0.13
	(0.08)	(0.03)	(0.03)	(0.07)	(0.04)	(0.04)
	-3.68	1.78	3.57	-2.79	-2.78	3.44
QPRF441	-0.31	0.37	0.40	-0.26	-0.05	0.53
	(0.05)	(0.03)	(0.03)	(0.04)	(0.02)	(0.05)
	-5.75	10.96	13.85	-7.01	-2.63	10.77
QPRF443	-0.32	0.38	0.41	-0.27	-0.05	0.54
	(0.06)	(0.03)	(0.03)	(0.04)	(0.02)	(0.05)
	-5.76	11.01	13.96	-7.03	-2.63	10.82
QPRF444	-0.30	0.36	0.39	-0.26	-0.05	0.51
	(0.05)	(0.03)	(0.03)	(0.04)	(0.02)	(0.05)
	-5.74	10.91	13.76	-7.00	-2.63	10.72
SETHI453	0.03	0.02	0.01	0.02	0.00	0.01
	(0.07)	(0.03)	(0.03)	(0.06)	(0.01)	(0.03)
	0.37	0.55	0.40	0.36	0.40	0.40
SETHI454	0.03	0.02	0.01	0.03	0.01	0.02
	(0.09)	(0.03)	(0.03)	(0.08)	(0.01)	(0.04)
	0.37	0.55	0.40	0.36	0.40	0.40
SETHI455	0.03	0.01	0.01	0.02	0.00	0.01
	(0.07)	(0.03)	(0.02)	(0.06)	(0.01)	(0.03)
	0.37	0.55	0.40	0.36	0.40	0.40
WKETH457	0.08	-0.02	-0.03	0.08	0.01	-0.04
	(0.08)	(0.03)	(0.03)	(0.06)	(0.01)	(0.03)
	1.10	-0.58	-1.05	1.17	0.40	-1.05
WKETH458	0.08	-0.02	-0.03	0.08	0.01	-0.04
	(0.08)	(0.03)	(0.03)	(0.06)	(0.01)	(0.03)
	1.10	-0.58	-1.05	1.17	0.40	-1.05
WKETH459	0.10	-0.02	-0.03	0.09	0.01	-0.04
	(0.09)	(0.03)	(0.03)	(0.08)	(0.02)	(0.04)
	1.10	-0.58	-1.05	1.18	0.40	-1.05

Total Effects of ETA on Y

BR	TQM	PWR	UNIC	COL	QPRF

SP22	- -	- -	- -	- -	- -	- -
SP23	- -	- -	- -	- -	- -	- -
SP24	- -	- -	- -	- -	- -	- -
CSTMRK33	- -	- -	- -	- -	- -	- -
CSTMRK34	- -	- -	- -	- -	- -	- -
CSTMRK35	- -	- -	- -	- -	- -	- -
HR52	- -	- -	- -	- -	- -	- -
HR54	- -	- -	- -	- -	- -	- -
HR55	- -	- -	- -	- -	- -	- -
PM63	- -	- -	- -	- -	- -	- -
PM64	- -	- -	- -	- -	- -	- -
PM65	- -	- -	- -	- -	- -	- -
INFO41	- -	- -	- -	- -	- -	- -
INFO42	- -	- -	- -	- -	- -	- -
INFO43	- -	- -	- -	- -	- -	- -
CI73	- -	- -	- -	- -	- -	- -
CI74	- -	- -	- -	- -	- -	- -
CI75	- -	- -	- -	- -	- -	- -
BR85	0.88	0.02	-0.02	0.02	0.01	0.08
	(0.00)	(0.05)	(0.02)	(0.02)	(0.02)	(0.03)
	599.38	0.37	-1.09	0.92	0.34	2.79
BR86	0.93	0.02	-0.02	0.02	0.01	0.09
	(0.02)	(0.05)	(0.02)	(0.02)	(0.02)	(0.03)
	45.81	0.37	-1.09	0.92	0.34	2.79
BR87	0.90	0.02	-0.02	0.02	0.01	0.08
	(0.02)	(0.05)	(0.02)	(0.02)	(0.02)	(0.03)
	43.05	0.37	-1.09	0.92	0.34	2.79
TQMFM3	0.03	0.84	0.00	0.00	0.00	0.00
	(0.12)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
	0.21	599.38	-0.20	0.20	0.17	0.21
TQMFM4	0.03	0.87	0.00	0.00	0.00	0.00
	(0.13)	(0.03)	(0.00)	(0.00)	(0.00)	(0.01)
	0.21	31.80	-0.20	0.20	0.17	0.21

TQMFM5	0.03	0.84	0.00	0.00	0.00	0.00
	(0.12)	(0.03)	(0.00)	(0.00)	(0.00)	(0.01)
	0.21	30.66	-0.20	0.20	0.17	0.21
PWR411	- -	- -	0.67	- -	- -	- -
PWR412	- -	- -	0.83	- -	- -	- -
			(0.05)			
			15.38			
PWR413	- -	- -	0.64	- -	- -	- -
			(0.04)			
			15.48			
UNC421	- -	- -	-0.10	0.84	- -	- -
			(0.03)			
			-3.30			
UNC422	- -	- -	-0.11	0.95	- -	- -
			(0.03)	(0.02)		
			-3.30	39.52		
UNC423	- -	- -	-0.10	0.84	- -	- -
			(0.03)	(0.03)		
			-3.30	33.60		
COL431	- -	- -	-0.07	0.46	0.79	- -
			(0.03)	(0.03)		
			-2.51	16.13		
COL432	- -	- -	-0.08	0.53	0.91	- -
			(0.03)	(0.03)	(0.03)	
			-2.52	17.18	33.44	
COL433	- -	- -	-0.08	0.49	0.84	- -
			(0.03)	(0.03)	(0.03)	
			-2.52	16.53	30.82	
QPRF441	- -	- -	0.05	0.08	- -	0.92
			(0.02)	(0.02)		
			2.09	3.15		
QPRF443	- -	- -	0.05	0.08	- -	0.95
			(0.02)	(0.02)		(0.02)
			2.09	3.15		54.53
QPRF444	- -	- -	0.05	0.07	- -	0.90
			(0.02)	(0.02)		(0.02)
			2.09	3.15		46.25
SETHI453	- -	- -	0.04	0.01	-0.04	- -
			(0.03)	(0.03)	(0.04)	
			1.18	0.35	-1.03	

SETHI454	- -	- -	0.04	0.01	-0.05	- -
			(0.04)	(0.04)	(0.05)	
			1.19	0.35	-1.03	
SETHI455	- -	- -	0.03	0.01	-0.04	- -
			(0.03)	(0.03)	(0.04)	
			1.18	0.35	-1.03	
WKETH457	- -	- -	0.02	0.05	0.01	- -
			(0.03)	(0.03)	(0.04)	
			0.80	1.64	0.23	
WKETH458	- -	- -	0.02	0.05	0.01	- -
			(0.03)	(0.03)	(0.04)	
			0.80	1.64	0.23	
WKETH459	- -	- -	0.03	0.06	0.01	- -
			(0.04)	(0.04)	(0.05)	
			0.80	1.64	0.23	

Total Effects of ETA on Y

	SETHP	SETHW
	--------	--------
SP22	- -	- -
SP23	- -	- -
SP24	- -	- -
CSTMRK33	- -	- -
CSTMRK34	- -	- -
CSTMRK35	- -	- -
HR52	- -	- -
HR54	- -	- -
HR55	- -	- -
PM63	- -	- -
PM64	- -	- -
PM65	- -	- -
INFO41	- -	- -
INFO42	- -	- -
INFO43	- -	- -

CI73	- -	- -
CI74	- -	- -
CI75	- -	- -
BR85	0.01	0.00
	(0.02)	(0.02)
	0.85	-0.27
BR86	0.02	0.00
	(0.02)	(0.02)
	0.85	-0.27
BR87	0.01	0.00
	(0.02)	(0.02)
	0.85	-0.27
TQMFM3	0.00	0.00
	(0.00)	(0.00)
	0.20	-0.17
TQMFM4	0.00	0.00
	(0.00)	(0.00)
	0.20	-0.17
TQMFM5	0.00	0.00
	(0.00)	(0.00)
	0.20	-0.17
PWR411	- -	- -
PWR412	- -	- -
PWR413	- -	- -
UNC421	- -	- -
UNC422	- -	- -
UNC423	- -	- -
COL431	- -	- -
COL432	- -	- -
COL433	- -	- -
QPRF441	- -	- -
QPRF443	- -	- -
QPRF444	- -	- -
SETHI453	0.76	- -

SETHI454	0.92	- -
	(0.04)	
	24.15	
SETHI455	0.73	- -
	(0.03)	
	22.76	
WKETH457	- -	0.79
WKETH458	- -	0.79
	(0.03)	
	27.16	
WKETH459	- -	0.95
	(0.03)	
	29.70	

Indirect Effects of ETA on Y

	SP	CUSTMRK	HR	PM	INFO	CI
SP22	-0.17	0.33	0.33	-0.23	0.09	0.44
	(0.05)	(0.03)	(0.02)	(0.03)	(0.04)	(0.03)
	-3.04	11.84	15.70	-6.69	2.60	13.83
SP23	-0.15	0.30	0.30	-0.20	0.08	0.40
	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
	-3.02	11.54	15.03	-6.63	2.59	13.37
SP24	-0.15	0.30	0.30	-0.21	0.08	0.40
	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
	-3.02	11.56	15.08	-6.64	2.59	13.40
CSTMRK33	- -	- -	- -	- -	- -	- -
CSTMRK34	- -	- -	- -	- -	- -	- -
CSTMRK35	- -	- -	- -	- -	- -	- -
HR52	- -	0.29	- -	- -	- -	- -
		(0.04)				
		7.38				
HR54	- -	0.31	- -	- -	- -	- -
		(0.04)				
		7.43				
HR55	- -	0.28	- -	- -	- -	- -
		(0.04)				
		7.36				
PM63	0.75	0.51	0.37	-0.25	0.10	0.49

	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)
	13.04	14.67	14.09	-5.69	2.59	18.01
PM64	0.78	0.52	0.38	-0.26	0.11	0.51
	(0.06)	(0.04)	(0.03)	(0.05)	(0.04)	(0.03)
	13.11	14.80	14.21	-5.66	2.59	18.22
PM65	0.74	0.50	0.37	-0.25	0.10	0.48
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)
	12.99	14.59	14.02	-5.65	2.59	17.88
INFO41	0.55	0.42	0.27	-0.19	0.08	0.36
	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
	10.83	12.27	12.59	-6.10	2.62	12.27
INFO42	0.55	0.42	0.27	-0.19	0.08	0.36
	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
	10.81	12.25	12.57	-6.10	2.61	12.25
INFO43	0.49	0.37	0.24	-0.17	0.07	0.32
	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
	10.59	11.93	12.23	-6.06	2.61	11.93
CI73	-0.31	0.35	0.39	-0.26	-0.04	-0.20
	(0.05)	(0.03)	(0.02)	(0.03)	(0.02)	(0.04)
	-5.96	11.85	15.87	-7.71	-2.47	-5.69
CI74	-0.39	0.46	0.49	-0.34	-0.05	-0.26
	(0.06)	(0.04)	(0.03)	(0.04)	(0.02)	(0.05)
	-6.05	12.65	17.94	-7.90	-2.48	-5.57
CI75	-0.39	0.46	0.49	-0.34	-0.05	-0.26
	(0.06)	(0.04)	(0.03)	(0.04)	(0.02)	(0.05)
	-6.05	12.65	17.95	-7.90	-2.48	-5.57
BR85	0.32	0.41	0.28	0.09	0.09	0.54
	(0.11)	(0.03)	(0.03)	(0.07)	(0.05)	(0.05)
	2.97	12.85	9.35	1.32	1.57	11.86
BR86	0.34	0.44	0.30	0.10	0.09	0.57
	(0.12)	(0.03)	(0.03)	(0.08)	(0.06)	(0.05)
	2.97	13.01	9.41	1.32	1.57	11.98
BR87	0.33	0.43	0.29	0.10	0.09	0.56
	(0.11)	(0.03)	(0.03)	(0.07)	(0.06)	(0.05)
	2.97	12.93	9.38	1.32	1.57	11.92
TQMFM3	0.01	0.03	0.08	0.05	-0.06	0.01
	(0.05)	(0.03)	(0.04)	(0.06)	(0.06)	(0.04)
	0.12	1.21	2.11	0.77	-1.00	0.33
TQMFM4	0.01	0.03	0.08	0.05	-0.07	0.01
	(0.05)	(0.03)	(0.04)	(0.07)	(0.07)	(0.04)
	0.12	1.21	2.11	0.77	-1.00	0.33

TQMFM5	0.01	0.03	0.08	0.05	-0.06	0.01
	(0.05)	(0.03)	(0.04)	(0.06)	(0.06)	(0.04)
	0.12	1.21	2.11	0.77	-1.00	0.33
PWR411	-0.09	0.07	0.08	-0.11	0.04	0.11
	(0.07)	(0.03)	(0.02)	(0.07)	(0.07)	(0.03)
	-1.19	2.75	3.24	-1.71	0.63	3.16
PWR412	-0.11	0.09	0.10	-0.14	0.05	0.13
	(0.09)	(0.03)	(0.03)	(0.08)	(0.08)	(0.04)
	-1.19	2.77	3.26	-1.72	0.63	3.19
PWR413	-0.08	0.07	0.08	-0.11	0.04	0.10
	(0.07)	(0.03)	(0.02)	(0.06)	(0.06)	(0.03)
	-1.19	2.75	3.23	-1.71	0.63	3.16
UNC421	-0.02	0.11	0.12	0.09	-0.14	0.16
	(0.08)	(0.03)	(0.03)	(0.07)	(0.07)	(0.04)
	-0.25	3.93	4.49	1.24	-2.05	4.43
UNC422	-0.02	0.13	0.13	0.10	-0.16	0.18
	(0.09)	(0.03)	(0.03)	(0.08)	(0.08)	(0.04)
	-0.25	3.94	4.50	1.24	-2.05	4.45
UNC423	-0.02	0.11	0.12	0.09	-0.14	0.16
	(0.08)	(0.03)	(0.03)	(0.07)	(0.07)	(0.04)
	-0.25	3.93	4.49	1.24	-2.05	4.43
COL431	-0.27	0.05	0.09	-0.18	-0.12	0.12
	(0.07)	(0.03)	(0.03)	(0.06)	(0.04)	(0.04)
	-3.67	1.78	3.57	-2.78	-2.78	3.43
COL432	-0.32	0.06	0.11	-0.20	-0.13	0.14
	(0.09)	(0.03)	(0.03)	(0.07)	(0.05)	(0.04)
	-3.68	1.79	3.58	-2.79	-2.78	3.44
COL433	-0.29	0.05	0.10	-0.19	-0.12	0.13
	(0.08)	(0.03)	(0.03)	(0.07)	(0.04)	(0.04)
	-3.68	1.78	3.57	-2.79	-2.78	3.44
QPRF441	-0.31	0.37	0.40	-0.26	-0.05	0.53
	(0.05)	(0.03)	(0.03)	(0.04)	(0.02)	(0.05)
	-5.75	10.96	13.85	-7.01	-2.63	10.77
QPRF443	-0.32	0.38	0.41	-0.27	-0.05	0.54
	(0.06)	(0.03)	(0.03)	(0.04)	(0.02)	(0.05)
	-5.76	11.01	13.96	-7.03	-2.63	10.82
QPRF444	-0.30	0.36	0.39	-0.26	-0.05	0.51
	(0.05)	(0.03)	(0.03)	(0.04)	(0.02)	(0.05)
	-5.74	10.91	13.76	-7.00	-2.63	10.72
SETHI453	0.03	0.02	0.01	0.02	0.00	0.01
	(0.07)	(0.03)	(0.03)	(0.06)	(0.01)	(0.03)
	0.37	0.55	0.40	0.36	0.40	0.40

SETHI454	0.03	0.02	0.01	0.03	0.01	0.02
	(0.09)	(0.03)	(0.03)	(0.08)	(0.01)	(0.04)
	0.37	0.55	0.40	0.36	0.40	0.40
SETHI455	0.03	0.01	0.01	0.02	0.00	0.01
	(0.07)	(0.03)	(0.02)	(0.06)	(0.01)	(0.03)
	0.37	0.55	0.40	0.36	0.40	0.40
WKETH457	0.08	-0.02	-0.03	0.08	0.01	-0.04
	(0.08)	(0.03)	(0.03)	(0.06)	(0.01)	(0.03)
	1.10	-0.58	-1.05	1.17	0.40	-1.05
WKETH458	0.08	-0.02	-0.03	0.08	0.01	-0.04
	(0.08)	(0.03)	(0.03)	(0.06)	(0.01)	(0.03)
	1.10	-0.58	-1.05	1.17	0.40	-1.05
WKETH459	0.10	-0.02	-0.03	0.09	0.01	-0.04
	(0.09)	(0.03)	(0.03)	(0.08)	(0.02)	(0.04)
	1.10	-0.58	-1.05	1.18	0.40	-1.05

Indirect Effects of ETA on Y

	BR	TQM	PWR	UNIC	COL	QPRF
SP22	- -	- -	- -	- -	- -	- -
SP23	- -	- -	- -	- -	- -	- -
SP24	- -	- -	- -	- -	- -	- -
CSTMRK33	- -	- -	- -	- -	- -	- -
CSTMRK34	- -	- -	- -	- -	- -	- -
CSTMRK35	- -	- -	- -	- -	- -	- -
HR52	- -	- -	- -	- -	- -	- -
HR54	- -	- -	- -	- -	- -	- -
HR55	- -	- -	- -	- -	- -	- -
PM63	- -	- -	- -	- -	- -	- -
PM64	- -	- -	- -	- -	- -	- -
PM65	- -	- -	- -	- -	- -	- -
INFO41	- -	- -	- -	- -	- -	- -
INFO42	- -	- -	- -	- -	- -	- -
INFO43	- -	- -	- -	- -	- -	- -

CI73	--	--	--	--	--	--
CI74	--	--	--	--	--	--
CI75	--	--	--	--	--	--
BR85	0.00	0.02	-0.02	0.02	0.01	0.08
	(0.00)	(0.05)	(0.02)	(0.02)	(0.02)	(0.03)
	0.38	0.37	-1.09	0.92	0.34	2.79
BR86	0.00	0.02	-0.02	0.02	0.01	0.09
	(0.00)	(0.05)	(0.02)	(0.02)	(0.02)	(0.03)
	0.38	0.37	-1.09	0.92	0.34	2.79
BR87	0.00	0.02	-0.02	0.02	0.01	0.08
	(0.00)	(0.05)	(0.02)	(0.02)	(0.02)	(0.03)
	0.38	0.37	-1.09	0.92	0.34	2.79
TQMFM3	0.03	0.00	0.00	0.00	0.00	0.00
	(0.12)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
	0.21	0.38	-0.20	0.20	0.17	0.21
TQMFM4	0.03	0.00	0.00	0.00	0.00	0.00
	(0.13)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
	0.21	0.38	-0.20	0.20	0.17	0.21
TQMFM5	0.03	0.00	0.00	0.00	0.00	0.00
	(0.12)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
	0.21	0.38	-0.20	0.20	0.17	0.21
PWR411	--	--	--	--	--	--
PWR412	--	--	--	--	--	--
PWR413	--	--	--	--	--	--
UNC421	--	--	-0.10	--	--	--
			(0.03)			
			-3.30			
UNC422	--	--	-0.11	--	--	--
			(0.03)			
			-3.30			
UNC423	--	--	-0.10	--	--	--
			(0.03)			
			-3.30			
COL431	--	--	-0.07	0.46	--	--
			(0.03)	(0.03)		
			-2.51	16.13		
COL432	--	--	-0.08	0.53	--	--
			(0.03)	(0.03)		

			-2.52	17.18		
COL433	- -	- -	-0.08	0.49	- -	- -
			(0.03)	(0.03)		
			-2.52	16.53		
QPRF441	- -	- -	0.05	0.08	- -	- -
			(0.02)	(0.02)		
			2.09	3.15		
QPRF443	- -	- -	0.05	0.08	- -	- -
			(0.02)	(0.02)		
			2.09	3.15		
QPRF444	- -	- -	0.05	0.07	- -	- -
			(0.02)	(0.02)		
			2.09	3.15		
SETHI453	- -	- -	0.04	0.01	-0.04	- -
			(0.03)	(0.03)	(0.04)	
			1.18	0.35	-1.03	
SETHI454	- -	- -	0.04	0.01	-0.05	- -
			(0.04)	(0.04)	(0.05)	
			1.19	0.35	-1.03	
SETHI455	- -	- -	0.03	0.01	-0.04	- -
			(0.03)	(0.03)	(0.04)	
			1.18	0.35	-1.03	
WKETH457	- -	- -	0.02	0.05	0.01	- -
			(0.03)	(0.03)	(0.04)	
			0.80	1.64	0.23	
WKETH458	- -	- -	0.02	0.05	0.01	- -
			(0.03)	(0.03)	(0.04)	
			0.80	1.64	0.23	
WKETH459	- -	- -	0.03	0.06	0.01	- -
			(0.04)	(0.04)	(0.05)	
			0.80	1.64	0.23	

Indirect Effects of ETA on Y

	SETHP	SETHW
SP22	- -	- -
SP23	- -	- -
SP24	- -	- -
CSTMRK33	- -	- -

CSTMRK34	- -	- -
CSTMRK35	- -	- -
HR52	- -	- -
HR54	- -	- -
HR55	- -	- -
PM63	- -	- -
PM64	- -	- -
PM65	- -	- -
INFO41	- -	- -
INFO42	- -	- -
INFO43	- -	- -
CI73	- -	- -
CI74	- -	- -
CI75	- -	- -
BR85	0.01	0.00
	(0.02)	(0.02)
	0.85	-0.27
BR86	0.02	0.00
	(0.02)	(0.02)
	0.85	-0.27
BR87	0.01	0.00
	(0.02)	(0.02)
	0.85	-0.27
TQMFM3	0.00	0.00
	(0.00)	(0.00)
	0.20	-0.17
TQMFM4	0.00	0.00
	(0.00)	(0.00)
	0.20	-0.17
TQMFM5	0.00	0.00
	(0.00)	(0.00)
	0.20	-0.17
PWR411	- -	- -
PWR412	- -	- -

PWR413	- -	- -
UNC421	- -	- -
UNC422	- -	- -
UNC423	- -	- -
COL431	- -	- -
COL432	- -	- -
COL433	- -	- -
QPRF441	- -	- -
QPRF443	- -	- -
QPRF444	- -	- -
SETHI453	- -	- -
SETHI454	- -	- -
SETHI455	- -	- -
WKETH457	- -	- -
WKETH458	- -	- -
WKETH459	- -	- -

Total Effects of KSI on Y

	LDR
SP22	0.72 (0.03) 25.68
SP23	0.65 (0.03) 22.97
SP24	0.65 (0.03) 23.14
CSTMRK33	0.65 (0.03) 23.02
CSTMRK34	0.70

(0.03)
24.22

CSTMRK35 0.67
(0.03)
23.50

HR52 0.61
(0.03)
21.22

HR54 0.67
(0.03)
22.62

HR55 0.59
(0.03)
20.74

PM63 0.71
(0.03)
25.05

PM64 0.73
(0.03)
25.73

PM65 0.70
(0.03)
24.69

INFO41 0.70
(0.03)
25.43

INFO42 0.70
(0.03)
25.30

INFO43 0.62
(0.03)
22.80

CI73 0.55
(0.03)
19.97

CI74 0.71
(0.03)
24.70

CI75 0.71
(0.03)
24.73

BR85	0.64
	(0.03)
	22.88
BR86	0.68
	(0.03)
	23.81
BR87	0.66
	(0.03)
	23.34
TQMFM3	0.53
	(0.03)
	18.03
TQMFM4	0.55
	(0.03)
	18.41
TQMFM5	0.53
	(0.03)
	18.07
PWR411	0.03
	(0.03)
	1.22
PWR412	0.04
	(0.03)
	1.22
PWR413	0.03
	(0.02)
	1.22
UNC421	0.35
	(0.03)
	11.91
UNC422	0.40
	(0.03)
	12.25
UNC423	0.35
	(0.03)
	11.92
COL431	0.33
	(0.03)
	11.44
COL432	0.38
	(0.03)
	11.80

```
 COL433       0.35
            (0.03)
             11.58

QPRF441       0.56
            (0.03)
             18.48

QPRF443       0.57
            (0.03)
             18.74

QPRF444       0.54
            (0.03)
             18.26

SETHI453       0.04
            (0.03)
              1.35

SETHI454       0.05
            (0.03)
              1.35

SETHI455       0.04
            (0.03)
              1.35

WKETH457       0.04
            (0.03)
              1.30

WKETH458       0.04
            (0.03)
              1.30

WKETH459       0.04
            (0.03)
              1.30
```

TI

Standardized Total and Indirect Effects

Standardized Total Effects of KSI on ETA

```
               LDR
          --------
     SP       0.86
CUSTMRK       0.77
     HR       0.70
     PM       0.77
   INFO       0.77
```

CI	0.77
BR	0.72
TQM	0.63
PWR	0.05
UNIC	0.41
COL	0.41
QPRF	0.60
SETHP	0.05
SETHW	0.05

Standardized Indirect Effects of KSI on ETA

	LDR
SP	0.62
CUSTMRK	- -
HR	0.26
PM	0.99
INFO	0.77
CI	0.54
BR	0.72
TQM	0.06
PWR	0.18
UNIC	0.20
COL	0.24
QPRF	0.63
SETHP	0.02
SETHW	-0.03

Standardized Total Effects of ETA on ETA

	SP	CUSTMRK	HR	PM	INFO	CI
SP	-0.20	0.39	0.40	-0.28	0.11	0.53
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	0.33	- -	- -	- -	- -
PM	0.82	0.56	0.41	-0.28	0.12	0.54
INFO	0.61	0.46	0.30	-0.21	0.09	0.40
CI	-0.43	0.50	0.54	-0.37	-0.06	-0.28
BR	0.36	0.47	0.32	0.11	0.10	0.61
TQM	0.01	0.04	0.10	0.06	-0.08	0.02
PWR	-0.13	0.11	0.12	-0.17	0.06	0.16
UNIC	-0.02	0.13	0.14	0.10	-0.17	0.18
COL	-0.34	0.06	0.11	-0.22	-0.15	0.15
QPRF	-0.34	0.40	0.43	-0.29	-0.06	0.57
SETHP	0.04	0.02	0.01	0.03	0.01	0.02
SETHW	0.10	-0.02	-0.03	0.10	0.01	-0.05

Standardized Total Effects of ETA on ETA

	BR	TQM	PWR	UNIC	COL	QPRF
SP	- -	- -	- -	- -	- -	- -
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	- -	- -	- -	- -	- -

PM	- -	- -	- -	- -	- -	- -
INFO	- -	- -	- -	- -	- -	- -
CI	- -	- -	- -	- -	- -	- -
BR	0.00	0.02	-0.02	0.02	0.01	0.09
TQM	0.03	0.00	0.00	0.00	0.00	0.00
PWR	- -	- -	- -	- -	- -	- -
UNIC	- -	- -	-0.12	- -	- -	- -
COL	- -	- -	-0.09	0.57	- -	- -
QPRF	- -	- -	0.05	0.08	- -	- -
SETHP	- -	- -	0.05	0.01	-0.05	- -
SETHW	- -	- -	0.03	0.06	0.01	- -

Standardized Total Effects of ETA on ETA

	SETHP	SETHW
SP	- -	- -
CUSTMRK	- -	- -
HR	- -	- -
PM	- -	- -
INFO	- -	- -
CI	- -	- -
BR	0.02	-0.01
TQM	0.00	0.00
PWR	- -	- -
UNIC	- -	- -
COL	- -	- -
QPRF	- -	- -
SETHP	- -	- -
SETHW	- -	- -

Standardized Indirect Effects of ETA on ETA

	SP	CUSTMRK	HR	PM	INFO	CI
SP	-0.20	0.39	0.40	-0.28	-0.03	-0.13
CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	- -	- -	- -	- -	- -
PM	-0.20	0.40	0.41	-0.28	0.12	0.54
INFO	-0.15	0.30	0.30	-0.21	0.09	0.40
CI	-0.43	-0.04	-0.21	0.15	-0.06	-0.28
BR	0.18	0.47	0.46	-0.31	0.04	0.31
TQM	0.01	0.04	0.01	0.00	0.00	0.02
PWR	-0.13	0.11	0.12	-0.08	-0.02	-0.09
UNIC	-0.02	0.13	0.14	-0.09	-0.01	-0.04
COL	-0.34	0.06	0.11	0.04	-0.15	-0.11
QPRF	-0.34	0.40	0.43	-0.29	-0.06	-0.19
SETHP	0.04	0.02	0.01	0.00	0.01	0.02
SETHW	0.10	-0.02	-0.03	0.03	0.01	0.09

Standardized Indirect Effects of ETA on ETA

	BR	TQM	PWR	UNIC	COL	QPRF
SP	- -	- -	- -	- -	- -	- -

CUSTMRK	- -	- -	- -	- -	- -	- -
HR	- -	- -	- -	- -	- -	- -
PM	- -	- -	- -	- -	- -	- -
INFO	- -	- -	- -	- -	- -	- -
CI	- -	- -	- -	- -	- -	- -
BR	0.00	0.00	0.00	0.01	0.00	0.00
TQM	0.00	0.00	0.00	0.00	0.00	0.00
PWR	- -	- -	- -	- -	- -	- -
UNIC	- -	- -	- -	- -	- -	- -
COL	- -	- -	-0.07	- -	- -	- -
QPRF	- -	- -	-0.01	- -	- -	- -
SETHP	- -	- -	0.00	-0.03	- -	- -
SETHW	- -	- -	-0.01	0.01	- -	- -

Standardized Indirect Effects of ETA on ETA

	SETHP	SETHW
SP	- -	- -
CUSTMRK	- -	- -
HR	- -	- -
PM	- -	- -
INFO	- -	- -
CI	- -	- -
BR	0.00	0.00
TQM	0.00	0.00
PWR	- -	- -
UNIC	- -	- -
COL	- -	- -
QPRF	- -	- -
SETHP	- -	- -
SETHW	- -	- -

Standardized Total Effects of ETA on Y

	SP	CUSTMRK	HR	PM	INFO	CI
SP22	0.67	0.33	0.34	-0.23	0.09	0.44
SP23	0.61	0.30	0.30	-0.21	0.08	0.40
SP24	0.61	0.30	0.30	-0.21	0.09	0.40
CSTMRK33	- -	0.85	- -	- -	- -	- -
CSTMRK34	- -	0.91	- -	- -	- -	- -
CSTMRK35	- -	0.88	- -	- -	- -	- -
HR52	- -	0.29	0.87	- -	- -	- -
HR54	- -	0.32	0.95	- -	- -	- -
HR55	- -	0.28	0.84	- -	- -	- -
PM63	0.75	0.51	0.37	0.66	0.11	0.50
PM64	0.78	0.53	0.39	0.68	0.11	0.51
PM65	0.74	0.50	0.37	0.65	0.10	0.49
INFO41	0.55	0.42	0.28	-0.19	0.99	0.36
INFO42	0.55	0.42	0.27	-0.19	0.98	0.36
INFO43	0.49	0.37	0.24	-0.17	0.88	0.32
CI73	-0.31	0.36	0.39	-0.27	-0.04	0.51
CI74	-0.39	0.46	0.50	-0.34	-0.06	0.66
CI75	-0.39	0.46	0.50	-0.34	-0.06	0.66

BR85	0.32	0.42	0.28	0.10	0.09	0.54
BR86	0.34	0.44	0.30	0.10	0.09	0.57
BR87	0.33	0.43	0.29	0.10	0.09	0.56
TQMFM3	0.01	0.03	0.08	0.05	-0.06	0.01
TQMFM4	0.01	0.03	0.08	0.05	-0.07	0.01
TQMFM5	0.01	0.03	0.08	0.05	-0.06	0.01
PWR411	-0.09	0.07	0.08	-0.12	0.04	0.11
PWR412	-0.11	0.09	0.10	-0.14	0.05	0.13
PWR413	-0.08	0.07	0.08	-0.11	0.04	0.10
UNC421	-0.02	0.11	0.12	0.09	-0.15	0.16
UNC422	-0.02	0.13	0.13	0.10	-0.16	0.18
UNC423	-0.02	0.11	0.12	0.09	-0.15	0.16
COL431	-0.27	0.05	0.09	-0.18	-0.12	0.12
COL432	-0.32	0.06	0.11	-0.21	-0.14	0.14
COL433	-0.29	0.05	0.10	-0.19	-0.13	0.13
QPRF441	-0.31	0.37	0.40	-0.27	-0.05	0.53
QPRF443	-0.32	0.38	0.41	-0.28	-0.05	0.55
QPRF444	-0.30	0.36	0.39	-0.26	-0.05	0.52
SETHI453	0.03	0.02	0.01	0.02	0.01	0.01
SETHI454	0.03	0.02	0.01	0.03	0.01	0.02
SETHI455	0.03	0.01	0.01	0.02	0.00	0.01
WKETH457	0.08	-0.02	-0.03	0.08	0.01	-0.04
WKETH458	0.08	-0.02	-0.03	0.08	0.01	-0.04
WKETH459	0.10	-0.02	-0.03	0.09	0.01	-0.04

Standardized Total Effects of ETA on Y

	BR	TQM	PWR	UNIC	COL	QPRF
SP22	- -	- -	- -	- -	- -	- -
SP23	- -	- -	- -	- -	- -	- -
SP24	- -	- -	- -	- -	- -	- -
CSTMRK33	- -	- -	- -	- -	- -	- -
CSTMRK34	- -	- -	- -	- -	- -	- -
CSTMRK35	- -	- -	- -	- -	- -	- -
HR52	- -	- -	- -	- -	- -	- -
HR54	- -	- -	- -	- -	- -	- -
HR55	- -	- -	- -	- -	- -	- -
PM63	- -	- -	- -	- -	- -	- -
PM64	- -	- -	- -	- -	- -	- -
PM65	- -	- -	- -	- -	- -	- -
INFO41	- -	- -	- -	- -	- -	- -
INFO42	- -	- -	- -	- -	- -	- -
INFO43	- -	- -	- -	- -	- -	- -
CI73	- -	- -	- -	- -	- -	- -
CI74	- -	- -	- -	- -	- -	- -
CI75	- -	- -	- -	- -	- -	- -
BR85	0.89	0.02	-0.02	0.02	0.01	0.08
BR86	0.94	0.02	-0.02	0.02	0.01	0.09
BR87	0.91	0.02	-0.02	0.02	0.01	0.08
TQMFM3	0.03	0.84	0.00	0.00	0.00	0.00
TQMFM4	0.03	0.88	0.00	0.00	0.00	0.00
TQMFM5	0.03	0.85	0.00	0.00	0.00	0.00
PWR411	- -	- -	0.67	- -	- -	- -
PWR412	- -	- -	0.83	- -	- -	- -

PWR413	- -	- -	0.64	- -	- -	- -
UNC421	- -	- -	-0.10	0.85	- -	- -
UNC422	- -	- -	-0.11	0.96	- -	- -
UNC423	- -	- -	-0.10	0.85	- -	- -
COL431	- -	- -	-0.07	0.47	0.81	- -
COL432	- -	- -	-0.08	0.54	0.93	- -
COL433	- -	- -	-0.08	0.49	0.86	- -
QPRF441	- -	- -	0.05	0.08	- -	0.93
QPRF443	- -	- -	0.05	0.08	- -	0.95
QPRF444	- -	- -	0.05	0.07	- -	0.90
SETHI453	- -	- -	0.04	0.01	-0.04	- -
SETHI454	- -	- -	0.04	0.01	-0.05	- -
SETHI455	- -	- -	0.03	0.01	-0.04	- -
WKETH457	- -	- -	0.02	0.05	0.01	- -
WKETH458	- -	- -	0.02	0.05	0.01	- -
WKETH459	- -	- -	0.03	0.06	0.01	- -

Standardized Total Effects of ETA on Y

	SETHP	SETHW
	--------	--------
SP22	- -	- -
SP23	- -	- -
SP24	- -	- -
CSTMRK33	- -	- -
CSTMRK34	- -	- -
CSTMRK35	- -	- -
HR52	- -	- -
HR54	- -	- -
HR55	- -	- -
PM63	- -	- -
PM64	- -	- -
PM65	- -	- -
INFO41	- -	- -
INFO42	- -	- -
INFO43	- -	- -
CI73	- -	- -
CI74	- -	- -
CI75	- -	- -
BR85	0.01	0.00
BR86	0.02	0.00
BR87	0.01	0.00
TQMFM3	0.00	0.00
TQMFM4	0.00	0.00
TQMFM5	0.00	0.00
PWR411	- -	- -
PWR412	- -	- -
PWR413	- -	- -
UNC421	- -	- -
UNC422	- -	- -
UNC423	- -	- -
COL431	- -	- -
COL432	- -	- -
COL433	- -	- -
QPRF441	- -	- -

QPRF443	- -	- -
QPRF444	- -	- -
SETHI453	0.76	- -
SETHI454	0.93	- -
SETHI455	0.74	- -
WKETH457	- -	0.80
WKETH458	- -	0.80
WKETH459	- -	0.96

Standardized Indirect Effects of ETA on Y

	SP	CUSTMRK	HR	PM	INFO	CI
SP22	-0.17	0.33	0.34	-0.23	0.09	0.44
SP23	-0.15	0.30	0.30	-0.21	0.08	0.40
SP24	-0.15	0.30	0.30	-0.21	0.09	0.40
CSTMRK33	- -	- -	- -	- -	- -	- -
CSTMRK34	- -	- -	- -	- -	- -	- -
CSTMRK35	- -	- -	- -	- -	- -	- -
HR52	- -	0.29	- -	- -	- -	- -
HR54	- -	0.32	- -	- -	- -	- -
HR55	- -	0.28	- -	- -	- -	- -
PM63	0.75	0.51	0.37	-0.26	0.11	0.50
PM64	0.78	0.53	0.39	-0.27	0.11	0.51
PM65	0.74	0.50	0.37	-0.25	0.10	0.49
INFO41	0.55	0.42	0.28	-0.19	0.08	0.36
INFO42	0.55	0.42	0.27	-0.19	0.08	0.36
INFO43	0.49	0.37	0.24	-0.17	0.07	0.32
CI73	-0.31	0.36	0.39	-0.27	-0.04	-0.20
CI74	-0.39	0.46	0.50	-0.34	-0.06	-0.26
CI75	-0.39	0.46	0.50	-0.34	-0.06	-0.26
BR85	0.32	0.42	0.28	0.10	0.09	0.54
BR86	0.34	0.44	0.30	0.10	0.09	0.57
BR87	0.33	0.43	0.29	0.10	0.09	0.56
TQMFM3	0.01	0.03	0.08	0.05	-0.06	0.01
TQMFM4	0.01	0.03	0.08	0.05	-0.07	0.01
TQMFM5	0.01	0.03	0.08	0.05	-0.06	0.01
PWR411	-0.09	0.07	0.08	-0.12	0.04	0.11
PWR412	-0.11	0.09	0.10	-0.14	0.05	0.13
PWR413	-0.08	0.07	0.08	-0.11	0.04	0.10
UNC421	-0.02	0.11	0.12	0.09	-0.15	0.16
UNC422	-0.02	0.13	0.13	0.10	-0.16	0.18
UNC423	-0.02	0.11	0.12	0.09	-0.15	0.16
COL431	-0.27	0.05	0.09	-0.18	-0.12	0.12
COL432	-0.32	0.06	0.11	-0.21	-0.14	0.14
COL433	-0.29	0.05	0.10	-0.19	-0.13	0.13
QPRF441	-0.31	0.37	0.40	-0.27	-0.05	0.53
QPRF443	-0.32	0.38	0.41	-0.28	-0.05	0.55
QPRF444	-0.30	0.36	0.39	-0.26	-0.05	0.52
SETHI453	0.03	0.02	0.01	0.02	0.01	0.01
SETHI454	0.03	0.02	0.01	0.03	0.01	0.02
SETHI455	0.03	0.01	0.01	0.02	0.00	0.01
WKETH457	0.08	-0.02	-0.03	0.08	0.01	-0.04
WKETH458	0.08	-0.02	-0.03	0.08	0.01	-0.04
WKETH459	0.10	-0.02	-0.03	0.09	0.01	-0.04

Standardized Indirect Effects of ETA on Y

	BR	TQM	PWR	UNIC	COL	QPRF
SP22	- -	- -	- -	- -	- -	- -
SP23	- -	- -	- -	- -	- -	- -
SP24	- -	- -	- -	- -	- -	- -
CSTMRK33	- -	- -	- -	- -	- -	- -
CSTMRK34	- -	- -	- -	- -	- -	- -
CSTMRK35	- -	- -	- -	- -	- -	- -
HR52	- -	- -	- -	- -	- -	- -
HR54	- -	- -	- -	- -	- -	- -
HR55	- -	- -	- -	- -	- -	- -
PM63	- -	- -	- -	- -	- -	- -
PM64	- -	- -	- -	- -	- -	- -
PM65	- -	- -	- -	- -	- -	- -
INFO41	- -	- -	- -	- -	- -	- -
INFO42	- -	- -	- -	- -	- -	- -
INFO43	- -	- -	- -	- -	- -	- -
CI73	- -	- -	- -	- -	- -	- -
CI74	- -	- -	- -	- -	- -	- -
CI75	- -	- -	- -	- -	- -	- -
BR85	0.00	0.02	-0.02	0.02	0.01	0.08
BR86	0.00	0.02	-0.02	0.02	0.01	0.09
BR87	0.00	0.02	-0.02	0.02	0.01	0.08
TQMFM3	0.03	0.00	0.00	0.00	0.00	0.00
TQMFM4	0.03	0.00	0.00	0.00	0.00	0.00
TQMFM5	0.03	0.00	0.00	0.00	0.00	0.00
PWR411	- -	- -	- -	- -	- -	- -
PWR412	- -	- -	- -	- -	- -	- -
PWR413	- -	- -	- -	- -	- -	- -
UNC421	- -	- -	-0.10	- -	- -	- -
UNC422	- -	- -	-0.11	- -	- -	- -
UNC423	- -	- -	-0.10	- -	- -	- -
COL431	- -	- -	-0.07	0.47	- -	- -
COL432	- -	- -	-0.08	0.54	- -	- -
COL433	- -	- -	-0.08	0.49	- -	- -
QPRF441	- -	- -	0.05	0.08	- -	- -
QPRF443	- -	- -	0.05	0.08	- -	- -
QPRF444	- -	- -	0.05	0.07	- -	- -
SETHI453	- -	- -	0.04	0.01	-0.04	- -
SETHI454	- -	- -	0.04	0.01	-0.05	- -
SETHI455	- -	- -	0.03	0.01	-0.04	- -
WKETH457	- -	- -	0.02	0.05	0.01	- -
WKETH458	- -	- -	0.02	0.05	0.01	- -
WKETH459	- -	- -	0.03	0.06	0.01	- -

Standardized Indirect Effects of ETA on Y

	SETHP	SETHW
SP22	- -	- -
SP23	- -	- -
SP24	- -	- -

CSTMRK33	- -	- -
CSTMRK34	- -	- -
CSTMRK35	- -	- -
HR52	- -	- -
HR54	- -	- -
HR55	- -	- -
PM63	- -	- -
PM64	- -	- -
PM65	- -	- -
INFO41	- -	- -
INFO42	- -	- -
INFO43	- -	- -
CI73	- -	- -
CI74	- -	- -
CI75	- -	- -
BR85	0.01	0.00
BR86	0.02	0.00
BR87	0.01	0.00
TQMFM3	0.00	0.00
TQMFM4	0.00	0.00
TQMFM5	0.00	0.00
PWR411	- -	- -
PWR412	- -	- -
PWR413	- -	- -
UNC421	- -	- -
UNC422	- -	- -
UNC423	- -	- -
COL431	- -	- -
COL432	- -	- -
COL433	- -	- -
QPRF441	- -	- -
QPRF443	- -	- -
QPRF444	- -	- -
SETHI453	- -	- -
SETHI454	- -	- -
SETHI455	- -	- -
WKETH457	- -	- -
WKETH458	- -	- -
WKETH459	- -	- -

Standardized Total Effects of KSI on Y

	LDR

SP22	0.72
SP23	0.65
SP24	0.65
CSTMRK33	0.65
CSTMRK34	0.70
CSTMRK35	0.67
HR52	0.61
HR54	0.67
HR55	0.59
PM63	0.71
PM64	0.73

PM65	0.70
INFO41	0.70
INFO42	0.70
INFO43	0.62
CI73	0.55
CI74	0.71
CI75	0.71
BR85	0.64
BR86	0.68
BR87	0.66
TQMFM3	0.53
TQMFM4	0.55
TQMFM5	0.53
PWR411	0.03
PWR412	0.04
PWR413	0.03
UNC421	0.35
UNC422	0.40
UNC423	0.35
COL431	0.33
COL432	0.38
COL433	0.35
QPRF441	0.56
QPRF443	0.57
QPRF444	0.54
SETHI453	0.04
SETHI454	0.05
SETHI455	0.04
WKETH457	0.04
WKETH458	0.04
WKETH459	0.04

Time used: 2.293 Seconds