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**ORGANISATIONAL SLACK RESOURCES, THE DEFINITIONS AND
CONSEQUENCES FOR BUSINESS FLEXIBILITY AND PERFORMANCE**

AN EMPIRICAL INVESTIGATION.

PAUL S. ADKINS
Doctor of Philosophy

The University of Aston in Birmingham
November 2005

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**ORGANISATIONAL SLACK RESOURCES, THE DEFINITIONS AND
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THESIS SUMMARY

Slack resources are recognised to be those spare capabilities and assets of the organisation that are variably reclaimable for re-deployment. They represent under utilised and hidden spare energies within a company that may be recaptured and employed for a variety of tasks. However their positive contribution to organisational success has been a contentious claim that has provoked the intuitive argument that slack resources are inefficiency and are to be eradicated. The counter argument has been that very efficient organisations are inflexible and therefore incapable of being responsive to an increasingly dynamic environment.

Therefore this work compares and contrasts three distinctive industries in a holistic manner and maps the impact of environmental flux on the firm, its subsequent disruptive ripples through the organisation and its absorption by slack resources. Through this process it is demonstrated that slack resources do positively contribute to organisational performance and subsequently the ability of slack to promote sustained competitive advantage is also identified. The major findings of this work are listed below.

1. This work has developed and perfected a new research model that aids the investigation of the internal behaviours and consequences of Slack Resources.
2. Supported by argument a new variable of Soft Slack was developed. Its validity was demonstrated in its ability to capture the contribution of intangible assets, such as education, experience, spare management time and further training, to the extant levels of Organisational Hard Slack resources.
3. The validity of Soft Slack was further supported when its contribution to Organisational Flexibility was also established.
4. The original argument that Slack Resources enhance Organisational Performance has been further developed. It is now evidenced that Slack Resources facilitate Organisational Flexibility and by this process enhances Organisational Performance.
5. It was also demonstrated that while a general model of Slack enhancing Flexibility that

drives Performance improvement may be demonstrated, the precise mechanism is distinctive within different industries.

6. A theoretical model for the achievement of Sustained Competitive Advantage was also constructed through rational argument that builds on the earlier work of Grant (1991) by incorporating Slack Resources into his model of a Resource Based Strategy.

Key Words; Organisational Flexibility; Strategic Paradigms; Soft Slack; Hard Slack.

"It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change"

Charles Darwin (1853)

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1. INTRODUCTION

1.1 The Organisational Slack Resources Argument: An Overview

Organisational slack is commonly defined within the academic literature to be institutional resources that are under-utilised, Penrose (1959), Damanpour (1987), Cyert and March (1963), Davis and Stout (1992). It is a recognition that not all company resources may be simultaneously deployed and employed to provide maximum returns on their investment.

However, there are those that advocate the continual pursuit of maximised resource utilisation to obtain the greatest return from their investment, Antle and Fellingham (1990), Kirby, *et al* (1991). The intuitive argument for this policy being that superior organisational efficiency will ensure competitive advantage by minimising costs and is summarised by Galbraith (1973) when he states, *"Slack resources are an additional cost to the organization or the customer"*,

The organisational gurus of the last twenty-five years that have promoted the efficient, hard working organisation, as championed by Turner (1989), Hammer and Champy (1993), Peters and Waterman (1986), Harvey-Jones (1992), are philosophically firmly embedded within the Classical Strategy perspective of the DuPont Management School of thought, Chandler (1962), Sloan (1963), Ansoff (1965), and the traditional economic theories of the last century that continue to proliferate current management textbooks, Whittington (1993). The theory under-pinning this view is that an imbalance of the 'Principle of Multiples', Babbage (1832), results in less than optimal economic activity, potential inactivity within the system which is deemed to be wasteful and therefore undesirable, Turner (1989). In reply Bourgeois (1981) states, *"I submit that too much of management and administrative theory is preoccupied with ferreting it [slack] out and eliminating it through efficiency-seeking optimization principles."*, his rationale is that the returns to management effort employed in efficiency seeking programs is at best minimal and furthermore that slack resources are essential for organisational flexibility that may provide the elusive condition of competitive advantage.

On first examination it would appear that maximising the efficiency of internal resources and thereby maximising the returns on their investment is intuitively a self-evident common sense objective however, cracks in this ideology have been developing over the last forty years and the common counter argument is that efficient companies are inflexible, incapable of being responsive to increasingly dynamic environmental changes and shifts, Cyert and March (1963), Cohen and Cyert (1965), Galbraith (1973), Bourgeois (1981), Sharfman *et al* (1988), March and Simon (1993), Tan (2003).

These same authors also argue that a competitive advantage may be obtained through building internal organisational flexibility. This flexibility they define as the firm's ability to respond in a timely manner to the changing demands of the business's external and internal environments. Furthermore, Bromley (1991), March and Simon (1993), Greenley and Oktemgil (1998) and Finch (1991) argue that organisations may achieve this flexibility through the provision of slack, a stock of under utilised resources. Such slack, they continue, provides spare organisational energy and the conceptual room to manoeuvre internally to satisfy these new demands. Additionally they argue that slack resources provide the tools and the operational flexibility to innovate.

The argument for and against the desirability of some, as yet unidentified level of organisational slack has not raged but rather endured over the last forty-five years, from Penrose (1959) and Cyert and March (1963), to Kirby, *et al* (1991), Greenley and Oktemgil (1998) and Tan (2003). The arguments for a sustained drive towards the total rational employment of internal company resources, Antle and Fellingham (1990), Kirby, *et al* (1991), stands uncomfortably alongside the equally vocalised desire by the same commentators for organisational flexibility which they identify ostensibly as personnel flexibility bourn of education and training that provides multi-tasking employees.

However, organisational flexibility, as express above, is a holistic concept that is defined as the organisations ability as a whole to respond in a timely manner to challenging and volatile environments and therefore intuitively, some degree of resource slack, the physical spare tools, money and time, together with personal capabilities may well prove

to be desirable in the pursuit of organisational flexibility, but just what resources, under what conditions and what level of slack and how such slack may be generated, recognised, captured and operationalised is as yet little explored in any practical detail.

The management strategy debate may be perceived as a pendulum that swings from the internal resource perspective, Grant (1991), to the external focus on environmental positioning of the organisation, Porter (1980, 1985). The basic premise of the latter is that sustained competitive advantage may be gained through a favoured positioning of the firm within the environment. The external strategic policy that advocates price leadership requires maximising returns on resource investment through a program of streamlining the organisation and squeezing each and every resource in the name of efficiency, Turner (1989), Porter (1980,1985). However, most of the commentators that advocate such policies also call for organisational flexibility, the internal ability to be customer responsive together with a capability to facilitate organisational change and innovation. Alternatively, the internal resource perspective argues that competitive advantage must be sought in the internal acquisition of superior synergies of resources that provide non-imitable performance enhancing advantages which then seek external windows of opportunity, Grant (1991). Such synergies of resources, it may be argued, require a high degree of flexibility to enable timely changes in their construction and deployment to match changes in the environment demands.

There exist many other externally focused strategies, alternatively based on providing superior quality goods, continuous innovation, superior service and a combination of these together with price leadership. Yet all of these policies have been witnessed to require a high degree of internal flexibility to implement, a clear example being Procter and Gamble as discussed by Wright, Krol and Parnell (1996). Therefore the anecdotal evidence would seemingly support the desirability of organisational flexibility whether the overriding strategy is externally or internally focused.

The academic debate at present seemingly revolves around what constitutes a flexible organisation. The pragmatists of the externally focused strategy paradigm seemingly

concentrate on the functional operations of the organisation, such elements being a multi-tasked workforce enabling job change, machine set-up efficiencies facilitating a greater range of modified products providing customisation such as at the Panasonic Bicycle Company of Japan, Hill and Jones (1995). While others, Galbraith (1973), Bourgeois (1981), Sharfman *et al* (1988), advocate a far more holistic, organisation wide paradigm shift for true flexibility to exist, a flexible company that is evident within the strategic, structural, operational and even the cultural dimensions of the organisation.

According to an early definition slack resources are ‘... *an idleness*’, Penrose (1959) and within a climate that advocates the pursuit of “organisational fitness”, as proffered by Antle and Fellingham (1990), they are to be abhorred and eradicated, Kirby, *et al* (1991). This philosophy is often vocalised as a call for the ‘lean, keen and efficient organisation’. However, it appears that all commentators, from all perspectives, are equally agreed on the desirability of organisational flexibility, Cyert and March (1963), Greenley and Oktemgil (1998), Turner (1989), Porter (1980, 1985). Therefore the argument seemingly revolves around the question of the means of acquisition and even the definition of organisational flexibility.

1.2 The Research Gaps

As detailed above the primary question to be addressed is whether slack resources aid organisational flexibility and subsequently enhance performance and if they do, what precise mechanisms are employed? If this is found to be the case, what specific slack resources and what proportions of these prove to be most beneficial to the company? It is also speculated that if slack is effective it must be acting through other organisational processes that to-date have been little explored.

Additionally, Bourgeois (1981) has suggested a specific non-linear model of slack resources enhancing performance that is effective up to an as yet undetermined level, after which the relationship becomes negatively associated, representing a drain on organisational performance that is undesirable. This specific behaviour, although

hypothesised over twenty years ago, has yet to be tested empirically, although the recent work of Tan (2003) lends support for this hypothesis.

As discussed within the main text of this work, it is speculated that the empirical investigations conducted to-date have been unable to discover a positive significant association between slack resources and performance because the data employed was gathered from mixed industry samples. This has produced contradictory, confusing and non-significant results. The conjectured reason for this is that slack enjoys a proportional association with performance that is industry specific. This supposition requires a thorough and robust research methodology to investigate.

It is further speculated that each industry sector experiences its own distinctive environmental dynamism. This is not to say that organisations exist in different environments, but that the same external environmental shifts make demands on organisations that may be industry specific. Therefore the collective members of a specific industry must respond to these demands in a like manner. That which may prove to be an extraordinary demand within one industry requiring radical internal changes, may be of little consequence to the members of another industry. This intuitive supposition has yet to be addressed.

Further to the above, the impacts of environmental dynamism on organisations and the subsequent metaphorical ripples of change that they cause to emanate within the internal environment of the firm are much discussed but are a little explored phenomenon empirically.

The antecedence of slack resources has been assumed to be a successful organisational history that results in an unconscious accumulation of spare internalised resources that have been acquired during periods of profit generation. This process has only been addressed in the loosest theoretical terms and therefore this also requires further investigation.

1.3 The Research Objectives

This work will endeavour to establish the antecedents of slack resources and to track the suspected complex behaviour that may exist in the speculated absorbent properties of slack for environmental dynamism. This research will also examine the contribution of slack to organisational change and the much debated relationship of slack resources with performance. Ultimately this work will attempt to establish an association between slack and the elusive condition of sustained competitive advantage.

In addition this work will attempt to capture the environment dynamism impacting on the organisations of three distinct industries by observing the consequent operational and strategic changes of their member organisations. Each of these industries inhabits a distinctive period of development and it may be established that correlated to sector longevity these industries experience very different degrees and frequencies of demands from the external environment.

1.4 Thesis Structure

Chapter 1

An introduction – An overview of the general discussion of slack resources.

This chapter provides a summary of the main elements of the argument to-date in the efficiency versus the slack resources debate. The antecedents of the theory of organisational slack are highlighted and in particular the claims that slack provides organisational flexibility and by doing so generally enhances company performance. A summary of the shortcomings of the research to-date is discussed in the research gaps section, concluding with a summary of the primary research objectives of this thesis.

Chapter 2

Slack resources – A literature based assessment.

In this chapter current research and discussion is examined in detail and disassembled in an attempt to forge the common theories, suppositions, hypotheses and general understanding of the slack debate to-date. It begins with a revision of the definitions employed in the literature and continues with an examination of slack from within many

of the perspectives and paradigms of organisational theory. Having discussed the various theoretical applications of slack, this section continues with a review of the methodologies of the empirical research conducted so far, together with a critique of the operationalising of the variables under investigation. Concluding with a review of the research gaps, the anomalies and a summary, this section attempts to identify and clarify the main issues that require further investigation

Chapter 3

Slack resources – *A theoretical model*

Having established the current developments in the slack debate and research, and identifying its deficiencies, this chapter proposes a new holistic conceptual model for the investigation of the presence and consequences of slack resources within the organisation. It first develops a comprehensive and detailed philosophy of the slack domain in organisational theory, ostensibly that of slack for operational and strategic flexibility together with slack for cultural liberation. This examination of the slack environments and their speculated relationships within the organisation concludes with the development of a theoretical model for sustained competitive advantage.

Chapter 4

Research Methodology and Design

After identifying the shortcomings of the slack resource research to-date, and having developed a conceptual model of the external environmental demands impacting on the organisation and the theoretical protective type of slack resources, chapter four explores the methodologies available to investigate the validity of this and the previously discussed hypotheses of Greenley and Oktemgil (1998), Bourgeois (1981) and others.

Specifically, this chapter outlines in detail the research process and discusses the relevant methodological issues for each of the individual process steps. The initial section of this chapter examines the issues of data collection, followed by addressing concerns related to data analysis and interpretation.

In identifying the best fit methodology for this investigation this chapter concludes with the process of research design to be employed.

Chapter 5

An Initial Exploration of the data

In chapter five an initial explorative examination of all three industries data is undertaken in an inductive manner in an attempt to identify general theories, trends and relationships between the various variables that are common to all three industries. This methodology is employed as it may illuminate new and surprising elements of the slack debate that have not yet been anticipated.

This chapter will also act as an introduction to, and provide familiarisation with the data and aid in the development of a map of the fundamental processes suspected to exist in the practical establishment, capture and deployment of slack resources for enhanced organisational performance. It is further anticipated that within this initial examination of the data the reasons for the inconclusive and contradictory evidence of previous research will be discovered.

The analysis of collective industry data in this chapter it is anticipated will culminate in the development of a robust and practical research model for further detailed industry specific investigations.

Chapter 6

A determination of the internal relationships and behaviours of slack in each industry

Chapter Six will continue to develop the research method established in the previous chapter, but in applying the newly developed research model will explore the suspected individual relationships that each industry may experience with its environment, its slack resources and the associations with internal changes and organisational performance.

In applying Multiple Regression Analysis to each industry as prescribed in the research model, it is anticipated that a rich picture will emerge of the complex and multifaceted relationships and consequences of organisational slack resources.

Chapter 7

Reflection, discussion, interpretation and conclusions

This penultimate chapter will explore in detail the conclusions that may be drawn from the analysis and further examine the industry specific nuances of slack resources, their impact on organisational flexibility, the subsequent effect on performance and the speculated consequences for sustained competitive advantage.

Chapter 8

Suggested further investigation and research

To conclude, this chapter will make specific recommendations for further research.

2. SLACK RESOURCES: A LITERATURE BASED ASSESSMENT

2.1 The Slack Resource Terminology:

An Initial Review and Clarification of Definitions

Moses (1992) observed that while there is no single, definitive consensus for the concept of slack, despite being widely used in organisational and business strategy literature, '...most suggest that slack is excess resources that provide organisational buffers or opportunities'.

Others have proffered their own definition of slack that reflects their personal research perspective and several of these are organisational behaviourists that observe that slack is "the glue that binds the organisations personnel", Cyert and March (1963). They therefore defined slack as "[The] disparity between the resources available to the organisation and the payments required to maintain the coalition.", and Child (1972) explains slack as, "The surplus or margin which permits an organisation's dominant coalition to adopt structural arrangements which accord with their own preferences."

Other authors have adopted a more pragmatic definition of slack that reflects the relationships of the external and internal organisational environments. For instance, March and Olsen, (1978) define slack as, "The difference between the existing resources and activated demands."

The above definition of March and Olsen, (1978) curiously assumes a positive, excess resource relationship because if the demands are in excess of the abilities of the resources to satisfy, then a negative relationship results and obviously no slack is then evident in the system.

March (1979) provides another definition that begins with a simple explanation for the presence of organisational slack, "Since organisations do not always optimize, they accumulate spare resources and unexploited opportunities which then become buffers against bad times"

This definition from March (1979) is a precursor of that given by Moses (1992) and quoted at the opening of this chapter. Both authors refer to 'buffers' and 'opportunities' to be exploited at some future time. March (1979) explicitly states that slack and opportunities are exploited at '... bad times' whereas Moses (1992) does not specify when in the future slack should be, or even if it can be consciously exploited.

Bowman and Hurry (1993) define organisational slack as economic investment options for the future that, having incurred low sunk costs can be exploited (*takes*) or dropped (*puts*) as and when environmental conditions dictated. This then is a practical example of the old adage '... not having all of ones eggs in one basket'; it is a definition that is discussed in their paper examining joint ventures and strategic alliances. It refers specifically to the provision of strategic flexibility and the purposeful investment in future strategic options.

However, Bourgeois (1981) in paraphrasing March (1979) has developed what has become the generally accepted definition of organisational slack that has been adopted by many researchers including Greenley and Oktemgil (1998),

'..that cushion of actual or potential resources which allows an organisation to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment.'

This definition rather neatly fulfils the flexibility or 'adaptability' requirements of the organisation as discussed briefly in chapter one. Firstly, it refers to the accessibility question by declaring that slack must be either actual or potential to the organisation. Secondly, it declares that slack provides an ability to react to internal or external environmental pressures for change. Therefore, slack resources by this definition may be identified specifically as providing organisational flexibility.

However, a cause for concern is amply demonstrated in the above paragraph and is evident in much of the literature (e.g. Johnson and Scholes 1989). The concept of flexibility and adaptability are liberally used as interchangeable descriptions of the organisation's ability to change. In attempting to differentiate between them this work will consider organisational flexibility to be a specific reference to the capability of the organisation to respond to environmental pressures, where organisational adaptability will refer to the organisation's propensity to employ their organisational flexibility for change. The difference is crucial for a full appreciation of the slack debate.

The above amply demonstrates the disparate and interchangeable nature of the terms employed in the various literature sources that merits further attention, therefore this problem will be addressed in detail in the following section.

2.1.1 Slack, Slack Resources and Organisational Slack

To-date much of the literature addressing the organisational slack resource argument have employed all the above terms contemporaneously when addressing the various aspects and consequence of spare and/or under utilised environmental and organisational resources. In an effort to address the consequences of deleterious confusion arising from such disorder, this work attempts to identify and employ the commonly used terminology from the dominant authors in this field of academic endeavour and attempts to bring some clarification.

As previously noted Bourgeois (1981) in paraphrasing James March has developed what has become the generally accepted, holistic definition of Organisational Slack and to reiterate, slack may be defined as:

'..that cushion of actual or potential resources which allows an organisation to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment.'

The title Organisational Slack specifically refers to the organisation and in consequence this work recognises that 'organisational slack' is a reference to slack that may be discovered internally and not to slack that may exist in external environments.

Additionally, Bourgeois makes reference only to 'actual or potential resources' and omits to note that in order for these resources to enable successful organisational adaptation they must be spare or at least under utilised and to a greater or lesser degree accessible. In short, for a resource to be slack it must possess the ability to deliver as yet, untapped organisational energy. It must possess the capability to perform in a new fashion that is more valuable to the organisation than in its previous employment, or that it starts to perform more effectively in its current role to satisfy a new demand.

Conversely, Slack Resource is any individual, and bundles of resources that possess the potential to convey the benefit of organisational flexibility as briefly discussed in chapter one above. These 'Slack Resources' may be discovered within the external or internal environments of the organisation.

The generic term Slack is here employed to denote the physical under capacity, the potential that is available or recoverable from the internal or external environments. It is employed to denote the excess energies that may be captured by the organisation independently from the specific resource or bundle of resources that contains the potential. It is the untapped extra that is deliverable from a single, or a bundle of, slack resource(s).

The term Buffer, employed by Thompson (1967) and Moses (1992) is used as a specific reference to the conceptual internal shock absorbers between the organisation and the environment or as the metaphoric clutches between internal departments and divisions. The most obvious practical example of a buffer being inventory as this is a device that enables slippage between both the operating routines of internal departments and the external environment. Steel and Papke-Shields (1993) refer to these buffers as 'Capacity Slack'.

2.1.2 Actual, Available, Recoverable, Absorbed and Potential Slack Resources

Actual and Potential Slack Resources were early classifications introduced by Cyert and March (1963) to differentiate between organisational under-utilised resources that were variably available to management. They refer specifically to the ease of recovery, and hence to the speed of redeployment, of spare organisational energies. The argument has since matured and slack is now characterised as residing within one of three conceptual domains. If the definitive divisions listed below, Moses (1992), are viewed as a scale of accessibility on the same continuum, rather than discrete measures, some slack may conceptually be found to straddle two of the classifications.

Available or Actual Slack resources refer to under utilised, highly accessible internal assets that may be quickly deployed to offset sudden unexpected demands. Examples being cash reserves, inventory, personnel multitasking capabilities, under-utilised tools and staff available for immediate, if not instantaneous, re-deployment.

Recoverable or Absorbed Slack are those internally buried but not lost spare resource energies that may be realised by the organisation through a search and utilisation program. The type of resources that may deliver such slack may be outstanding invoices, shift work possibilities, under-utilised machine capacities or cumbersome operational routines in administration and the excess padding of departmental budgets.

Potential Slack is energies available to the organisation from the external environment. Potential Slack may be discovered in external resources in the form of cheap and accessible lines of credit and finance, government incentives in the form of credits or tax-breaks and free professional advice. High levels of unemployment may present the opportunity to acquire trained and skilled staff with considerable cost savings. Technological developments and changes in local and national government policies and law may also provide fresh organisational energies previously unavailable.

Having summarised the contemporary terminology of slack resources the next section will examine the concept and nature of organisational flexibility and the hypothesis that slack resources provide the foundations for this elusive and arguably intangible concept.

2.2 Slack for Organisational Flexibility: The Conceptual Argument

Management literature and guru speak is profuse with references to flexibility, both in terms of its organisational desirability as a management tool and indeed as a necessity for obtaining and maintaining 'competitive advantage'. However, the generic term 'flexibility' is generally employed with little discussion of its definition and indeed assumptions of the universal understanding of flexibility abound and because of this it has been adopted and used within many of the different focuses of organisational and management theory. From the strategists such as Johnson and Scholes (1989) flexibility is linked to the concept of 'Strategic Options' and from the school of Operations Management, Stevenson (1993) discusses 'Flexible Manufacturing Systems', and for the Organisational Psychologists, Kuratko and Welsch (1994) equate organisational flexibility with 'Entrepreneurial Behaviour'. These are just a small sample of the various references to flexibility within specific areas of organisational experience and academic study.

The general consensus amongst the theorists appears to focus on the consequences of organisational flexibility, ostensibly that it affords the organisation an ability to respond, in a timely fashion, to the vagaries of a dynamic environment, Boer (1993). By accepted definition, it provides some form of enhanced ability to react to the various changing demands made upon the business above and beyond those generally expected as normal from the traditional organisational routines. Flexibility, although still an intangible for the present becomes a valued abstract resource, an intangible asset because it is an enabler, a desirable with the promise of future returns upon its accession.

The problem of defining flexibility and being able to fully appreciate it is to be found in its intangible nature, it is a state to be attained, an asset that cannot yet be expressed on the balance sheet. Flexibility is a condition, an organisational capability and not an article

that may be bought off the self. It is to be built internally, by the acquisition of other, more tangible commodities and as specifically argued by Cyert and Marsh (1963), Bourgeois (1981), Galbraith (1973), Greenley and Oktingil (1998), acquiring slack within company resources ensures this elusive condition of organisational flexibility. This slack in resources they argue affords additional or spare organisational energies, reserves that may be recovered and employed when new and surprising internal or external environmental events present themselves, be they threats or opportunities.

To move the discussion forward and summarise the above, organisational flexibility is arguably an internal capability, attainable by the maintenance of slack within resources that are accessible to the organisation, Bowman and Hurry (1993), Greenley and Oktemgil (1998) and Bourgeois and Singh (1983).

In confirmation Stevenson (1993), Evans (1991), Wernfelt and Karnani (1984) and Porter (1980) all concur that organisational flexibility provides firms with an ability to adapt effectively to environmental dynamism. As all firms operate in, and are dependent upon the external environment for their survival, it is self evident that those organisations that respond in a timely manner to change may reap certain benefits (e.g. 'first mover advantages' Porter (1980) and Stalk (1988)), over those that suffer from organisational sloth. Alternatively, those commercial entities that prefer a strategy of being second or late movers to benefit from lessons learnt, Millikan and Lant (1991), must also be flexible in order to implement untrammelled change. These flexible companies it is argued will gain advantage over those organisations that suffer from painful rigor born of an inability to smoothly adapt and therefore fail to compete effectively in a challenging environment. The suggestion inherent in the above argument is that organisational flexibility is then, a fundamental source of competitive advantage.

As discussed above, Thompson (1967) conceptualises this phenomenon by visualising organisational flexibility as "*...a buffer between internal departments, suppliers and the organisation and the market place*". These buffers enable less coordination of the operating systems of different departments while arguably simultaneously providing the

maintenance of overall organisational efficiency and compliance to the strategic objectives of the firm, Cyert and March (1963), Moch and Pondy (1977).

Additionally, not only can flexibility possibly provide a buffer to the general dynamic flux of the external environment, it may also increase the personal satisfaction of individual customers. The flexibility of a company may facilitate the fulfilment of unusual requirements providing customers with desired attributes that are usually beyond the capability of an organisation's common routines. Flexibility in this paradigm may therefore provide the manoeuvrability within the internal environment required to satisfy uncommon demands, Finch (1991).

Therefore organisational flexibility arguably becomes a prerequisite for competitive advantage, but the quest for this elusive condition and the operationallisation of flexibility as a measured variable within empirical research, remains a largely unexplored academic corridor. Sharfman and Dean (1997) did however develop a prescriptive measure for flexibility but its application was limited. Their methodology will be returned to and discussed in greater detail below.

However, Bowman and Hurry (1993), Greenley and Oktemgil (1998) and Bourgeois and Singh (1983) suggest that the antecedents of organisational flexibility are to be found in resource slack, and in consideration that the operationallisation of slack resource variables are now well established within the academic literature, these may be employed to express a relative, proportional level of organisational flexibility, Bourgeois and Singh (1983). However, the capture and employment of variables will be addressed in greater detail later, for the present the next section will proceed with an examination of the conceptual residences of slack within contemporary organisational theory.

2.3 The Philosophical Domains of Slack within Organisational Theory

Organisational Theory is not an individual, unified, supreme explanation of the functions, actions and reasons for the existence of The Organisation. Rather it is a pastiche, a distillation of many models, concepts, ideas and theories developed from multidiscipline

perspectives and paradigms, Jameson (1985), Kreiner (1992). The consequence of slack resources within some of these individual areas of academic interest has stimulated much of the slack resource literature to-date.

Porters 'Five Forces Model' (1980) delivers the concept of an organisation that is intrinsically linked, incrementally influencing and being influenced by the industry or, as he terms it, the micro-environment. The micro (industry) environment is itself embedded within the greater or macro-environment, commonly identified by the acronym SLEPT, the social, legal, economic, political and technological demands and influences that affect and effect the organisation and the industry. This is a model that encourages rational monitoring of external developments and the intelligence produced to be utilised for internal strategic and tactical modification to enhance the company's position relative to the external environment. The conceptual boundaries of the organisation may be witnessed to become even more blurred when employing 'network modelling' that seeks to enhance our understanding of the complex interactive nature of the organisational and the external environment especially during product development and innovation, Kreiner and Schultz (1990). In addition the behaviourists, Cyert and Marsh (1963), Pondy et al (1983), Alvesson (1987), have introduced concepts from anthropology, sociology, psychology and other disciplines, now commonly grouped under the heading of Organisational Behaviour, that greatly enhance our appreciation, if not our deeper understanding, of the complex and nebulous nature of The Organisation, Morgan (1986).

It appears that the very nature of complex man and his multilevel interactions may hold the key to a greater understanding of the organisation and its ability to adapt and even transform itself, in the face of a hostile and ever changing environment. On reflection, this would seem to be a sensible scenario since the core component of the organisation is the human, Tannenbaum (1992). Organisations are distinctly human constructs and humans are, as social animals, firmly embedded in the greater environment, Astley and Van de Ven (1983). Humans construct, operate and control these institutions and furthermore it may be intuitively proposed, that organisations exist purely for the

enhancement of the human condition. They impart benefits to their stakeholders in the broadest sense, McTaggart and Gillis (1998) and to society in general, Clarkson (1995).

The shortcomings of the traditional mechanistic model of the organisation as an internally focused schematic devoid of all external environmental contact and interaction, commonly depicted as divisional, functional and hierarchical pictograms, are further explored in the work of Miller (1987), who suggests a new model where there exist four major elements of organisational theory that "... reveal the range of applicability of paradigms". These "...organizational elements" are again discussed and developed by Nahavandi (1993). These elements are identified in figure 2.1 below.

Fig.2.1 **Strategy, Environment, Structure and Culture. (S.E.C.S.)**



It is therefore arguable that an examination of the presence and consequences of slack resources should be investigated from within each of these elemental components of the organisation. Each of the 'S.E.C.S'(Strategy, Environment, Structure and Culture) and their sub-unit components will now be addressed by turn beginning with an examination of the fundamental generic theories of Organisational Strategy and their theoretical relationship with the concept of slack.

2.3.1 Slack Resources and the Four Generic Theories of Management Strategy

Formulation Behaviour

This section will concentrate on the elementary processes of strategy formulation behaviour and the underlying philosophies that drive the different paradigms. It is proposed that it is here, at this fundamental level of organisational behaviour, that the

conceptual roots of slack resource as a potent force for sustained competitive advantage must be firmly embedded for their future harvesting when external opportunities and threats are experienced. To this end, the principle paradigms of the theories of strategy formulation as defined by Whittington (1993), are here reviewed and their relationship with the theory of slack are discussed.

The Classical Strategy Concept

The Classical Strategy philosophy draws support from the traditional economic theories of the last two centuries while its popular basic concept reflects ancient military strategy.

The military comparison is graphically displayed in Gary Hamels (1996) 'Strategy as Revolution' whose work is liberally decorated with the images of model soldiers in fighting poses.

Popularised in the 1960s through the work of Chandler (1962), Sloan (1963) and Ansoff (1965) the theory has three basic tenets, a commitment to short term profit maximisation, rational analysis and a hierarchical separation of policy formulation and execution. The simplistic goal of pursuing maximum short term profits in combination with the macho military terminology employed by the proponents of the 'Classical Theory' has proved extremely seductive and its philosophy still dominates the pages of many popular management text books today, Braker (1980), Hoskin (1990). The link with military concepts is not an accident, as Hoskin (1990) observed, "*...many of the early American business systematisers have shared a common early career in the army, indeed many having received a West Point Academy education and training.*"

This last observation highlights an interesting question, why did these former military officers abandon one of their basic battlefield tactical lessons? They frequently compare doing business to engaging in a battle, with the CEO as a General directing his troops on the field of the external environment and the enemy identified as the organisations competitors, the battlefield objectives being the windows of opportunity (James 1985). However as any junior army officer will relate, a general will not give battle without a rear guard, reserves which he throws forward at critical times in the battle when

circumstances dictate, to either take advantage of a competitive weakness or to bolster defences. Throughout history these reserves or slack resources have been the elite units of the standing army, the Persian Immortals, Napoleons Imperial Guard, the German SS, the British Guard regiments and the Roman Praetorian Guard to name but a few, but in the business context it appears that this essential concept of military discipline has been subordinated to the initial pursuit of maximised returns.

In this paradigm idle resources, the equivalent of military reserves, are seemingly viewed as asset investments that must provide continuous returns to the stakeholders. However, to express the danger in a military metaphor, the commitment of all ones troops to the front line is tantamount to surrender, for it will be only a matter of time before a crack will develop through sheer fatigue and a rout will then be assured without the means of extra support from the rear, Wellington (1853).

It would appear that the concept of commercial slack resources should be a fundamental tactic within the Classical Strategy School, but it appears to have been subsumed to the 'tough talk' and a human predilection for business total efficiency in the pursuit of immediate returns on all investments.

The Evolutionary Paradigm

In contrast to the Classical theorists the Evolutionists will argue that the rational planning of top management is of little consequence in ensuring sustainable long term survival of the firm (Henderson 1989). They conclude that the market will automatically select the best performers as survivors and eradicate the inefficient.

Einhorn and Hogarth (1988) make a direct comparison with Darwinian natural evolutionary theory, "...*evolution is nature's cost-benefit analyst.*" Henderson (1989) asserts that competition is in a constant battle for survival in an over-populated, complex and harsh, unforgiving environment. Most Evolutionary theorists go even further by rather pessimistically dismissing his conclusion that diversification and adaptation to environmental change is the only strategic option for survival. Aldrich (1979) argues that

organisations are akin to biological organisms, they are limited in their recognition of the environment and more importantly, are slow to adapt. The adoption of a successful strategy is perceived as little more than pure good fortune because the complexity of the environment will ensure that no-one is able to predict the microcosm that they inhabit, Hollis and Nells (1975), therefore success in this paradigm becomes an elusive creature of pure happenstance.

The Evolutionists also maintain that markets are too efficient to allow any sustainable resource advantage (McClosky 1990). Temporary strategic advantages will be eliminated by competitive imitation. Williamson (1991) concludes that the only true advantage to be gained is one of cost control. He states that strategic effort will not win through "*...if there exists the burden of excess costs in production, distribution or administration.*"

Williamson (1991) would then, appear to put the last nail in the coffin of the slack resources argument within the evolutionary paradigm but Hannan and Freeman's (1989) '*population ecology perspective*', from within the same school of thought, gives us a clear picture of a growth market where a stream of new firm entrants are ruthlessly evaluated and ill-fitting firms are selected-out. However, by the same argument product introduction must also be seen as progressing through a similar experience of evaluation, adoption or rejection so that constant product innovation and introduction becomes the only option for survival and given the above argument of swift competitive advantage imitation, McClosky (1990), constant product development would prove to be the only defence. A clear example of this strategy working in practice is given by the Sony Corporation's launch of the Walkman. During the 1980s they released 160 versions, twenty at a time onto the market before selecting models for long production runs (Sanchez and Sudharshun 1992) and constant product development is also witnessed within the mobile phone industry

Therefore the adoption of slack resources within the Evolutionary paradigm now becomes not just desirable but essential. It provides the flexibility required by the organisation to adapt quickly to a hostile, volatile and unpredictable environment where

constant innovation and presentation of new products to the market is the only recipe for survival. Organisational flexibility, borne of slack resources once again becomes of paramount importance. Slack, within this vision of environmental intolerance, provides the springboard for a firm to become a market leader and relegates imitators to late entry competitors who may fall progressively further behind.

The Processual or Emergent Strategy

The Evolutionists rejection of the Classical proponents partiality for rational strategy planning and application is also shared by the Processual or Emergent Strategy advocates however, they also reject the concept of a perfect market place ensuring the survival of only the fittest, Whittington (1993). They view both organisations and the environment as messy, unpredictable phenomena from which strategies emerge slowly, incrementally, Weick (1990).

The Processualists, having abandoned Rational Economic Man, Hollis and Nells (1975) insist that individuals and sub-groups within the organisation do not unite to pursue a single objective such as profit. The individual perceptions, biases and personal objectives of coalition members require bargaining procedures resulting in compromised goals being set that are acceptable but probably not optimal, Cyert and March (1963), Pettigrew (1985). In addition, the complexities of the environment lead to satisficing, rather than optimal behaviour, Simon (1957), Mintzberg (1987), this perspective entails acceptance of the first '*satisfactory*' solution. We as individuals they argue, are disinclined to embark on endless searches for information and indeed are incapable of processing reams of data, in addition we display biases when attempting to interpret it.

The consequence of Processual theory is that rationalised strategic planning is nothing more than a management vanity to be abandoned, and that we need to accept our own and others limitations and to work with the world as it is, unpredictable. Firms can take heart from the old Processualists, Cyert and Marsh (1963) who maintain that incremental change and slow adjustments are safe options, for unlike the Evolutionists, they believe the markets to be imperfect and therefore reasonably tolerant of under-performers. In

today's volatile environment however this rather lazier-a-faire attitude has been somewhat modified. Nelson and Winter (1982), although of the Processual school, advocate "*...the fundamental heuristic imperative for top management is: Develop a strategy.*"

This initially seems to be a denial of the original theory but it is only an acceptable adjustment of the original thinking behind it. Weick (1990) affirms that it is essential for senior management to initiate something, "*...it does not matter much if they are wrong, so long as they give [middle] managers the confidence and a sense of purpose to act.*"

It is not fear of competitive action and market forces that drives initial strategy planning and implementation in the Processual world but a dread of rigor mortis. Whittington (1993) succinctly states, "*If the firm sits waiting for the right map it will freeze; if it gets up and moves, it will somehow or other find direction, acquire experience and make its own opportunities.*"

The Processualists are not advocating the Classical ethos of rational strategy formation and execution by this, but rather they are indicating that senior management should wind the organisation up and point it in the right direction. The bumps and knocks that it receives on its journey will modify its behaviour and rectify or reposition erroneous goals. In this manner strategy, although initiated and codified from the top of the organisation, will be redeveloped and rebuilt from the bottom up and the execution and development stages of strategy formulation begin to blur into one act.

Mintzberg (1987) likens the process to an artist, they will begin with a broad plan of what is required but as the work takes shape, the intimacy of the artist with their task will result in ongoing incremental development which ultimately results in an aesthetically pleasing and hopefully a commercially viable product that may be far removed from their own original perception of the finished article.

The Processual paradigm is then impossible to rationalise without slack resources, the conceptual spare colours on the artist's palate. The buffering of interdepartmental demands upon one another, the so called 'policy side-payments', Cyert and March (1963), the absorption of external environmental turbulence and the maintenance of flexibility for strategic modification, all require substantial slack in the organisational system, Hambrick and Snow (1977), to enable a sustained application of such a strategy, or indeed neo-strategy.

The Systemic Strategy Perspective

The systemic strategy perspective does not advocate any specific approach to strategic formulation or its execution. Rather it is an analytical tool for examining the strategy process. It advocates that strategy is not borne of perfect rational behaviour but is profoundly influenced by the immediate cultural environment. Granovetter (1985) introduced the concept of 'social embeddedness' that advocates that economic activity is never conducted in a cultural vacuum, decision makers are rooted within social systems that places obligations and constraints upon the individuals decision processes. Hu (1992) adopts this view and rejects recent discussions of borderless markets and world-wide, rootless corporations. He argues that even the largest multinational organisations maintain strong domestic roots that determine their business policy and strategic planning. This perspective dismisses the concept of the truly transnational corporation.

As yet there exist only one, limited empirical study contrasting different culturally orientated firms and their attitude to organisational slack, Poynter and White (1985), the results of which are arguably inconclusive. Ueno and Sekaran (1992) sought to highlight the disparity of US and Japanese budget slack planning, but they do not address the broader question of cultural attitudinal differences to slack in general. Extending this line of enquiry may well illuminate the reasons why some managements endeavour to eradicate it, others to ignore it, while some institutions who may be defined as culturally embedded, may actually encourage and re-invest in some forms of slack. However, defining the population parameters of such a study may prove problematic and for the

present the question of a relationship between cultural embeddedness and attitudes to slack resources is beyond the remit of this work.

All of the above strategic paradigms relate to the rational positioning of the organisation within the external environment and yet other authors and researchers advocate that this initial concept is hubris and that the strategic focus of the organisation should be directed to the development of an internal competitive advantage alone.

2.3.2 Slack and the Internal Resource Perspective

Philosophically, the reasoning for the maintenance of slack can be seen to validate the arguments of many authors, Barney (1988), Grant (1991), Oliver (1997), when they argue for a resource based perspective to develop internal competitive advantage. Their argument is that internal capabilities born of organisational resources should be matched to the external opportunities rather than attempting to scan the market for niches that may be exploited by the rigid condition of the firm. This internal perspective inherently demands organisational flexibility in a volatile environment, a constant shift in resource deployment and primacy to match the changing external demands, Pfeiffer and Salancik (1978) Bourgeois and Singh (1983), Bourgeois (1981), Sharfman et al (1991), Hart (1995) and Galbraith (1973).

The argument that competitive advantage is to be sought and developed in the internal resource base of the organisation rather than attempting to place the firm in a favourable position within the environment, as proffered by the DuPont school of thought, Chandler (1962), Ansoff (1965), is well attested to. The bounded rationality of man, Simon (1957), the dynamic complexity of the environment, Grant (1991), Bowman and Hurry (1993), that undermine the concept of *rational economic man*, Hollis and Nells (1975), together with chaos theory, Parker and Stacey (1995), all conspire to make any reliable, rational dependence upon environmental scanning and analysis alone for strategic planning totally inadequate as it rules out accurate prediction. The only answer they argue lies in “...a preparedness for an uncertain future with internal flexibility”, (Harding 1987).

Hence, Grant (1991) when discussing strategy formation takes a diametrically opposed view to Porters (1980) industry and environment analysis, suggesting that a strategy for competitive advantage must originate from an organisations internal analysis,

"When the external environment is in a state of flux, the firms own resources and capabilities may be a much more stable basis on which to define its identity. Hence, a definition of a business in terms of what it is capable of doing may offer a more durable basis for strategy than a definition based upon the needs which the business seeks to satisfy." Grant (1991)

The premise for this argument is based upon a given [*presumed self-evident*] fact that the source of all profits are resources and capabilities, as discussed and advocated by Wright, Patrick and McMahan (1992). Grant (1991) summarises; *" Business strategy should be viewed less as a quest for monopoly rents (the returns to market power) and more as a quest for Ricardian rents (the returns to resources which confer competitive advantage over and above the real costs of these resources). "*

Monch and Pondy (1977) expand this argument and demand an internal focus on the acquisition of slack resources with the bold statement, *"With sufficient slack, there will be a solution for every problem."*

Oliver (1997), Dierickx and Cool (1989), Day, and Wensley (1988) concur with the above by arguing that industry resource heterogeneity combined with immobility within the factor markets means that a far more fruitful route of strategic formulation would be found by examining and building non-transferable, non-immutable internal resources.

Given the argument that slack within these resources provides flexibility, the organ for adaptability that can lead to competitive advantage, a greater degree of internal focus now seems paramount for organisational survival and superior performance, Day and Nedungadi (1994), Chowdrey, Lang and Shamsud (1994).

However, Hart (1995) gives a note of caution with regard to this perspective, *'The resource based view may lead to an organization that is like the proverbial, "child with a hammer", everything starts looking like a nail.'*

Hart's (1995) warning may be interpreted as, when the external environment is dynamic a strict internally focused, narcissistic organisation may cling to original competitively advantageous but now out-dated resources and decline the inclination to acquire new ones. In such circumstances original core competencies may become 'core rigidities', Leonard- Barton (1992). In conclusion, within the internal resources paradigm slack resources can seemingly provide the prerequisite of organisational flexibility for survival.

Therefore, it may be concluded that no matter which strategic paradigm is prescribed or which perspective is adopted, slack resources are of paramount importance for organisational flexibility and ultimately for securing competitive advantage.

However as noted above, strategy is not formulated in a vacuum but resides within, affecting and effected in turn, the other elements of the S.E.C.S. model, see figure 2.1 above. Moving this work forward the next section will examine the cultural dimension of this system.

2.3.3 Slack in the Cultural Domain; The Politics of Slack

As discussed above, the Processualists having discarding the rather naive and simplistic concept of rational human behaviour, they insist that the individuals and sub-groups of the organisation do not on mass concur to pursue a single objective. The individual perceptions, biases, egos, peccadilloes and personal goals of the individual coalition members require negotiation often resulting in compromised goals being set that, while being acceptable to the sub-group may not necessarily be optimal for the organisation, Cyert and March (1963), Pettigrew (1985). Additionally, the effect of a constantly changing complexity of environmental demands results in satisficing, rather than optimal behaviour, Simon (1957), Mintzberg (1987). This perspective entails the acceptance of the first satisfactory solution. As discussed above, the Processualists argue that humans

are disinclined to embark on endless searches for information and indeed are incapable of processing an excess of data and in addition, will display biases when attempting to interpret it. Furthermore, the presence of slack resources it may be argued, may affect the cultural posture of individuals, coalitions and the organisation as a whole.

As a consequence this work will proceed with an examination of the slack resource research to-date within this field of academic interest.

Organisational Conflict

Bromley (1991) insists that innovative programs require slack for initiation and March and Simon (1993) further develop the argument for slack resources when they state, *"..if all the resources of an organization are busily employed in carrying on existing programs, the process of initiating new programs will be slow and halting at best."*

New programs, they argue, require investment and without slack or spare organisational energy, conflict will arise from individuals and subgroups that experience erosion of their personal resource bank. Cyert and March (1963) lend historic gravitas to this discussion by stating that those organisations that hold slack in their systems are more able to survive crisis periods, *"...they discover economies despite their difficulty in discovering possible economies during better times."*

The reason for this slack myopia during environmental munificence is explored by Cohen and Cyert (1965). They argue that the organisation is a coalition and that, *"...a coalition is viable if the payments made to the various coalition members are adequate to keep them in the organization. If enough resources exist to meet all demands, the coalition is a feasible one."*

Arguably, the personal aspirations of the individual coalition members are somewhat dependant on the munificence of the external environment and as a consequence personal expectations are moderated during hard times, Hellriegel, Slocum and Woodman (1995).

They do not argue that wages may be automatically reduced during lean periods without consequence, but that growth is restrained or indeed halted and that efficiencies in employment practices and personnel deployments are developed. However, when the environment is munificent there is a lack of urgency, the incentive and the will to seek out slack evaporates, Geppert (1996). Indeed, it may be speculated that during periods of environmental pecuniary munificence internal energies are urgently directed to exploiting the external environmental opportunities and not in seeking internal economies; as exemplified by, “*..make hay while the sun shines*” attributed to Sam Colt [1863] in an internal memo to his sales team on the eve of the American Civil War, (BBC Timewatch series ‘Sam Colt’, 1989)

Bourgeois (1981), Papke-Shields and Steels (1993), being diametrically opposed to this behaviour of shifting organisational focus, argue that the instruments of external opportunity exploitation are precisely internal slack resources and that a munificent, as well as a depressed market warrants their recognition, appreciation and a constant exploration and analysis of their potential, and re-investment. Therefore, to promote organisational harmony, it is argued that slack resources are significant during periods of both environmental munificence and contraction.

Goal Conflict

The early work of Cyert and March (1963) concluded that in times of economic munificence the generated slack serves to reduce goal conflict within the organisation. Moch and Pondy (1977) would appear to concur with this when they observe that slack allows choice opportunities to be distributed generally to all participants reducing conflict. However, in his earlier work Pondy (1967) points out that the decentralisation of the decision making process that slack engenders may lead to goal conflict. He argues that local rationality leads to sub-unit loyalties that may seek to achieve goals that could be at odds with the overall objectives of the firm. In contrast, the empirical study conducted by Bourgeois and Singh (1983) concluded that the presence of slack resources reduced strategic discord and promoted goal consensus.

An explanation for this seemingly intangible confusion is found in the work of Dess and Origer (1987) who propose that, *'there exists an inverse relationship between environmental munificence and the [congruence of both] organisational objectives and competitive methods.'*

They cite Chakravarth (1982) who maintains that when slack is low then resource rationing exists which both constrains divergent organisational objectives and the means of pursuing independent departmental goals. This view is supported by Pfeffer and Leblebici (1973) who hypothesised that high levels of competition, described as a hostile environment, leads to a demand for more organisational co-ordination and control.

This also confirms the work of Cyert and March (1963) and Moch and Pondy (1977), but Dess and Origer (1987) expand the argument and maintain that other factors are at work in addition to the munificence of the external environment. They propose that when firms are exposed to complex and dynamic environments, munificent or not, a greater division of labour is required to monitor and initiate responses. It is this division that leads to goal divergence and the sub-unit myopia discussed above. The conflict they argue, arises not from the generated slack of a munificent market that allows the exploration of individual and idiosyncratic departmental development, but from the proliferation of isolated departments that suffer from the mind set of professional and personal perspectives that may cause inter-departmental friction, or even an independent and conflicting interpretation of organisation objectives.

In explanation of this behaviour Dess and Origer (1987) suggest that the individual backgrounds of departmental management teams impart a biased perspective which colours their strategic objectivity. To elaborate, it is easy to recognise that an organisation consisting of sub-units each made up of individuals solely from marketing, production or finance backgrounds would naturally possess divergent perspectives on the methodologies of attaining objectives and may well develop conflicting goals borne of their specific training and personal experience. However, if inter-departmental flexibility is maintained through the deployment of buffers borne of slack, as discussed above, then friction may

be significantly reduced if not eliminated Thompson (1967). Therefore it is argued that the core strategic objectives of the organisation may still be achieved even when each sub-group is employing their own favoured methodologies and pursuing departmental sub-goals.

The dampening of internal organisational conflict and the accommodation of sub-unit goals through the acquisition of slack resources cannot intuitively be the only cultural dimension that aids or obstructs organisational success. The argument being developed here is that slack provides flexibility and this maybe transformed into superior performance, but for this to occur the organisation must also possess the will, the ambition and the ability to make it happen.

A Propensity for Change

It is speculated by this work that for slack resource energy potential to be full realised requires a management ability to conceive new ways of operating, and the will and ability to pursue these new programs through to completion. Such cultural propensity for innovative thinking is seemingly common amongst entrepreneurial strategists, Kurato and Welsch (1994), but arguably however, it is a relatively rare quality within the administrative management prevalent in mature industries, Hellriegel, Slocum and Woodman (1995).

This observation highlights a potential area of concern for management because it is generally speculated that potential and recoverable slack is most likely to be discovered within the more mature firms and industries, Cyert and March (1963). It is speculated that the reason that this slack may be discovered in mature organisations is that routine operations of some longevity may have acquired peculiar nuances and hidden sources of organisational energies through subtle, incremental and even radical changes in their use over time. Therefore, it may be further speculated that there exists a miss-match between the extant levels of organisational slack and the internal cultural capacity to exploit its inherent theorised benefits.

Conceptually, mature operations may be compared to an old computer that has experienced changes of programming and operating systems, activities that lead to hidden files and part files, ghost residues of the past that continue to occupy valuable memory that may be recoverable for future use but at present are hidden from view. In this scenario management will need the ability and the propensity to search out these spare energies and consider new possibilities and innovative forms of operating. Intuitively, managers may not consider new ways of operating until they know what potential and actual tools they have at their disposal and if managers and strategists are more concerned with the administrative day-to-day operations of the firm, as may be experienced within a mature and relatively settled environment, the will to seek out and reap the benefits of hidden slack may not be present.

The topic of cultural propensity and ability will be further explored later, but for the present, in the pursuit of thesis continuity, the examination of the fundamental organisational elements of the S.E.C.S model (see fig. 2.1 above) continues with an exploration of slack within the organisational structure.

2.3.4 The Nomenclature of Slack in the Internal Structure and Operations

As argued above internal slack is specifically Organisational Slack and this has been defined by earlier authors as either Available/Actual or Recoverable/Absorbed. The two classifications refer specifically to the ease of recovery of the slack for redeployment and the choice of the different titles for each classification has been one of author preference. However, the term Actual Slack would seem to imply that some slack may be conceptually discovered lying on the floor or loose in the back of a draw. Apart from cash in the pocket, all slack will require some degree of effort to extract it for re-deployment, be it a visit or phone call to the bank to release cash reserves, an inventory re-assessment or the re-deployment of under-utilised staff, all require some degree of effort to realise their potential energies. Therefore, Actual Slack it may be argued, only exists after it has been captured and is ready for immediate re-deployment such as cash readily available or idle staff awaiting instruction, until then if its recovery is assured and

relatively simple in nature then intuitively it should be referred to as 'Available', with an inherent small variability of availability and ease of accessibility apparent to all.

The title Absorbed Slack does not intuitively differentiate between slack that may be recovered and that which is buried so deeply in the internal structures and operations of the firm as to make it uneconomical to pursue. Therefore, the term Recoverable, which inherently implies that it has practical, retractable potential energy, would seemingly be a preferable title for slack that is economically retractable and deployable.

Recoverable Slack is therefore those energies that may be discovered by an internal audit of resources. They may be found in a follow-up of outstanding invoices or the sale of the same (factoring), personnel training and redeployment, machine job re-routing that realises spare capacity, a re-evaluation of over-padded budgets, under-utilised floor space, a review and rationalisation of administrative procedures and practices and probably a myriad of other, less obvious areas of administrative and operational activities.

In conclusion, internal structural slack will be identified in this work as either Available or Recoverable Slack and is perceived to exist in many different forms. It may be recognised as vertical slack, residing within the hierarchical structure at different levels of the organisation and also as horizontal slack, within different divisions and departments. Intuitively in this two dimensional model, slack will be found to reside at different positions within the organisation that may be located by a simple organisational map referencing system.

Finally, an examination of slack in the external environment, the last of the conceptualised constructs within the S.E.C.S model, will conclude this section.

2.3.5 Slack in the External Environment

As discussed above (sec. 2.3) the external environment is generally accepted as being composed of two elemental fields, the macro or general environment that all individuals

and organisations inhabit and the industry sector or micro-environment (see fig.2.2 below) and it is argued that each should be independently evaluated for opportunities and threats, Hill and Jones (1995), Porter (1980). The industry (micro)environment is often perceived as being the most imminently threatening of the two and therefore, is traditionally monitored by most organisations if only informally. However, arguably many organisations give scant regard to the value of a thorough environmental scan; “.. *managers cope with the range of influences by evolving, over time, accepted wisdom about their industry, its environment and what are sensible responses to different situations*”, Johnson and Scholes (1989).

However, what may often be forgotten is that “..accepted industry wisdom...” should be continually questioned and challenged, as personified by entrepreneurs such as Anita Roderick, The Body Shop, and Richard Branson, Virgin, Hellriegel, Slocum and Woodman (1995).

The macro-environment is commonly identified within popular management literature by the acronym SLEPT, representative of the social, economic, political and technological externalities that may make demands upon an industry or industries and individual organisations. The micro-environment as defined by Porter (1980) comprises of the elemental threats and demands on the members of distinct industry sectors, these are recognised as product substitution, the power of buyers, the power of suppliers, competitive pressures and the threat of new entrants into the competitive melting pot of an industry, these elements are most commonly referred to as Porters Five Forces. When all external environmental elements are combined they may be expressed as in figure2.2 below.

Fig. 2.2

Environmental Pressures on the Organisation
After Hill and Jones (1995)



For an appreciation of the environments it is essential to distinguish between that which may be labelled a market opportunity or window, and that which constitutes a slack resource. An untapped slice of the market may commonly be viewed erroneously as the presence of slack in the micro-environment. This window of opportunity would usually be quickly identified by most competitors within the same industry and an aggressive strategic effort embarked upon to exploit it. This market window is not to be confused with slack resources.

Slack should be identified as the spare energies that afford the organisation strategic or tactical flexibility to exploit such windows that may present themselves, Bourgeois (1981), Mintzberg (1978), Nohria and Gulati (1995). Slack exists in the external environmental, or an internal resource that has not been employed to realise its full potential and is recoverable for future strategic or tactical deployment, Thompson (1967), Bowman and Hurry (1993), Bourgeois and Singh (1983). Environmental Slack is then defined as external potential energies that may be accessed and recovered by the organisation; hence it is defined as Potential Slack.

When a window of opportunity is identified a clear example of slack that may be required to mount an assault could be spare production capacity, however, this is a clear example of an internal slack. External environmental slack that enables exploitation of a new market opportunity may well be a pool of unemployed specialist personnel, or the external development of new processes and methodologies that may be importable. Yet other routes to exploitation may be available through accessing local or national government aid, or cheap and accessible capital and different industry technological developments that may be applicable and importable, these therefore may be identified as slack in the external environment.

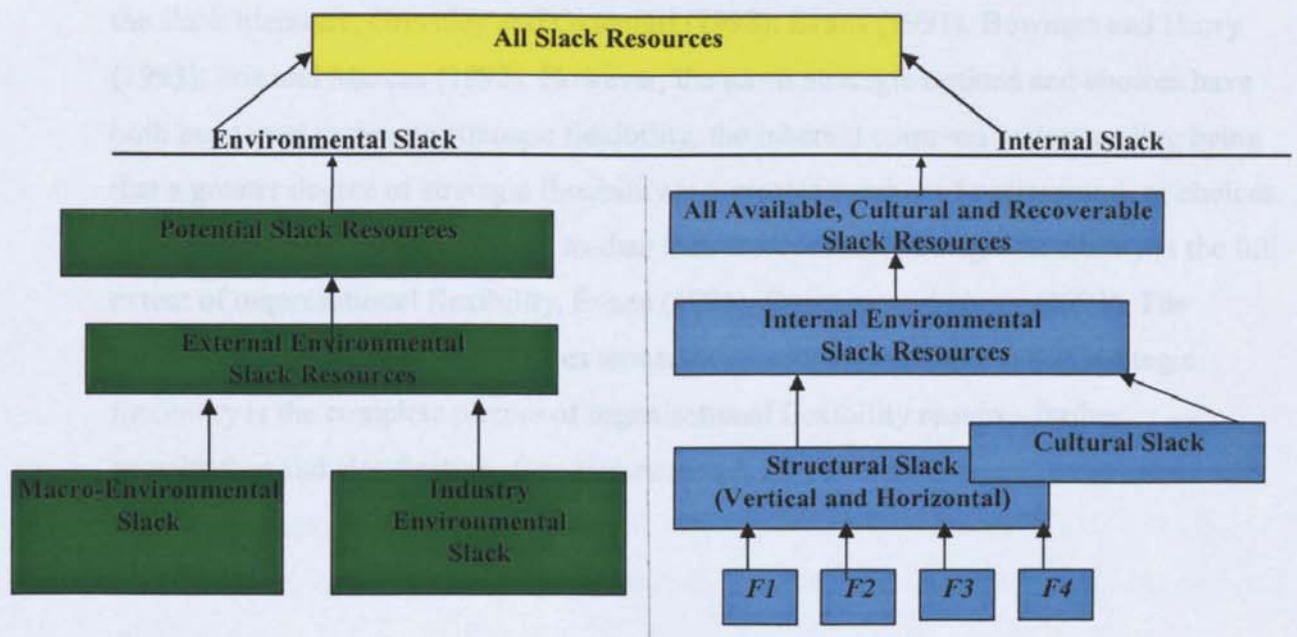
Slack in the external environment may often be overlooked until other external developments impinge directly upon the organisation. During the 1990's the financial investment industries were slow to react to the combined effects of diminishing state pension provision in real terms and the movement of the so-called 'baby boomers' into middle age creating an increased demand for investment products. The late rush to gain the lions share of this newly expanded market by companies resulted in poorly designed and marketed products that led to many firms falling foul of the industry regulators and incurring swinging financial penalties, not to mention seriously damaging their reputations. Here again is an example of a marketing window and not slack. Indeed, the industry's lack of slack was clearly demonstrated by their failure to deliver timely, appropriate products. The anecdotal evidence was of an industry shortage of trained personnel for both product design and sales to take effective and timely advantage of this window and this occurred at a time of relatively high unemployment, this later element being a clear example of an environmental slack resource.

In summary, environmental slack, potential slack from the external environments may be discovered in the form of cheap and accessible lines of credit and finance, government incentives in the form of credits or tax-breaks and free professional advice and another is high levels of unemployment that may present the opportunity to acquire trained and skilled staff with considerable cost savings.

Another example of environmental slack is that of external technological development. The recent advances in IT and telecommunications has led to widespread organisational internal restructuring and procedural changes but it has also spurred new concepts in conducting business such as telephone and internet banking, internet shopping and new globalisation aspirations for even relatively small organisations. These are clear examples of non-specific industry technological developments that are importable and therefore represent a true macro-environmental slack, enabling strategic and tactical flexibility, Hill (1994). The external development of the internet also highlights a possible internal slack resource. The eponymous PC, that until relatively recently was employed for strictly internal operations such as word-processing, data bases and spreadsheet applications, now becomes a very powerful marketing tool when connected to the World Wide Web. This demonstrates the possible, a new way, and a possible shift in fundamental strategic thinking that could radically transform a company's operations and fortunes.

The diverse domains of slack that arguably afford organisational flexibility may now be conceptually defined as belonging to two main streams with multiple sub-levels (see fig. 2.3 below)

Fig.2.3 The Conceptual Two Domain Multi-Level Residences of Slack Resources Where F_x Represent Internal Functional Departments
(The element of Cultural Slack will be further explored bellow in sec.3.1.3.)



Having introduced the conceptual domains of slack within organisational theory this work will now proceed with a more detailed examination of the practical application and consequences of slack as discussed within the current literature and in particular will begin with a further exploration of the consequences of slack for strategy.

2.4 Slack for Strategy: The Options, Choices and Flexibility Confusion

Meyer (1982) refers to “..ambiguous environmental shocks” as jolts and argues that the antecedents of jolt survival are to be found not in slack resources, but in a range of strategic options. However, Nohria and Gulati (1995) and Poynter and White (1985) argue that the tools required for the construction of these strategic options are indeed slack resources. This is supported by the empirical research of Veliyath (1996), who describes slack as a buffer against the vagaries of a hostile environment and also possessing the positive attribute of, “... *dampening performance variability*”, Thompson (1967). Conceptually, slack in this paradigm maybe considered as insulating the strategic core objectives of the organisation against a dynamic external environment by providing a greater number and range of strategic options that would still serve to fulfil the original strategic objectives.

The theoretical argument, and the pursuit of empirical evidence for the enhancement of strategic flexibility through the presence of organisational slack has stimulated much of the slack literature, Greenley and Oktemgil (1998), Evans (1991), Bowman and Hurry (1993), Fox and Marcus (1992). However, the terms strategic options and choices have both been used to denote strategic flexibility, the inherent common understanding being that a greater degree of strategic flexibility is a greater number of options and, or choices. Also, much of the published work to-date also assumes that strategic flexibility is the full extent of organisational flexibility, Evans (1991), Bowman and Hurry (1993). The confusion of the options and choices terminology and the assumption that strategic flexibility is the complete picture of organisational flexibility requires further examination and clarification. (*see also section 3.1*).

The strategy setters of the organisation being the senior management, arguably provide the initial organisational impetus and collect the required resources for the firm, it also institutes the structure and defines its culture, all within the prevailing contemporary context of the external environment, Kuratko and Welsch (1994). The strategy team, being subsequently influenced by both internal and external environmental developments modifies its views and opinions and therefore its directives over time, Mintzberg (1987). The strategy team may therefore be defined as the organisations 'options sorting house'. It is required to make choices from a range of options. However the team's strength, it is argued by Sanchez (1997), lies in the number of strategic options that it has available, in other words the degree of strategic flexibility that it enjoys is proportional to the number of options that are considered to be practically operational and conform to the organisations policy. Intuitively however, to fully enjoy the benefits of an abundance of strategic options, the strategy team it may be assumed, must also possess a propensity to investigate all of its options and possess the will to pursue unusual strategies in order to effectively counter threats and exploit such opportunities that may exist.

The proposition being developed above is that the development of both strategic options and the cultural propensity to use them, as reflected in a strategic choice, may provide the elusive asset of strategic flexibility.

As argued by Nohria and Gulati (1995), Bourgeois (1981), Greenley and Oktemgil (1998), the precursor of strategic flexibility may reside in organisational slack. These slack resources, as argued above exist in many forms and in many vertical and horizontal positions within the organisation and it is these spare energies that may afford a greater number of strategic options, Bonham and Litschert (1978).

If slack resources are witnessed to be a key factor in the pursuit of exceptional performance through enhanced organisational flexibility, then responsibility for the provision and exploitation of slack lies solely with the strategy team, but slack alone cannot implicitly imply strategic flexibility. This condition maybe achieved only when the strategy team also displays other personal distinctive capabilities. These capabilities

maybe identified as an ability to recognise and exploit slack in pursuit of environmental windows of opportunity and to develop in parallel '*blue sky*' strategies to maintain an initial competitive advantage, Hellriegel, Slocum and Woodman (1995). These rather esoteric qualities may now be defined as cultural or soft slack.

The definition of organisational flexibility is argued by many authors to be substantive strategic options borne of organisational slack, Bonham and Litschert (1978), Bourgeois (1981), Bourgeois and Singh (1983), Greenley and Oktemgil (1998). However, organisational slack is defined above as all internal resource slack and hence it may be argued that organisational flexibility should conceptually be flexibility that is organisation wide and not restricted to just one arena of organisational activity, the domain of strategy alone. Indeed, given the exploration above, strategic options are arguably a direct and proportional representation of company wide slack resources and that strategic flexibility is a representation of a combination of the options available plus a propensity to pursue and employ them, which is defined here as soft or cultural slack and that strategic flexibility is only a component part of total organisational flexibility.

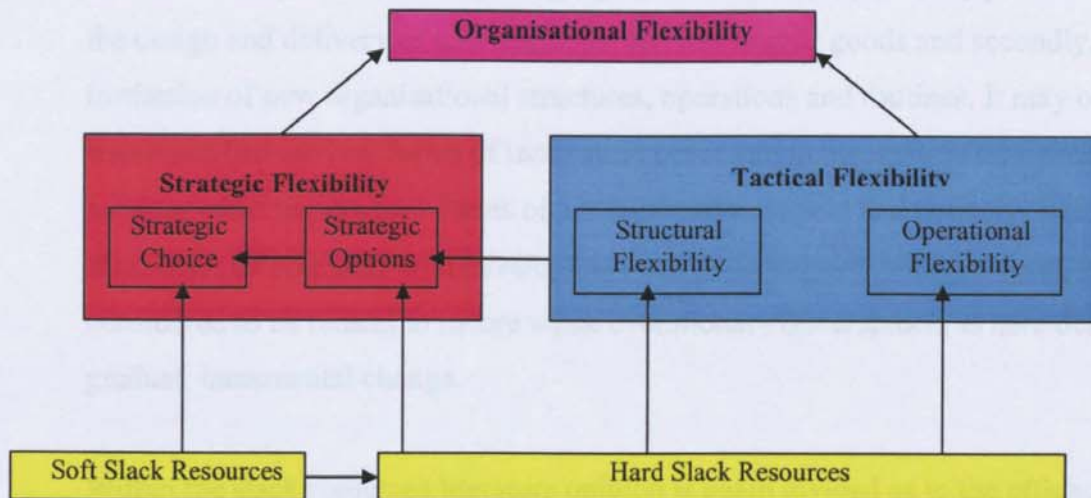
However, conceptual causation may well lead to the supposition that the ability to generate strategic options is a result of the totality of organisational flexibility and not just an elemental part of it. Conversely, because of the arguments given above it may also be ventured that organisational flexibility includes strategic options only as a subset alongside all other organisational tactical level capabilities borne of slack. To summarise this argument, organisational flexibility is an umbrella term that incorporates the concept of the strategic together with all other internal operational flexibility. In short it comprises strategic long-term planning flexibility together with the daily tactical ability of the organisation to absorb and endure environmental buffeting.

Organisational flexibility in this paradigm is the culmination of all organisational slack. Strategic flexibility is one level of flexibility built on yet other levels of flexibility, operational and structural, all of which is provided by slack resources, (see fig. 2.4 below). Strategic flexibility in this argument is only achieved when it is founded on slack

resources that provide a range of strategic options and when this is also combined with a high level of strategic choice, where choice is defined independently from option as the ability to recognise and pursue an option identified as optimal. A successful strategic choice, a selected optimal option, may be conceptualised as the result of personal capabilities and predilections, defined here as cultural or soft slack that is perceived to be an internal human capability to pursue unusual avenues of investigation and the demonstration of entrepreneurial attributes. It may also be speculated that the degree of soft slack may be evident in the level of organisational slack resources that are allowed to exist at the lower levels of the company's operations. If the senior management display relatively high levels of soft slack then it would be a logical conclusion to presume that they would tolerate the existence of hard slack within the firms systems and operations that would afford them a greater range of future strategic options for consideration.

Fig. 2.4

The Conceptual Antecedents of Strategic, Structural & Operational Flexibility and their contribution to overall Organisational Flexibility



However, just how much Strategic Options and Strategic Choices are independently, each dependent upon the presence of different slack resources is as yet unknown. Intuitively, a larger number of Strategic Options may be developed in an organisation that displays greater tactical flexibility (i.e. internal slack resources), but Strategic Choices, the options sorting mechanism, may be seriously moderated by the mind-set of senior management

that displays low cultural/soft slack resources. Conversely, it is logical to postulate that performance which is protected from serious fluctuation by buffers provided by slack resources, Thompson (1967), may well enhance the risk taking propensity of management, Bromley (1991) and hence free them from continually selecting the 'safest' options. Slack in this paradigm therefore becomes a prerequisite for organisational growth and innovation.

The next section will further explore this theory of Bromley (1991) and examine the empirical investigations and hypotheses that address the subject of slack resources for the enhancement of organisational innovation. It will also return to examine the conceptual arguments surrounding the philosophy of slack resources as repositories of spare energy to be captured and re-deployed for specific duties versus the argument that slack acts only as internal buffers protecting the strategic core of the organisation.

2.5 Slack for Innovation

Innovation may be viewed as belonging to one of two camps, firstly product innovation is the design and delivery of new customer services and/or goods and secondly, the institution of new organisational structures, operations and routines. It may often be witnessed that the two forms of innovation occur simultaneously as new products and services often require new forms of administrative support and delivery. Innovation should not be confused with development and to distinguish between them, innovation is considered to be radical in nature while evolutionary development is here defined as gradual, incremental change.

Within the slack resources literature opinion is again divided as to the efficacy of its contribution to innovation. Leibenstein (1969) maintains that "*... slack promotes undisciplined investment and diminishes the incentive to innovate*".

Conversely, Bromley (1991) insists that innovative programs require slack for initiation and March and Simon (1993) further develop the argument for slack resources when they

state, ‘..if all the resources of an organization are busily employed in carrying on existing programs, the process of initiating new programs will be slow and halting at best’. New programs they argue require resource investment and without slack or spare organisational energies other areas of the organisations operations will be required to surrender some level of resources.

Finch (1991) in an examination of R&D expenditures within the pharmaceutical industry confirms the above with his observation that in many industries profitability has been demonstrated to be largely dependent on a firms continued innovative success and:

“Thus it is essential in some industries that individual firms maintain a capacity to innovate in the face of formidable uncertainty. Resource buffers or slacks should be maintained to provide managers with the flexibility to respond effectively to environmental opportunities and threats. Consequently, maximum internal efficiency must be sacrificed to provide a cushion or buffer of under utilised corporate resources.”

Finch (1991)

Miles (1989) observed that U.S. organisations are characterised by a mode of change that is integrative, this being an emphasis on internal co-ordination and control to facilitate the completion of innovative and complex tasks. Finch (1991) berates such behaviour and suggests this drive for greater managerial control and efficiency has resulted in the loss of critical resource slack. He postulates that this narrow perspective for organisational efficiency has resulted in solutions to the problems of change that are only efficient within a very limited context. He continues; *“In the face of growing international competition, these traditional notions of short run efficiency are growing increasingly less appropriate. Sustained long-term success and profitability requires a greater appreciation of the contribution of resource buffers to the process of product innovation.”* Finch (1991)

Finch (1991) concludes with a final sentence directed at all organisations, *“A greater appreciation of the role of R&D as a resource buffer will provide managers in all*

industries a greater understanding of the commitments required to reduce long term risks to tolerable levels"

However, it may be argued that the above statement relegates the R&D budget to one of a company wide contingency fund. Allegorically, it becomes a non-specific emergency fire extinguisher, the receptacle of all organisational slack that may be drawn down by other departments as unexpected circumstances dictate.

Finch (1991) does not differentiate between slack and buffers in his paper, which may lead to confusion both to their practical application and their consequences for the organisation. Slack resources, as argued above, Bourgeois (1981), Bourgeois and Singh (1983), Nohria and Gulati (1995), Bowman and Hurry (1993), Greenley and Oktemgil (1998), possess the ability to provide excess internal energies, those beyond the requirements of the organisations everyday operations. Slack resources provide an ability to develop the new without the necessity of deconstructing the present in an act of internal cannibalism, stripping other departments and groups of their normal component resources. Conversely, 'buffers' as defined by Thompson (1967) and Moses (1992), reflects the organisations ability to absorb environmental shocks. They provide conceptual slippage between the internal departments common routines and act as a shock absorber to the jolts received from the external environment, as such they may protect the core strategy of the firm. Additionally, buffers may dampen company performance volatility. This is envisaged as smoothing the organisations results curve year-on-year. If this proposition is accepted then the consequences for managerial behaviour may be considerable.

The presence of buffers may be interpreted as absorbing the consequences of erroneous decisions that could damage performance and therefore managers may be liberated from conservative decision-making borne of this fear. The level of buffers in this scenario proportionally negates the fear of risk and therefore, higher levels of risk activity may be undertaken with the confidence of protection from ruinous results by the presence of buffers, Moses (1992). Buffers in this paradigm are not the tools of innovation as slack

may be recognised to be, but are perceived as the shield of innovative behaviours, they negate or at least ameliorate the consequences of possible failure. Buffers are a spare resources that reside within departments and sub-groups in perpetuity. They may be conceptualised as the oil between the functions of the organisation, metaphorical 'clutches' between these groups that allow the pursuit of new, internal innovative behaviours while protecting the normal, daily activities. Buffers may also be perceived as the absorbers of unexpected and extraordinary external demands made upon individual departments. Buffers may well facilitate the normal operations and interactions of the sub-groups while simultaneously enabling the processing of unusual and innovative demands.

However, it is argued by Bourgeois (1981), that such buffers borne of slack resources are only effective up-to a certain point after which they become a burden, a drain on the organisations long term profitability. Finch (1991) fails to address this seemingly logical hypothesis and his omission is compounded by other methodological problems in his work.

In an examination of R&D budgets, Finch (1991) employs Available Slack only and ignores the presence and consequences of Recoverable Slack, those buried but extractable spare company energies. Finch (1991) also omits to identify and measure Potential Slack, the organisations ability to access external environmental resources. The capability of some organisations to employ resources that are available beyond the organisations own internal environment, together with recoverable slack internally, may also prove to provide a culture of negated company risk, an intuitive conclusion that is neglected in the work of Finch (1991). Although Potential and Recoverable Resources may be of little consequence to the pharmaceutical industry, although this is difficult to conceive, Finches (1991) protestations of the serious consequences of his study for other industries of available slack alone, requires further empirical evidence.

Finally, Finch (1991) relies on 'Market Rank' and 'Market Performance' to equate 'success' with R&D expenditure and although he includes data on expenditure per

employee as a percentage of sales, he neglects long-term company profit data. To accept that greater risk tolerance borne of available slack buffers alone will provide long-term sustained competitive advantage is not supported by theoretical argument. Additionally, the non-differentiation between slack and buffers relegates this research to an initial, single industry scan that can only give us a feel for the complex nature and the consequences of slack resources.

It may therefore be surmised that in the Finch (1991) study R&D investments were compared with the level of Available Slack only, while the other forms of slack that are ignored in this work, may also be behaving as unseen buffers, negating perceived risk as the moderators of poor performance.

Moses (1992) examined the risk-taking propensity of managers' and slack resource levels in the U.S. defence industry and this work did differentiate between the different forms of slack resources. However, although many positive associations between the various measures of slack and risk taking behaviour were evident some proved to be less influential than others. This may suggest that different industries may display different behaviours as a consequence of different forms of slack, a proposition that requires further investigation. However, the presence of slack resources and their effect on the risk taking behaviour of managers is confirmed when he observes that; *"Risk taking is permitted because slack provides the source of resources to cushion or absorb failure"*, Moses (1992). This is a curiously constructed sentence that implies that slack may be transformed into 'other' resources that may act as a buffer.

Moses (1992) did not attempt to equate risk-taking behaviour with organisational success. His investigation was based purely on the hypothesis that increased levels of slack resources resulted in increased risk taking behaviour, the consequences of which were not discussed. This may be viewed as an acceptable and rational investigation, but in restricting the empirical research to one highly specialised industry the data base was confined to 53 innovative projects and he omits to inform how many of these projects were undertaken by independent organisations. As all slack resources may be equally

accessible to all projects across the same organisation, there can be no difference in the levels of slack accessible to each project within the same company. It is not necessary for each project to amass the slack resources to increase risk tolerance, buffers are agreed to act as assurance against possible failure and therefore the initiators need only be made aware of their presence within the organisation to increase their confidence of protection against failure. If any of the 'projects' of the Moses (1992) investigation were discovered to be those of the same organisation, then obviously none of these projects had access to superior levels of slack and no informative comparative information could be drawn from the data.

In conclusion and to summarise the above we have strong, if only limited empirical evidence to suggest that innovative programs require some forms of slack resources to initiate and to sustain the innovation through to completion without impairing the normal every-day procedures and operations of the organisation. This may prove to be, as suggested by the literature to-date ostensibly Available Slack however, it is also suggested that the propensity of managers to embark upon risky endeavours may also require *buffers* born of different slack dimensions to alleviate the fear of the consequences of failure.

However, the empirical studies to date of innovative behaviour and its relationship with slack were all designed as cross-sectional time horizon investigations and were therefore incapable of pursuing the presumed intended consequences of innovative behaviours, that of improved long-term performance. The subject of performance, it is observed, has been central to much of the discussion to-date and most authors addressing the subject of organisational slack resources has overtly or tentatively implied that slack resources may be a prerequisite for sustained competitive performance. Therefore, the next section will explore the hypothesised link between slack, flexibility and long-term performance.

2.6 Slack for Sustained Competitive Advantage

2.6.1 Introduction

The hypothesised consequence of rationally incorporated organisational slack resources is organisational flexibility and in accord with general theory, this should produce improved company performance, Evans (1991), Miller and Leiblein (1996), Greenley and Oktemgil (1998), Bourgeois (1981). It has been further suggested that the continual replenishment of slack may aid the sustaining of competitive advantage. However, despite suggestions that there exists a strong positive association between slack and performance the empirical evidence for this claim remains limited. Additionally, many studies that have drawn such conclusions, while considering the changing levels of slack over time, have employed 'snap-shot' performance comparisons to classify firms as either high or low performers rather than examining organisational superiority sustainability, Greenley and Oktemgil (1998), Hambrick and D'Aveni (1988) and Tan (2004).

The subject of sustained competitive advantage is often alluded to but is seldom subject to serious academic study. The reason for this may be the desire to preserve professional integrity. The work of Peters and Waterman (1982) amply demonstrates the danger of such predictive activity for an author's reputation. In highlighting several organisations for their 'excellence' and nominating them as displaying long-term superiority tendencies, Peters and Waterman (1982) embarked upon a personally risky endeavour where history has since proven that intuitive confidence is often ill-founded, with many detractors awaiting the passage of time to metaphorically trip-up such speculative work, Pascale (1990), Doyle (1992). The problem of identifying organisations that may prove to maintain competitive advantage is the enormous size and complexity of the predictive model required. This, compounded with the inescapable problems associated with chaos theory, Parker and Stacey (1995), means that such work can only be speculative.

Furthermore, a hypothesised formula for sustained competitive advantage can be considered as a tautological impossibility. Such a formula implies that all organisations of comparable size within the same industry can achieve a long-term superiority of

results and competitive advantage over their rivals. Clearly this is a nonsense conclusion as some industry members must be relegated to 'also-rans' for others to enjoy comparative superior success. However, many authors have sort to address this problem explaining that an organisations failure to 'come first' maybe the consequence of satifcicing behaviour, Simon (1957), Mintzberg (1987). This is demonstrated as a natural propensity of some managers to accept satisfying rather than optimal results that may require greater effort to attain. Others suggest that success breeds complacency that results in organisations deviating from 'the winning formula' and the development of 'group think', the arrogant believe in their organisations invulnerability, Hellriegel, Slocum and Woodman (1995).

2.6.2 A Philosophy for Sustained Competitive Advantage

Although no empirical research has sought to clearly identify the antecedents of slack resources many postulate that they may be a natural consequence of an initial superior performance. Hence, in the view of Leibenstein (1969) such initial superior performance that produces slack resources may lead to organisational arrogance, satifcicing behaviour and contemptuous reactions to environmental change, all of which may result in organisational ill discipline and hence deviation from a winning formula. Conversely however, the benefits of slack resources as argued above, reside in their ability to provide organisational flexibility to address the ever changing problems posed by a dynamic environment and herein is their strength and contribution to sustained competitive advantage. Therefore, sustainable advantage is not to be sought in a rigid tactical formula of do's and don'ts but within a subtle, flexible guiding strategy riding on the back of an organisation wide philosophy that encourages and promotes innovation and disciplined change to cope effectively with various and surprising new challenges. This would be fuelled by organisation slack resource energies and protected by the buffers that slack arguably also provides.

In providing, or at least tolerating slack, it is argued that organisations may conceptually free managers from the natural restrictions of a metaphorical 'tight ship' and provide the also metaphorical, 'room to manoeuvre'. In this paradigm slack is not perceived as spare

that may be squandered on ill disciplined, high risk new ventures but is available energies that may be used to enhance, improve and extend operations all within the guiding force of the over-riding organisational objectives embodied within a flexible strategy. It may be argued therefore that the essence of a sustainable competitive advantage is not to be found in a lists of rules and regulations, as these are ineffective tools in the pursuit of excellence, but what is probably required is a flexible guide for the initial investment in, the identification of, and rational and timely redeployment of slack when required for specific development (slack) and protection (buffers).

It is further speculated that given such conditions, that which differentiates the winners and runners-up in the commercial activities of organisations is their ability to maintain an purposeful innovative drive and enthusiasm of the firm. Intuitively this is an undiminished entrepreneurial spirit that continually explores possible new forms of operating and new products in a disciplined manner that is shielded by buffers, which will increasingly win-out over those that stagnate, resting on their laurels and still others that pursue ill-disciplined, undirected projects. Therefore within this paradigm, hard slack resources alone are incapable of providing sustained competitive advantage but must also be complemented by a particular, organisation-wide mindset that was identified above as cultural or soft slack, a condition that may be mutually supported practically by the presence of hard slack resources.

Such an organisational mind-set and the practical, physical assets (hard slack) require institutionalisation from the top management of the firm. Grant (1991) alludes to such guiding strategic flexibility when he calls for an internal resources perspective as discussed above, and his subsequent development of a strategy model for competitive advantage moves one step closer to the goal of sustainable superior performance (*see fig.2.5 bellow*).

Fig. 2.5

**Grant (1991): A Resource-Based Approach
to Strategic Analysis: A Practical Framework**



It may be argued that the degree of management ability to identify, appraise and select appropriate resources and courses of action from the above model is critical in the pursuit of competitive advantage. It is this degree of ability that may be identified as cultural slack as discussed above, a condition that may be enhanced by the presence of buffers generated by organisational slack resources.

Grant's (1991) model for strategy formulation dismisses the traditional model of senior management's wishes and aspirations, as reflected in its set strategy imposed on the organisation from above. Being the directive for the organisation, the traditional classical

strategy and its devolved instructions from a rationally structured and all pervasive, non-malleable and unquestioned top down order for action, is here swept away. Instead it begins with an internal resources perspective and not with an initial identification of the desires of management with regard to the external environment

The Grant (1991) model's first instruction is an audit of all available resources, combined with the identification of organisational strengths and weaknesses compared to its competitors. This is executed together with the identification of opportunities that are available to the organisation through its existing resources and its existing and potential resource synergy's. Opportunities here refer not to external environmental windows but to new product possibilities, quality improvements, administrative and delivery developments. When a full appreciation of present resources is acquired a firm can identify its capabilities and more importantly identify capabilities that are unique, that which it can deliver faster, at higher quality, at lower cost and with greater efficiency than its competitors. It is during this process that an organisation recognises and develops its competitive effectiveness, its distinctive advantages. After identifying firm capabilities it must now determine the resource inputs that maintain them, together with developing an in-depth appreciation of the complexity of each capability.

After the identification of capabilities the third step requires an appraisal of the returns that may be generated from them compared to the investment in the resources that they require. Additionally, an assessment of the sustainability of competitive advantage that a capability endows must also be determined as any potential future erosion of sustainability must be evaluated in order for its exploitation value to be fully assessed and appreciated.

It is only after all of the above steps have been completed that Grant (1991) considers the formulation of strategy to be appropriate. In this model it is only then that the internal resources and capabilities are matched to the perceived external windows of opportunity and an appropriate strategy adopted to pursue the match.

Step five in the Grant (1991) model is a feed back loop, the systems self-correction mechanism. Once an appropriate strategy is adopted resource gaps need to be identified and plugged. The supply of depletable resources must also be secured to ensure constant, timely and consistent replenishment. Grant advises that the firm must also continually examine the possibilities for augmenting and upgrading its resource stock, this is advisable for the maintenance of advantage because competitors will be continually scanning their internal and external environments in search of opportunities to erode the advantage once it is established.

Grants (1991) robust internal perspective model for the development of advantage displays the critical, central role that an understanding of resources is for developing an appropriate strategy. It clearly demonstrates that all strategy must begin with an appreciation of the energies that the organisation may recruit or recoup. If it is accepted that the presence of slack within these resources affords organisational flexibility as argued above, it is clear that its availability within this model enhances the number of possible capabilities and hence organisational strategic options and therefore the competitive arsenal of the firm.

Taking the resource based perspective strategy model developed by Grant (1991, *see fig.2.5 above*) and expressed by Barney, (1991, *see fig. 2.6a below*), and include constant environmental monitoring as advocated by Hart (1995) limited as this may be, together with a process of resource slack reinvestment we may now develop a proposed theoretical model for building 'sustained competitive advantage' (*see fig. 2.6b below*).

Fig. 2.5a

**An Extension Of The Resource Based Perspective
(A Two Step Model For Practical Application)**

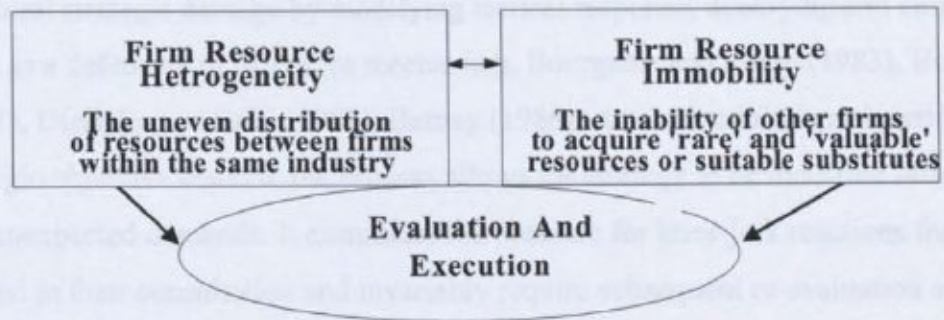


Fig 2.5b 'ig.13b Proposed model for building sustained competitive advantage, after Barney (1991)



This model, on second and subsequent passes adopts the Mintzberg (1978) emergent strategy philosophy. As the organisation suffers environmental buffering it minimises collateral strategic damage by modifying tactical response, deploying and employing slack as a defensive or offensive mechanism, Bourgeois and Singh (1983), Bourgeois (1981), Dierickx and Cool (1989), Barney (1986). As slack minimises departmental strategic objective discord, the process allows for strategy to be modified satisfying new and unexpected demands. It eliminates the pressure for knee-jerk reactions that are limited in their consultation and invariably require subsequent re-evaluation and redesign. In protecting the core business objectives in this manner, slack resources affords the organisation extra time, time that permits strategy to emerge, to develop naturally from the bottom up.

Although reactive in nature this may well prove to be more efficacious than a proactive model, because unless the future developments within the environment are an obviously well defined and comprehended forecast, a timely untrammelled post event, reactive tactical or strategic shift, when the issues and consequences of change can be more accurately gauged, may well prove to be more fruitful for the firms long term interests, Millikan and Lant (1991).

The above model for sustained competitive advantage has been compiled from a synthesis of many author's contributions over many years and develops the argument for the inclusion of slack resources as a prerequisite for sustained competitive advantage. However, Bourgeois (1983) makes the observation that slack can only be of value up to a given point after which it becomes a burden that is detrimental to the organisation. A balance of as yet unknown factors must determine the question of what, and how much slack can be efficiently carried by the firm and in attempting to address this proposition the next section will explore this argument further.

2.7 The Argument for a Balance of Slack Resources

All of the previous discussion and argument above has been an examination of the basic proposition that slack resources are a beneficial asset of the organisation. The central proposition is that slack resources provide organisational flexibility, an internal ability to react in a timely and effective manner to the vagaries of a dynamic and fluctuating environment. To summarise the argument, slack resources enable an organisation to satisfy the unexpected and sudden demands made of it from external forces without disturbing the normal operations and strategic core of the firm. Slack resources, it is also argued, enhance the innovative process and all of this it may be concluded, enhance organisation performance and may be a significant contributor to the elusive condition of sustained competitive advantage.

This argument implies a simple positive correlation between the levels of slack resources and organisational flexibility and ultimately performance. However, this simple relationship requires further examination, just how much flexibility does an organisation require to display superior performance, and can too much slack be carried by the firm that makes it inefficient. This later question was first addressed in the hypothesis of Bourgeois (1981), *"Slack resources aid organisation performance only up to a certain level after which they become an organisational burden adversely affecting performance"*.

The inherent observation in the above hypothesis is that flexibility may be continually built into an organisation through the acquisition of slack resources however, what level of flexibility in the form of slack resources is effective? Bourgeois (1981) suggests that too much slack may be acquired by the organisation that would then have an adverse effect on performance. This argument may be further demonstrated by a simple analogy. In consideration of an individual household whose occupants become compulsive hoarders, collectors who refuse to dispose of any article "...just in case", it may be observed that the property soon becomes an inefficient mess that is a disruptive influence on normal family functions. The vast majority of such a hoard, it may be speculated, will never be employed for any task, and those articles that may be required at some future

date for an unforeseen demand may be lost, never to be recovered from the general detritus and even in the collective memory of the family. Although it may be argued that the level of flexibility of this household is theoretically very high, the effectiveness of such flexibility in practice may be observed to be extremely low. Excessive slack resources will be witnessed to impede on the common routines of the household, where internal movement and the location of regularly employed articles would become an excessively time consuming activity. Ultimately, in an attempt to address the internal chaos the family may consider moving to a larger house incurring excessive costs just to house the increasing collection of slack resources.

Therefore it may be concluded that a balance must be established between the stock of slack resources and the expected future demands on that stock to enhance overall internal efficiency and ultimately organisational performance in the long term. This observation is also addressed by Johnson and Scholes (1989) who maintain that; *"...the extent of firm resource flexibility and adaptability is important to establish, for it must be balanced with the level of environmental uncertainty"*.

Before further consideration of the above statement's argument, its content requires further consideration beyond that of its proposition. It appears here that Johnson and Scholes (1989) employ the terms flexibility and adaptability in an interchangeable manner. Flexibility in this work is viewed as an organisational ability to absorb environmental dynamism and the term adaptability to be a firm's specific capability to change. The former relating to the notion of buffers, slack specifically deployed for the task of absorption, and the latter to slack resources that may be re-deployed or recruited for an extraordinary project or even a radical organisational transformation

In the above statement Johnson and Scholes (1989) argue that flexibility can have no value without an appreciation of, and a balance with, the environmental fluctuation faced by the firm. This argument for slack resource efficiency, considering that the level of organisational flexibility is arguably directly proportional to the level of slack, further explains and is supported by Bourgeois (1981) when he argues that the correlation of

organisational success and the level of slack are curvilinear, positive only up to a certain point after which it becomes negative. To elaborate, slack as the provider of flexibility with no potential for future deployment becomes an inefficiency, Penrose (1959). This argument seeks to minimise the Bowman and Hurry (1993) *puts* (abandoned options), unused future options. It suggests that a balance should be sort at the strategic level between strategic options and the volatility of the environment, and at the tactical level the flexibility of operations and administrative systems need to be balanced with the vagaries of external demands.

Nohria and Gulati (1995) support the argument of Bourgeois (1981) that the correlation between the level of slack and organisational performance is curvilinear, represented as an inverse U (*See fig.2.6 below*). In their meta-analysis (secondary data analysis) Nohria and Gulati (1995) examined the level of organisational slack and its impact on the development of “good” innovation, where good innovation was naturally, but only anecdotally, positively linked with organisational performance.

Fig. 2.6

**Norhria & Gulati (1995, *A Meta-Analysis*)
Hypothesised Model After Bourgeois (1981)
Optimal Slack for Best Organisational Performance;**



The Nohria and Gulati (1995) explanation for such observed behaviour is that low slack inhibits experimentation and investment in research and development where successful market exploitation is uncertain. In addition, it may be argued that low levels of organisational slack implies a period of low organisational performance where management may be experiencing concern for the future survival of the firm and are naturally highly conservative about even considering new programs. When this occurs it may be further posited that organisational energies are commonly, if perhaps erroneously, directed at securing solutions in the external environment, usually in the current market place, while at the same time radically reducing internal costs, Grant (1991). Conversely, high levels of organisational slack are argued to promote complacency and ill-disciplined investment in “*pet projects*” which may be politically motivated and where little if any return on their investment may be secured, Nohria and Gulati (1995), Pondy (1967).

As witnessed earlier, Leibenstein (1969) may be observed to concur with this latter observation when he states, “... *slack promotes undisciplined investment and diminishes the incentive to innovate*”. However, it may be argued that by this comment Leibenstein (1969) was referring to all and any level of organisational slack. However, due to the findings of their investigation Nohria and Gulati (1995) agree with Bourgeois (1981) and conclude that there exists an optimum level for organisational slack.

In contrast to the above findings of Nohria and Gulati (1995), Dampours’ (1991) meta-analysis found a low positive association between the levels of slack and innovation rates. However, the findings of this study may well be attributed to the inherent problem of most if not all meta-analysis when attempting to discover new correlations, that of a reliance on data received from an experiment or survey specifically designed for other purposes. In conformation of this, Singh (1996) critically observed that in Dampour’s 1991 study, “... *absorbed slack (excess costs) and unabsorbed slack (excess, uncommitted liquid assets)* [reflecting Recoverable Slack and Available Slack respectively] *were not separated for analysis*”, which Singh (1996) maintains is a serious problem of data mismanagement.

Nohria and Gulati (1995) did differentiate and separate the classes of slack and additionally, unlike Dampour (1991) they were acutely aware of the discrepancy in the differing rates of innovation across different industries and paid particular attention to compensating for varying industrial environmental conditions. The critical observations of Singh (1996) together with the sensitivity of the Nohria and Gulati (1995) study to differing industrial norms may well explain the discrepancy with Dampours (1991) observations.

A more disconcerting and damning argument than Dampours (1991) findings against the Bourgeois (1981) and Nohria and Gulati (1995) model for optimal slack, are the findings of Bromiley (1991) with corroborative evidence from Greenhalgh (1983) and Mansteild (1961). Focusing on recoverable slack, Bromiley's (1991) study of 288 companies found a strong correlation between the levels of slack and organisational performance that seemingly turns the original Bourgeois (1981) inverse 'U' model on its head (*see fig. 2.7 below*).

Fig. 2.7

**Bromiley (1991)
Optimal Slack for Best Organisational Performance**



Equating 'good risk-taking behaviour' together with good innovation as being synonymous with good performance, Bromiley (1991) found that high levels of slack results in higher levels of "strategic options" (*see fig. 2.7 above*) that confer competitive

advantage through ‘good innovation’ that results in superior performance. In the same model Bromiley (1991) observed that low levels of slack resources forces organisations to manage more carefully with particular attention being paid to cost reductions and performance improvement.

In addition Bromiley (1991) employed the findings of two previous studies to corroborate his own findings, namely those of Greenhalgh (1983) and Mansteild (1961), see figure 2.8 below.

Fig. 2.8 **Performance versus Slack Resources**
(*The historic empirical evidence*)

The Greenhalgh (1983) results

The Mansteild (1961) results



Bromiley (1991) maintains that the above results confirm his own but he is only able to demonstrate this because of a lack of data provide. Within his own model Bromiley (1991) includes the results of Greenhalgh (1983) and Mansteild (1961) (*please see fig. 2.9 below*), but fails to include measures for the *X* and *Y* axis and in this manner Bromiley (1991) is able to maintain the demonstrable positive and negative correlations of the previous investigations but is also able to arbitrarily move them relative to each other and indeed relative to his own results curve. The arbitrary positioning of these results to lend

support for his theory of slack is demonstrated in his paper of 1991 and reproduced below fig2.9. This is an unacceptable methodology and therefore his conclusions require careful consideration.

Fig. 2.9

**Optimal Slack for Best Organisational Performance
With corroborative evidence from Greenhalgh (1983) and Mansteild (1961)**



Source, Bromiley (1991)

The recent work of Tan (Dec. 2003) would seem to successfully demonstrate that the conclusions of Bromley (1991) are inaccurate and asserts that the curvilinear relationship proposed by Bourgeois (1981) is supported in an extensive survey of 17,000 Small to Medium Enterprises (SME's) in China. The results of this investigation are displayed in a stylised form below, figure 2.11.

Fig. 2.11

The Curvilinear behaviour of Slack versus Performance



After Tan (Dec. 2003)

The absence of axes in this model, as demonstrated above, is irrelevant as the diagram seeks to demonstrate only the form of the relationship discovered, and it stands independently, it does not seek to incorporate and compare other researchers' data.

The above result (Tan 2003) is confirmation of the speculated non-linear relationship hypothesised by Bourgeois's (1981). The capture of extremely low performing companies, either displaying excessive Hard Slack Resources or a dearth, intuitively are difficult to operationalise as they would normally be quickly eliminated and would fall out of the population and hence the sample. However, an explanation for their survival and subsequent capture in the Tan (2003) study may be sought in the population parameter of geographic and subsequent political location. Further examination and discussion of Tan's (2003) work will be undertaken in the final chapter of this thesis as it has a direct bearing on the conclusions of this work.

However, to return to Bromiley's (1991) work, what was discovered of note was that poor performance, which was correlated with moderate recoverable slack levels, promoted a higher degree of undisciplined and hence poor risk taking behaviour that further moderated company performance. It may therefore be observed that desperate

circumstances require desperate measures that may well result in ill-conceived and rushed responses. This is in direct contradiction of Leibstein's (1969) assertion that it is the very presence of slack that promotes poor decision making activity, Bromiley's (1991) conclusion is that it is not the presence of slack that promotes undisciplined responses but poor performance that may result in panic reactions.

It is further observed that although the increased level of good innovation (that is arguably evidence of slack resources, March and Simon, 1993) may well be reflected in improved company performance such a relationship may be laggard and indeed the Bromiley (1991) study found evidence albeit weak, for a two year delay in good innovation being reflected in improved performance. Greenley and Oktemgil (1997) while employing integrated non-linearity also found evidence for a delayed relationship between slack levels and performance, however in accord with Bromiley, they concluded that the evidence was weak and therefore inconclusive. Sharfman and Dean (1997) found a simple positive relationship, seemingly confirming the earlier study of Manstied (1961), but their study was limited and may well have captured only a small sample of firms that reflected only a fraction of the anticipated full model.

Prior to further hypothesising and model building, which will be undertaken in chapter three, an examination of the slack for flexibility argument and its conjectured consequences for specific strategic behaviours will be addressed in the next section.

2.8 Slack, Flexibility and Strategic Deployment Behaviour

Evans (1991) suggests that two forms of strategic flexibility application exist. The first describes the offensive or defensive stance of the organisation in response to specific threats or opportunities from the environment. The second comprises what he terms an '*ex ante*' mode in which the firm anticipates a future environmental change and prior action prepares the organisation to meet the possible challenges it may pose, or conversely an '*ex post*' element where the acquisition of flexibility will afford response in retrospect. (see Fig.2.12, after Greenley and Oktemgil 1998).

Fig. 2.12

**The Strategic Behaviour Matrix
After Greenley and Oktemgil 1998**



An 'ex-ante' posture may well afford first mover advantages (Porter 1980) however, it relies upon the presence of a sophisticated and constant monitoring of the environment, where the problems of bounded rationality and satisficing behaviour are all too well attested to, Cyert and March (1963), Simon (1957). This mode may well lead to knee jerk reactions that, given the often dynamic nature of the environment, could develop into organisational chaos with the firm in constant and even conflicting re-organisations. Therefore, unless the environmental threats and opportunities are believed to be simple in nature, extremely well comprehended and the consequences are widely anticipated, then an 'ex post', timely reaction, as argued above Millikan and Lant (1991) may well prove to be the more propitious option. In addition, given that a predicted environmental event is widely understood within one organisation will invariably mean that most if not all players in the same industry will possess the same intelligence, which may well preclude any real 'ex ante' opportunity for competitive advantage.

A clear example of the above was the so-called and much hyped 'millennium time bomb' otherwise known as the Y2K computer problem. The high profile and publicity given to this predicted problem ensured that everyone knew about it and to take pre-emptive action would probably not afford a competitive advantage, but it may well have ensured commercial survival on the 1st January 2000. However, under certain conditions if a firm has a stock of slack resources that are rare, imperfectly mobile and non-substitutable, an organisation may well be in a position to respond in an appropriate *ex ante*, pro-active

manner to predicted environmental change that is denied to its competitors. Under such circumstances at least a limited competitive advantage may be assured.

All of the above presumes an understanding by management of the relationships between slack resources, flexibility and performance. It also assumes management's ability to operationalise this knowledge and transform it into superior performance. Therefore the next section will address the understanding that management may possess of slack resources and their consequences for the organisation.

2.8.1 The Conceptual and Behavioural Operationalisation of Slack

The majority of authors in the field of slack resources are of the opinion that slack is acquired by organisations as a natural consequence of their activities, Cyert and March (1963) and Carter (1971) confidently claims, "*Slack is not planned*". This is a bold statement and one that deserves further examination.

There exists only scant anecdotal evidence for the purposeful investment in slack resources, such as company profit retention for R&D, and other non-specific activity as exemplified in the ubiquitous contingency fund, and the more uncommon company policies such as that operated by IBM (UK) in their graduate recruitment program. Here, graduates are reputedly recruited with no specific division or job allocation, they become general administrative staff and are subsequently encouraged to apply to join new projects as and when they arise.

Authoritative confirmation of Carter's (1971) statement is to be found in an early observation from Cyert and March (1963), when they said, "*We see no significant evidence for the conscious rationalization of slack in business firms*",

Most commentators have assumed that a conscious investment in slack resources is non-existent or at least is an extremely rare occurrence, excepting cash reserves when the only penalty is that of lost opportunity costs, Lucey (1991). However, the lack of planned

slack investment is only a speculative supposition and the extent and nature of this form of counter intuitive slack accrual has to-date received no empirical investigation. Many researchers have assumed that slack is an accumulation of spare and under-utilised resources that is a natural consequence of past profitable activity. Such ill-disciplined slack collecting is counter-intuitive to the concept of slack for competitive advantage as it relegates performance enhancing slack acquisition to one of pure happenstance. However, this may well prove to be the case in practice.

It may prove to be imperative for sustained competitive advantage, that managers are made aware of which slack categories, if not which precise slack resources are critical for their firm's future success in particular industry sectors, and that they are encouraged to actively and vigorously invest in their accession.

Attempting to clarify and quantify the above may at first seem an impossible task. If managers are not aware of what slack they have, how they acquired it, or how they may be able to capture and re-deploy it, the question arises of how can the individual slack requirements for success in different sectors of industry be identified. All of the previous studies in this area give little if any regard to the knowledge and ability of managers, comparing only account based measures of slack data directly with performance. The inference in these studies is that organisational slack, as an enhancer of performance is providing organisational flexibility despite management's ignorance of its presence or, as may be regarded as a more probable explanation, slack may be acting in the subconscious decision making processes of management. Therefore, those organisations that display superior industry sector performance should theoretically be identifiable by their superior levels of specific slack resources. To enrich our understanding of the slack, performance behaviour, management's slack awareness should also be evaluated and comparisons made. If evidence of a significant degree of slack awareness is discovered in different organisations then it is speculated that high performers will be those firms whose management display a greater understanding of the role of slack resources. If this behaviour is witnessed in practice, it would imply that those managers who display slack resource awareness may possess a distinct competitive advantage.

Although senior management may be discovered to be unaware of the contribution to company success that slack may provide, it may be further speculated that it is operating without their implicit knowledge at the tactical response level of the firm, providing unrecognised tactical flexibility. If this is discovered, then it is a logical conclusion that those senior managers that are made aware of the critical role of the relevant slack resources for their company may ensure their timely accrual and deployment and ultimately to enhance their company's future performance.

Having discussed in depth the slack research to-date and the debates and theories developed, this work will now proceed with an examination of the current empirical methodologies employed within the literature.

2.9 Methodologies Currently Employed for the Investigation of Slack

2.9.1 Capturing the Slack Resource Variables

Because extant organisational excess resources are physically difficult to identify, operationallising measures of slack for empirical investigation have proved problematic and approaches have varied widely, Moses (1992). The most frequently employed quantitative measures used in an attempt to capture slack have included such data as profit, Dimick and Murray (1978), return on investment (ROI), Litschert (1978), operating expenses, Wolf (1971), research and development (R&D) expenditure, Finch (1991) and debt/equity ratios, Bromley (1991). However, recent work building on the research of Bourgeois and Singh (1983 and 1986) has developed a composite set of measures to capture slack, Moses (1992).

To give definition to the parameters of slack Bourgeois and Singh (1983, 1986) identified three categories based on their ease of recovery by the organisation:

1. Available Slack – Resources not presently assimilated to the technical design of the organisation- e.g. liquid assets
2. Recoverable Slack – Resources that have been absorbed into the system and are manifest as excess that may be recovered with relative ease – e.g. excess overhead costs.

3. Potential Slack – The capacity of the organisation to generate/acquire resources from the external environment – e.g. the ability to raise capital.

Moses (1992)

However, a curious anomaly of definition is thrown up by the phrase referring to Potential Slack. The existence of Potential Slack, it has been argued above, is restricted to a physical presence in the external environment, beyond the normal boundaries of the organisation, Bourgeois and Singh (1983). Potential Slack in the above definition is not strictly a slack resource, it is an organisational capability. It is the extent to which an organisation can assimilate additional resources from the external environment. The reason for the confusion seemingly arises from the practicality of attempting to identify and capture resources in the external environment. While Potential Slack does indeed reside in the external environment it is of little consequence unless the firm possesses the capability to capture it. Hence when operationalising Potential Slack in all the research to-date, it is the organisation's internal capability to capture and absorb such slack that is operationalised and measured and not the extent of external environmental slack that exists. In an attempt to eradicate any further confusion this work will refer to Potential Slack as the physical presence of spare external environmental resources available, but not necessarily accessible to the firm. The capability of the company to acquire such potential will be referred to as Potential Capacity Slack, the extent or capacity of the organisation to infuse additional energies from the external environment.

To capture this trio of slack families there exist thirteen accepted, standard accounting based techniques for the identification and operationalisation of organisational slack however, this must now be qualified by the following modification;

There exist thirteen standard accounting techniques for the identification and operationalisation of available and recoverable slack and for the identification and operationalisation of the capability of the organisation (Potential Capacity Slack) to acquire extra resources from the external environment. These thirteen measures have been traditionally combined into ten ratio formulas to provide what have become the

standard bench marks for the capture of the individual families of organisational slack resources. These comprise of the Bourgeois (1981) eight measures, see table 2.1 below plus two more developed by Moses (1992).

Table 2.1

The original (Bourgeois 1981) eight measures as incorporated into the three-dimensional construct of slack resources developed by Bourgeois and Singh (1983)



The above provides a means of measuring various “ease-of-recovery” components of organisational slack and Moses (1992) added two more measures to aid in capturing recoverable slack:

Working Capital	+ (Current assets – current liabilities)/Sales
Fixed Assets	+ Non-current assets/Sales

The Bourgeois and Singh (1983) variable measurements above, also employed by Bromiley (1991), and the Moses (1992) amendments are designed to conform to the generally accepted theory of Bourgeois (1981) that observable behaviours are linked to *changes* in slack and are not related to absolute measures. In other words behaviours and their subsequent consequences cannot be viewed as contemporaneous with the level of slack. The measures are relative in two senses: First, the variables being adjusted by sales are scaled for organisational size and/or the level of activity. Second, the measures are specifically designed to capture changes in the relative amount of slack over time, to achieve this each of the measures are transformed thus:

$$\text{Slack Change} = \frac{\text{Measure}_t - \text{Measure}_{t-1}}{\frac{1}{2} ([\text{Measure}_t] + [\text{Measure}_{t-1}])}$$

where t = one year prior to investigation program start in the Moses (1992) study, obviously t and $t-x$ may be modified to accommodate any period of organisational activity. Profit Margin, Equity Change and General Expenses were not transformed in this study because they already reflected ‘flows’ of resources into and out of organisations over a period of time, consequently providing direct proxies for change in slack.

This call for slack to be measured in terms of changes over time rather than as absolute measures is further supported by Miller, Kent, Leilein and Michael (1996), March and Shapire (1987) and Bromiley (1991). Miller et al (1996) also identified and employed the same thirteen distinct accounting based variable measures from previous empirical studies for capturing change in organisational slack over time.

Miller, et al (1996) draw our attention to the fact that financial ratios, commonly used as slack indicators, differ across industries. Ratios that may be considered to be normal in one industry may be viewed as exceptionally high or low in another. Hence, Slack measures may not generalise across industries. However, Lev (1969) uses average

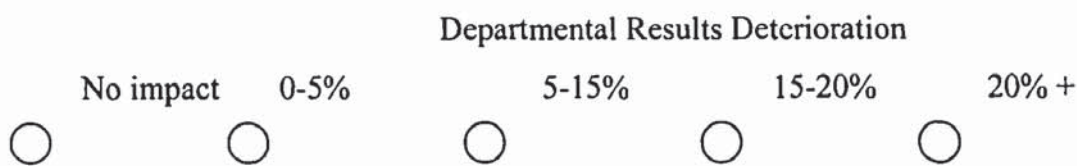
industry financial ratios that offer reasonable proxies for target levels at the two-digit SIC (Standard Industry Classification) level.

Miller, et al (1996) also normalised their slack measures by employing the firms individual ratio divided by the two-digit SIC industry average ratio, thus enabling cross-industry data comparisons.

Of the nine empirical studies concerned with the question of slack, all have employed various combinations of the thirteen accounts based data measures for operationallising slack.

There exists only one empirical study, from Gulati and Nohria (1997), which employs subjective qualitative data for capturing organisational slack. Bourgeois (1981) produced guidance for such research that advocates operationallising subjective slack variables from the responses of managers on a Likart scale and suggests hypothetical questions such as; *"What effect upon your departments/divisions results would a 5%; 10%; 15%; (etc.) cut in your budget have?"*

Respondents would be invited to estimate for each budget percentage cut, on a five point scale the impact on their own department's results i.e,



Bourgeois (1981) also suggested asking managers to consider;

'If circumstances dictated a cut in your salary when would you seriously consider seeking employment else where?'



However his later collaborations on empirical studies of slack employed account based quantitative data only when operationalising slack.

Both papers, Bourgeois (1981) and Gulati and Nohria (1997), recognise that qualitative research could invite a high level of politicised response that may colour results as all managers may be deeply suspicious of such questions, suspecting an imminent round of internal cost cutting measures. However the authors Gulati and Nohria (1997) are convinced that their assurances of anonymity and confidentiality have circumvented the natural defensive responses of managers and that this simple expedient validates their findings.

Having developed a methodology to capture the extant hard slack resources present within organisations, it is also imperative to gain an understanding of the management's understanding, appreciation and general attitudes to this slack

2.9.2 Management's Attitudinal Relationship with Slack

Management's general perception of slack, its recognition, its toleration, size estimation, its perceived consequences for organisational performance, its capture, re-deployment and re-investment, is important to capture as such behaviour will influence to what degree and in what forms slack is allowed to exist. It will also display how it is exploited, or not, within the organisation, this may be viewed as the transformation of potential to kinetic organisational energies. Also, if and why it is either ignored or eagerly sort, eradicated or exploited by organisations. If management eagerly seek to eliminate slack in the pursuit of organisational efficiency then it is speculated that while short-term performance will be enhanced, long-term performance will be seriously impaired as previously discussed. Conversely, management's recognition of the long-term importance of slack should be reflected in a policy of toleration and replenishment that may result in ongoing firm growth and improving performance moderated only by the intensity of environmental flux. All of these facets of management behaviour have to-date received scant theoretical discussion and no empirical evaluation.

However, in an attempt to capture '*firm wide political behaviour*' Bourgeois and Singh (1983) employed a two-question test that may also be employed as a proxy methodology to address this deficiency. Answers given on a scale of 1 to 5 by each of the senior management team were averaged for each firm. This form of questionnaire is a common empirical research tool for capturing subjective variables but as already commented above, management preconceptions and attitudes to slack have yet to be fully evaluated.

Additionally, because of the hypothesised importance of balancing the level of slack with the dynamism of individual industry sector environments, as discussed above (sec.2.6), the management's perception of their environment and its uncertainty is also essential to operationalise. It may be speculated that managers may well exaggerate the demands of the external environment that they inhabit relative to others. Under such conditions, even if management appreciates the required balance required between slack and environmental flux and subsequently attempts to achieve it, given their inaptitude for whatever reason of accurately determining the degree of environmental flux this may ultimately be reflected in an organisations poor performance.

Management attitudes, perceptions and subsequent behaviours have been captured in numerous academic studies employing carefully constructed questionnaires with responses invited on a Likart scale as described above, Bourgeois (1981), Gulati and Nohria (1997). This work will employ the same accepted methodology in an attempt to address the research gaps that will be explored in greater detail below (see sec. 3.3.1).

The central thesis of the slack debate has been a consistent claim that slack is an enhancer of organisational performance, but the evidence for this has proven to be elusive. However, it is suspected that previous research design faults may have obscured the expected correlations and this work will re-explore this much debated relationship. Therefore, to evaluate the effect of extant slack resources it is imperative to also capture and operationalise measures of organisational performance. This data may then be tested for correlations and any subsequent associations with extant levels of organisational slack resources.

2.9.3 Performance Measures

The measurement of organisational performance has received considerable attention over many years and has achieved a high degree of accepted custom. Commonly employing publicly available accounting data from such sources as Standard and Poors Compustat, company Annual Reports, Financial Analysis Made Easy (F.A.M.E.) and Extel Microstat, most organisational researchers in the field of slack resources employ one or more of seven standard performance measures, six being objective quantitative measures and one, peer ranking by management, subjective.

All nine empirical research papers that have examined the suggested relationship of performance and slack have endeavoured to display a significant link between the *changes* in slack levels over time with a snap-shot, an absolute level of performance. This methodology seemingly attempts to establish a positive relationship between slack and *sustained* performance, in so doing the research does not address the relationship between slack and organisational performance as hypothesised by Bourgeois (1981). Therefore, the hypothesised changes in the level of slack versus the laggard changes in performance over time have yet to be addressed empirically. This appears to be a serious omission in the research to-date as all current theory suggests that while a generalised enhancement of overall organisational performance may be achieved through the accession of slack, this is acquired in a specific manner, namely by either a stepped gradual climb in performance, a clear example of success breeding success, or the overall climb of a witnessed peak and trough performance curve which is inversely correlated with the level of aggregated or individual classes of slack (*see figs.2.13a & 2.13b*); to elucidate, when slack is found, recaptured and positively re-deployed (a reduction in the slack), performance improves, an inverse (and may be delayed) reaction. Performance at this point either stabilises at a higher level or falls back slightly as new slack is inculcated into the internal system, the whole process is then repeated, hopefully in perpetuity. This hypothesised pattern of behaviour has yet to be empirically tested.

Fig. 2.13a The Hypothesised Step-Wise, Performance, Slack Relationship.

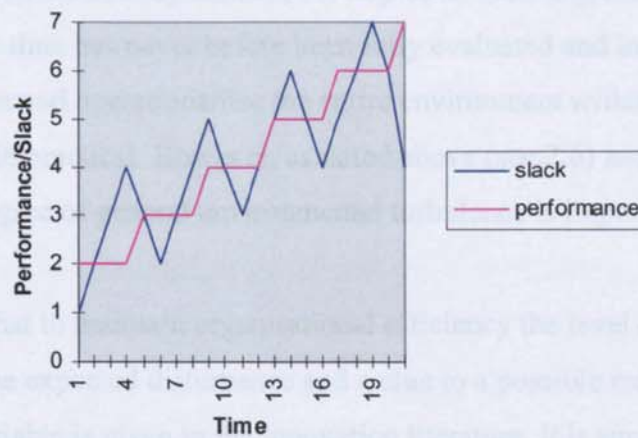
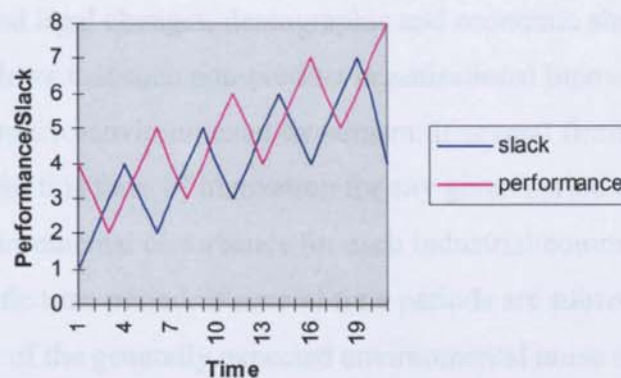


Fig. 2.13b The Hypothesised Inverse Performance, Slack Relationship.



It is imperative for a full appreciation of the consequences of slack resources for organisations that a thorough and detailed understanding of the precise mechanics of the slack, performance relationship be investigated and that the above hypotheses be empirically tested.

As argued above, the level of organisational hard slack resources needs to be balanced with the demands of the external environment in an attempt to provide an efficient and effective reserve of organisational energies. Therefore, it is imperative to also capture and compare the dynamism of a firm's external environment.

2.9.4. Capturing External Environmental Flux

The extent of environmental dynamism, the degree of buffering that is endured by an organisation over time has never before been fully evaluated and indeed the prospect of attempting to scan and operationalise the entire environment within any given time period is clearly impractical. However, as noted above (sec.2.6) and expanded below (sec.3.1.4) the degree of general environmental turbulence is important to establish.

Theory dictates that to maintain organisational efficiency the level of slack should be proportional to the expected disturbance and a clue to a possible methodology of capturing this variable is given in the innovation literature. It is suggested that changes in internal structure, operations and administrative procedures are a direct consequence of environmental pressures such as technological developments, social pressures, government policy and legal changes, demographic and economic shifts. The obvious presumption then follows that such non-product organisational innovations may be used as a direct proxy for macro-environmental dynamism. If several firms within a given sector are evaluated for this form of innovation for any given period and averaged, the degree of macro-environmental disturbance for each industrial/commercial sector may be gauged for that specific time period. If several time periods are subsequently evaluated in this manner a picture of the generally expected environmental noise could conceivably be constructed for each sector. Likewise, if product, marketing and market positioning innovations are captured employing the same methodology then a rich picture of the micro environment may also be constructed.

However, while attempting to rationalise the degree of total environmental dynamism through the proxy of an evaluation of organisational internal change, it must be compared with an appreciation of the management's perception of environmental buffering. Their behaviours, that will be manifest in the organisational changes, may be disproportionate to the actual demands of external flux, Boyd, Dess and Rasheed (1993).

The prospect of employing the proxy of organisational change for capturing environment dynamism will be further examined and developed below (*see sec.3.1.5*).

The concluding section of this chapter will summarise the current anomalies and knowledge gaps that form the motivation for this research. However, to close this section some general observations concerning the capture of hard slack and performance will be further examined.

2.10 Further Observations and Discussion of the Performance and Slack Variables

Slack variables

The capture and evaluation of the variables of slack resources have assumed accepted custom over several years and this work will not flaunt convention by attempting to instigate new and novel measures. However, it is apparent that such measures fail to identify distinctive forms of slack resources. This represents a serious failing of the research, because it fails to inform managers of the precise forms of slack that may be beneficial to the organisation and where they may be located. Employing the traditional, accepted methodology relegates this research to that of an initial investigation that maybe considered of little consequence for management.

However, further discussion of this particular short-coming will be addressed in the recommendations for further research.

Performance Variables

As discussed above organisational performance has received considerable attention over many years and has achieved a high degree of accepted custom that commonly employs publicly available accounting data to formulate ratios which variously display different measures of performance. Each industry has traditionally adopted one or two ratio measure that it feels comfortable with and employs them in general discussion or comparison within its own sector. This has distinct advantages not least that everyone recognises and can appreciate the ratios being discussed. However, this can be the cause of confusion and miss-understanding when conversations and research projects are conducted across industry boundaries. In an attempt to circumvent this problem this research will employ Return on Capital Employed (ROCE). In this manner, across

industry comparisons may be confidently employed where each organisations performance is evaluated with the same weighted ratio measure. Employing this methodology will mirror that of the capture of the slack variables, as it enables a relative positioning rather than providing an absolute scaled measure.

The above discussion will be addressed in greater detail together with the research methodology in chapter four.

2.11 Summary of Current Research Anomalies

The Bromiley 'U' shaped performance, slack relationship is diametrically opposed to Bourgeois's (1981) predicted *inverse* 'U', and although a theory for the synthesis of both is discussed above as an explanation (see sec. 2.9), this was a speculative exercise and the model developed will not be explored further. However, Tan (2003) is arguably able to validate Bourgeois's (1981) original hypothesis and because of this and the methodological problems of further explorative investigation (to be discussed in the final chapter), this work will not examine this aspect.

The fundamental consequences of environmental dynamism for the organisation are indisputable, being attested to by all strategic management authors. Some even contend that the environment should be the overriding focus of management in all their operations, Porter (1980). Although the effects of this important factor in organisational theory are widely discussed and accepted there exists no empirical research that attempts to measure environmental flux, the flows over time of environmental demands. Limited subjective data is available in a few case studies, but these all examine the effect of individual environmental jolts or Shumpterian Shocks (after Shumpter 1950) and their consequences for individual firms. As a consequence, the effects of a few specific, individual environmental jolts in limited organisational circumstances have been analysed in depth, but to-date no-one has attempted to rationalise and operationalise the full picture of environmental flux for specific industrial or commercial sectors.

All of the slack literature refers to the specific ability of slack resources to provide organisational flexibility, but as with environmental flux, no researcher has yet attempted to capture flexibility for empirical testing. The supposition that slack provides the ability to cope with a challenging environment through the provision of flexibility requires further investigation as it is suspected that an organisational propensity for change, a change culture born of personal and personnel slack attributes must also be present in addition to reserves of hard slack resources for true flexibility to be evident.

Finally, two forms of performance versus slack behaviour have been proposed. Firstly an inverse, stepwise gradual but continuous climb of both over time, versus an inverse rise and fall of performance and slack, where both measures display a peak and trough behaviour with a mean rise over an undetermined period of time. To enable a thorough understanding of the hypothesised relationship between slack and performance these two models require thorough empirical investigation.

An attempt to address these anomalies and to test previously vocalised speculations and hypotheses as discussed above requires the construction of a conceptual organisational model. This mind model will track the ripples of environmental flux through the organisation and the speculated absorbent effect of slack resources at different levels within the firm and ultimately the consequences for performance. The next chapter will introduce the elements and discuss the development of such a model. It is anticipated that this will aid the development of robust and practical research models and hypotheses that will be statistically tested for correlations and ultimately for significant associations.

3. SLACK RESOURCES, A THEORETICAL MODEL

Introduction

This chapter attempts to build a conceptual model of the organisation that reflects the argument developed previously, that slack resources possesses the ability to absorb environmental flux as it impacts on the firm, and that the eventual consequences of this behaviour is improved company performance. The rationale for employing this methodology is the anticipated natural evolution of a robust, practical and feasible research model, and the development of hypotheses for statistical analysis.

To begin this process section one will examine the residences of slack resources within the organisation, concluding with a model of the dynamic instigator of organisational change, environmental flux, and a methodology for operationalising this element for empirical research.

Section two is a glossary of terms and a summary of the arguments and discussion that will act as an aid memoir for the construction of the model.

The third section will course the development of a model that tracks the conceptual ripples of environmental flux as they disturb the organisation and the residences of slack resources that dampen and absorb this flux and the eventual consequences for performance. From this model, hypotheses and research models will be developed in section four.

3.1 The Conceptual Domains of Slack in the Organisation

To develop a conceptual model as described above requires a re-examination and rationalisation of the domains of slack resources within the present understanding of the organisation. In pursuit of this, each of the conceptualised dimensions of the organisation referred to above as Strategic, Operational and Cultural will be re-examined and their speculated relationships with slack will be systematically developed. Section one will conclude with an examination of the antecedents of environmental flux.

3.1.1 Slack for Strategic Flexibility

As previously discussed slack resources may be discovered within all locations throughout the internal and external organisational environments, Penrose (1980), Bourgeois (1981). For example, spare production capacity, cash, employee time, access to credit, grants, graduate unemployment, inventory and personnel skills are all examples of slack, but this practical identification of the 'nuts and bolts' of spare resources belongs firmly within the construct of the traditional departmentalised model of the organisation. It is only within this paradigm that slack may be easily pigeonholed, excepting of course external environmental resources where the macro and micro environments do not naturally appear in the traditional divisional, departmentalised and hierarchical models of the company.

The primary problem of slack allocation in such a model is that theory suggests that the sum of slack is suspected, even generally considered to be, of greater value to the organisation than the addition of its individual constituents, Bourgeois (1981). This is a factor that may well be lost in the traditional, departmentalised organisational model with its naturally dispersed and unrelated slack assets that may appear to be static, immovable and immutable. Furthermore, it is considered that as slack is slowly generated and absorbed into the organisation it becomes accepted as a natural element of the routine daily processes and systems, and its speculated potential value for re-deployment is unrecognised, Evans (1991), Miller and Leiblein (1996). In summary, when illustrating slack as dispersed elements in the traditional organisational model, the benefits of potential spare organisational energies that may be captured and operationalised, may not be fully appreciated. In short slack becomes 'part of the furniture' and its potential benefit is invisible.

Furthermore internal resource slack may be arbitrarily assigned to functional units however, within the paradigm of the functional, efficient clockwork, traditional model of the organisation, slack is to be viewed as an anomaly to be eradicated. Slack in this system produces inaccuracies as the conceptual departmental cogs fail to mesh precisely, and will cause slippage and even jamming of the mechanism. However, this metaphorical

internal slippage between departments is precisely the desired condition of organisational flexibility. Slack resources it is argued are required to relieve the stresses and strains of both internal and external environmental pressures. Slack as discussed above can be viewed as the clutch that smoothes inter-departmental operations and relieves organisational tensions and torque.

Attempting to rectify this situation and incorporate slack as the precursor of organisational flexibility, Bourgeois (1981) uses the analogy of the organisation as a bicycle, where slack in the chain, practically provided by extra links, is required to reduce the strain of acceleration and therefore the risk of 'drive snap'. While this concept philosophically explains the worth of individual slack resources for the organisation, it gives little guidance for the introduction, monitoring and the timely exploitation of slack. A more analogous comparison for slack resources may be found with bicycle gears. Most of them being infrequently used the majority of the time, gears afford the bicycle the ability to endure the ups and downs of environmental changes while maintaining smooth progress.

Bourgeois does not elaborate whether the rider is responsible for the initial investment in the extra chain links, normally these are integral to the design of all bicycles, but for our gear systems analogy it becomes obvious that someone did specifically invest to gain greater flexibility in their selection of routes. It also becomes apparent that the rider is the senior management team, be they the owner rider or indeed a non-owner management rider. It is they who take control and decide when and which individual gears are employed. Their decision will of course, be somewhat dictated by the conceptual topological conditions representing the external environment, but a greater range of slack resources, conceptually more gears, will provide a far wider choice of routes to be embarked upon. The gears in this paradigm provide not only strategic flexibility, many initial route plans, but also tactical flexibility, the ability to adapt quickly to surprises encountered on route. To take the analogy one step further, it may be envisioned that if management invested in a mountain bike that has many distinctive attributes and capabilities, then its inherent slack resources hypothetically frees the rider from the set

choices of paved roads and philosophically provides full freedom of direction, a condition that is comparable to 'blue skies' thinking. It provides superior confidence with the knowledge that whatever is encountered on route can be effectively overcome. This may be viewed as an ability to '...point the organisation in the right direction and let it go', Whittington (1993), where the strategy set is restricted to providing the ultimate objective and only a general guide to the direction of the firm and the operating policy. Obstacles encountered on route will modify tactical and maybe even strategic responses, but the slack protects the validity of the overall general direction and maintains a focus on the primary objective on the horizon.

To date, the discussion of organisational slack has concerned itself with its nature, its ease of recovery and its implications for the firm, Cyert and March (1963), Penrose (1980), Bourgeois (1981), Greenley and Oktemgil (1998). The fundamental question of the responsibility for slack, its detection, re-investment, monitoring, evaluation and exploitation has received scant attention however, the bicycle analogy developed above provides an obvious first candidate to investigate, the rider, the controller and helmsman, the strategist, the Senior Management Team.

Therefore an initial investigation into the presence and operationalisation of organisational slack must arguably first concern itself with strategy and particularly with any evidence for the inclusion of slack issues in the decision processes.

Open the first few pages of practically any standard academic strategic management text book such as Hill and Jones (1995), Wright, Kroll and Parnell (1996), Johnson and Scholes (1989) and it is apparent that all provide a personalised variation on the same themed structure for strategic formulation;

Strategic Analysis→ Strategic Choice →Strategic Implementation

The above represents the core elements of strategy formulation to which all commentators apply some form of feed-back system of corrective action. Each of these

core elements will now be discussed in detail together with their conjectured relevance to, and for slack resource

i. Strategic Analysis

Strategic Analysis refers specifically to the collection of relevant data and information that may be employed to develop a comprehensive organisational SWOT (strengths, weaknesses, opportunities and threats) analysis. This initial stage of strategic formulation attempts to paint a rich picture of an organisations present situation and its relationship with its environment, together with a projection of future external trends and developments and ultimately to display a number of strategic options that may be employed. The information and data search is conducted as an audit of both the internal strengths and weaknesses of the firm and an external environmental investigation of the opportunities and threats that may affect the company. Ultimately the goal of senior management is to seek the means of exploitation of external opportunities through the timely and effective employment of internal strengths and the reduction of internal core weaknesses and the pro-active combative or defensive stance of the organisation against external threats.

The presence of adequate resources to conduct such an extensive scoping activity intuitively has an effect at several different levels. Firstly, the physical ability to conduct an effective scan of both the external and internal environments must be available in the form of hard slack resources. This activity is additional to the daily routine operations of the organisation and requires both management time and adequate budgets to commission reports internally, and often the employment of outside specialist agencies. Secondly, also present must be adequate cultural slack as discussed above (sec. 2.3.3)and expanded below (sec. 3.1.3). This is defined as the collective training, education and experience of management to effectively perform the tasks of search and interpretation of the information and to develop effective and feasible strategic options for consideration that sometimes may be required to be radical in nature.

ii. Strategic Choice

Once the present strategic position of the organisation relative to the external environment has been clearly defined and feasible strategic options generated to exploit recognised opportunities, management must then select the most effective strategic option to ensure organisational success. However, the definition of success will be predicated by the major stake-holders wishes and aspirations.

Strategic choice will intuitively be affected by the perceived levels of hard resources that are accessible to the organisation, because the ability of the organisation to implement the selected strategy will be dependent upon the timely, efficient and effective deployment of the correct physical resources. Additionally, the cultural slack of the organisation will also play a significant, if only a subconscious role in the strategy selection process. If strategic options create discomfort amongst the senior management due to unfamiliarity, perceived lack of personal and, or organisation wide skills, then these options it may be assumed, will be quickly dropped for the safety zone of more familiar and comfortable options.

iii. Strategic Implementation

The implementation of strategy is often reported by commentators, Hill and Jones (1995), Wright, Kroll and Parnell (1996), Johnson and Scholes (1989), as the most problematic of the process. Firstly, the physical resources of budgets, workers, machines, administration, R&D and a myriad of many, if not all of an organisations operations may be required to undergo total or part reorganisation, amalgamation or even disposal. The task is often enormous and complex. Systems that change require padding, excess resources exemplified by Thompson's (1967) 'Buffer', the conceptual internal clutches between departments, the internal and external customers and indeed between old and new operating systems. Therefore, it is evident that organisations may substantially underestimate the total resource requirements of strategic change and subsequently may struggle with its implementation and many may fail to successfully implement even non-radical organisational change.

However, this is not the complete picture of change failures and difficulties. Additionally cultural resistance to change may be a serious impediment to new strategy implementation. Commonly people do not relish the prospect of change, they experience sensations of discomfort with new routines, systems and working experiences, in general they prefer the comfort of, and seek the safety of, the familiar. Change often entails a decrease in personal job confidence and therefore satisfaction. People lack experience of new routines and they fear retribution for failure, Mintzberg (1987) and this may lead to satifying behaviour, Pettigrew (1985), Simon (1957), as discussed above (sec. 2.3.3).

To combat disillusion, apathy and in extreme cases sabotage, management must possess firstly, the ability to recognise the potential problems of cultural (psychological) resistance and secondly, the personal ability and physical resources to combat these unseen, intangible obstacles to successful strategy implementation. Management may employ the common tool of communication to overcome cultural resistance, Nitzburg (1987). This entails communication of the vision and the enthusiasm, together with a full explanation of the physical changes required and constant truthful reassurance, together with staff confidence building through programs of training, re-training and team-building. These latter programmes require the investment of further hard resources.

Therefore, for a new strategy to be successfully adopted significant levels of additional hard and soft resources are essential. These additional resources may be accessible and present in the form of slack within existing resources, slack that may be found and recovered in both the external and internal environments.

However, a problem of access to and the recognition of hard slack resources by senior management is evident within the current literature, Cyert and March (1963). It is a common observation that slack is found to be, and even mostly assumed to be, almost entirely the concern and province of middle management.

This is a disconcerting confirmation of the work of March and Simon (1958), Cyert and March (1963) and Bourgeois (1981), who maintain that slack may be employed as a

political tool of individuals within management hierarchies for self aggrandisement and prestige, Astley (1978). Employed to conceptually oil the cogs between departments, slack in this paradigm may be used by managers to perform 'favours' for fellow managers of other departments, favours stored for future reciprocal repayment. Jealously guarded and protected by these departmental managers, slack resources could conceivably become the tools of fraudulent activity, for example the ubiquitous '*foreigner*' and while many organisations, it may be assumed, 'turn a blind eye' to such perceived inconsequential activities, senior management must be made aware of the slack being employed because it may well be proven that their company's distinctive competitive advantage is to be found in this slack.

Subsequently it is conceivable that the responsibility for and the recognition of slack is often the preserve of middle management, be it by design or a natural consequence of historical organisational activity. Also, slack is usually associated with a desire of senior management to identify and eradicate it. However, it is evident from the discussion above that slack should be made transparent to all and especially the strategy team for it to be transformed into superior results, if not sustained competitive advantage. Considering the possible personal perception of the value of slack by some middle managers, it may well prove to be an extremely difficult task to identify hidden, stored and politically sensitive slack in many organisations, a challenge that any investigation of slack resources must address with vigour, relentlessly and from many conceptual angles.

In attempting to address such problems all extant organisational slack will in this study, be determined from account data, a methodology employed by the majority of the empirical work to date. This data will be cross-matched to the *perceived* levels of organisational slack by individual senior managers. The discrepancy if present, between the perceived and extant levels of organisational slack will hopefully illuminate the reasons for varying strategic behaviours and the subsequent performances of individual organisations within the same sector.

The reasoning for such philosophical conjecture lies in the supposition that all firms within the same sector ostensibly experience the same environmental flux and therefore all organisations should enjoy the same long term profits proportional to their gross assets normalised for economies of scale, however this is not the observed norm. The differing fortunes of individual firms may well be a consequence of self imposed restrictions of activity due to slack myopia, an inability to identify possible courses of action that indeed are possible but are considered at present beyond the capability of the organisation. It is intuitively speculated therefore, that higher management who are restricted in their appreciation of extant levels of organisational slack will be restricted in the number and radical nature of strategic options that may be given serious consideration.

It has also been argued above that the strategic core of the organisation may be shielded from disruptive environmental flux by the presence of operational flexibility that is provided by slack resources at the tactical work-face of the organisation. In consideration of this speculation, attention will next be focused at tactical interface of the organisation.

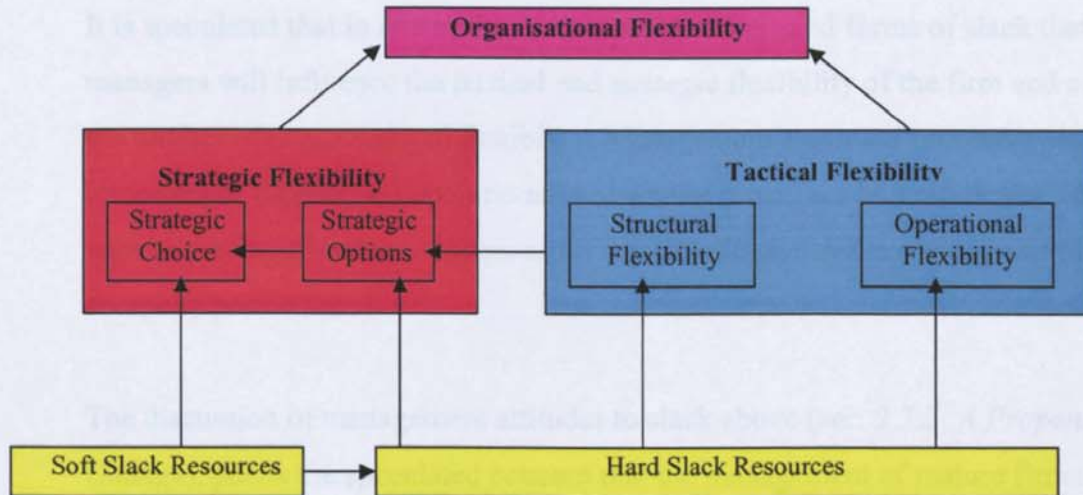
3.1.2 Slack for Operational Flexibility

Operational flexibility refers specifically to the organisations internal procedures ability to process varying demands and is identified here as one element of total 'Tactical Flexibility' (see fig.3.1). It is the degree of ease that the delivery and administrative systems of the organisation can satisfy unusual requests without recourse to a request for strategic deviation. Operational flexibility may be envisioned as protecting the firm from collateral damage, the need to continually change or adapt strategy, this being a clear example of the '*buffer*' as discussed by Thompson (1967). While a Shumpterian Shock may overwhelm tactical flexibility and require strategic shift, the everyday experience of environmental jolts may be absorbed at the functional, tactical levels of the company when slack is present.

The degree of tactical flexibility, a factor of total organisational flexibility, it is proposed, is proportional to the level of all slack resources (*see fig.3.1 below; fig. 2.4 reproduced*).

Fig. 3.1 (fig. 2.4 reproduced)

The Conceptual Antecedents of Strategic, Structural & Operational Flexibility and their contribution to overall Organisational Flexibility



Further to the concept of a strategy shield, tactical flexible may be employed to address a neglected element of all organisational empirical research to-date, namely that of the capture and operationallisation of environmental dynamism. The degree of operational innovation, reflected in the depth and frequency of permanent changes in operations and/or administration may directly and proportionately reflect the extent of environmental dynamism experienced by the firm.

In addition, the ease of innovative change as a measure of operational flexibility may well prove to be proportion to the level of slack available, recoverable and potential to the organisation. However, the individual merits of each class of slack and its contribution to operational flexibility are as yet untested.

3.1.3 Culture, the Liberator or Inhibitor of the Benefits of Slack

As discussed above in chapter two, the predilections, egos, experience and peccadilloes of the incumbent management within individual organisations may well inhibit the hypothesised benefits of slack. Dependent upon their training, education and commercial experience (soft slack), managers may possess varying attitudes to slack. Although little evidence exists some may actively encourage and invest in some forms of slack, others of

differing paradigms may actively seek to eradicate it, while still others display indifference. However, to-date little empirical evidence exists.

It is speculated that in attempting to control the levels and forms of slack that exist managers will influence the tactical and strategic flexibility of the firm and subsequently the totality of organisational flexibility. Management's cultural propensity is therefore important to capture and operationalise because it may act as a moderator of behaviour with as yet undefined consequences for organisational slack resources and ultimately for company performance.

The discussion of management attitudes to slack above (*sec. 2.3.3, A Propensity for Change*), posits the speculated concern that the management of mature firms may display non-entrepreneurial attitudes, suggesting resistance to innovative behaviours. This may be considered as a resistance to employing slack for new and innovative projects, which may naturally lead to a desire for the rooting out of slack and its elimination as an unemployable organisational burden. Intuitively as innovative behaviours in this paradigm are to be considered an irrelevance, slack becomes an inefficiency that should be eliminated.

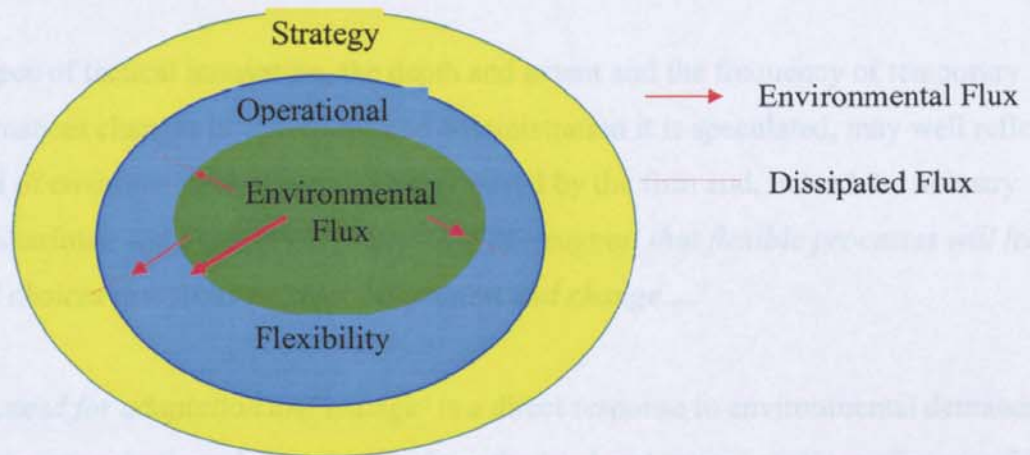
All of the above theoretical conjecturing now requires synthesising into a robust, conceptual holistic model and the subsequent construction of a practical research model that aids the development of hypotheses. However, such a conceptual model must also include the initiator of responsive behaviours, the demands of the external environments.

3.1.4 Environmental Flux, Noise and Turbulence

The environmental flux antecedents, defined previously as S.L.E.P.T within the Macro Environment, and Porters Five Forces within the Micro Environment (see fig. 2.2, sec. 2.3.5 above) may be envisioned as the originators of environmental ripples that variously disturb the conceptual organisation 'boat', see figure 3.6 below.

Fig. 3.6

Environmental Flux Ripples Disturbing the Organisation



While every-day unusual demands are theoretically absorb at the tactical response level of the organisation by the operational flexibility, it may be speculated that heavy environmental jolts may impact on strategy but their disruptive effect may be somewhat mitigated by the same operational flexibility,

It is conjectured in the current literature that most organisational slack may be invested at the tactical response level of the organisation. This may be a natural result of operational changes and, or a senior management intuitive response that slack should reside 'at the sharp end of the company'. This may be the consequence of a management believe that the 'spare tools' of the firm should be present at the organisations interface with the external world.

As observed above (see sec. 2.6), Johnson and Scholes (1989) called for a balance to be established between the extent of organisational flexibility and the level of environmental uncertainty. This call for an efficient balance between slack held (as the precursor of flexibility) and environmental dynamism poses a problem. The purpose of slack it has been argued is to provide flexibility as a defensive or offensive mechanism against an unpredictable environment, and given that the environment is imponderable, how can a measured balance be sought? A possible answer lies not in a detailed comprehension of the total possible volubility of environment flux, with all the human ineptitude inherent in

such an exercise, but in an appreciation of its amplitude, in other words it's expected depth of noise (*See fig. 3.2 below*).

The degree of tactical innovation, the depth and extent and the frequency of temporary and permanent changes in operations and administration it is speculated, may well reflect the level of environmental dynamism experienced by the firm and, indeed the industry sector. Sharfman and Dean (1997) state that; *'We suggest that flexible processes will lead to novel choices that firms need for adaptation and change....'*

This *'...need for adaptation and change'* is a direct response to environmental demands. Intuitively, organisations do not deviate from the tried and trusted routines of successful behaviour without good reason, this being an example of the old adage, 'if it ain't broke, don't fix it'. In consequence it is a logical conclusion to expect that all operational changes demonstrate a change demand from the environment. Therefore the degree of change, casual or radical, temporary or permanent, intuitively reflects the intensity, or amplitude of environmental disturbance and the number of operational changes over time demonstrates the frequency of the environmental disturbances (*see fig. 3.2 below*). Therefore an industries environmental flux, its amplitude and frequency, may be operationalised by an evaluation of industry sector wide operational changes. The process of capturing such data is further explored below, section 4.3.4 and figure 4.1.

Fig. 3.2

Conceptual Model of the Parameters of Environmental Flux



Environmental Noise, the amplitude or degree of buffeting that the organisation can reasonable be expected to experience, Johnson & Scholes (1989).

In the above model environmental dynamism is defined as two dimensional, it has amplitude and frequency and is analogous to an electric current and therefore is referred to as 'Flux'. However, unlike the domestic electric supply system, environment flux is not regulated with equivalents of the relay and substations, therefore the two dimensions of flux may be erratic, conceptually experienced by the organisation as sudden surges or brown-outs and even total black-outs.

Johnson and Scholes (1989) maintain that in mature industries where environmental noise is low, high levels of flexibility are inappropriate. To accept that flexibility is proportional to the level of combined resource slack (Stevenson, 1993) this observation suggests that, for the sake of efficiency, it is advisable that the level of slack should be proportional to the expected environmental amplitude.

Environmental flux presents the problem of never before being rationalised for empirical research, but as suggested above it may well be captured by using the direct proxy of organisational internal change. Conceptually, the intensity or amplitude of environmental flux will be commensurate with the degree and depth of organisational changes in its standard routines, and if the changes represent a permanent or temporary deviation from

normal procedure. The frequency of flux in such a model is captured in a straightforward count of all such organisational procedural deviations within a give period.

If an organisation can develop an appreciation of the general level of environmental flux of its own industry it may then accumulate the most effective and efficient levels of slack resources to balance the demands and maintain an appropriate level of organisational flexibility. It is anticipated that such modelling may substantially aid the quest for sustained superior performance.

However, many authors comment that sustained competitive advantage does not imply an advantage in perpetuity, Porter (1985), Hill and Jones (1995). Not only can the specific distinctiveness of capabilities be eroded but Barney (1991) and Rumelt and Wensley (1981) after Shumpeter (1950), confirm that unforeseen revolutionary environmental changes, Shumpeterian Shocks, can fundamentally alter the nature of firms and even eliminate industries. However, under such circumstances an inherent organisational flexibility borne of slack resources may facilitate a relative ease of entry into other industrial or commercial activities ensuring survival, even when total organisational transformation is required.

The next section of this chapter will synthesise and summarise the definitions, arguments, theories, hypotheses and conjectured reasoning of the proceeding discussions. In this manner it is anticipated that a rich picture of the theory of slack resources and its present knowledge gaps will emerge that will aid the development of a conceptual model in the following section from which a practical, robust research model and hypotheses for empirical testing will be drawn.

3.2 Summary Notes of the Definitions, Phenomena, Theory and Suppositions for Further Investigation

Before developing detailed hypotheses and building research models, this section will summarise the major elements of the discussion in an attempt to clarify the focus of this works investigation. To begin this process a glossary of the terms and definitions developed and discussed in previous pages is given below.

3.2.1 Glossary of Terms

Available Slack: refers to under utilised, highly accessible internal assets that may be quickly deployed to offset sudden unexpected demands. Examples being cash reserves, inventory, personnel multitasking capabilities and under-utilised staff and equipment available for immediate re-deployment.

Environmental Flux; the frequency and amplitude (the depth and breadth) of external environmental disturbance experienced by the organisation. Demands made on the organisation from its external environments.

Hard Slack; available, recoverable and potential (capacity) slack.

Hard Slack Resources; the resources that contain available, recoverable and potential (capacity) slack.

Organisational Flexibility; the total of internal strategic and tactical ability to absorb environmental flux; affords the organisation an ability to respond, in a timely fashion, to the demands of environmental flux. It provides an enhanced ability to react to the various changing demands made upon the business above and beyond those generally expected as normal from the traditional organisational routines. Organisational flexibility is arguably an internal capability, attainable by the maintenance of slack within resources that are

accessible to the organisation.

Potential Capacity Slack; the internal capability of the organisation to acquire additional resources from the external environment – e.g. the ability to raise capital, when this is internalised it becomes available slack.

Potential Slack; external environmental energies not necessarily accessible to the firm

Recoverable Slack; those spare energies that may be discovered by an internal audit of resources. They may be found in a follow-up of outstanding invoices or the sale of the same (factoring), personnel training and redeployment, inventory, machine job re-routing that realises spare capacity, a re-evaluation of over-padded budgets, under-utilised floor space, a review and rationalisation of administrative procedures and practices and other, less obvious areas of administrative and operational activities.

Slack; an internal or external environmental spare capability or capacity; it may be contained within a resource that has not been employed to realise its full potential that maybe recoverable for future strategic or tactical deployment.

Soft (or Cultural) Slack; a management ability to conceive new ways of operating, and the will and ability to pursue these new programs through to completion. Such cultural propensity for innovative thinking is seemingly common amongst entrepreneurial strategists, Kurato and Welsch (1994), but arguably however, it is a relatively rare quality within the administrative management prevalent in mature industries, Hellriegel, Slocum and Woodman (1995).

Strategic Flexibility; a combination of the strategic options available (number and radical nature) plus a propensity to pursue and implement them (soft or cultural slack) as strategic choices. The degree of strategic level responsive behaviour to environmental flux.

Tactical Flexibility; the ability of the organisations structure and operations to absorb environmental flux.

3.2.2 Summary of the Arguments and Discussion

To summarise all of the above discussion, organisational flexibility is arguably an internal capability, attainable by the maintenance of slack within resources that are variously accessible to the organisation (Bowman and Hurry, 1993; Greenley and Oktemgil, 1998; Bourgeois and Singh, 1983). Organisational flexibility absorbs environmental flux and by this process enhances performance.

As discussed above, Thompson (1967) conceptualises this phenomenon by visualising organisational flexibility as “...*a buffer between internal departments, suppliers and the organisation and the market place*”. These buffers enable less co-ordination of operating systems between departments while maintaining overall organisational efficiency and a commitment to the strategic objectives of the firm, Cyert and March (1963), Moch and Pondy (1977).

Additionally, not only can flexibility possibly provide a buffer to the dynamic flux of the external environment, it may also increase the personal satisfaction of individual customers. Flexibility can facilitate one-off requirements beyond the capabilities of organisations common routines, because it can provide the manoeuvrability within the internal environment required to satisfy unusual demands, Finch (1991).

The hypothesised consequence of rationally incorporated slack resources is organisational flexibility that should, in accord with general theory produce improved company performance, Evans (1991), Miller and Leiblein (1996), Greenley and Oktemgil (1998), Bourgeois (1981). However, despite such diverse suggestions that there exists a strong positive association between slack and performance the empirical evidence for such a relationship remains limited and ambiguous, Greenley and Oktemgil (1998), Hambrick and D'Aveni (1988). The intuitive supposition of this work is that the link between hard slack and performance is organisational flexibility and that the

organisational flexibility variable has been omitted in previous studies leading to difficulties in establishing a significant direct relationship between slack and performance.

The general understanding that environmental dynamism has consequences for the organisation is indisputable being attested to by all strategic management authors, and although the effects of this important factor in organisational theory are widely discussed and accepted there exists little empirical research that attempts to measure total environmental flux, the ebbs and flows over time of environmental jolts. Limited qualitative data is available for a few specific case studies, but these all examine the effect of individual environmental jolts and their consequences for individual firms. As a consequence, the effects of a few specific, individual environmental jolts in limited organisational circumstances have been analysed in depth, but to-date no research has attempted to rationalise and operationalise a full, rich picture of environmental flux for specific industrial sectors.

Furthermore, the supposition that slack provides the ability to cope with a challenging environment by the provision of flexibility requires further investigation. It is suspected that an organisational propensity for change, a change culture represented as cultural slack or soft slack must also be present in addition to reserves of hard slack resources for true organisational flexibility to be evident.

The degree of operational flexibility, a factor of tactical and ultimately organisational flexibility, is argued to be proportional to the level of slack resources (*see fig3.1 above*). In accepting that flexibility is proportional to the level of combined resource slack, this observation suggests that it is advisable that the levels of slack should be proportional to the anticipated environmental amplitude, Stevenson (1993) and Johnson and Scholes (1989).

The suggestion inherent in all of the above argument is that organisational flexibility is a fundamental source of competitive advantage, but the quest for this elusive condition and the operationallisation of flexibility as a variable within research, remains a largely

unexplored academic corridor. Bowman and Hurry (1993), Greenley and Oktemgil (1998) and Bourgeois and Singh (1983) tentatively suggest that the antecedents of organisational flexibility and hence competitive advantage are to be found in resource slack and although many of the commentators of slack resources argue that slack provides organisational flexibility they do not attempt to operationalise this behaviour.

This work will endeavour to rectify this omission, capturing organisational flexibility employing a measure of the organisation's strategic and tactical changes. The rank ordering of companies by their flexibility may then be compared to their respective holdings of hard slack resources. This methodology will be further discussed and expanded below in section 3.5.

To capture the environmental flux for each industry sector it is speculated that the intensity or amplitude is proportional to the depth and breadth of changes in their member's standard routines. In addition, the frequency of environmental flux for each industry may be captured as the number of all organisational procedural deviations within a give period. (This will be further explored below in chapter 4)

As discussed above in section 2.3.3, *A Propensity for Change*, it has been proposed that for slack resource energies to be fully exploited requires an ability to recognise new conceptual ways of operating and the will and the ability to pursue the unfamiliar. Such cultural propensity for 'blue sky' innovative thinking is seemingly common amongst entrepreneurs, Kurato and Welsch (1994), however it is a relatively rare quality of the administrative style of management prevalent in mature industries, Hellriegel, Slocum and Woodman (1995).

These observations give rise to a potential area of concern for management, because it is generally speculated that slack is most commonly to be discovered within, and accessible to, mature firms and industries, Cyert and March (1963). It is commonly speculated that slack is accumulated within those routine operations of some longevity, those systems that have acquired peculiar nuances and hidden sources of organisational energies

through minor but numerous changes in their operation. The suggested generally staid behaviours and slack myopia of management within mature industries, together with the assertion of hard slack resource munificence within these organisations requires further investigation.

Related to the behaviour of senior management is the question of how Strategic Options and Strategic Choices are each dependent upon the presence of hard and soft slack resources. This again is another academic blind spot.

Most commentators have assumed that a conscious predetermined investment in slack resources is non-existent or at least is an extremely rare occurrence, excepting cash reserves when the only penalty is that of lost opportunity costs, Lucey (1991). However, this is a purely speculative supposition, the extent and nature of counter intuitive slack investment has to-date received no empirical investigation, most commentators assuming that slack is an accumulation of spare, under-utilised resources that is a natural but unintentional consequence of past profitable activity. Such ill-disciplined slack accrual is counter to the concept of slack for competitive advantage as it relegates performance enhancing slack acquisition to one of pure happenstance. Conversely, this may well prove to be the case in practice, which may explain the difficulties encountered in predicting sustained competitive advantage.

Therefore, it may prove to be imperative for sustained competitive advantage considering the above, that managers be made aware of which slack categories if not which precise slack resources are critical for their firm's future success in particular industry sectors and that they are encouraged to actively and vigorously invest in their accession.

All previous empirical research that has sought to establish a relationship between slack resources and performance has endeavoured to display a significant link between the *changes* in slack levels over time with a mean level of performance. This methodology seemingly attempts to establish a positive relationship between slack and superior performance, but this methodology does not address the hypothesised relationship

between slack and organisational performance over time. Therefore, the precise hypothesised laggard changes in the level of slack versus changes in performance have never been addressed empirically. The theory developed above suggests that while a generalised enhancement of overall organisational performance may be achieved through the accession of slack, this is acquired in a specific manner, namely by either a stepped gradual climb in performance, or the overall mean climb of a witnessed peak and trough performance curve. Hypothetical each of these performance behaviours will be inversely matched by the levels of hard slack, (*see figs. 2.9a & 2.9b*). It is imperative for a full appreciation of slack resources within organisations that a thorough and detailed understanding of the precise mechanics of the slack, performance relationship is investigated.

Finally, a synthesis of the research and theory building to-date has resulted in a proposed theoretical model for the attainment of superior performance. Employing the internal resource based perspective developed by Grant (1991) and incorporating environmental monitoring as advocated by Hart (1995) and adding a process of hard slack reinvestment, the proposed model for '*sustained competitive advantage*' (*see fig. 2.5b above*) requires further investigation.

In discussing the research to-date this work has introduced two new elements to the slack resources debate, that of environmental flux, a two dimensional model, and the concept of soft slack. These new elements will be incorporated in a new conceptual model of slack resources in the organisation.

3.3 The Development of Models and Hypotheses

The primary aim of this investigation will be the identification of slack resources contribution to the flexibility of organisations in the three industries of Food, Plastics and IT. However, the journey to satisfy this aim requires the development of a robust research model that must also address many other gaps in the present understanding of slack and its consequences for the organisation.

To advance slack theory requires an appreciation of the present understanding of the subject and the identification of the knowledge gaps that require further investigation. Having extensively explored the relevant literature, this work will proceed with a summary of the present research gaps and an identification of the primary research objectives.

3.3.1. Summary of the Research Gaps

- i. The proposed time laggard relationship between the variously accessible forms of slack resources and organisational performance has yet to be established empirically (*see fig's 2.9a & 2.9b above*).
- ii. The perception of slack by managers, their recognition and operationalisation of the spare organisational energies that are hypothesised to be found in slack is restricted to limited studies of slack's political power that is endowed upon its controllers.
- iii. A practical methodology of organisational slack search, capture, redirection and re-investment is notable only by its paucity in the available literature.
- iv. While many authors contend that slack provides an internal 'buffer', an organisational defensive shield to the vagaries of a dynamic environment, none have yet attempted to test such suppositions excepting a couple of restricted individual case studies.
- v. The capture and measure of organisational flexibility has yet to be compared to the level of slack resources. The consequence being that the repeated claim that slack resources provide organisational flexibility remains an empirically untested speculation. The research to-date has attempted to relate performance directly with the level of slack resources and the link of 'flexibility' between them has been relegated to a theoretical and undefined mechanism for the relationship.
- vi. It is tentatively suggested in the current slack literature that different industry sectors experience different environmental flux, the intensity and frequency of change requirements that initiate organisational responses. Consequently, it may be supposed that different sector companies require differing forms and levels of slack, a theory that would have practical and far reaching consequences for managers, a theory that requires further investigation.

- vii. Excepting the political consequences of slack, the cultural dimensions of slack resources have yet to be explored. The presence of soft slack resources compared to the propensity of management to display flexible behaviour and the general perceptions of slack by management have yet to be investigated.
- viii. The newly introduced concept of soft slack (cultural slack) and its contribution to slack theory and specifically flexibility as discussed above has never before been considered and hence its presence and consequences requires investigation.

3.3.2. The Primary Research Objectives

The majority of published material on the nature, effects and consequences for organisations of the presence of slack resources is confined ostensibly to theory building. The hypothesising of the consequences of the various forms of slack for the firm has developed over the last forty-five years but the limited empirical research to-date has generally resulted in inconclusive if not contradictory conclusions. This has led to argument about the relationship between performance and the various forms of slack resources. However, it is suspected that the inconclusive results of many of the investigations are in part due to design faults in the research methodology employed. The aggregation of data collected across several industry sectors and the generalisation of results for all organisations from a limited number of individual case studies, are two common research failings.

While most researchers recognise the importance of the changes in the level of slack over time none equate this with the contemporary changes in performance, employing instead an absolute measure of non-contemporaneous, present level performance. In doing this they seemingly attempt to establish a direct relationship between perceived '*excellent*', or top performing organisations as defined at the time of investigation, and historic slack level changes, but they neglect to demonstrate the underlying complex, hypothesised staggered relationship between slack and performance as discussed above.

This work is an attempt to address the above research gaps and failings and will;

1. Seek to clarify the definitions of the terms in general usage.
2. Construct a research model for the analysis of the primary hypothesis that slack provides organisational flexibility and this subsequently enhances company performance.
3. Examine and model the relationship between environmental flux and the slack resources of the organisation, and enhance the understanding of the complex nature of the interactions.
4. Develop a methodology for operationallising environmental flux.
5. Test the hypothesis that different sectors of industry require different levels and classes of slack to enhance their performance due to experiencing different environmental demands.
6. Endeavour to operationallise the concept of organisational soft (cultural) slack.

While addressing the fundamental questions above and examining some of the underlying suppositions of the slack and organisation relationship, it is the intention of this thesis to develop robust conclusions, models and analytical tools that will prove to be practical aids to both future researchers and practicing managers.

3.3.3 The Development of a Conceptual Model

To conceptualise the theory developed above, environmental flux will be absorbed, to a higher or lesser degree by operational flexibility, provided by the presence of slack resources at the interface of the organisation (tactical flexibility), that enhances performance. Any overwhelming flux may then make demands for strategic modification. At this stage strategic options will be generated, these will require an audit of accessible external and internal resources and capabilities for future re-deployment. It may be considered that all available options, even the seemingly wild and revolutionary may well be proffered at this early stage of strategic formulation. However, it is suspected that the seemingly outlandish and impractical ideas may not be offered up for consideration, dependent upon the collective level of cultural slack. The fear of ridicule may deter many managers from suggesting totally revolutionary concepts and theories of doing business. The extent of ideas repression may be considered as inversely proportionate to the strategy teams flexibility, measured by its total soft or cultural slack, i.e. education,

training, experience (each a contributor to self confidence) and available management time. However, it may be considered that the extent of management flexibility will be more accurately captured at the strategy selection stage. Intuitively the evidence for the level of cultural flexibility of management will be most transparent to the researcher when management have to select policies and strategies for implementation. It is speculated that those policies and strategies that are perceived as radical, complex and unfamiliar may be rejected for the comfort of the familiar by the inflexible, the soft slack deprived.

Therefore, it is at the strategic choices stage that soft slack that is reflected in the flexibility of management, will probably be most evident and transparent and therefore, easier to capture. While individual managers may profess the generation of many radical concepts and innovative ideas at the options generation stage, their collective extant flexibility may well be physically manifest only in their practical adoptions.

It is further speculated that all of the above behaviours will culminate in a measurable and significant impact on organisational performance. A simplified, conceptual schematic is given below (*see fig. 3.9 below*) where organisational flexibility is the total of all organisational flexibility, operational and structural which may collectively be termed tactical, together with strategic flexibility as discussed above (*see fig. 2.4*). The antecedents of this flexibility are arguably slack resources.

Fig. 3.9 The Positive Contribution of All Slack Resources to Organisational Flexibility that Enhance Performance.



As argued above the maintenance of organisational flexibility with slack resources should be linked to environmental flux. Therefore if environmental flux is constant, without frequency and/or amplitude fluctuation, this would represent external demands that were unchanging in their requirements and quantities and the need for flexibility and hence slack resources would be significantly reduced if not eradicated. A constant and therefore perfectly predictable flux requires only a ridged system to process. Slack and the flexibility it provides is only required when an organisation experiences new, or fluctuating demands, however it is very unlikely that any organisation could be discovered that has a consistent environmental flux amplitude and frequency. Therefore it may be hypothesised that to enhance the long term performance of the organisation a balance must be sort between slack resources and the expected changes in environmental flux.

3.3.4 The Development of a More Detailed Conceptual Model.

A conscious decision to exclude the implementation stage of the strategy process in this research is made because it is an element that has been adequately and eloquently documented by others. While slack resources must conceptually play a great part in the effective and speedy execution of this process, it will intuitively have been a consideration of senior management at the strategic choices stage and therefore demonstrable hard slack resources will be reflected in the management's behaviour at this earlier stage of strategy formulation. However, the processes of tactical response and strategy formulation, and their relationships with slack resources together with the demands of the external environment are little explored and consequently these will form the major focus of this study.

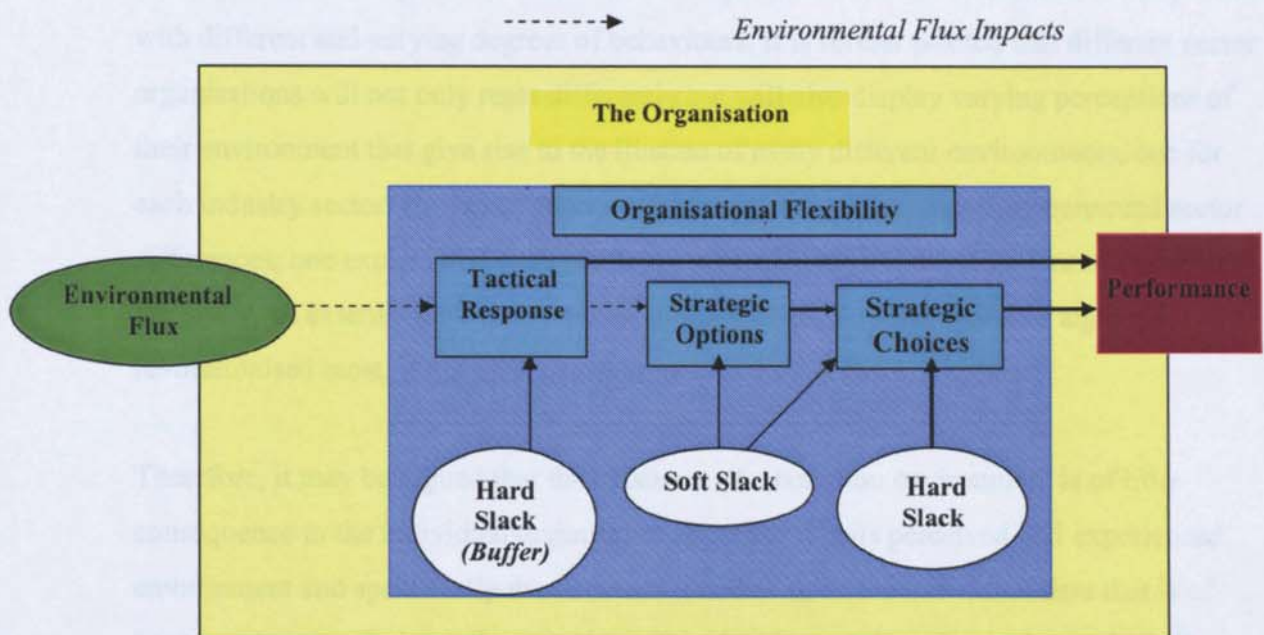
This work will also attempt to discover which classes of slack impact where and to what degree in the organisations of the three distinct industrial sectors of Food, Plastic and IT, as this is also little explored in the current literature.

It is further speculated that all of the above behaviour will culminate in a measurable impact on organisational performance.

In consideration of the research aims and further developing the model above, *Fig. 3.9*, 'The positive contribution of slack to organisational flexibility', a more detailed, holistic conceptual model of the organisation is given below (*see fig. 3.10*).

Fig. 3.10

The Conceptualised Slack, Flexibility Performance Model



Each of the major elements of the above conceptual model will now be discussed in further detail and operational hypotheses will be developed.

3.3.5 Environmental Flux

As previously discussed, it is tentatively suggested in the current slack literature that different industry sectors may experience different environmental flux, the intensity (amplitude) and frequency of environmental demands that require organisational responses. Consequently, it may be speculated that different industry sector firms require different forms and levels of slack as a response mechanism. This is a theory that would have practical and far-reaching consequences for managers.

All organisations conceptually exist in and are subject to, the same environmental developments, however different industry sectors may experience different demand levels from this same source. What may be perceived as a revolutionary development that requires immediate and radical action by one organisation may be considered of little consequence by a firm in another industry sector. Therefore, it is speculated that although all organisations exist in a common macro-environment their industry sector (micro-environment) will experience it in different ways and will react to common developments with different and varying degrees of behaviours. It is further posited that different sector organisations will not only react differently but will also display varying perceptions of their environment that give rise to the illusion of many different environments, one for each industry sector. However, some environmental developments may transcend sector differences, one exceptional example being the technological development of the desktop computer, an external environmental technological development that has arguably revolutionised most, if not all organisations across all sectors of industry.

Therefore, it may be argued that the existence of a common environment is of little consequence to the individual organisation, because it is its perceived and experienced environment and specifically the demands it makes upon the individual firm that is of concern. As argued above the experienced environmental flux, that is the total of all external environmental demands may be operationallised by monitoring sector specific, mean organisational shifts and changes; Hence:

Hypothesis 1.

Each industry sector experiences a unique environmental flux.

To elaborate further, it is hypothesised above that each of the three industries examined in this study, food, plastics and IT, each experience and react to, a measurably different environmental flux that is unique to each sector.

The proposition that the environmental demands on individual industrial sectors is unique is important to establish, because this would have consequences for the required degree

of flexibility that companies need and hence the efficient level of slack that, as argued above, facilitates such flexibility.

If the above is established, this research will also endeavour to identify which slack resource classes are required for the efficient maintenance of appropriate flexibility for each of the industry sectors.

3.3.6 Tactical Flexibility

To recap, because of the perceived difficulties of operationallising dynamic environments the capture of an individual firm's flexibility, their ability to absorb flux, has yet to be compared to their level of slack. The consequence being that the repeated claim that slack resources provide organisational flexibility remains an untested speculation. The empirical research to-date has attempted to relate performance with slack levels and the link of 'flexibility' between them has therefore been relegated to a theoretical, untested metaphor for the practical relationship. However, this work suggests that these previously elusive variables, environmental flux and flexibility, may be captured by the direct measure of appropriate proxies.

Tactical Response

It is conjectured that environmental flux commonly first encounters the organisation at the company interface of the tactical response level. It is here that a response that is deemed profitable, feasible and ethical is first developed. If a demand can be satisfied by the common routines of the firm the dynamism of the demand is exhausted, dissipated by the normal operations of the firm and mutual satisfaction is accomplished. However, should the demand be unusual and/or urgent and especially when it is unexpected, the tactical response may require temporary or permanent alteration of its common routines. Should an organisation be required to re-design its operations and/or administrative support systems of delivery as a response mechanism, it is speculated that the absence of hard slack resources will severely impair the introduction and initial operation of such new routines.

Intuitively, flux of greater amplitude will require still higher levels of hard slack resources for the tactical response mechanisms to be able to process. It is therefore speculated that the ability to develop appropriate tactical responses, buffers against the external environment and the ‘clutch slippage’ required between departments to dissipate environmental flux, is directly proportional to an organisations hard slack holdings and that the level of tactical response is conversely limited by a relative scarcity of these slack resources (*see fig. 3.12 bellow*). Therefore, a greater level of organisational hard slack resources will facilitate higher levels of tactical responses to satisfy environmental flux demands.

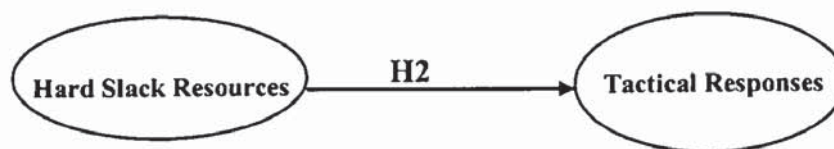
Hence:

Hypothesis 2.

**Organisational Tactical Responses are positively associated
with Hard Slack Resources.**

Fig. 3.12

**Hard Slack at the company interface increases Tactical Responses
to Environmental Flux demands.**



In the pursuit of organisational efficiency it is proposed that hard slack resources should be proportional to the environmental flux and this may be found to be the case in practice, however it may be achieved not by conscious design but by a process of natural development, in such a scenario a spurious correlation may be discovered between hard slack resources and environmental flux but this would not demonstrate a consciously designed significant relationship.

As previously noted empirical investigation has yet to address the consequences of the flow of environmental demands for different organisations in different industry sectors over time and equate the consequent responses with the differing levels and types of slack

that are variously accessible and note the absorbent properties that slack is propounded to possess. It is the intention of this work to address this deficiency.

The different forms of slack as discussed above will intuitively provide differing degrees of protection in different industries. This work will also endeavour to identify which slack resource classes in which industrial sectors prove to be more effective.

It is also the intent of this work to discover the extent and effect of soft slack and manager's perceptions of slack in general, their policies and their practical management of slack resources because it may be established that the spurious association predicated above between environmental flux and hard slack resources may be enhanced by higher levels of soft slack.

3.3.7 Strategic Flexibility

Strategic Options

As speculated above in the event of environmental amplitude and/or frequency overwhelming the tactical flexibility capabilities of the organisation (i.e. a short fall in the required operational hard slack to deal with external demands) or indeed a Shumpterian Shock occurring, then the flux will impact on the organisations strategy. Metaphorically the defences of operational flexibility in this scenario will have been breached and the environment flux will now make demands for strategic modification or shift.

The first step of strategy formulation as discussed above (*see sec. 3.1.1*), is the generation of strategic options for further consideration. It is hypothesised that the number of options generated at this stage will reflect the level of soft slack, the sum of management's personal capabilities that are available to the organisation (*see fig. 3.13 below*).

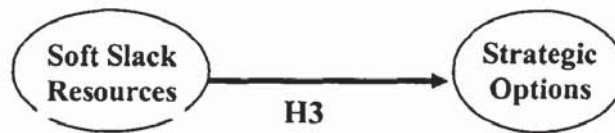
Hence;

Hypothesis 3.

**Strategic Options are positively associated
with Soft Slack Resources.**

Fig. 3.13

Hypothesis 3.



However, as discussed above it is anticipated that the influence of soft slack may be more transparent in an examination of strategic choices but in the interest of research continuity the above hypothesis will be included in the full research model and will be tested.

Strategic Choice Revisited (see sec. 3.1.1)

Most of the slack literature to-date refers to the specific ability of slack to provide organisational flexibility, but as with environmental flux, no researcher has yet attempted to capture total organisational flexibility for empirical testing. The supposition that slack provides the ability to cope with a challenging environment by the provision of flexibility requires further investigation because it is suspected that an organisations propensity and intellectual capacity for change, a change culture provided by soft slack must also be present in addition to reserves of hard slack resources for flexibility to be evident.

It is suspected however, that the consequences of soft slack will be most evident at the level of strategic choice, the propensity of management to undertake radical even revolutionary action will be dependent upon their personal paradigm of perceived risk. This propensity, it may be argued, is a function of the confidence that they possess in their own and their organisations abilities, based on education, training, experience, and the spare management time available, in addition to hard slack resources that they believe they possess, to devote to institutionalising new programs.

It is further speculated that as an internal function, strategic choices are driven by the generation of strategic options, considerations for adoption at the choices stage. Therefore, it is suspected that strategic choices are positively associated with strategic options.

Intuitively the perceived availability and accessibility of all hard slack resources will also play a significant role in the adoption of a strategic choice. Therefore, it is further speculated that the degree of radical strategic shift will be additional dependent upon the accessibility and availability of hard slack resources.

To summarise the above, strategic choice is positively associated with all hard slack and soft slack resources and strategic options (*see fig. 3.14 below*).

Hence;

Hypothesis 4a

Strategic choices are positively associated with soft slack resources.

Hypothesis 4b

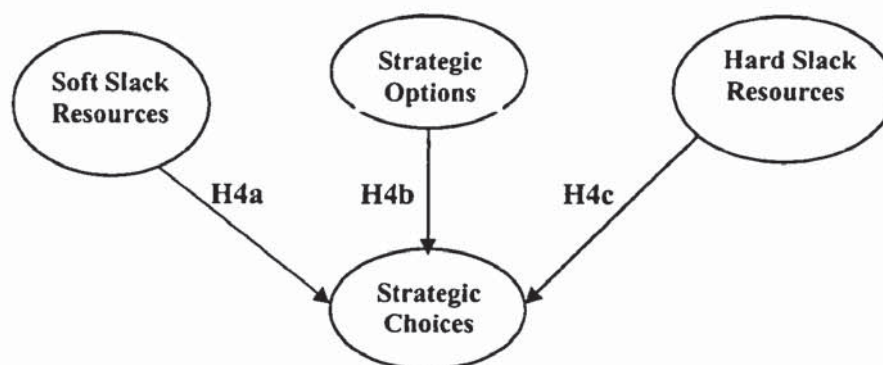
Strategic choices are positively associated with strategic options.

Hypothesis 4c

Strategic choices are positively associated with hard slack resources.

Fig. 3.14

The greater the extant levels of Strategic Options, Soft Slack and All Hard Slack Resources, the greater the number and radical nature of Strategic Choices.



3.3.8 The Antecedence of Hard Slack

As previously discussed the majority of the literature to-date suggests or implies that the antecedence of hard slack resources is profitable commercial activity and it is also suspected that slack resource is accumulated through the process of organisational non-radical, evolutionary development and change. Intuitively, these probable causes of slack will be positively linked to organisational age. However, the management appreciation of the theorised practical attributes of hard slack resources may also contribute to the extant levels of internal slack. A propensity to carry organisational slack resources, if not to actively acquire slack, may be reflected in and therefore proportional to the sum of soft or cultural slack (see fig. 3.15 below)

Hence;

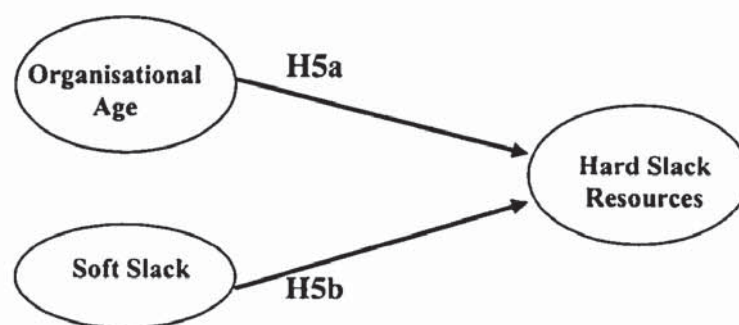
Hypothesis 5a

**Organisational Hard Slack Resources are positively associated
with Organisational Age.**

Hypothesis 5b

**Organisational Hard Slack Resources are positively associated
with Soft Slack.**

**Fig. 3.15 Organisational Hard Slack Resources are positively associated
with Organisational Age and Soft Slack**



3.3.9 Performance

While most researchers recognise the importance of the historic changes in the level of slack over time none equate this with changes in performance levels over the same period. Therefore they neglect to demonstrate the underlying complex, hypothesised relationship between slack and performance, Bourgeois (1981).

Therefore, the hypothesised changes in the level of slack versus the hypothesised changes in performance over time have never been addressed empirically. This appears to be a serious omission of the research to-date as intuitively, while a generalised enhancement of overall organisational performance may be achieved through the recognition and re-deployment of slack, this is acquired in a specific manner, namely by either a stepped gradual climb in performance, a clear example of success breeding success, or by the overall, mean climb of a witnessed peak and trough performance curve.

Each of the suggested performance behaviours are hypothetical inversely matched, in a laggard or tardy manner, to hard slack resources (*see figs. 2.9a & 2.9b, page 80*). When slack is captured and re-deployed (a reduction of hard slack), performance gradually improves, an inverse reaction. Performance at this point either stabilises at a higher level or falls back slightly as new slack is inculcated into the system, when this process is repeated, hopefully in perpetuity it may produce sustained superior performance.

It is imperative for a full appreciation of the consequences of slack resources for organisations, that a thorough and detailed understanding of the precise mechanics of the slack, performance relationship is investigated.

Although previous argument has concluded that slack enhances flexibility and that this is the missing link with performance, this work will test the original Bourgeois (1981) hypothesis that 'slack resources are positively associated with performance' in an attempt to demonstrate why previous empirical investigations have proved inconclusive.

Hence;

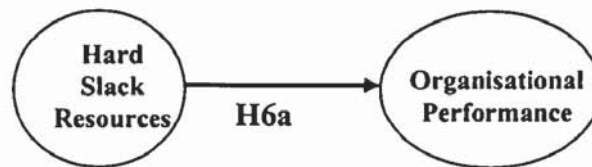
Hypothesis 6a. (after Bourgeois 1981)

**Organisational Performance is associated
with Organisational Hard Slack Resources.**

See fig. 3.16 below

In attempting to duplicate previous research (at H6a above), this work will attempt to identify suspected methodological problems that may have contributed to previously inconclusive and conflicting results.

**Fig. 3.16 Organisational Performance is associated
with Organisational Hard Slack Resources.**



Although it is hypothesised that a direct association may be discovered between hard slack resources and performance, it has been argued throughout this work that the process is in practice far more complex than that demonstrated above, fig 3.16. The full rich picture of slack enhancing performance intuitively incorporates the concept of organisational flexibility (see fig. 2.4 above) and that slack is positively associated with, and enables the condition of organisational flexibility comprised of the elemental components of strategic, operational (tactical) and management's (soft slack) flexibility, and it is this process that drives the enhancement of performance.

It is speculated that the condition of organisational flexibility may be operationalised through an appreciation of organisational change and this may be captured by operationalising all strategic and operational changes, where strategic changes are synonymous with strategic choices, these being strategic options that have been selected for implementation. Therefore, all strategic change will be captured as the variable 'strategic choices'.

Hence;

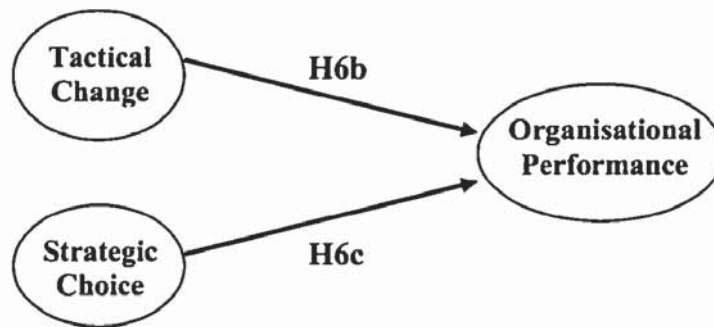
Hypothesis 6b

**Organisational Performance is positively associated
with Tactical Change.**

Hypothesis 6c

**Organisational Performance is positively associated
with Strategic Choice.**

Fig. 3.17 **Organisational Performance is positively associated
with Tactical and Strategic Change.**



In the model above (fig.3.17) ‘Tactical Change’ and ‘Strategic Choice’ (strategic change) as response mechanisms, together capture all organisational change and therefore collectively represent organisational flexibility.

3.3.10 Summary of the hypotheses developed above.

Hypothesis 1.

Each industry sector experiences a unique environmental flux.

Hypothesis 2.

**Organisational Tactical Responses are positively associated
with Hard Slack Resources.**

Hypothesis 3.

Strategic Options are positively associated with Soft Slack Resources.

Hypothesis 4a

Strategic Choices are positively associated with Soft Slack Resources.

Hypothesis 4b

Strategic Choices are positively associated with Strategic Options.

Hypothesis 4c

Strategic Choices are positively associated with Hard Slack Resources.

Hypothesis 5a

Organisational Hard Slack Resources are positively associated with Organisational Age.

Hypothesis 5b

Organisational Hard Slack Resources are positively associated with Soft Slack.

Hypothesis H6a. (after Bourgeois 1981)

Organisational Performance is associated with Organisational Hard Slack Resources

Hypothesis H6b

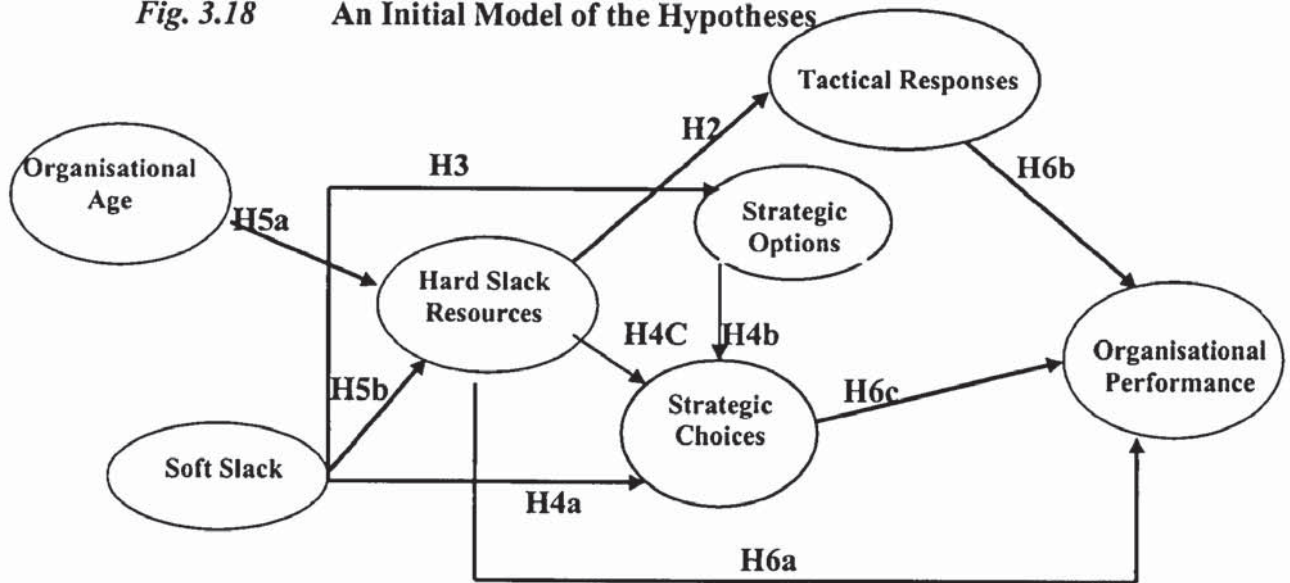
Organisational Performance is positively associated with Tactical Change.

Hypothesis H6c

Organisational Performance is positively associated with Strategic Choice.

All of the above hypotheses (excepting H1) may now be combined to produce an initial holistic simple model (see fig.3.18 below)

Fig. 3.18 An Initial Model of the Hypotheses



The initial research model above, that reflects the major hypotheses (excepting H1) that have been developed, suffers from a complexity of labelling that reflects the logical development of hypotheses, but does not represent a logical path through the model. In further developing this model below a re-numbering of the hypotheses will rectify this problem. This model represents only a simplified picture of the detailed examination and discussion of slack that has been conducted in this work. A further complexity to the model above includes the major supposition that each individual industry sector will display subtle distinctive behaviours because of their different experiences of the environmental demands. It is anticipated that the capture of these differences will require the expansion of the above model to include the individual categories of hard slack resources that demonstrates their possible behaviours as additional hypotheses.

An explanation of this complex process will be conducted in the next section.

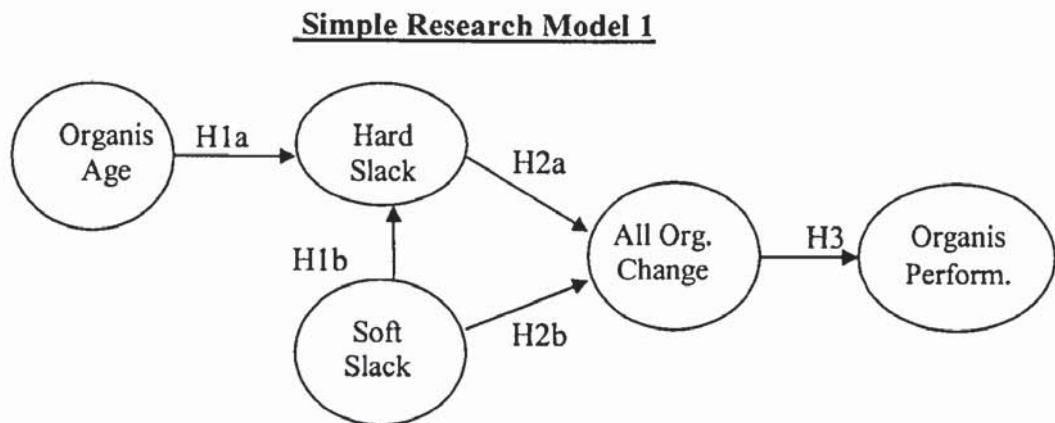
3.4 Development of a full and robust research model

Hypothesis H6 above has been the major research question of all previous empirical investigations and has been included here to examine the speculation that the mixed results obtained previously are due in great part to methodological problems associated with cross-industry data gathering. This is because it is strongly suspected that each

industry sector enjoys a unique slack, performance relationship due to its unique environmental flux experience (see H1 above). It is also anticipated that the relationship is far more complex than previously envisioned and that slack is acting through other processes that are themselves the direct enhancers of performance. Therefore, the hypothesised relationship between slack and performance is suspected to be indirect. It is anticipated that an inductive, exploratory investigation of the data may reveal a richer picture than previously anticipated, a complicated relationship as demonstrated below (see fig.'s 3.19a, b, c and d below).

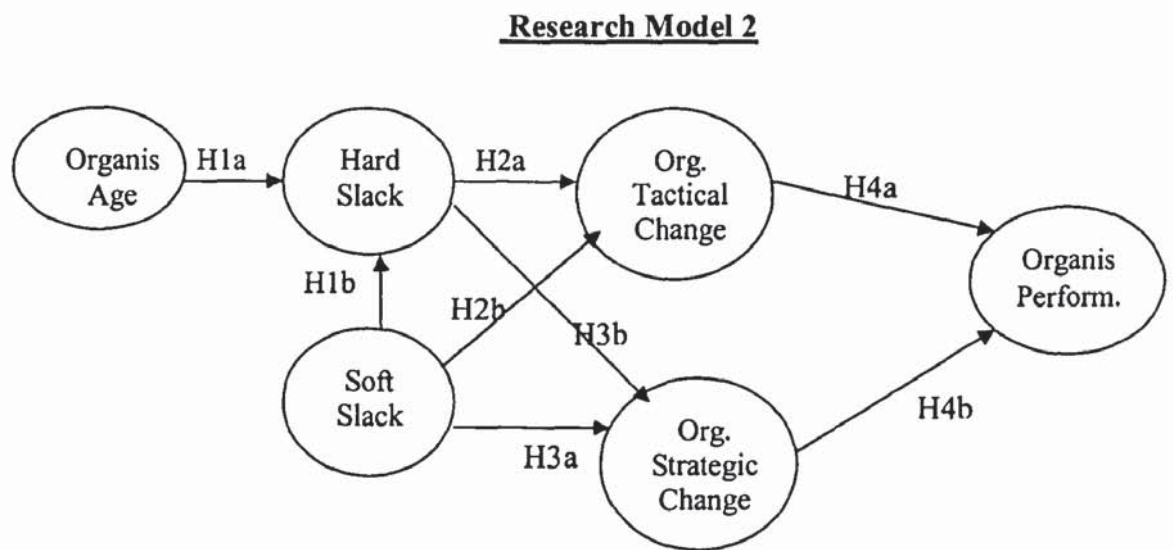
If the model developed above (see fig.3.18) is reconfigured to display its most simple form by combining the strategy and tactical elements into one variable, 'All Organisational Change', and in re-numbering the hypotheses (anticipated relationships) for the sake of clarity, an initial simple research model (modell1, fig.3.19a below) emerges.

Fig. 3.19a



Model 2 (see Fig.3.19b below) continues to reflect the associations hypothesised in model 1 above, but now develops the complexity by re-splitting 'All Organisational Change' into its two elements (variables) of 'Tactical Change' and 'Strategic Change'.

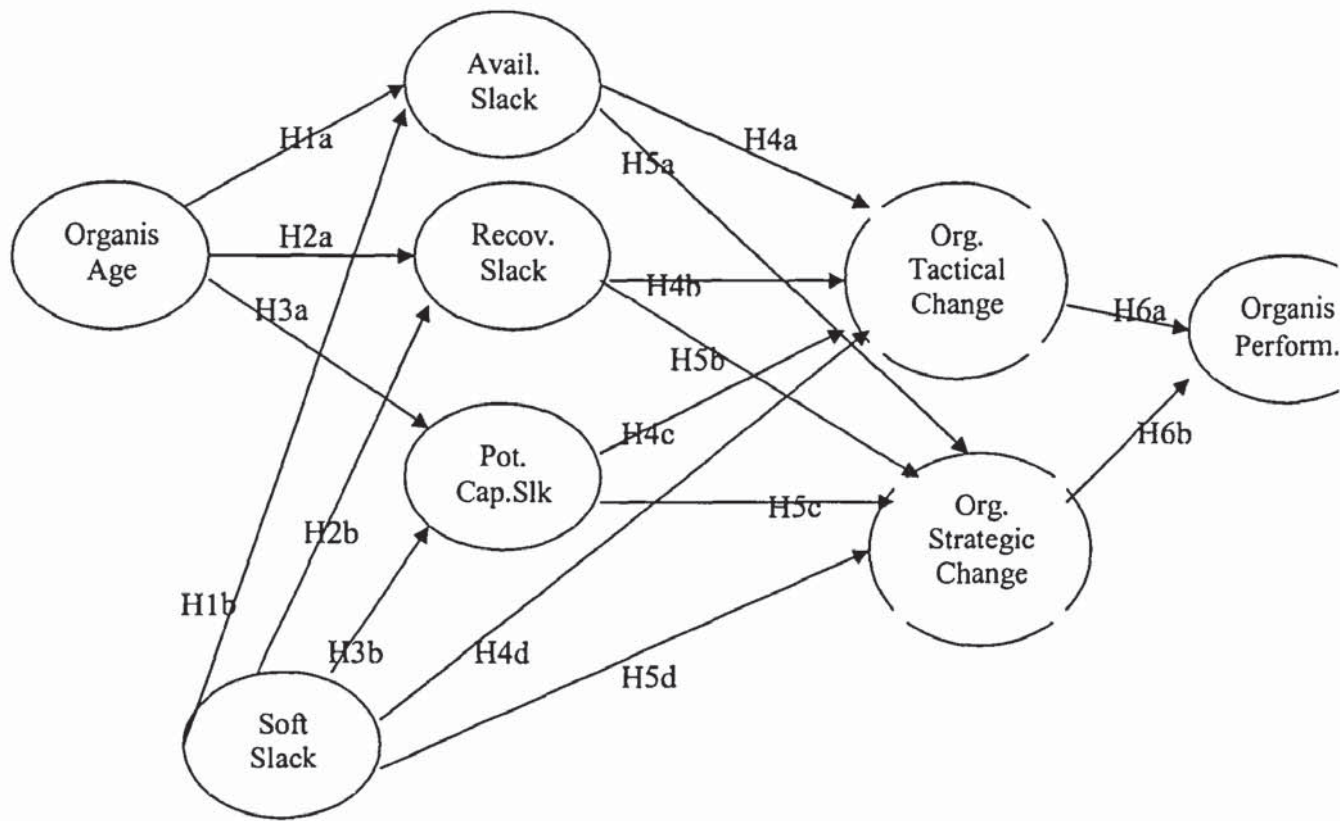
Fig.3.19b



Model 3 below (fig. 3.19c) continues to add complexity by separating the elements (variables) of 'Hard Slack Resources' and again using the hypotheses developed above (re-numbered) identifies the anticipated associations.

Fig. 3.19c

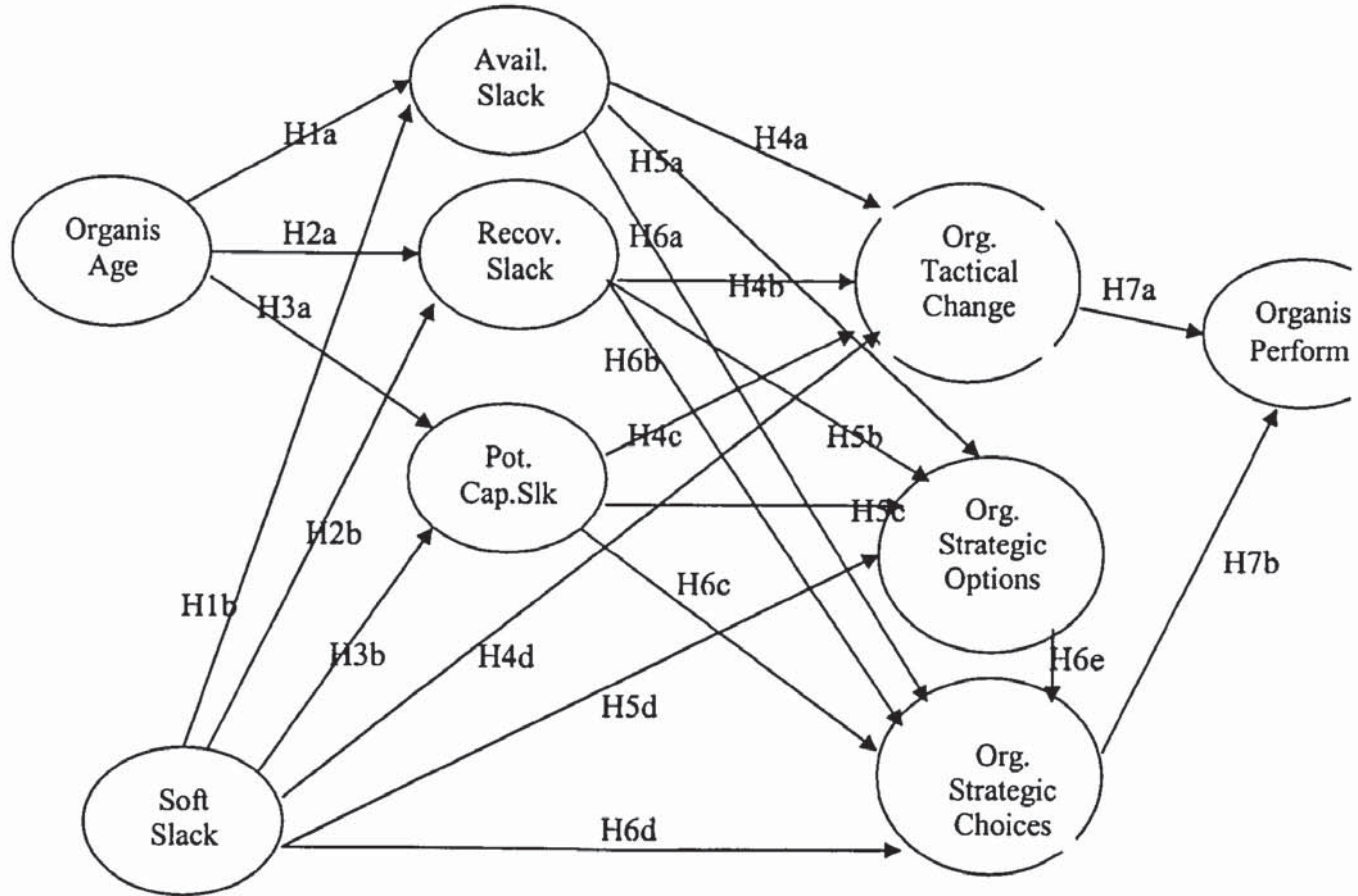
Research Model 3



Finally, the last layer of complexity is achieved by separating the variable of 'strategic change' into its components of 'strategic options' and strategic choices' (see fig.3.19d below). This final research model (4) now displays all of the major individual elements of the slack debate that have received attention in the pervious pages of this work and also anticipates all of their associated behaviours that have been speculated to exist.

Fig. 3.19d

Research Model 4



The above research model '4' (fig. 3.19d) will be applied to each of the three industry sectors individually and will therefore be employed as the main research tool. However, the previous 'simpler research models' have been developed and displayed here because it is suspected that they may prove to be a more appropriate tool for exploring the general behaviours of all industries. They may be employed when factor analysis dictates that they are appropriate.

The hypotheses developed above constitute the primary research questions of this work and will form the central core of the investigation. However, a greater understanding of slack behaviour may be achieved in further exploring the detail within the rich and broad

data obtained. This data may be used to gain a greater appreciation and understanding of the complex nature and consequences of organisational slack resources. Therefore, although inductive in the main, this research will occasionally display a more deductive, explorative approach in an attempt to develop a rich picture.

It was noted above that the development of the research models 1 – 4 (fig.'s 3.19a – d) and the subsequent logical numbering of the anticipated associations, would require the re-numbering and ordering of the major hypotheses developed previously. This will be addressed in the next section together with the inclusion of the new hypotheses that have emerged from the development of the research models.

3.4.1 The development, re-ordering, and re-numbering of the major hypotheses developed above to conform to the research model 4 (see fig. 3.19d above).

Hypothesis 8. Previously H1, is beyond the scope of the research model 4 and therefore stands independently.

H8 Each industry sector experiences a unique environmental flux.

Hypothesis 4. Previously H2, now requires splitting due to the increased number of variables employed.

**H4a Organisational Tactical Responses are positively associated
 with Available Slack Resources.**

**H4b Organisational Tactical Responses are positively associated
 with Recoverable Slack Resources.**

**H4c Organisational Tactical Responses are positively associated
 with Poential Capacity Slack Resources.**

**H4d Organisational Tactical Responses are positively associated
 with Soft Slack Resources.**

Hypothesis 5. Previously H3, again requires expansion due to the increased number of variables.

H5a Strategic options are positively associated with available slack resources.

H5b Strategic options are positively associated with recoverable slack resources.

H5c Strategic options are positively associated with potential capacity slack resources.

H5d Strategic options are positively associated with soft slack resources.

Hypothesis 6. Previously H4a, b & c, similarly requires expansion

H6a Strategic choices are positively associated with available slack resources.

H6b Strategic choices are positively associated with recoverable slack resources.

H6c Strategic choices are positively associated with potential capacity slack resources.

H6d Strategic choices are positively associated with soft slack resources.

H6e Strategic choices are positively associated with strategic options.

Hypothesis 1, 2 and 3 now replaces the original H5a & b; again this is required due to the expansion of the simple research model to include an increased number of variables and a logical re-ordering (numbering) that is required to reflect a natural progression through the model.

Hypothesis 1

H1a Available Slack Resources are positively associated with Organisational Age.

H1b Available Slack Resources are positively associated

with Soft Slack.

Hypothesis 2

**H2a Recoverable Slack Resources are positively associated
with Organisational Age.**

**H2b Recoverable Slack Resources are positively associated
with Soft Slack.**

Hypothesis 3

**H3a Potential Capacity Slack Resources are positively associated
with Organisational Age.**

**H3b Potential Slack Resources are positively associated
with Soft Slack.**

Hypothesis 7a (previously H6b)

**H7a Organisational Performance is positively associated
with Tactical Change.**

Hypothesis 7b (previously H6c)

**H7b Organisational Performance is positively associated
with Strategic Choice.**

Hypothesis 7c, d & e, below (previously expressed as H6a above; after Bourgeois 1981). The original hypothesis (H6a) posits a relationship between ‘Hard Slack Resources’ collectively, and performance. However, with the variable of hard slack separated into its component variables of available, recoverable and potential in model 4 above, each is now required to make an individual claim to enhance performance. However, the hypotheses H7c, d and e below are omitted from the research model 4 above as previous argument has established that the hypotheses are theoretically flawed, it is now speculated that slack acts through ‘flexibility’ to enhance performance. Although these additional hypotheses have been dismissed, they are included and will be tested, because they do form the major historical argument that has motivated much of the previous research, and their exploration in his work may demonstrate why the evidence for a direct relationship has proven to be consistently elusive.

**H7c Organisational Performance is positively associated
with Available Slack Resources.**

**H7d Organisational Performance is positively associated
with Recoverable Slack Resources.**

**H7e Organisational Performance is positively associated
with Potential Capacity Slack Resources.**

The above hypotheses will now be re-listed to aid clarity.

3.4.2 The Logical Re-Listing of the Hypotheses.

The re-ordering of the major hypotheses developed above to conform to the research model 4.

Hypothesis 1

**H1a Available Slack Resources are positively associated
with Organisational Age.**

**H1b Available Slack Resources are positively associated
with Soft Slack.**

Hypothesis 2

**H2a Recoverable Slack Resources are positively associated
with Organisational Age.**

**H2b Recoverable Slack Resources are positively associated
with Soft Slack.**

Hypothesis 3

**H3a Potential Capacity Slack Resources are positively associated
with Organisational Age.**

**H3b Potential Slack Resources are positively associated
with Soft Slack.**

Hypothesis 4

**H4a Organisational Tactical Responses are positively associated
with Available Slack Resources.**

H4b Organisational Tactical Responses are positively associated

with Recoverable Slack Resources.

H4c Organisational Tactical Responses are positively associated with Poential Capacity Slack Resources.

H4d Organisational Tactical Responses are positively associated with Soft Slack Resources.

Hypothesis 5

H5a Strategic options are positively associated available slack resources.

H5b Strategic options are positively associated recoverable slack resources.

H5c Strategic options are positively associated potential capacity slack resources.

H5d Strategic options are positively associated soft slack resources.

Hypothesis 6

H6a Strategic choices are positively associated with available slack resources.

H6b Strategic choices are positively associated with recoverable slack resources.

H6c Strategic choices are positively associated with potential capacity slack resources.

H6d Strategic choices are positively associated with soft slack resources.

H6e Strategic choices are positively associated with strategic options.

Hypothesis 7

H7a Organisational Performance is positively associated with Tactical Change.

H7b Organisational Performance is positively associated with Strategic Choice.

H7c Organisational Performance is positively associated

with Available Slack Resources.

H7d Organisational Performance is positively associated with Recoverable Slack Resources.

H7e Organisational Performance is positively associated with Potential Capacity Slack Resources.

Hypothesis 8

H8 Each industry sector experiences a unique environmental flux.

Before exploring the research model 4 and its component hypotheses developed above, this work will first re-examine the work of previous researchers and their attempts to establish a direct relationship between slack resources and performance (H7). Therefore, hypotheses 7c, d & e (not included in model 4) will first be tested with the collective data of the food, plastics and IT industries and then re-applied to each industry individually in an attempt to discover why previous empirical research has consistently proved to be inconclusive. Therefore the testing of the hypotheses contained within the research model 4 will be returned to in chapter six and applied each individual industry.

However, prior to all of the above, the next chapter will explore the research methodology to be employed and the specific research tools that will be used in an attempt to address the research aims and hypotheses developed above.

4.0 RESEARCH METHODOLOGY

Introduction

This chapter will proceed with a brief review of the philosophy of social research, the perspectives and the related methodologies to be employed.

4.1. Rational for the Research Methodology Employed

The majority of research literature that addresses the capture and operationalisation of organisational slack resources has set the precedent of employing a quantitative methodology within a pragmatic positivist paradigm.

As previously observed the methodology for the capture and operationalisation of slack within the resources of organisations, as with organisational performance, has acquired accepted custom over many years of previous research. Captured employing secondary data, slack and performance measures have proven to be consistently capable of replication and hence the condition of a high degree of reliability can be assured.

However, it may be demonstrated that when reliability is high it is always at the expense of validity. Firstly, hard slack within this work as is customary, will be captured using secondary data, namely published account data. Secondary data is accepted to be inferior to primary data as it is drawn from a resource, in this case published accounts, that was not specifically designed to serve the research objectives of this investigation and therefore the raw data obtained requires manipulation before it is employable. Secondly, the capture of slack employing account data does not define specific slack quantities only the relative levels of the classifications of available, recoverable and potential capacity. It cannot identify where or what specific physical slack resources exist in the organisation. Therefore it may be concluded that the validity of the slack variables is low, the use of secondary data together with the lack of descriptive data that defines the precise parameters, the physical presence and quantities of slack is a research weakness. This may be addressed with a qualitative methodology that seeks to target and capture variables with a greater degree of accuracy. However, this methodology from the phenomenological research perspective requires the collection of subjective, qualitative data that may substantially improve the

validity of the captured variables but this will be at the expense of reliability as the data captured is subjective, by its nature it is open to interpretation by the respondents and the researcher.

However, it is not the intention of this work to radically challenge previous research methodologies, this thesis in part is an endeavour to identify why this earlier work failed to conclusively demonstrate what theory suggests, namely that slack resources enhance performance. As argued above it is suspected that this is due to erroneous, simplified models and cross-industry data collection that has produced inconclusive and contradictory results. Therefore the capture of hard slack variables will be conducted, as with all previous research, from published data as the specifics of slack quantities, locations and precise identification are of little consequence to the objectives of this research. What is required of this work is the capture of the relative levels of slack variables within different organisations and the examination of the relationships that these variables display with others. This work is not concerned with the specific identification and absolute measure of individual slack resources but only their relative weights displayed as ratio measures.

Therefore, proven to be a robust research methodology this work will not endeavour to flaunt established convention and will also employ a quantitative research methodology. Although there exists a question of the influence that a management's perceived level of organisational slack may have on the behaviour of organisations, this is a side issue to the main thrust of this research that attempts to establish a direct relationship with extant slack, expressed as a ratio measure, and other organisational variables. However, in the interest of academic curiosity management perceptions of, and their attitudes to the levels of slack resources will be captured employing a Likert scale response system within the questionnaire. The data generated here will be limited in depth and therefore is observed to be only an introduction to the complex issues involved in this sub-question of the research. Further research in this particular field will be identified and recommended later.

The rationale for the adoption of a positivist research methodology for this work is the argument that organisations that experience demands subsequently demonstrate measurable

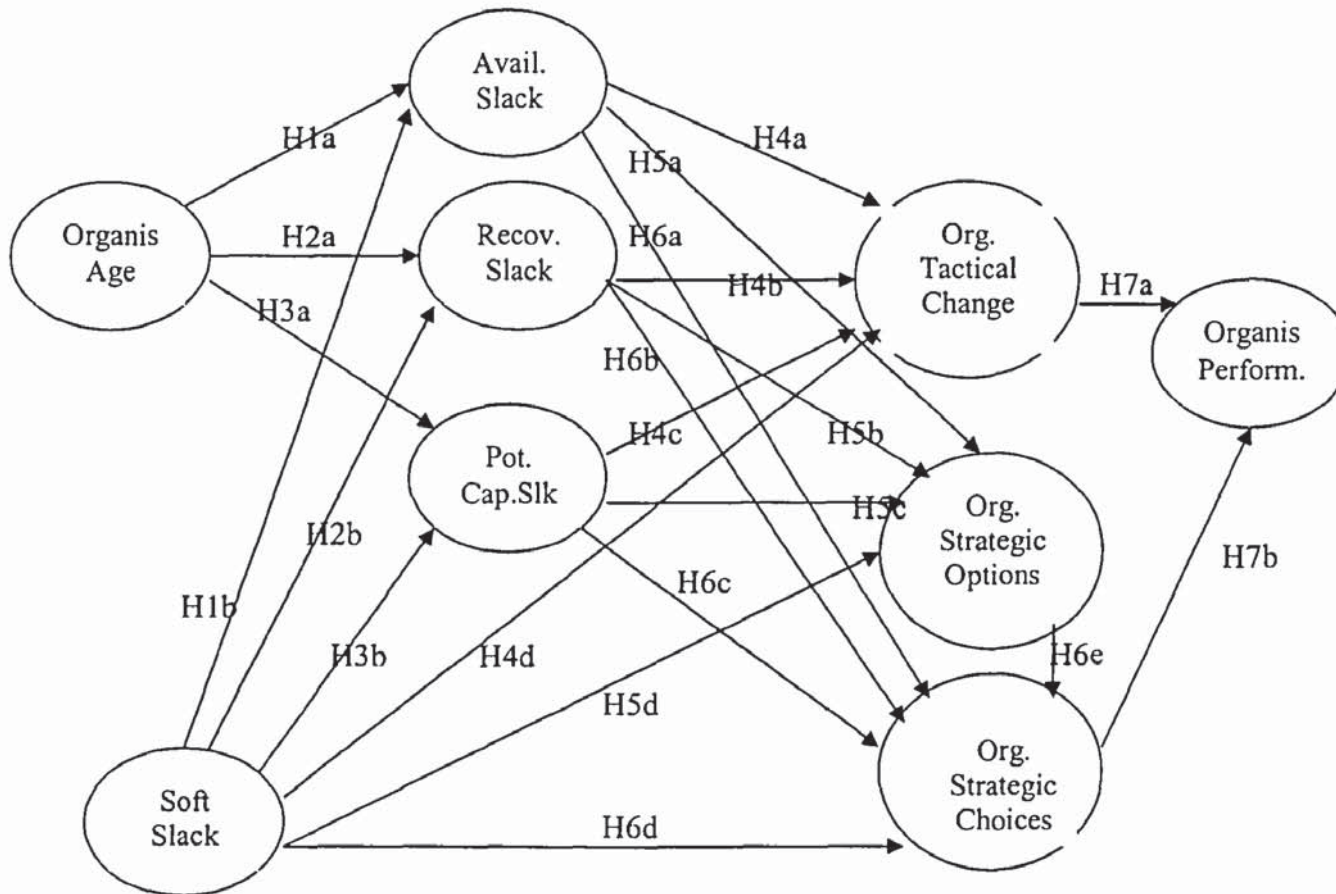
organisational changes. This work is not ostensibly concerned with why demands influence subsequent events and behaviours, but is primarily directed at the capture and demonstration of the phenomena. The argument for this approach is that the basic maps of cause and effect for this subject must first be established with rigour before further examination and investigation can be undertaken with phenomenological interpretation. To reiterate, it is essential to initially establish precisely what is happening before further study can determine why it is happening. The development of a 'complete rich picture scenario' must be a natural evolution from a basic elemental understanding of what is happening, and for the present little empirical evidence is available that demonstrates the consequences of the presence of slack resources. This work therefore, must be viewed as a preliminary investigation of the subject, an attempt to establish a degree of fundamental and elemental understanding. The meaning of phenomena for individual participants and observers and their perceptions of how these phenomena developed is not within the objectives of this study and therefore a qualitative methodology within a phenomenological paradigm is, for the present inappropriate for this work.

4.2 The Identification and Capture of Variables

The original simple research model (Fig. 3.19a above) developed in the previous chapter, identifies the variables and the hypothesised behaviours that were developed in the preceding theoretical arguments. In splitting the original composite variables of Hard Slack Resources and Organisational Change into their component variables of Available, Recoverable and Potential Slack and Tactical and Strategic Change, a more detailed research model was developed that is reproduced below, fig. 4.1.

Fig. 4.1 (*fig.3.19d reproduced*)

Research Model 4



From this model the original hypotheses were further developed, re-ordered and re-numbered to reflect the anticipated complexity of behaviours that are speculated to exits. These are again listed below.

Hypothesis 1

- H1a** Available Slack Resources are positively associated with Organisational Age.
- H1b** Available Slack Resources are positively associated with Soft Slack.

Hypothesis 2

- H2a** Recoverable Slack Resources are positively associated with Organisational Age.

- H2b Recoverable Slack Resources are positively associated with Soft Slack.**

Hypothesis 3

- H3a Potential Capacity Slack Resources are positively associated with Organisational Age.**
- H3b Potential Slack Resources are positively associated with Soft Slack.**

Hypothesis 4

- H4a Organisational Tactical Responses are positively associated with Available Slack Resources.**
- H4b Organisational Tactical Responses are positively associated with Recoverable Slack Resources.**
- H4c Organisational Tactical Responses are positively associated with Potential Capacity Slack Resources.**
- H4d Organisational Tactical Responses are positively associated with Soft Slack Resources.**

Hypothesis 5

- H5a Strategic options are positively associated available slack resources.**
- H5b Strategic options are positively associated recoverable slack resources.**
- H5c Strategic options is positively associated potential capacity slack resources.**
- H5d Strategic options is positively associated soft slack resources.**

Hypothesis 6

- H6a Strategic choices are positively associated with available slack resources.**
- H6b Strategic choices are positively associated with recoverable slack resources.**

- H6c** Strategic choices are positively associated with potential capacity slack resources.
- H6d** Strategic choices are positively associated with soft slack resources.
- H6e** Strategic choices are positively associated with strategic options.

Hypothesis 7

- H7a** Organisational Performance is positively associated with Tactical Change.
- H7b** Organisational Performance is positively associated with Strategic Choice.
- H7c** Organisational Performance is positively associated with Available Slack Resources.
- H7d** Organisational Performance is positively associated with Recoverable Slack Resources.
- H7e** Organisational Performance is positively associated with Potential Capacity Slack Resources.

Hypothesis 8

H8 Each industry sector experiences a unique environmental flux.

As previously discussed H8 is beyond the parameters of the research model figure 4.1, but will be tested as it may have consequences for the theory of slack resources. Likewise, the hypotheses H7c, d and e are not represented in the model as previous argument does not support their existence. However, they will be explored and tested in an attempt to replicate previous research and discover why these projects produced inconclusive and conflicting results.

From the above hypotheses the variables that need to be captured are identified and are listed below, table 4.1.

Table 4.1 The identification of variables required to address the above hypotheses (in alphabetical order)

Available Slack Resources (secondary data)
Environmental flux, Industry Specific (primary data)
Organisational Age (primary data)
Organisational Performance (secondary data)
Organisational Tactical Responses (primary data)
Potential Capacity Slack Resources (secondary data)
Recoverable Slack Resources (secondary data)
Soft Slack (primary data)
Strategic Choices (primary data)
Strategic Options (primary data)

4.3 Data Collection

A questionnaire survey was deemed the most appropriate and effective method for collecting the required primary data given that the research model required broad and deep, quantitative data that covers several years of organisational activity. Company directors in particular were identified as being the most probable repository of, or having access to the required data and information. Due to the complex responses required by the questionnaire to legitimise this study and in recognition that all responses should be contemporaneous, it was decided to facilitate the collection of the required primary data by post. These were addressed to the senior management of a large number (850) of organisations. This was followed by the identification and collection of secondary data from publicly available company accounts data.

Further, it was decided that to address the specific hypothesis that different industry sectors may display different experiences of environmental flux, three very different industries, each representing a distinct period of industrial development, would be selected in an attempt to address this intuitive supposition.

4.3.1 Identification of the Population Organisations

Board members from three-hundred and fifteen (315) food processors together with two-hundred and sixty (260) plastics firms and two-hundred and eighty (280) computer hardware and, or software producers were identified and targeted with a questionnaire developed to capture the different variables of the research model.

Each target firm was identified and qualified employing three measures, first that the company belong to just one of the above industry categories identified by its Standard Industry Code (SIC) number. Secondly, that the firm was trading for the last five years, five years being the investigation period. There was no upper limit on the number of employees as this investigation was seeking comparisons not just across industries but also across varying degrees of commercial activity within the same industries. Thirdly, that the account data of each firm for the same five year period (1996-2000) were in the public domain, this being accessed employing on-line FAME software (Financial Analysis Made Easy).

The raw data collected were categorised in accord with an analytical framework that observed the distinctive constructs developed in the research model and previous argument. Namely, those of environmental flux, organisational age, tactical operations, strategic options, strategic choices, soft slack, hard slack resources and organisational performance, all within the three distinctive frames of industry sector longevity, these being industrialised food processors 100 plus years, the plastics industry <50 years and the IT industry <25 years.

Each organisation's extant, as opposed to perceived hard slack and the organisation's performance was determined from the publicly available account data, employing ratio measures established and legitimised by previous studies. This information will enable an examination of the hypothesised (H7c, d and e) relationships between extant slack and performance over time, the period examined being the five years of 1996 to 2000. Each hypothesis will be tested employing statistical analysis utilising Structural Equation Modelling (SME), LISERAL software and SPSS software. The conclusions derived from

these results will directly address the research questions and the implications for theorists and practitioners will then be further discussed.

This chapter will outline in greater detail the above research process and discusses the relevant methodological issues for each of the individual process steps. The next section of this chapter specifically examines the issues of data collection methodology, followed by concerns related to data analysis and interpretation.

4.3.2. A Questionnaire Survey and FAME as the Principal Research Tools

As previously observed the vast majority of research literature that addresses the problem of capturing organisational slack resources has set the precedent and accepted procedure of research through a quantitative methodology set in a positivist paradigm.

The argument for this approach being that the basic conceptual rules of cause and effect for this subject must first be established with rigour before further examination and investigation can be complicated with phenomenological and holistic interpretation. The total rich picture scenario must be a natural evolution from a fundamental understanding of the basic processes, and for the present little empirical evidence to support the general understanding of this particular subject is available. This work therefore, must be viewed as a preliminary investigation of the subject, an attempt to establish a degree of fundamental and elemental understanding. The meaning of particular phenomena to individual participants and the perceptions of how these phenomena developed is not within the remit of this study and therefore a qualitative methodology within a phenomenological approach is for the present inappropriate.

4.3.3 The Sample

As previously discussed above, having identified the target population three-hundred and fifteen (315) food processors together with two-hundred and sixty (260) plastics firms and two-hundred and eighty (280) computer hardware and, or software companies, were sent a questionnaire. Forty-four (44) food industry, thirty-six (36) plastics, and forty (40) IT companies responded with completed and fully employable questionnaires. These

respondents where then matched with the secondary data obtained from FAME, this is on-line, publicly available individual company account data (1996-2000) that would enable the capture and operationalisation of the extant levels of all hard slack resources together with organisational performance measures for the same period.

4.4 The Capture of Variables, Moderators and Subsequent Behaviours

This section will explore the methodologies that will be employed for the capture and operationalisation of the variables as listed above in Table 4.1 that conform to those demonstrated in the research model (fig. 4.1).

4.4.1 External Environmental Flux

As previously discussed (see sec.'s 2.9.4 & 3.1.4) the capture of the dynamism, or as redefined in this work the flux amplitude and frequency (see sec. 3.1.4, fig. 3.2, p95), of the external environment may be operationalise through a process of monitoring the collective internal responses of organisations as a direct proxy. Intuitively companies make changes and modifications to their operations, administrative systems and, or strategy in response to external demands and developments. Even if these changes or modifications are represented as '...a program of up-grading' they intuitively must be instituted because of a perceived need, and that need will be to satisfy a recognised external demand now or in the future.

The external environment makes unusual demands of organisations that must be addressed by modifications be they operational or strategic, and the degree of these modifications will be subtle or radical, permanent or temporary. However, as examined above (see sec. 3.4.1) different industry sectors are suspected of experiencing different environmental demands due to their different industry structures and histories of development, therefore to build a rich picture of the changes in the demand patterns of the environment upon different industries over time, a minimum of three diverse industries, Food, Plastics and IT, will be examined and their contemporaneous data regarding operational and strategic changes will be collated and compared. These three industries have been selected because of their distinctive histories and structures.

As previously argued Environmental Flux may be conceptualised as two dimensional (see fig.3.2 sec. 3.1.4 above), the frequency (rate) of change demands experienced by organisations and the amplitude of the demand, the degree of change required to satisfy the demand. The frequency of environmental demand is to be determined by a direct count of tactical and strategic changes and modifications in different industry sectors over a set time period, here being the five years 1996-2000. The Amplitude or the noise of Environmental Flux being the complexity and degree of demand, will be determined by the level of organisational change, specifically, temporary or permanent change, tactical and/or strategic change and the organisational depth of change across departments and divisions.

As a point of academic interest, a conceptual model of the total environmental demand system in this paradigm now comprises twenty (20) dimensions, namely amplitude and frequency, multiplied by the excited attitude of the five forces of the macro-environment, (S.L.E.P.T.) and Porters five forces of the micro, or industry environment.

4.4.2 Tactical Response (Operational Flexibility)

The Tactical Responses and hence the Operational Flexibility of individual companies will be determined employing a two dimensional measure of change.

i. The Historic Rate of Permanent and Temporary Operational Changes

The rate of operational changes will avail a determination of the experienced environmental flux frequency of both individual companies and individual sectors and also, when compared to the availability of Hard Slack Resources, may determine a direct link between slack and Operational Flexibility. It is speculated that individual organisations that display above average industry sector levels of Hard Slack will also display an increased ability to satisfy more demands. Hence, an organisation that tolerates higher levels of slack may display a higher than average number of operational changes.

ii. The Degree and Depth of Operational Changes

The degree of change will be assessed by whether the change represents a permanent or temporary change and weighted accordingly. The depth of change will be assessed by the extent of inter-departmental co-operative changes instigated by each individual demand upon the organisation.

Fig. 4.2 **Matrix for the construct of Tactical Response**
(Operational Flexibility) Evaluation

<i>Degree of change</i> =	ϵ_t Temporary	+	ϵ_p Permanent
	↓		↓
	<i>Weighting,</i> <i>Annual Total = x</i>		<i>Weighting,</i> <i>Annual Total = 2 x</i>
<i>Historic rate of change over 5yrs</i>	No. of Procedural changes		No. of Procedural changes
<i>Depth of change</i>	No. of Dept. co-op. changes		No. of Dept. co-op. changes

By weighting the data in this manner it is planned to construct a rank order table of organisations by tactical flexibility that may be directly compared with extant levels of hard slack resources.

It is anticipated that the above data will be accessed by the questionnaire.

4.4.3 Hard Slack Resources

As previously discussed, an analysis of individual company extant hard slack will be undertaken from the 13 standard measures of publicly available data (secondary data) combined into what has become the commonly employed, standard ratios as detailed in the table given above (sec. 2.9.1) and reproduced below (table 4.1).

Table 4.1 Capturing Slack Variables

AVAILABLE SLACK

1	RE	+Net Profit – Dividends/Sales
2	DP	-Dividends/Net Worth
3	CS	$\frac{+\text{Cash \& Securities} - \text{Cur. Liab.}}{\text{Sales}}$
4	OS	+Accounts Receivable/Sales

RECOVERABLE SLACK

5	SS	+Inventory/Sales
6	G+A	+Gen'l Admin. Expenses/Sales
(Mosses 1992) 7	AS	$+(\text{Current Assets}-\text{Current Liab.})/\text{Sales}$
8	A2S	+Non-Current Assets/Sales

POTENTIAL CAPACITY SLACK

9	D/E	-Long-term Debt/Net Worth
10	P/E	+Price/Earnings Ratio

The capture of account based ratios necessitates the careful monitoring of each of the measures to ensure comparability across different organisations. As this work is attempting to compare relative levels of slack within organisations and industries, an absolute measure

of a slack resource within a firm is not required, but a consistent method of evaluation that captures the relative level of the various classes of slack is imperative.

Hence, this work will employ the above ratios to capture extant Hard Slack Resources within individual organisations and will endeavour to ensure that all ratios will be determined using consistent methods to capture the required measures.

Therefore in accord with previous studies all extant Hard Slack Resource levels will be determined employing the thirteen standard accounting measures variously combined into nine ratio equations (see page 88) as previously developed and now accepted as the standard tools of slack resource capture. The raw data will be accessed utilising publicly available company account data (secondary data) through the on-line service F.A.M.E.

However, it is also intended to establish the managements perceived level of Hard Slack Resources available to individual firms, as this may well be at odds with extant levels and may have a critical effect on the management's perception of the capabilities of their individual organisations and therefore, may affect both operational and strategic decisions. This will be determined by the questionnaire and a comparison made with extant levels as determined above.

4.4.4 Strategy Options

As previously discussed, when formulating strategy the available literature commonly states that the first step is the generation of strategy options for further consideration. A straightforward count of all generated options over time (5yrs.) will capture this element. However, a contemporaneous historic comparison of the need to develop these options together with tactical changes will also illustrate the degree to which environmental flux has breached the operational buffer and impacted directly on the strategy process.

It is anticipated that the strategy options data will also be accessed by the questionnaire.

4.4.5 Soft Slack Resources (Cultural Slack)

As discussed above (*see sec. 3.1.3*) soft slack resources represent the combined abilities and the time devotion capabilities of senior management. This is represented by an aggregation of the level of education, training and experience and the perceived amount of time that management can devote to new problems and their solutions.

It is anticipated that soft slack resources have a direct, proportional relationship with strategy options generation and given the availability of relevant data this may be tested. However, as discussed above the capture of strategic options generation may not prove to be the most accurate method of determining the impact and extent of Soft Slack Resources and it is anticipated that Strategic Choice generation may prove to be a more reliable reflection of the contribution of Soft Slack assets.

Soft slack data will again be collected by questionnaire, employing a Likart response system.

The dimensions of Soft Slack:

- i. Level of management education.
- ii. Managements industry specific experience.
- iii. Other industry management experience.
- iv. Available management time.
- v. Management further training.
- vi. Employee further training.

However, soft slack is a new dimension within the panoply of management science and hence its existence may be considered as dubious. Developed above as a hypothetical construct through logical argument and intuitive reasoning, it has never before been operationalised. Therefore its existence and its conjectured dimensions as listed above, maybe considered as questionable. However, if this newly invented variable is discovered

to have significant consequences for organisational behaviour then its existence and its construction will be justified. However, further investigation of this element will be required to ensure that its dimensions have been adequately and accurately defined.

4.4.6 Strategic Choices

After the generation of strategy options, practical and feasible strategic choices are adopted for implementation. However, it is speculated above (*see sec. 3.1.1*) that the number and the complex, radical nature of such choices will be a function of both hard slack resources and soft slack resources.

To test this hypothesis the capture of strategy choices will be conducted by questionnaire. However, the complex nature of this element requires a carefully constructed analytical framework.

The capture and analysis of strategic choices will be conducted within a conceptual three-dimensional model.

1. The number of strategic choices will be determined by a direct count of all those adopted over the five year period 1996 - 2000. An industry-wide mean will then be determined.
2. The complexity of choice will be determined by the depth of operational changes instigated by the strategy choice. Again an industry-wide mean will be determined.
3. The degree of radical change will be determined by whether the strategic shift represents a significant shift in the pursuit of new markets. However, it is anticipated that such radical shifts will be a rare occurrence within the five year period of this study for each of the industries being examined.

4.4.7 Environmental Slack Resources

The contemporary Environmental Slack resources may be established from publicly available historic data published by Government agencies and would specifically address such issues as:

1. Exchange rates

2. Interest rates
3. Unemployment levels
4. Enterprise start up levels
5. Consumer spending patterns
6. Economic growth

However, an attempt to capture the full extent of environmental slack would prove to be endless and futile. It is entirely conceivable that invisible and unusual environmental slack issues that may impact upon the activities of the organisation directly or indirectly may be omitted. This together with the infinite variety and complexity of environmental slack issues would make such an endeavour totally impractical. In an attempt to address this seemingly inextricable complexity it is conjectured that a totality of external environmental slack is of little consequence to individual organisations and indeed industry sectors. As discussed above (sec. 2.9.1.) the only environmental slack that is of consequence to the organisation are those that may be accessed through internal organisational capabilities, specifically the ability to internalise external resources. Those resources beyond the grasp of the organisation are inconsequential to subsequent behaviours, excepting conjecture as to what might have been. Hence, only the Potential Capacity Slack, the organisations capability to capture external energies as discussed previously will be operationalised within this investigation. This data will again be captured utilising the account data as describe above, section 4.3.5 Hard Slack Resources.

4.4.8 Organisational Flexibility

Organisational flexibility, as argued above (*see sec. 2.4*) may be defined as the sum total of all strategic, structural, operational and cultural flexibility, each of which is a function of the relevant internal independent and symbiotic hard and soft slack resources that are variously accessible and recoverable to the organisation.

The capture and operationalisation of each of these slack resources is given in section 2.9.1.

4.4.9 Performance

The capture of individual company performance will be undertaken employing one of the generally accepted standard tests (ratios) of publicly available account data (secondary data). The standard ratios that are generally employed by researchers are detailed in the table below (table 4.2) together with the usual notation.

Table 4.2 Capturing Company and Industry, Performance Financial Ratio Variables

RoCE (Return on Capital Employed)	=	$\frac{\text{Operating Profit}}{\text{Total Net Assets}} \times 100$
RoE (Return on Equity)	=	$\frac{\text{Net Profit after tax \& dividend}}{\text{Ordinary Shares \& Reserves}} \times 100$
Gross profit to sales	=	$\frac{\text{Gross Profit}}{\text{Sales}} \times 100$
Net profit to sales	=	$\frac{\text{Net Profit}}{\text{Sales}} \times 100$
Dividend Yield	=	$\frac{\text{Dividend per Share}}{\text{Market price per Share}} \times 100$
Earnings per Share	=	$\frac{\text{Profit after tax \& dividend}}{\text{Number of Ordinary Shares}} \times 100$
P/E (Price/Earnings Ratio)	=	$\frac{\text{Market price per share}}{\text{Earnings per Share}} \times 100$
Asset Utilisation	=	$\frac{\text{Sales}}{\text{Fixed Assets}}$

Any of the above ratios may be employed to determine comparative organisational performance; the choice is at the discretion of the researcher. The only proviso is that of consistency, namely that the same measure be used for all organisations.

Commonly employing publicly available accounting data from such sources as Standard and Poors Compustat, company Annual Reports, Financial Analysis Made Easy (F.A.M.E.) and Extel Microstat, most organisational researchers in the field of slack resources have employed one or more of standard performance ratios as listed above, all of these being quantitative measures. This work will not flaunt convention but will employ the same methods to capture and operationalise organisational performance.

As previously noted the measurement of organisational performance has received considerable attention over many years and has achieved a high degree of accepted custom. Two simple measures of profitability for an individual organisation are Net or Gross Profit (NP or GP). However when comparing the profitability of different companies the measure needs to be scaled respective to organisational size and hence the breadth of its business activity to enable a comparative assessment of operating efficiency. Lucey (1991) states that, "The ROCE [Return on Capital Employed] is the primary ratio..." for comparing the profitability of different companies. However, as he explains problems with this ratio do exist because of the possibility of "capital employed being defined in various ways," Lucey (1991) these being;

- a) **Total capital** – represented by total share capital, reserves, long term liabilities, current liabilities.
- b) **Long term capital** – represented by total capital less current liabilities.
- c) **Shareholders total capital** – represented by total share capital plus reserves.
- d) **Shareholders equity capital** - represented by ordinary share capital plus reserves.

Lucey (1991) continues, of the four types of capital employed 'a' above is more appropriate for assessing the firm's efficiency in generating profitability.

The numerator of the ROCE ratio may also be defined in various ways and to ensure inter-firm comparability this also requires a consistent application of the same measure. The numerator of the ROCE identified as the most efficient by Lucey (1991) is;

Operating profit before tax, long term loan interest and bank interest.

Therefore as the 'primary ratio' for comparative organisational performance and anticipating that the above problems of ratio construction can be controlled, this work will consistently employ ROCE when determining organisational performance.

It is an assumption of this work that the perceived level of organisational performance will not be at variance with the internally generated and publicly available data, therefore in an effort to reduce the physical size of the questionnaire, all historic contemporaneous performance data will be gathered from publicly available sources. In the main and unless otherwise stated, this data will be accessed using the software F.A.M.E. (Financial Analysis Made Easy) produced and distributed in conjunction with the DTI (Department of Trade and Industry) and Companies House (UK).

4.5 Development of The Questionnaire

(Please refer to the full questionnaire in the appendix, volume 2)

Introduction

The questionnaire is a standard and accepted tool of empirical research and will be employed here alongside secondary account based organisational data in an attempt to address the research objectives of this work.

However, to ensure a survey that is acceptably rigorous, reliable, representative and valid, its design, application and the subsequent analysis of the data generated requires judicious

planning and observational input from several different and sometimes competing perspectives.

4.5.1 The Questionnaire Design

i. The questionnaire was divided into sections that each represent a distinct area of research concern and that each attempts to capture the required variables. The questions in each section are designed to capture the raw data that in sum total will provide a broad and rich picture of the antecedents, moderators and subsequent consequences of particular behaviours. As a consequence, the methodology of design also reflects what may be perceived as a logical progression through the different functional and conceptual areas of an organisation; this aids the respondent, presenting them with a seemingly logical and common sense conceptual map through their organisation that should enhance their considered observations on route.

ii. A first draft questionnaire was proffered for comment to three experienced research academics. After recommended modifications a second draft was similarly presented to two independent senior management members of the identified target populations (one from the food industry the second working within the plastics industry). They did not identify any perceived problems with the questionnaire. The final draft received criticism from only one academic, their concern centred on the substantial length and seeming complexity of the questionnaire that may prove to be detrimental to the number of completed returns. In consultation once again with the industry representatives' confidence in the questionnaire was restored by comments that the instrument was found to be a useful management tool as it engendered reflective observation of their own organisations.

iii. In accord with the quantitative methodology of this research, and in an attempt to comply with, and build upon previous empirical study in this area and to assist with the comparison of contemporaneous account based secondary data, the vast majority of the questionnaire is designed to provide parametric data for subsequent further analysis. Therefore the majority of the questions require a measured response on a standard Likart

scale. In accord with accepted research methodology the occasional negatively scaled question was randomly incorporated in the design.

iv. The questionnaire was distributed to all organisations in the UK that were identified as belonging to one of the three distinct industry populations, food (315), plastics (260) and IT (280) that fulfilled to population parameters as discussed above (sec. 4.1.1).

v. Forty-four (44) food industry, thirty-six (36) plastics, and forty (40) IT companies returned employable completed questionnaires.

vi. The questionnaires were directed at the senior management of each organisation requesting that it be completed by a member of the Directorship that were in employ with the firm during the period 1996-2000. All returned questionnaires excepting one, were completed by either the CEO or MD of the individual organisations, the odd one being completed by the Operations Director of the company.

vii. To comply with the promise that all information and data would be treated as confidential, each questionnaire dispatched was encoded to enable a match with the correct account based secondary data when returned.

4.5.2 An Overview of the Questionnaire

Section A. The Company in General

The questions in section 'A' will enable a general population classification of the individual company responses.

The first two questions refer to the defined population parameters and aid respondent classification.

Section E. The External Environment

The scaled raw data generated by this section (Q's E1-12) is designed to capture the management perception of environmental amplitude.

Q.E.11 is negatively scored.

The ability of the company to cope with environmental demand (its flexibility) it is argued, is a function of its slack resources, therefore a combination of the results of these questions, moderated by the sum total of extant individual company slack, when averaged across all firms in the same sector it is anticipated, will provide a detailed picture of the perceived environmental flux for each of the three independent industry sectors.

Section R - Company Resources

Questions R1 - R7 are designed to capture management attitudes to (Q.R1, 3, 4 and 6) and perceptions of (Q.R.2, 5 and 7) their own company resources and their organisational responsiveness to environmental demands.

Questions R8 i to xiv are designed to capture management's attitude to all slack resources variously available and recognisable to the company.

Questions R8.v. and R8.vii are negatively weighted.

Questions R9 and R10 are designed to directly capture the management perception of comparative environmental dynamism of firstly their company and secondly, their relevant industry. This data may be used to verify the responses to section E.

Question R11 is designed to capture elements of management philosophical attitude to slack resources as an aid to organisational flexibility.

Section T - Tactical Operation

Questions T1 - T3 when negatively scored, capture the extent of soft slack resource of management time availability, while questions T1a - T3a also negatively scored, attempts to capture management distinct attitudes to this element of organisational soft slack.

Question T4 acts as an aide memoir for the respondent when completing questions T4a and T4b.

Questions T4a and T4b are designed to capture the intensity of operational change in the last five years. This information together with data on strategic change will aim to capture the dynamism, the amplitude and frequency, of environmental flux and hence aid in establishing a rich research picture.

Question T5 is designed to establish the extent of organisational strategic focus, whether this is internal or external and may therefore also act as an indicator of the specific industry environmental dynamism. Intuitively, the more external focused industries would be associated with greater industry environmental dynamism. These results will act as checking mechanism for the information derived from the above questions T4a and T4b.

Questions T6, 6a and 6b. The data generated by these questions will determine the operational flexibility of the individual organisations. When aggregated for each industry sector, comparative industry levels of operational flexibility will be displayed.

Section S - Company Strategy

The S section will capture the degree to which environmental flux has overwhelmed the tactical response capability of the firm and has impacted directly on strategy. The extent to which strategic changes have occurred it is speculated, may well demonstrate the flux intensity.

The fundamental strategy of a firm will, it is assumed remain constant, undisturbed until environmental demands dictate change. Strategic change requires considerable effort and intuitively engenders uncomfortable psychological unease throughout the organisation. Therefore even its consideration demonstrates considerable environmental influence. Question S1 is designed to capture any consideration of strategic change and hence environmental pressure. It also acts as an aide memoir for the respondent when addressing later questions in this section.

Question S1a acts as a checking mechanism for the above, verifying that the issues examined are truly of a strategic nature.

Question S2 attempts to capture the presence and intensity of the external demands for each year (1996-2000) through a determination of the extent to which they impacted on the organisation. The ripples of environmental disturbance it is suggested, may be dissipated by an organisations flexibility born of slack, if this is indeed the case then the higher the levels of extant slack resources then the quicker a 'the calming of the troubled waters' will be displayed before they disrupt the strategic core of a firm.

Additionally, this question when combined with the tactical responses (see questions T above), inversely moderated by the firms total slack, averaged across all organisations within the same industry sector, may display the proportional level of environmental flux for each industry sector, e.g. each tactical and strategic modification or change and the degree of that change it is speculated, is in direct response to environmental demand(s). However, each organisations responsiveness, it is suggested will be proportional to its flexibility borne of slack resources. Therefore, if organisational responses are inversely and proportionately adjusted for the holdings of slack, then a mean of all organisations within the same industry, may demonstrate the extent of environmental flux for each of the three industries and provide an indication of the validity of the hypothesis that different sectors experience different demands from the external environment.

Question S3 again (see section T above - management time) addresses the degree of organisational soft slack resources, but here attempts to capture the flexibility of the management mindset.

Question S4. The sub-questions of question 4 are designed to capture data that will provide an extremely detailed rich picture of company strategic shifts and changes over the period 1996-2000.

Section P - Personal and Personnel Information

These questions are designed to capture the dimensions of soft (cultural) slack and will provide company and industry sector comparative soft slack information. It may also give an indication of management attitudes to the hard slack resources that are held by their individual organisation.

It may be concluded that all of the elements required to conduct the investigation are now present. The research model, the hypotheses and the methodology for the capture and operationalisation of all variables has been developed and discussed above. Therefore, an inductive investigation, directly testing the hypotheses would intuitively be the next logical step however, an initial examination of the data in a deductive, explorative manner may well enlighten general trends and relationships that have not yet been anticipated. This approach will also test the legitimacy of the research model and provide an introduction to the data and test some of the fundamental suppositions of this and previous work. This initial examination will also attempt to address why previous investigations have produced ambiguous, inconclusive and sometimes conflicting evidence.

5.0 An Initial Exploration of the Data

5.1 Introduction

The analysis in this chapter is conducted as an initial examination with the intent of becoming familiar with the data and to provide an insight into the dynamics of the various variables contained in the hypotheses and the speculative observations made previously.

A test to determine each industry's level of performance, slack resources and environmental flux is undertaken to validate the fundamental assumption that the behaviours of these variables are industry distinct. If the distributions of these variables were discovered to be indistinguishable across the three industries, then the initial assumptions underpinning many of the hypotheses developed above would be invalid and a redesign of the research model would be required.

Additionally, an examination of the collective performance and extant levels of slack of all companies in the sample will be conducted in an attempt to emulate previous research and to examine the reasons for their insignificant and inconclusive results.

This deductive method it is anticipated may increase confidence in the original research model or, will aid in its modification.

The next chapter will conclude the analysis with multiple regression tests being applied to each of the hypotheses for each of the three industries individually to test for significant relationships. Originally, it was planned that the research model for each industry would be subjected to Structural Equation Modelling (SEM) however, this was discovered to be an inappropriate technique for this project. A discussion of the problems encountered is given in chapter seven.

It is anticipated that the employment of this extensive analytical methodology will enable a rich and detailed picture of the suspected complex slack, performance behaviours within each industry to be revealed.

Additionally, this chapter's initial investigation will also examine the proposition that each of the three industries ostensibly inhabit distinct environments that will display different levels of demands on the individual companies that comprise those industries. The dynamism of each industry environment it is anticipated will be captured through a direct measure of its effect, namely the organisational changes that industry members adopt as responsive behaviours.

While this investigation employs comparative performance and slack ratios, it is not proposed that the mean levels of industry performances are solely attributable to the various industry mean levels of slack. To be specific, this work posits the speculation that the different industries under investigation will reveal different effective slack, performance relationships. To elaborate, because of the suspected different industry environments and the naturally occurring peculiarities of operation of each industry, resulting in varying returns upon business activity, the mean slack holdings of the companies within these different industry sectors should be individually computed to ascertain the most effective levels of the various forms of slack that would be most appropriate for enhancing company performance.

This chapter will progress with a general examination of the population parameters and the subsequent samples obtained and it will also examine the analytical tools that will be initially employed in this chapter.

5.2. A Recap of the Population Parameters

The population was identified by the ability to obtain access to five years (1996-2000) full company accounts employing F.A.M.E., financial analysis made easy, available on-line and an employee total of >10 for the same period. The employee rate was selected to lend a degree of long term company stability as the fortunes and

the nature of business for micro- companies are suspected to fluctuate more violently than larger organisations.

Three target industries were identified for their respective longevity's and their distinctive natures, the Food Industry >100 years, the Plastics Industry <50 years and the Information Technology (IT) Industry <25 years. However, the individual company ages need not match the time frames of the industries that they inhabit, for example an individual food processing company may be only five or ten years old but it does inhabit a distinctive industry (micro-) environment, it will reside within an industry environment that is over 100 years old and therefore experiences what is speculated to be a unique combination of environment demands.

However, the mean age of the organisations that responded were found to be:

Food - 72 years

Plastics - 34 years

IT - 13 years

Total population identified and approached = 810 companies

Excluding spoilt and incomplete questionnaires, employable respondents = 120

Total Sample = 14.8% of population.

Received employable questionnaires;

Food Industry = 44 (population = 296, sample = 14.9%);

Plastics = 36 (population = 259, sample = 13.9%);

IT industry = 40 (population = 255, sample = 15.7%).

A total sample of 120 Companies.

Slack and performance data were obtained from 5 years (1996 - 2000) of individual company accounts and all other data was obtained from a dedicated questionnaire designed specifically for this investigation (see sec. 4.4 above and the appendices).

The questionnaire was designed to capture organisational behaviour within the same 5 year period as the account data, i.e.1996-2000 inclusive. Therefore;

Total sample data observations = 120 companies x 5 years = 600

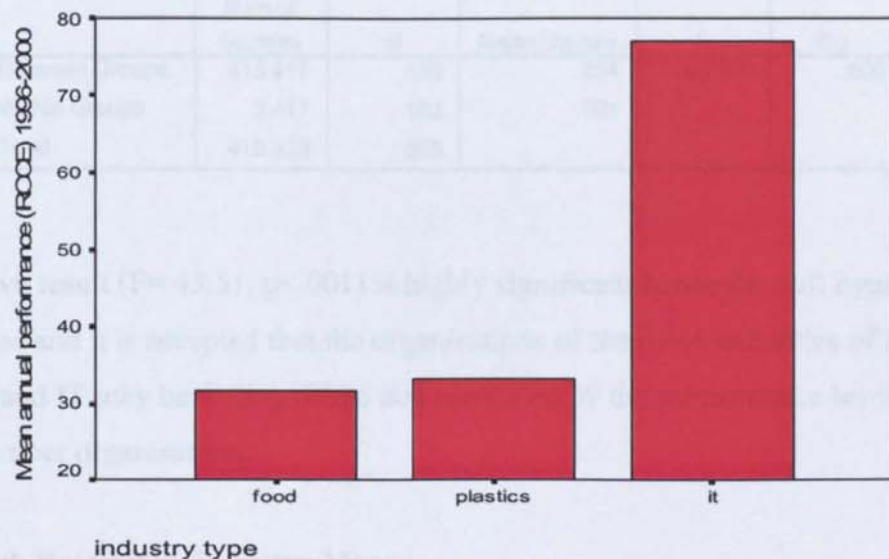
5.3 An Examination of the Primary Variables

This section will now conduct an initial examination of the primary variables of interest within this work, namely those of performance, slack resources and environmental flux. This is to confirm industry sector autonomy and independence of these variables.

5.3.1 Performance; An Initial Industry Sector Comparative Investigation

It has been previously speculated that the hypothesised relationship between hard slack resources and performance, although this may be a spurious relationship, is industry specific. This is to assume that industry performance and extant levels of hard slack are indeed industry distinctive. As a test of this fundamental assumption the first analysis will examine the mean performance behaviour of each industry.

Fig. 5.1 **Mean Annual Industry Performance (ROCE)**
for Five Years 1996 - 2000 incl.



Mean Annual Performance (ROCE) for the period 1996-2000

Food - 31.66

Plastics - 37.35

IT - 77.02

An initial examination of the annual mean performance levels of the three industries reveals that as expected different industries display varying degrees of performance and hence profitability. In this case the I T industry out-performs the other two, food and plastics individually by more than one-hundred percent. There exist many reasons why one industry sector may significantly out-perform another and this will be further discussed in greater detail below. However, to ensure a significant distinction of performance between the three industries a one-way between groups ANOVA test is employed below.

Hence;

H₀ : The organisations of three industries of Food, Plastics and IT cannot be distinguished by their levels of organisational performance.

H₁ : The organisations of three industries of Food, Plastics and IT can be distinguished by their levels of organisational performance.

Table 5.2 Three Industries Test of Performance

ANOVA					
indudustry code					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	415.917	436	.954	45.510	.000
Within Groups	3.417	163	.021		
Total	419.333	599			

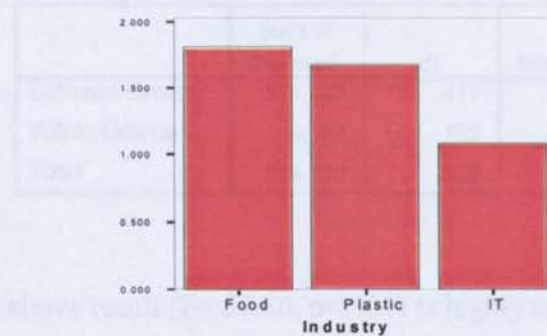
The above result ($F = 45.51$, $p < .001$) is highly significant hence the null hypothesis is rejected and it is accepted that the organisations of the three industries of Food, Plastics and IT may be distinguished and identified by the performance levels of their member organisations.

5.3.2 Hard Slack Resources, Industry Means

The same initial examination will now be undertaken of the Hard Slack Resources of the three industries.

Fig. 5.2

The Mean of all Hard Slack Resources for Each Industry



Mean annual levels of total hard slack per industry for the years 1996 - 2000.

Food - 1.80704

Plastics - 1.67038

IT - 1.08071

Test of industry sector distinction by their mean holdings of Hard Slack Resources, one-way between groups ANOVA, hence;

H₀ : The three industries of Food, Plastics and IT cannot be distinguished by their organisations mean level of Total Hard Slack Resources.

H₁ : The three industries of Food, Plastics and IT can be distinguished by their organisations mean level of Total Hard Slack Resources.

Table 5.3 Three Industries Test of Hard Slack Resources

ANOVA

indudustry code					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	416.167	417	.998	57.359	.000
Within Groups	3.167	182	.017		
Total	419.333	599			

The above result ($F= 57.36$, $p<.001$) is highly significant therefore the null hypothesis is rejected and it is accepted that the organisations of the three industries of Food, Plastics and IT may be distinguished and from their organisations mean level of Total Hard Slack Resources.

The data reveals that the relative hard slack holdings of each industry reflect a complete reversal of the mean performance measures. For instance, the food industry while displaying the lowest mean performance conversely displays almost 80% more hard slack than the companies of the IT industry. The companies of the plastics industry maintain their hold on the middle ground. Initial comparison of the slack and performance results above may be interpreted as an argument for the continued eradication of all slack as this may be perceived as a major drain on performance however, this would be a premature and erroneous conclusion as will be detailed below. Another initial observation that may be made is that Hard Slack Resources are positively associated with industry longevity, however this is also a premature conclusion that requires further investigation.

5.3.3 A Reflective Observation Regarding Previous Research

It has been speculated previously that the sometimes inconclusive and contradictory results of some of the earlier slack research may be a manifestation of attempts to draw conclusions based on the analysis of data drawn from different industries. As displayed above when the individual industries hard slack and performance data are separated they each display markedly different relative levels that may have

disrupted earlier attempts to establish correlation's and relationships and indeed may well of resulted in confusing, mixed results.

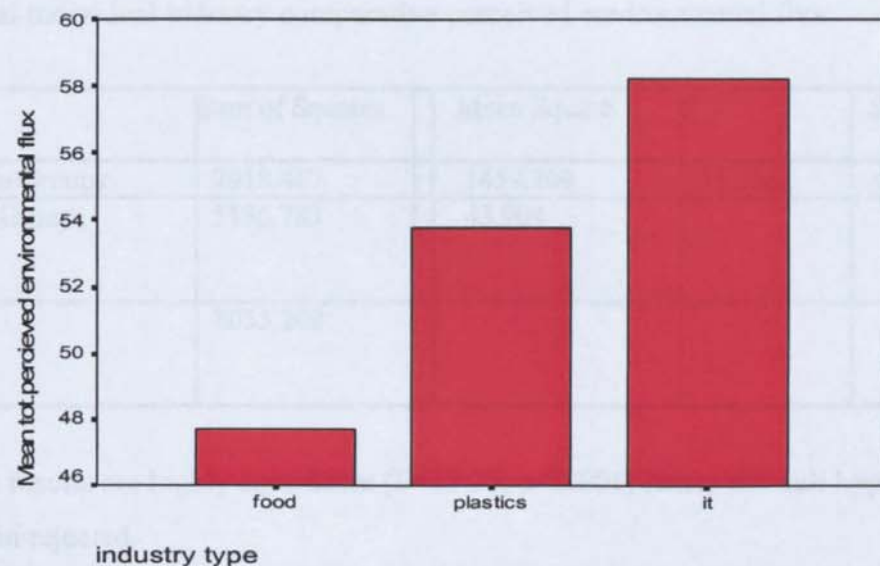
Another industry comparative investigation that may prove enlightening is an examination of each industries environmental flux. Initially, an examination of each industries management's perception of environmental flux will be determined. This will subsequently be compared to the industry's experiences of flux.

5.3.4 Industry Specific Environmental Flux; Perceived versus Experienced

It is anticipated that as each industry matures the environment that it inhabits becomes less volatile and hence less demanding and this results in an organisation that requires less responsive change mechanisms in an attempt to satisfy these external demands. Managerial perceptions of this flux will now be contrasted with the industry specific experience of environmental flux.

Fig. 5.3

**Management's Perceived Environmental Flux
Of Their Respective Industries (Industry Means of Questions E5 - E12)**



When examining the figure 5.4 above it may be speculated that the collective management of each of the three industries perceive their environmental flux as unique. This is not to say that they compare and rank their (perceived)

environmental flux positions relative to each other, the questionnaire specifically avoided asking management to make subjective judgments of other industries experiences, and instead the data generated refers only to the experience of the managements within their own industry environments. Therefore the test below attempts to identify that each industries management perception of their own environment is unique and distinguishable.

Testing the null hypothesis.

The Kruska, Wallis (K-W) One-Way Analysis of Variance
(*testing the null hypothesis*).

H_1 = The perception of the level of environmental flux of each individual industries collective management is distinctive.

H_0 = The perception of the level of environmental flux of each individual industries collective management is not distinctive.

Table 5.4. Three Industries Test of Perceived Environmental Flux

Total individual industry comparative perceived environmental flux

	Sum of Squares	Mean Square	F	Sig.
Between Groups	2918.417	1459.209	33.236	.000
Within Groups	5136.783	43.904		
Total	8055.200			

The results are highly significant ($F=33.24$, $p<0.001$) hence the null hypothesis is again rejected.

Therefore the alternative hypothesis is accepted and it may be concluded that each industries collective management do display a significant ($p = <.01$) different perception of the dynamism or flux of the environments that they inhabit. To

summarise, the managements of each industry perceive their environment uniquely. The collective senior management of the food industry perceive their environment to be less demanding than do the management of the other two (plastics and IT) industries. The management responses were based upon their personal experience and interpretation of events within their own company, they were not asked to make speculative comparisons between the different industries. Therefore the above graphic (fig.5.3) displays how each individual industries collective management instinctively rate the environmental flux that they experience.

The management's perception of the external environmental flux that each experience seemingly gives cause for optimism for the supposition that environmental flux is reduced as the industry matures. However, any sweeping statement with regard to all industries and their respective longevity's and experiences of the environments that they inhabit, requires conformation from research that would require surveying many more industries than just the three used here, indeed many more industries that match (approximately) each of the three time frames of the above (>100 years, Food; <50 years Plastics and <25 years IT) would be required to add evidence to this hypothesis, but for these three industries, food, plastics and IT the hypothesis seemingly remains intact. However, this result may be due to other variables not yet identified that are associated with these particular industries and may not be solely due to their respective longevity's. Also, this reflects only the industries collective management '*perception*' of their own environments as opposed to the extant environmental flux that each experience and this question will be addressed next.

To compare the accuracy of the management perceptions of their industries environmental flux with that which is physically experienced, analysis of the total demands made upon the individual companies (captured in questions T4; T4a; T4b; S1; S2; S4a) as operational or strategic changes made, will be compared across industry type.

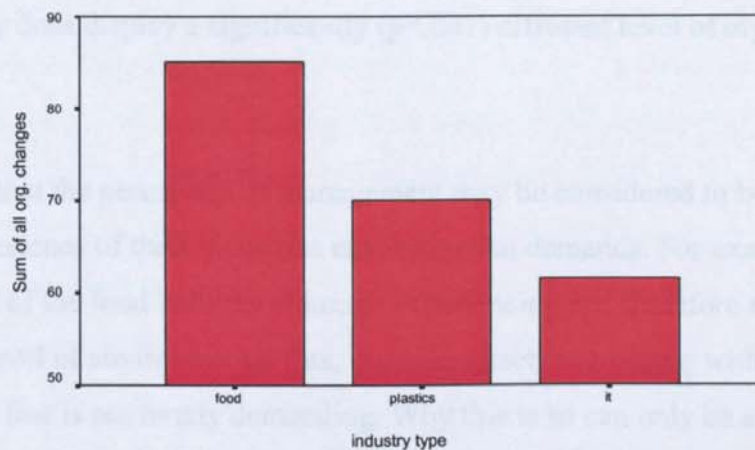
As argued above (sec.3.5) organisational change will occur as a response to demands and not usually for the sake of change. Even a project of ‘up-dating’, it is intuitively argued, occurs because of a perceived need and that need it is argued, will be to satisfy predicted future external demands.

Therefore, the hypothesis developed previously;

Hypothesis 8

H8 Each industry sector experiences a unique environmental flux;
will be addresses next.

Fig. 5.4 Mean Annual Rate of all Operational and Strategic Changes for each Industry Over Five Years, 1996-2000.



Test of industry sector extant environmental flux independence.

Hence;

H₁: Each industry sector experiences a unique environmental flux.

H₀: Each industry sector does not experience a unique environmental flux.

Table 5.5 A Kruska, Wallis (K-W) One-Way Analysis of Variance,
All Organisational Change (*testing the null hypothesis*).

ANOVA

$$(T4 \text{ tot}_{t1-5} + T4a * b_{t1-5} + S1 * S2_{t1-5} + S4 \text{ tot}_{t1-5} + S4a \text{ tot}_{t1-5}) / 5$$

= Mean sum total of all organisational changes for 5 years

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12073.746	2	6036.873	8.739	.000
Within Groups	80819.046	117	690.761		
Total	92892.792	119			

The results are significant ($F=8.739$, $p<0.001$) hence the null hypothesis is rejected.

The null hypothesis is rejected and the alternative hypothesis is accepted. Therefore each industry does display a significantly ($p<.001$) different level of organisational changes.

It is evident that the perception of management may be considered to be at odds with the experience of their industries environmental demands. For example, the management of the food industry although experiencing and therefore reacting to the highest level of environmental flux, considers itself as residing within an environment that is not overly demanding. Why this is so can only be a matter of speculation for the present however, it is suspected that due to its relatively high level of slack resources, the food industry enjoys greater ease of operational and even strategic changes. These changes may therefore be perceived by management as less traumatic and when change is demanded by external forces they are in a better, or more relaxed position to react and can achieve the desired change with greater efficiency and speed. Therefore, it may now be further hypothesised that the greater the level of hard slack resources that an organisation indulges itself with, the greater is the management sense of ease with the change that is demanded by external flux.

At the other end of the slack, environmental flux spectrum the IT industry seemingly enjoys a relatively quiet environment with comparatively low change demands on the individual company's operational routines and strategic directions, but with a management perception of greater environmental flux. In accord with the newly synthesised hypothesis above this may well be a manifestation of the industries relative dearth of hard slack resources. Being comparatively low on stocks of slack resources, the management of the IT industry may well interpret their inability to adapt swiftly and seamlessly to external demands as frustrating and troublesome as opposed to their counter numbers within the food industry. Therefore they view their own environment as demanding and complex. As may have been predicted the plastics industry again occupies the middle ground.

The original proposition that as industry longevity increases the demands of its environment would diminish now appears to be incorrect. However those industries of greater age may hold higher stocks of hard slack resources than those of a lesser age, and due to this they enjoy relatively untrammelled responses to external demands, and they therefore display many more internal changes. Seemingly, hard slack resources are not the shield to external forces for change but are the means of reaction, they are the buffers or absorbers of environmental flux. Therefore it may now be suggested that slack resources do indeed enhance organisational flexibility and indeed may enhance the comfort zone of management to the environmental flux that they experience.

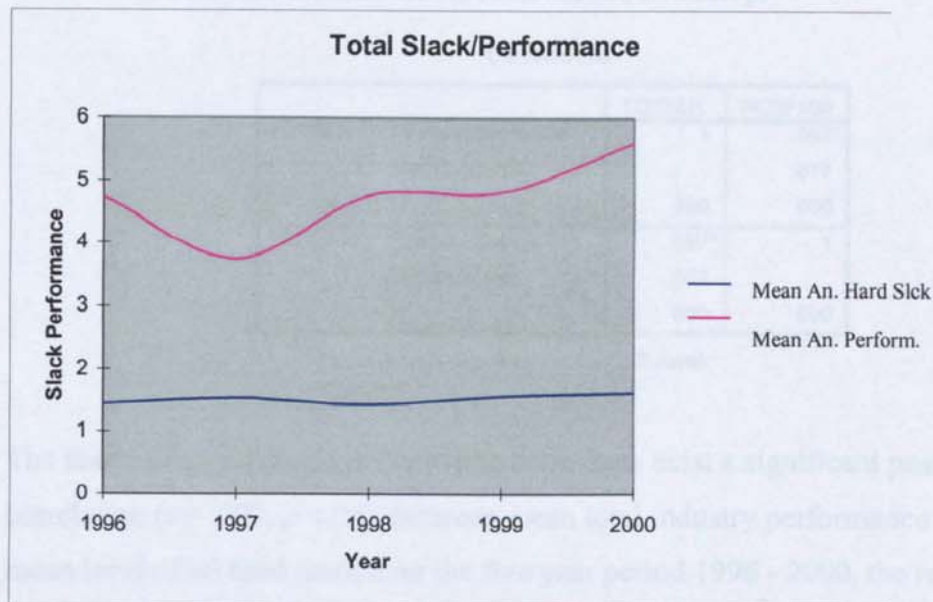
5.4 A Re-Examination of the Hard Slack, Performance Relationship

As discussed previously the primary objective of earlier research was to establish a direct significant association between hard slack resources and performance and this section is a re-examination of this much discussed and hypothesised relationship in an attempt to discover why this earlier work was for the most part inconclusive.

Fig. 5.5

Hard Slack and Performance

Behaviour, all 120 Companies Over Five Years.



Operational Notes to the above graph

The mean performance measure is divided by 10 to alleviate the scaled differential problem and hence ensures that a meaningful comparative graph may be obtained that displays a reliable picture of the comparative behaviours.

The graph above (fig.5.5) displays the mean annual hard slack and performance data of the of 120 organisations for each of the five years and these means are employed to enhance the picture of relative behaviours. A graph displaying all 600 data points, being 120 companies over five years, of the hard slack and performance data becomes incomprehensible due to the amount of data that it attempts to display. However, in the interest of research rigour a test of all 600 data points for slack and performance will be employed to establish the Pearsons bivariatet correlation coefficient.

It is evident that the above initial examination of the mean total hard slack holdings of all 120 companies is almost flat-lined when compared with the mean

performance levels over the same five year period. However, to test if a correlation does exist a Pearsons bivariate correlation test will be employed.

Table 5.5 Pearson Correlation Test, all 600 Performance and Total Hard Slack Observations, All Industry.

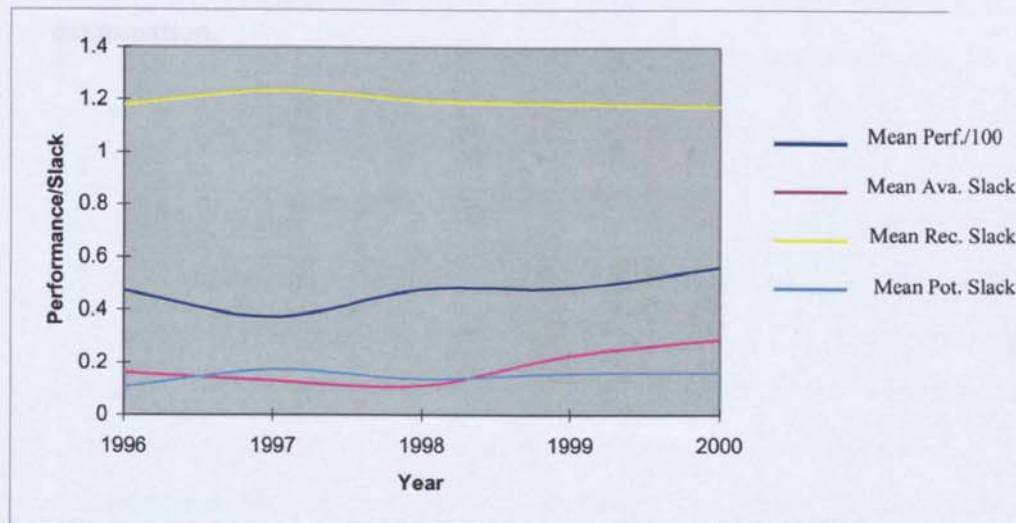
Correlations			
		TOTSLK	PERF100
TOTSLK	Pearson Correlation	1	.097*
	Sig. (2-tailed)	.	.017
	N	600	600
PERF100	Pearson Correlation	.097*	1
	Sig. (2-tailed)	.017	.
	N	600	600

*. Correlation is significant at the 0.05 level (2-tailed).

The above analysis displays that while there does exist a significant positive correlation ($r = .097, p < .05$), between mean total industry performance and the mean level of all hard slack over the five year period 1996 - 2000, the relationship displayed is weak (in a perfect Pearson correlation $r = 1$). The weak correlation between the variables maybe a manifestation of an attempt to conduct cross industry analysis, as discussed above it is speculated that previous empirical research may well have been weakened by this methodology. However, this weak correlation result may also be explained by another methodological phenomenon. The apparent flat-line history of the total slack variable as observed above may be an inappropriate variable as it is an amalgam of all hard slack. It may be speculated that a relationship between the mean sum total of all hard slack and performance dissembles a correlation between the individual families of slack and performance. In an attempt to address this problem and to enrich the analysis and therefore the general concept of the hypothesised hard slack, performance model, each of the three slack families, available, recoverable and potential capacity will be individually displayed together with the performance data (see fig.5.6 below).

Fig. 5.6

**The Segregated Hard Slack and Performance Behaviour
For All Three Industries Over Five Years**



Operational Notes to the above graph

The mean performance is divided by 100 to alleviate the scaled differential problem and hence ensures that a meaningful comparative graph may be obtained that displays a reliable picture of the comparative behaviours.

When the three classes of organisational hard slack resources (available, recoverable and potential) are displayed individually as above (figure 5.8), it becomes evident why total hard slack for the same period presented itself as a near flat line. The total stock of hard slack resources may remain relatively constant, but the individual classes display relative shifts, conceptual internal trades between the different types of slack that organisations hold. Therefore, very little total hard slack shift is witnessed over the five year period and it maybe observed that an attempt to achieve a strong significant correlation between all hard slack resources and performance may often prove to be a fruitless, if not a meaningless exercise.

In returning to the research model and the hypotheses developed above in the next chapter, each individual class of hard slack resource, available, recoverable and potential will be individually assessed for its association with performance. Additionally, as observed above each industry displays radically different relative slack and performance holdings therefore each industry also requires individual examination.

6.0 Slack Resource Relationships and Subsequent Behaviours for Each of the Industries of Food, Plastics and IT.

Introduction

The research model developed above, figure 3.19d, will now be applied to each of the three industries of food, plastics and IT individually in an attempt to develop a greater understanding of slack resources, their internal relationships and consequences for organisations.

Ideally, the research model would be tested using Structural Equation Modelling (SEM) software for each industry. This sophisticated analytical tool is capable of processing the total model and all of the independent and dependent variables in one or several passes while ensuring that cumulative errors are avoided, but it was discovered in collaboration with other professional researchers, that the SEM programme would stall and return error notices. The reason for the failure of SEM to process the model was suspected to be a number of weak correlations between the independent variables of available, recoverable and potential capacity slack, and collinearity was also discovered to exist between tactical and strategic changes. An examination of the graph at figure 5.8 above although only using mean levels, clearly evidences a seemingly collaborative behaviour, a correlation of relative shifts in the three classes of hard slack over the five year research period. Additionally, it is an intuitive conclusion that Strategic and Tactical changes will similarly demonstrate collinearity. Although tactical change will take place in isolation, most if not all Strategic change will result in Tactical change, therefore a correlation between these two variables is also suspected.

However, Multiple Regression Analysis (MRA) within SPSS software, employed to test the relationships of each dependent variable individually did not identify such problems. Therefore it will be used to address each of the hypotheses (H1-H7) developed from the research model above (fig. 3.19d), for each of the industries under investigation. MRA is a widely employed and accepted analytical tool and its limitations are well established and understood. To reduce the risk of cumulative

error, all of the variables employed in this work are first tested for normality and outliers. Additionally all of the analysis employed is subjected to post-hoc tests. Fortunately, SPSS software automatically tests and adjusts or warns for many of the operational problems that may exist. These anticipated problems are discussed in detail below.

The results of the analyses will be explored and further discussed in chapter seven together with recommendations for further research.

6.1 The Application of the Research Model to the Food Industry.

In an attempt to establish confirmation of the hypotheses (H1-H7) as robust linear relationships, a multiple regression analysis test will be applied to each one.

However, a number of qualifications must be satisfied to enable a reliable regression analysis, from Coakes and Steed, (1999);

1. Ratio of cases to independent variables - a minimum of at least five times more cases than independent variables.
2. Outliers - extreme cases will have a detrimental effect on the solution and should be deleted - SPSS will automatically apply Mahalanobis distance techniques and reject outliers beyond three degrees of freedom.
3. Multicollinearity and singularity - high or perfect correlations amongst the independent variables - Again SPSS will automatically warn when these are discovered.
4. Normality, linearity, homoscedacity and independence of residuals - Mild deviations from normality and linearity are not serious. Moderate to extreme deviations may lead to a serious underestimation of the relationship - Again SPSS will automatically assess these properties, warn and make appropriate adjustments.

The Food Industry sample size is forty-four (44) and each case contains data from five years of activity (therefore, 220 observation in total) and hence complies with condition number one above.

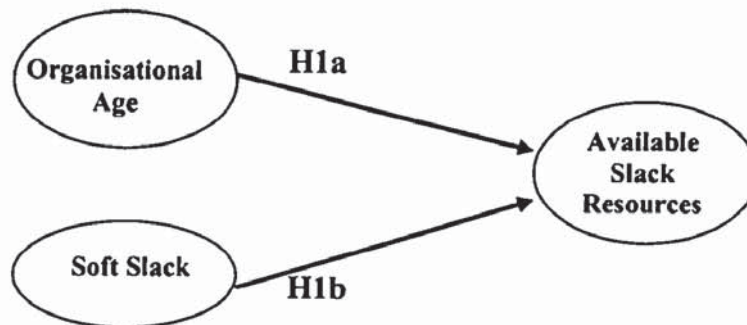
Each of the hypotheses will now be tested for the food industry. To aid brevity and promote clarity the full results of the MRA may be found in the appendices. When a hypothesis is supported the coefficients of the analysis will be reproduced in the text.

Hypothesis 1 (Food) (the full analysis is available in the appendices p262)

H1a Available Slack Resources are positively associated with Organisational Age.

H1b Available Slack Resources are positively associated with Soft Slack.

Hypothesis 1(Food)



Results of Multiple Regression Test

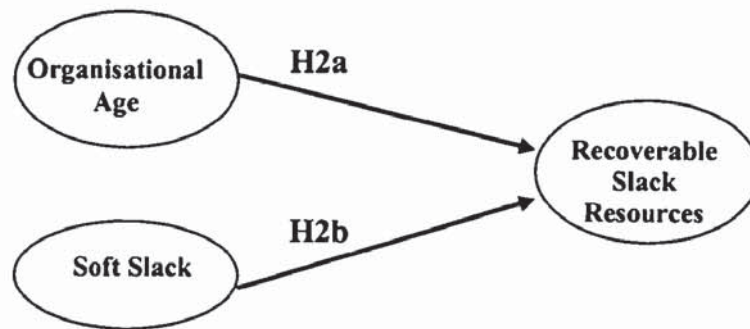
No significant relationship was established.

Hypothesis 2 (Food) (the full analysis is available in the appendices p263)

H2a Recoverable Slack Resources are positively associated with Organisational Age.

H2b Recoverable Slack Resources are positively associated with Soft Slack.

Hypothesis 2(Food)



Results of Multiple Regression Test

From the results displayed below, Recoverable Slack is significantly ($p<.01$) associated with Organisations Age.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.819	11.646		3.444	.002
	Org. Age	3.69E-02	.001	.388	2.909	.006
	all soft slack	-.227	.346	-.113	-.655	.516

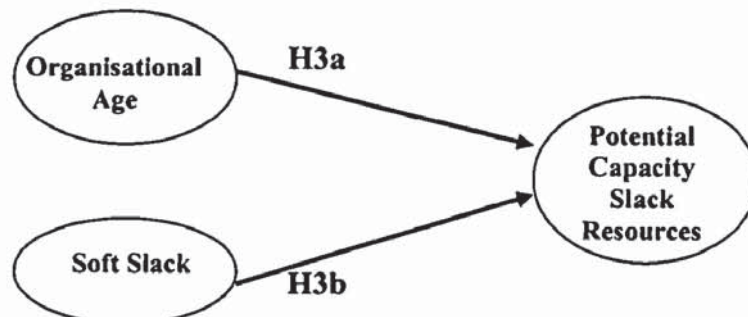
a. Dependent Variable: recoverable slack 1996-2000

Hypothesis 3 (Food) (the full analysis is available in the appendices p264)

H3a Potential Capacity Slack Resources are positively associated with Organisations Age.

H3b Potential Slack Resources are positively associated with Soft Slack.

Hypothesis 3 (Food)



Results of Multiple Regression Test

From the results displayed below, Potential Capacity Slack is significantly ($p < .01$) associated with Organisational Age.

Coefficients^{a,b}

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.605	3.659		-1.258	.215
	Soft Slack Resources	-1.70E-02	.118	-.020	-.144	.886
	Organisation Age	.105	.025	.587	4.208	.000

a. Dependent Variable: Potential Cap. Slack 1996-2000

b. Selecting only cases for which Industry = Food

Hypothesis 4 (Food) (the full analysis is available in the appendices p265)

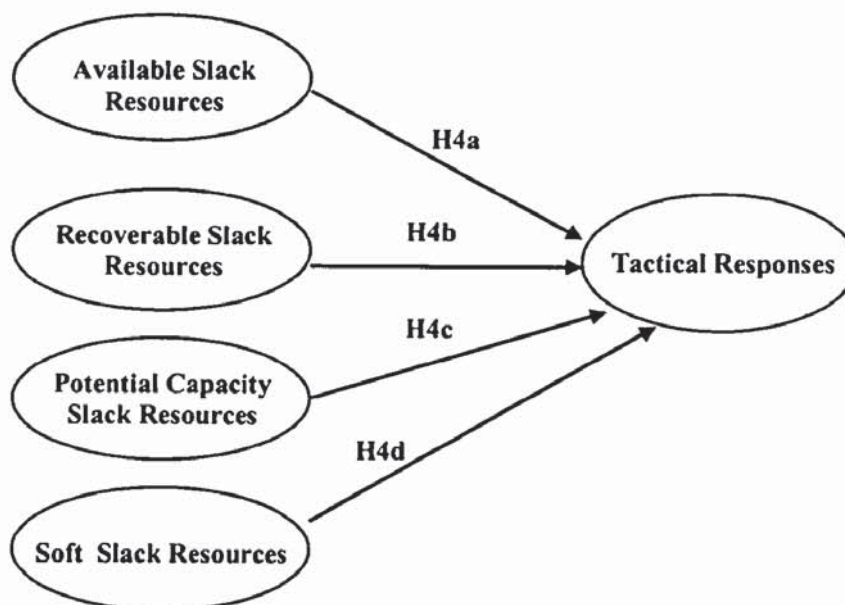
H4a Organisational Tactical Responses are positively associated with Available Slack Resources.

H4b Organisational Tactical Responses are positively associated with Recoverable Slack Resources.

H4c Organisational Tactical Responses are positively associated with Potential Capacity Slack Resources.

H4d Organisational Tactical Responses are positively associated with Soft Slack Resources.

Hypothesis 4 (Food)



Results of Multiple Regression Test

From the results displayed below, Organisational Tactical Change is significantly ($p < .05$) associated with Soft Slack Resources.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.711	3.484		3.074	.004
	all soft slack	.195	.084	.380	2.324	.026
	available slack p.yr.	.318	2.754	.623	.116	.909
	recoverable slack 1996-2000	.303	1.761	1.182	.172	.865
	potential slack 1996-2000	-.990	2.555	-1.694	-.388	.701

a. Dependent Variable: Tactical Change

Hypothesis 5 (Food) (the full analysis is available in the appendices p266)

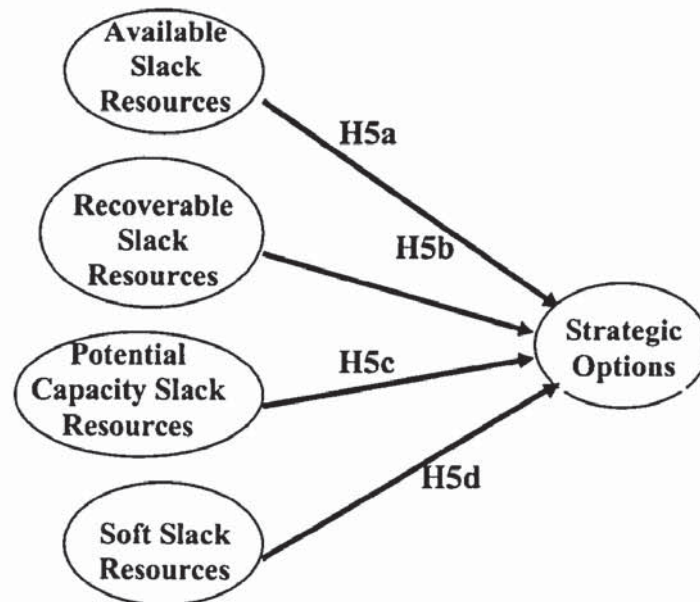
H5a Strategic options are positively associated available slack resources.

H5b Strategic options are positively associated recoverable slack resources.

H5c Strategic options are positively associated potential capacity slack resources.

H5d Strategic options are positively associated soft slack resources.

Hypothesis 5 (Food)



Results of Multiple Regression Test

No significant relationship was established.

Hypothesis 6 (Food) (the full analysis is available in the appendices p267)

Strategic Choices are adopted Options for implementation and are therefore synonymous with Strategic Changes.

H6a Strategic choices are positively associated with available slack resources.

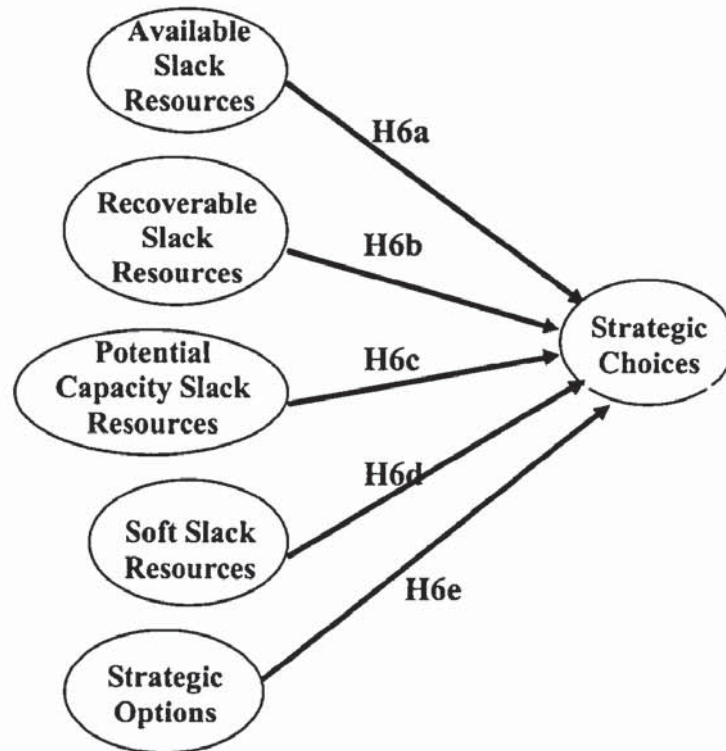
H6b Strategic choices are positively associated with recoverable slack resources.

H6c Strategic choices are positively associated with potential capacity slack resources.

H6d Strategic choices are positively associated with soft slack resources.

H6e Strategic choices are positively associated with strategic options.

Hypothesis 6 (Food)



Results of Multiple Regression Test

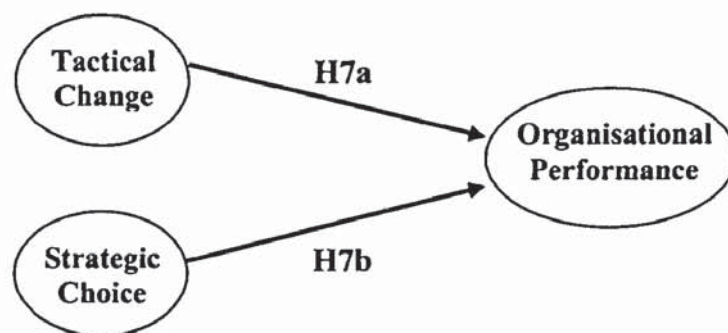
No significant relationship was established.

Hypothesis 7a & b (Food) (the full analysis is available in the appendices p268)

H7a Organisational Performance is positively associated with Tactical Change.

H7b Organisational Performance is positively associated with Strategic Choice.

Hypothesis 7a and b (Food)



Results of Multiple Regression Test

No significant relationship was established.

Hypothesis 7c,d and e (Food) (the full analysis is available in the appendices p269)

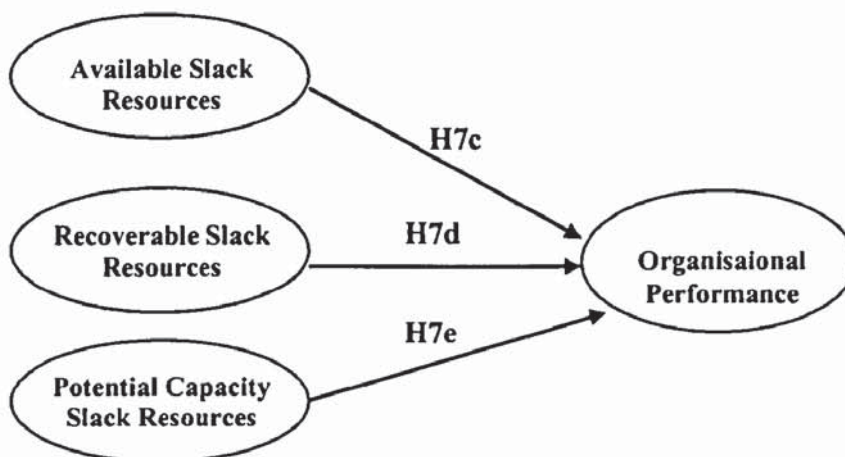
Although not incorporated into the research model these hypotheses will be investigated as they represent the major research objectives of previous investigations.

H7c Organisational Performance is positively associated with Available Slack Resources.

H7d Organisational Performance is positively associated with Recoverable Slack Resources.

H7e Organisational Performance is positively associated with Potential Capacity Slack Resources.

Hypothesis 7 c, d & e (Food)



Results of Multiple Regression Test

From the results displayed below, Organisational Performance is significantly ($p<.01$) associated with both Available and Recoverable Slack Resources.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	72.882	12.103		6.022	.000
	. available slack p.yr	52.769	16.407	15.513	3.216	.003
	recoverable slack 1996-2000	-37.949	10.517	-22.272	-3.608	.001
	potential slack 1996-2000	26.714	15.047	6.868	1.775	.085

a. Dependent Variable: performance 1996-2000

Each of the hypotheses will now be tested for the Plastics industry.

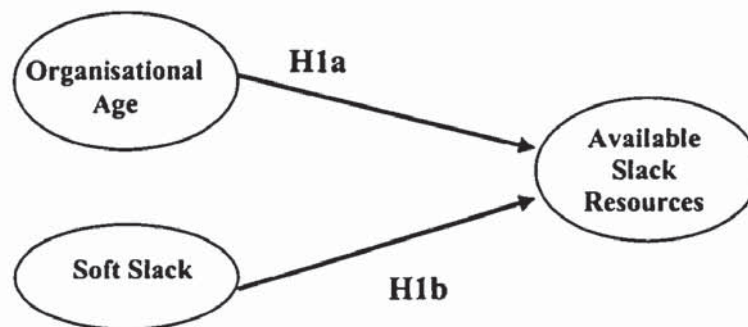
6.2. Application of the Research Model to the Plastics Industry

Hypothesis 1 (Plastics) (the full analysis is available in the appendices p270)

H1a Available Slack Resources are positively associated with Organisational Age.

H1b Available Slack Resources are positively associated with Soft Slack.

Hypothesis 1 (Plastics)



Results of Multiple Regression Test

From the results displayed below, Available Slack Resources are significantly ($p < .01$) associated with Organisational Age and Soft Slack.

Coefficients^{a,b}

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.192	.029		-6.713	.000
	Age of Organ.	.013	.001	.755	23.602	.000
	Soft Slack	.008	.001	.262	8.201	.000

a. Dependent Variable: Available Slack 1996 - 2000

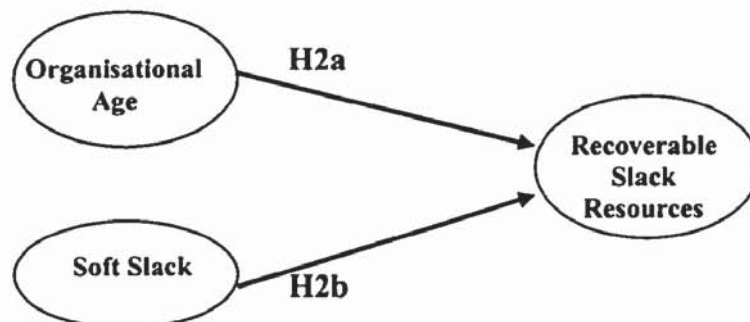
b. Selecting only cases for which Industry = Plastics

Hypothesis 2 (Plastics) (the full analysis is available in the appendices p271)

H2a Recoverable Slack Resources are positively associated with Organisational Age.

H2b Recoverable Slack Resources are positively associated with Soft Slack.

Hypothesis 2 (Plastics)



Results of Multiple Regression Test.

From the results displayed below, Recoverable Slack Resources are significantly ($p < .01$) associated with Organisational Age and Soft Slack.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.657	.031		20.912	.000
	Organisational Age	.015	.000	1.076	40.165	.000
	Soft Slack	-.005	.001	-.099	-3.702	.001

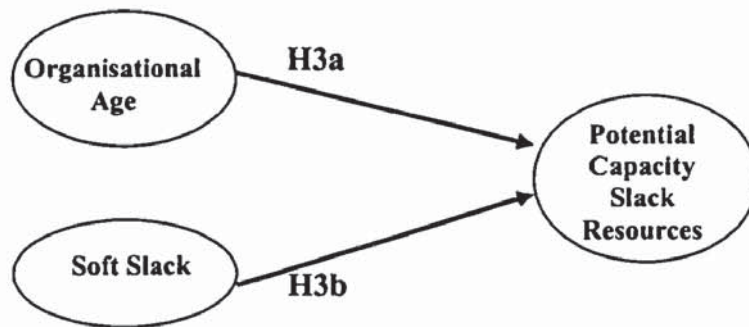
a. Dependent Variable: Recoverable Slack 1996-2000

Hypothesis 3 (Plastics) (the full analysis is available in the appendices p272)

H3a Potential Capacity Slack Resources are positively associated with Organisational Age.

H3b Potential Slack Resources are positively associated with Soft Slack.

Hypothesis 3 (Plastics)



Results of Multiple Regression Test

From the results displayed below, Recoverable Slack Resources are significantly ($p < .01$) associated with Organisational Age and Soft Slack.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.451	.979		-3.524	.001
	Organisational Age	.229	.012	.868	19.233	.000
	Soft Slack	.124	.039	.144	3.182	.003

a. Dependent Variable: Potencial Capacity Slack 1996-2000

Hypothesis 4 (Plastics) (the full analysis is available in the appendices p274)

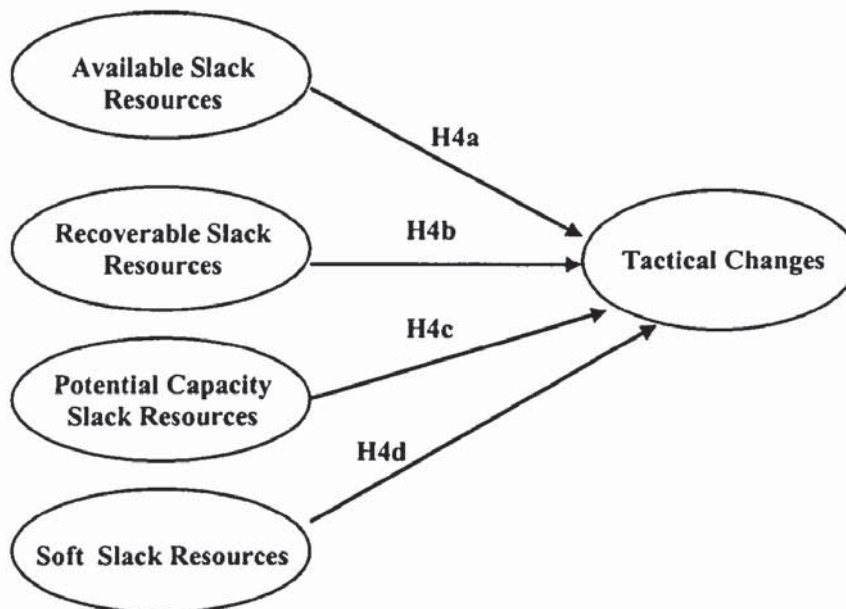
H4a Organisational Tactical Responses are positively associated with Available Slack Resources.

H4b Organisational Tactical Responses are positively associated with Recoverable Slack Resources.

H4c Organisational Tactical Responses are positively associated with Potential Capacity Slack Resources.

H4d Organisational Tactical Responses are positively associated with Soft Slack Resources.

Hypothesis 4 (Plastics)



Results of Multiple Regression Test

From the results displayed below, Tactical Change is significantly ($p < .01$) associated with Available, Recoverable and Potential Capacity Slack Resources.

Coefficients^{a,b}

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.812	.601		-1.350	.187
	Available Slack (1996-2000)	.705	.065	.995	10.925	.000
	Recoverable Slack (1996-2000)	.166	.032	.442	5.221	.000
	Potential Slack (1996-2000)	-1.317	.129	-.445	-10.237	.000
	Soft Slack Total	.000	.002	.001	.187	.853

a. Dependent Variable: Tactical Change

b. Selecting only cases for which Industry = Plastics

Hypothesis 5 (Plastics) (the full analysis is available in the appendices p275)

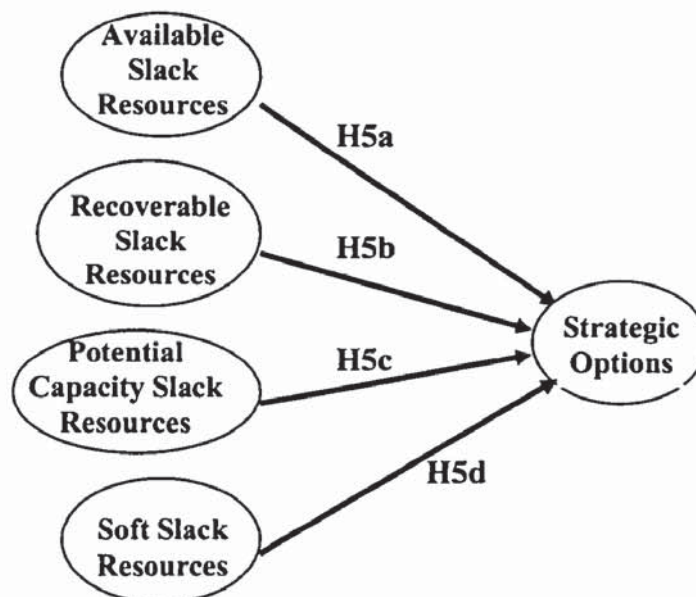
H5a Strategic options are positively associated available slack resources.

H5b Strategic options are positively associated recoverable slack resources.

H5c Strategic options are positively associated potential capacity slack resources.

H5d Strategic options are positively associated soft slack resources.

Hypothesis 5. (Plastics)



Results of Multiple Regression Test

No significant relationship was established.

Hypothesis 6 (Plastics) (the full analysis is available in the appendices p276)

Strategic Choices are adopted Options for implementation and are therefore synonymous with Strategic Changes.

H6a Strategic choices are positively associated with available slack resources.

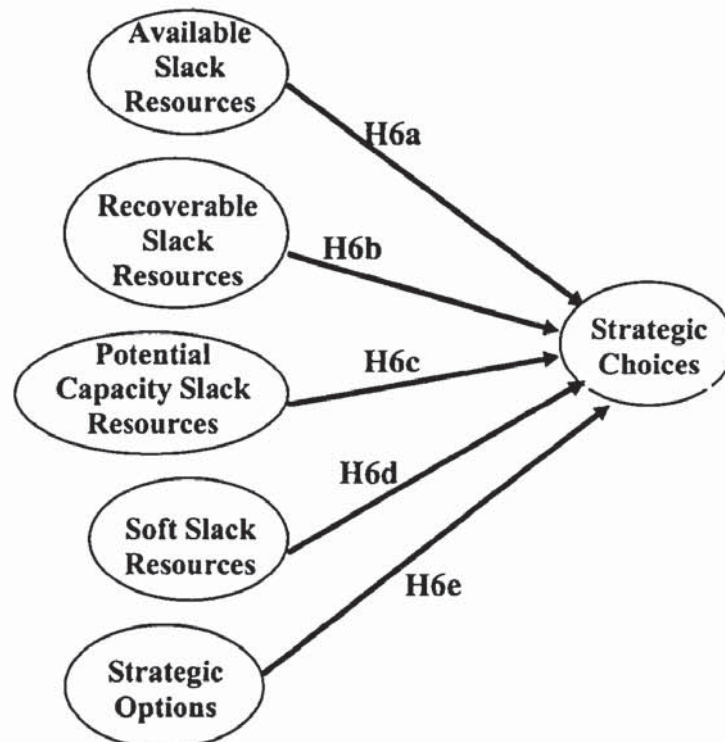
H6b Strategic choices are positively associated with recoverable slack resources.

H6c Strategic choices are positively associated with potential capacity slack resources.

H6d Strategic choices are positively associated with soft slack resources.

H6e Strategic choices are positively associated with strategic options.

Hypothesis 6. (Plastics)



Results of Multiple Regression Test

From the results displayed below, Strategic Change is significantly ($p < .05$) associated with Soft, Available, Recoverable and Potential Capacity Slack Resources.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.832	1.820		2.655	.012
	Available Slack 1996-2000	-.252	.077	-.543	-3.260	.003
	Recoverable Slack 1996-2000	-5.866	1.858	-.784	-3.156	.004
	Potential Capacity Slack 1996-2000	.833	.087	2.061	9.601	.000
	Soft Slack	.063	.026	.181	2.442	.021

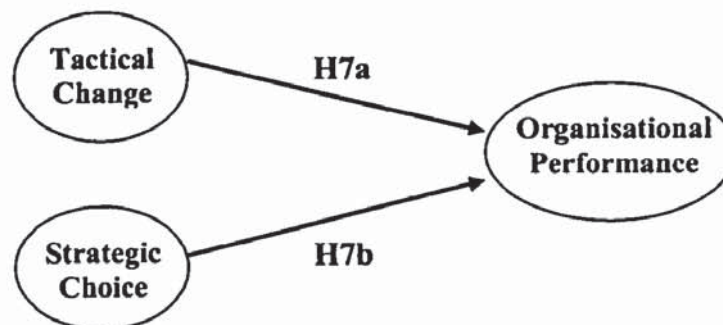
a. Dependent Variable: Strategic Changes 1996-2000

Hypothesis 7a & b (Plastics) (the full analysis is available in the appendices p278)

H7a Organisational Performance is positively associated with Tactical Change.

H7b Organisational Performance is positively associated with Strategic Choice.

Hypothesis 7a and b (Plastics)



Results of Multiple Regression Test.

From the results displayed below, Organisational Performance is significantly ($p < .01$) associated with Organisational Tactical Changes and Organisational Strategic Changes.

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	-24.759	3.064		.000
	Strategic Changes 1996-2000	1.700	.418	.347	.000
	Tactical Changes 1996-2000	3.263	.427	.652	.000

a. Dependent Variable: Performance 1996-2000

Hypothesis 7c, d and e (Plastics)

(the full analysis is available in the appendices p279)

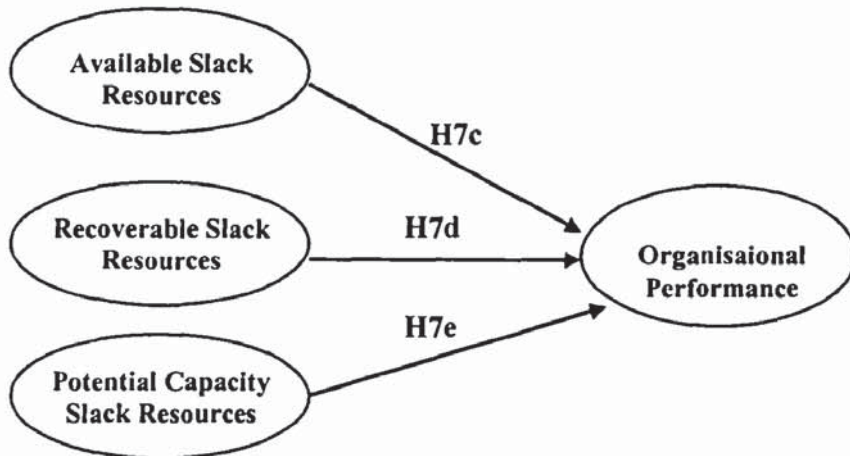
Although not incorporated into the research model these hypotheses will be investigated as they represent the major research objectives of previous investigations.

H7c Organisational Performance is positively associated with Available Slack Resources.

H7d Organisational Performance is positively associated with Recoverable Slack Resources.

H7e Organisational Performance is positively associated with Potential Capacity Slack Resources.

Hypothesis 7 continued (Plastics)



Results of Multiple Regression Test

From the results displayed below, Organisational Performance is significantly ($p < .01$) associated with Available, Recoverable and Potential Capacity Slack Resources.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	83.650	16.146		5.181	.000
	available slack p.yr.	17.134	5.009	1.351	3.420	.002
	recoverable slack 1996-2000	-53.341	15.130	-1.456	-3.526	.001
	potential slack 1996-2000	41.151	12.291	.599	3.348	.002

a. Dependent Variable: performance 1996-2000

Each of the hypotheses will now be tested for the IT industry.

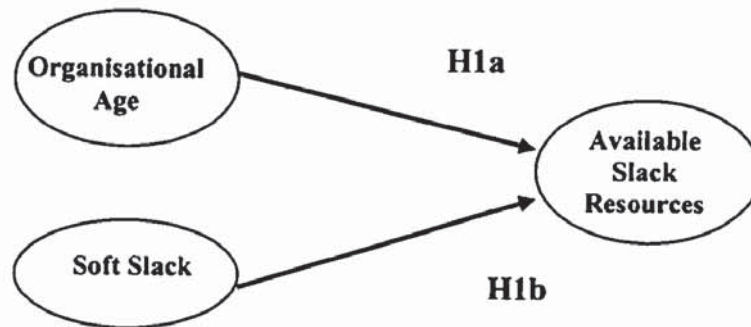
6.3. The Application of the Modified Research Model to the IT Industry

Hypothesis 1 (IT) (the full analysis is available in the appendices p280)

H1a Available Slack Resources are positively associated with Organisational Age.

H1b Available Slack Resources are positively associated with Soft Slack.

Hypothesis 1 (IT)



Results of Multiple Regression Test

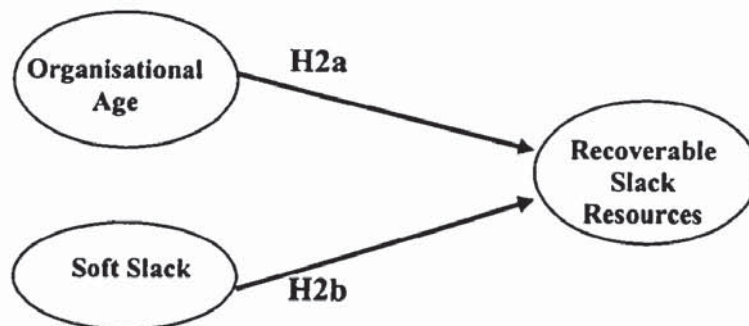
No significant relationship was established.

Hypothesis 2 (IT) (the full analysis is available in the appendices p281)

H2a Recoverable Slack Resources are positively associated with Organisational Age.

H2b Recoverable Slack Resources are positively associated with Soft Slack.

Hypothesis 2 (IT)



Results of Multiple Regression Test

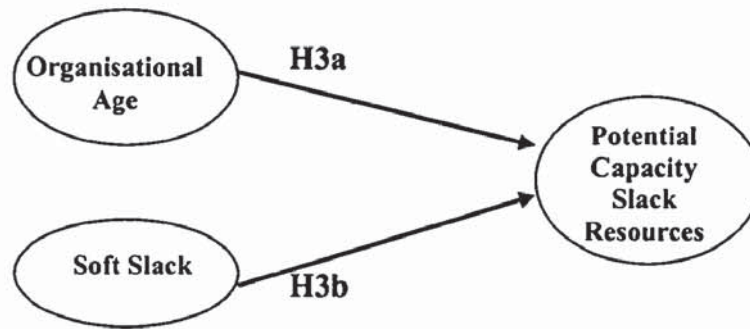
No significant relationship was established.

Hypothesis 3 (IT) (the full analysis is available in the appendices p282)

H3a Potential Capacity Slack Resources are positively associated with Organisational Age.

H3b Potential Slack Resources are positively associated with Soft Slack.

Hypothesis 3 (IT)



Results of Multiple Regression Test

No significant relationship was established.

Hypothesis 4 (IT) (the full analysis is available in the appendices p283)

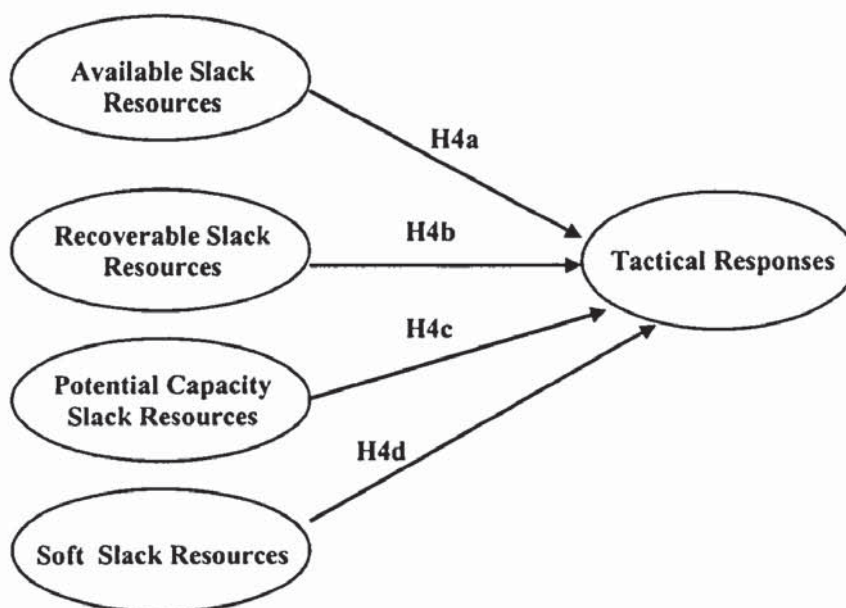
H4a Organisations Tactical Responses are positively associated with Available Slack Resources.

H4b Organisations Tactical Responses are positively associated with Recoverable Slack Resources.

H4c Organisations Tactical Responses are positively associated with Poential Capacity Slack Resources.

H4d Organisations Tactical Responses are positively associated with Soft Slack Resources.

Hypothesis 4 (IT)



Results of Multiple Regression Test

From the results displayed below, Tactical Response (Change) is significantly ($p < .01$) associated with Available and Recoverable Slack Resources.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.813	3.031		4.887	.000
	all soft slack	-.127	.091	-.200	-1.397	.171
	recoverable slack 1996-2000	.115	.031	.886	3.719	.001
	potential slack 1996-2000	-.481	1.399	-.059	-.344	.733
	available slack p.yr.	5.768	1.960	.759	2.944	.006

a. Dependent Variable: Tactical Change

Hypothesis 5 (IT) (the full analysis is available in the appendices p284)

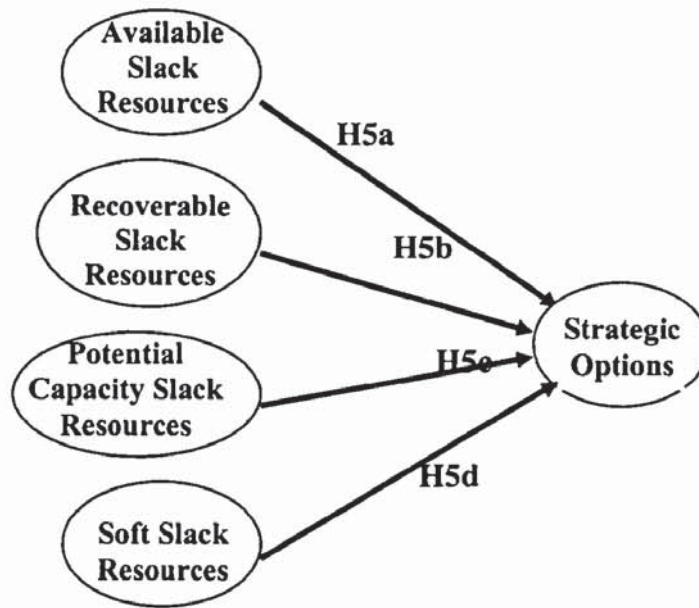
H5a Strategic options are positively associated available slack resources.

H5b Strategic options are positively associated recoverable slack resources.

H5c Strategic options are positively associated potential capacity slack resources.

H5d Strategic options are positively associated soft slack resources.

Hypothesis 5 (IT)



Results of Multiple Regression Test

No significant relationship was established.

Hypothesis 6 (IT) (the full analysis is available in the appendices p285)
Strategic Choices are adopted Options for implementation and are therefore synonymous with Strategic Changes.

H6a Strategic choices are positively associated with available slack resources.

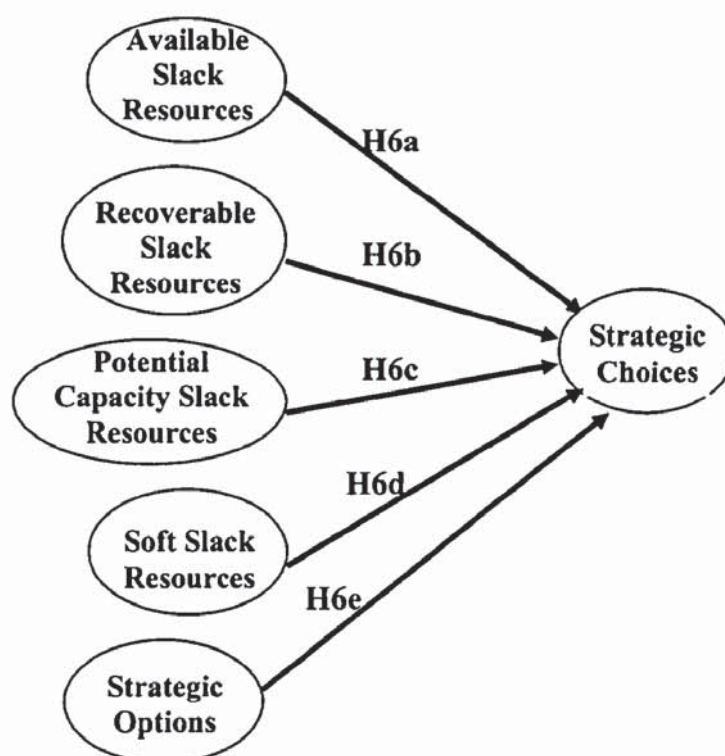
H6b Strategic choices are positively associated with recoverable slack resources.

H6c Strategic choices are positively associated with potential capacity slack resources.

H6d Strategic choices are positively associated with soft slack resources.

H6e Strategic choices are positively associated with strategic options.

Hypothesis 6. (IT)



Results of Multiple Regression Test

From the results displayed below, Strategic Change is significantly ($p < .05$) associated with Available and Potential Capacity Slack Resources.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.895	1.993		1.452	.156
	all soft slack	3.443E-02	.050	.112	.688	.496
	recoverable slack 1996-2000	9.424E-03	.016	.150	.580	.566
	potential slack 1996-2000	-1.688	.761	-.425	-2.219	.033
	available slack p.yr.	2.151	1.031	.583	2.087	.045
	strat options	4.619E-02	.025	.304	1.816	.078

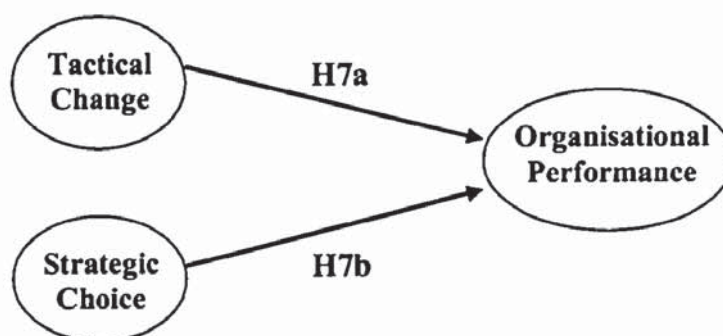
a. Dependent Variable: strat changes 5years

Hypothesis 7a and b (IT) (the full analysis is available in the appendices p287)

H7a Organisational Performance is positively associated with Tactical Change.

H7b Organisational Performance is positively associated with Strategic Choice.

Hypothesis 7a and b (IT)



Results of Multiple Regression Test.

From the results displayed below, Organisational Performance is significantly ($p < .01$) associated with Organisational Tactical Change and Organisational Strategic Change.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-24.759	3.064		-8.082	.000
	Strategic Changes 1996-2000	1.700	.418	.347	4.067	.000
	Tactical Changes 1996-2000	3.263	.427	.652	7.636	.000

a. Dependent Variable: Performance 1996-2000

Hypothesis 7c,d and e (IT) (the full analysis is available in the appendices p288)

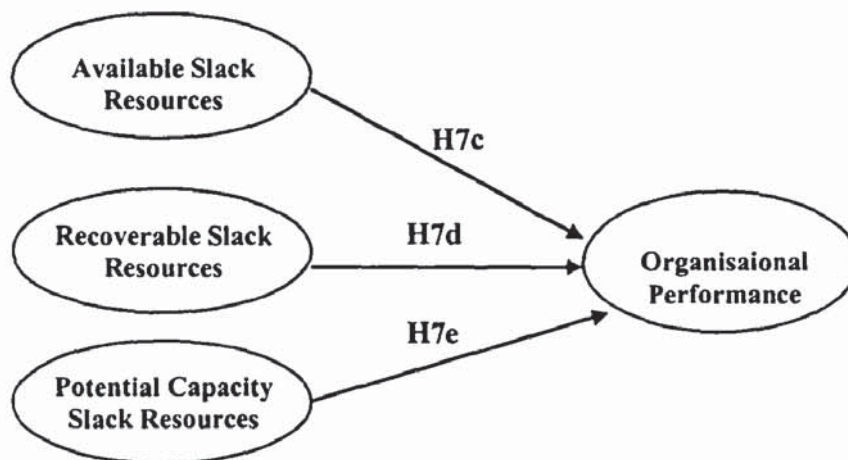
Although not incorporated into the research model these hypotheses will be investigated as they represent the major research objectives of previous investigations.

H7c Organisational Performance is positively associated with Available Slack Resources.

H7d Organisational Performance is positively associated with Recoverable Slack Resources.

H7e Organisational Performance is positively associated with Potential Capacity Slack Resources.

Hypothesis 7 c, d & e (IT)



Results of Multiple Regression Test

No significant relationship was established.

6.4 Summary of the Multiple Regression Analysis for the Three Industries of Food, Plastics and IT.

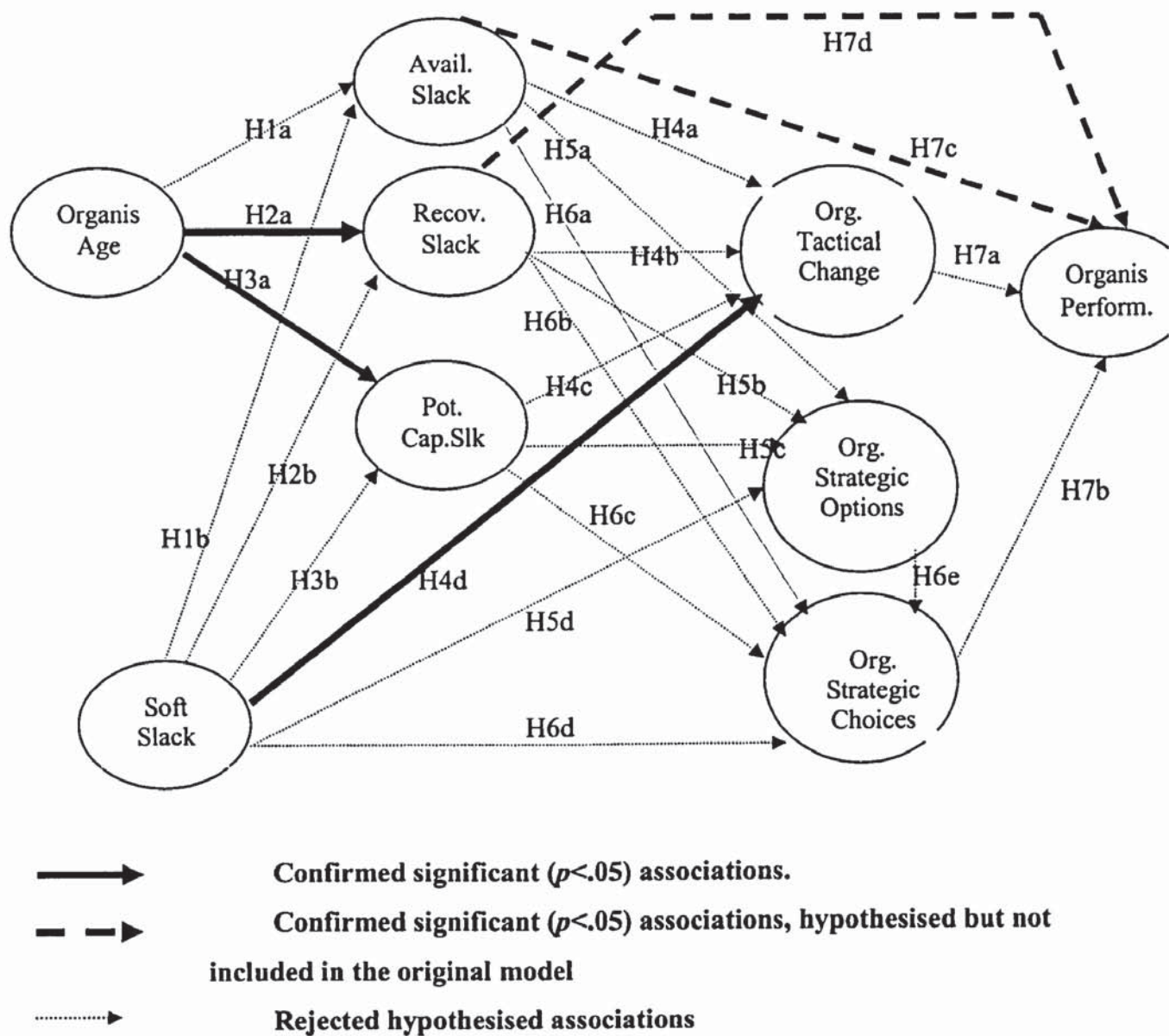
All of the results for each industry will be discussed in detail in chapter seven.

6.4.1 Multiple Regression Analysis Summary - The Food Industry

For quick reference the Multiple Regression Analysis summary for the Food Industry is graphically displayed below in Figure 6.1.

Fig 6.1 (adapted from the previously displayed Research Model 4, Fig. 3.19d)

Research Model 4, MRA results for the Food Industry



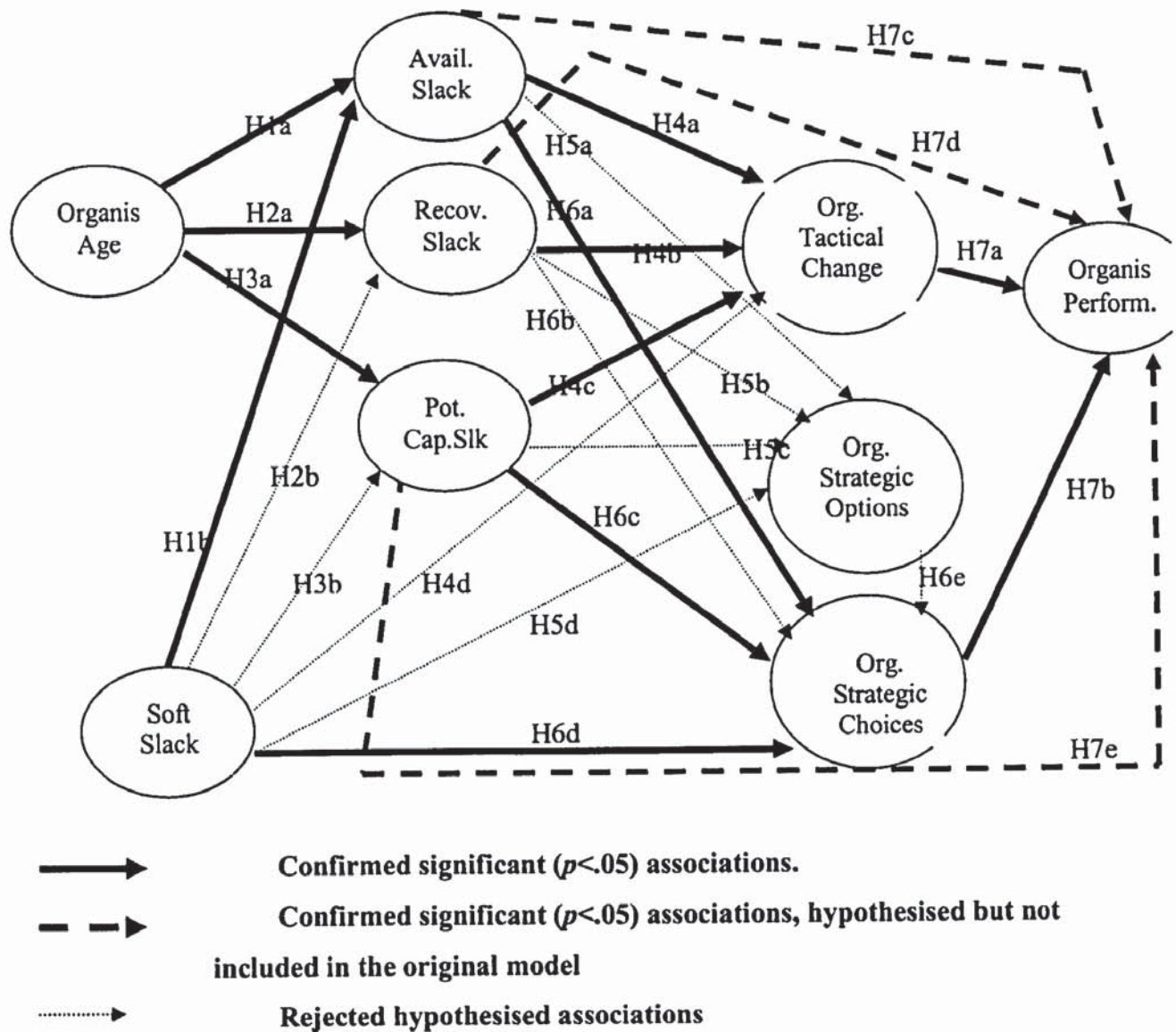
The next section will use the same presentation for results for the Plastics industry.

6.4.2 Multiple Regression Analysis Summary – Plastics

For quick reference the Multiple Regression Analysis summary for the Plastics Industry is graphically displayed below in Figure 6.2.

Fig 6.2 (adapted from the previously displayed Research Model 4, Fig. 3.19d)

Research Model 4, MRA results for the Plastics Industry



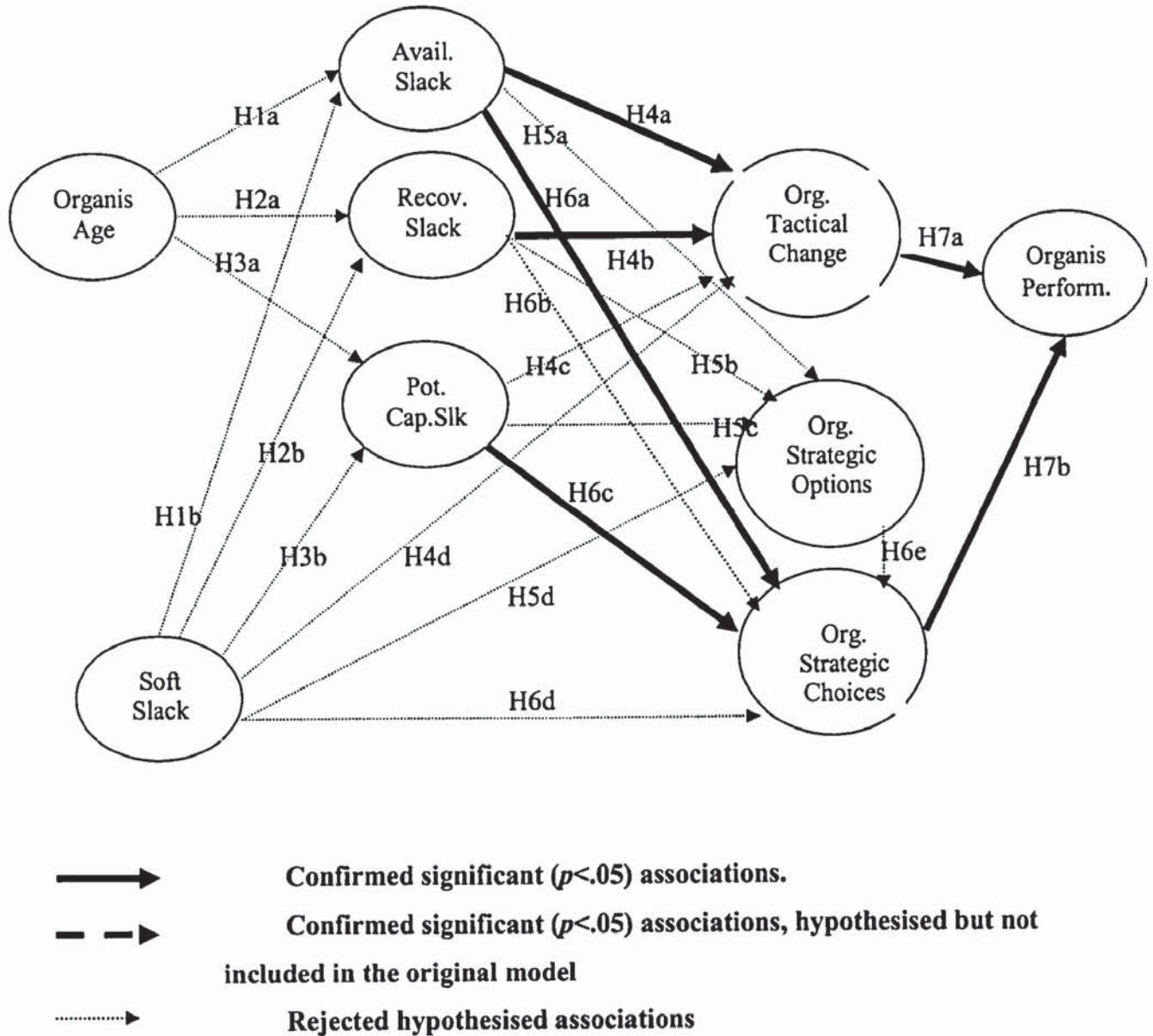
The next section will use the same presentation of results for the IT industry.

6.4.3 Regression Analysis Summary – IT

For quick reference the Multiple Regression Analysis summary for the IT Industry is graphically displayed below in Figure 6.3.

Fig 6.3 (adapted from the previously displayed Research Model 4, Fig. 3.19d)

Research Model 4, MRA results for the IT Industry



The data of the three industries of Food, Plastics and IT has received extensive analysis through chapters five and six above. The next chapter will discuss further and draw conclusions from the above analysis and will attempt to unravel and explain the complex relationships of the Organisational Slack Resources, Flexibility and Performance behaviour.

7.0 Reflection, Discussion, Interpretation and Conclusions

Introduction

“avoid cant and pomposity ...prize agreement with the evidence above mathematical sophistication...always search for simplicity...argue the relationships not the numbers”

Physicist, Prof. Murry Gell-Mann

(Quoted by the biographer Johnson, 2000)

It may be observed that an abundance of data has been generated in the previous two chapters with regard to the relationships of Hard and Soft Slack Resources, Tactical and Strategic Changes and Organisational Performance within the three industries of Food, Plastics and IT. In an attempt to clarify this information and achieve a deeper understanding of the relationships and consequences of Slack Resources within organisations, each research model will be examined in detail in an industry comparative manner. However, some generalities may be observed for the collective behaviours of the three industries of Food, Plastics and IT.

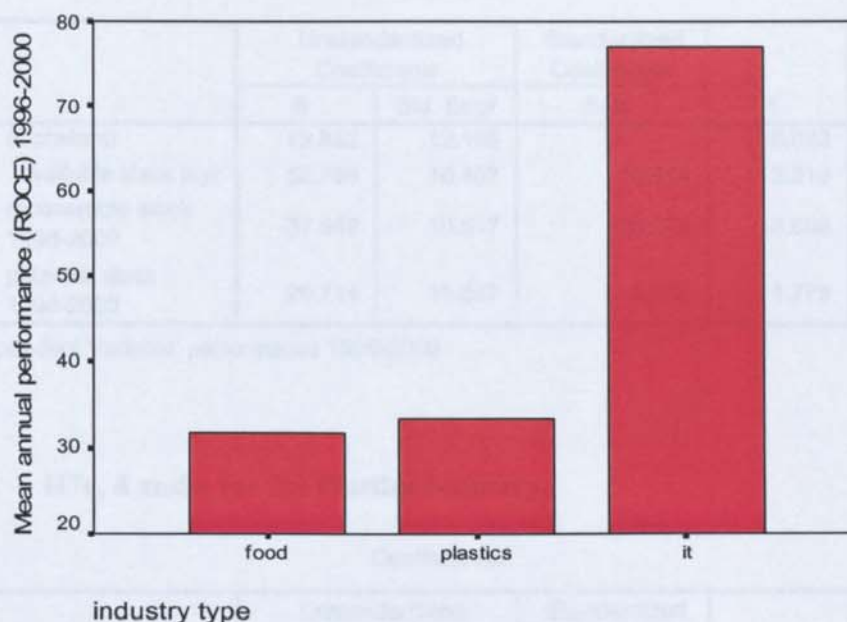
7.1 The Slack Resources versus Performance Behaviour

“There is no excellent beauty that hath not some strangeness in the proportion”

Sir Francis Bacon, 1561 - 1626

The above 17th century observation is demonstrated in the behaviour of Performance and Slack Resources (see fig. 7.1 below). In considering the demonstrated Performance versus Hard Slack Resource relationship it is evident from the above analysis (chapter 6) that each industry displays variations of a general pattern of behaviour.

Fig.7.1 Mean Annual Industry Performance (ROCE)
for Five Years 1996 - 2000 incl.



It was established in section 5.3.1 that the distributions of performance for each of the three industries of Food, Plastics and IT are statistically different. Each industry sector displays a significant ($F = 45.51, p < .001$) different mean level of profitability and therefore each sector may be identified and classified through the standard accounting method of Return On Capital Employed (ROCE). Furthermore, the varying levels of hard slack resources that each industry carries were also confirmed to be significantly ($F = 57.36, p < .001$) different. Subsequently, a significant (see Tables 7.1 and 7.2 below) association was discovered between the various classes of hard slack resources and performance within the Food and Plastics industries. These observations confirm that each of these industries enjoys an individual and specific slack, performance relationship, an industry sector distinctive behaviour. This phenomenon may have obfuscated the results of previous research and frustrated attempts to establish a significant relationship between performance and hard slack resources when employing data that may have been drawn from different industries.

Table 7.1 H7a, b and c for the Food Industry.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	72.882	12.103		6.022	.000
	. available slack p.yr	52.769	16.407	15.513	3.216	.003
	recoverable slack 1996-2000	-37.949	10.517	-22.272	-3.608	.001
	potential slack 1996-2000	26.714	15.047	6.868	1.775	.085

a. Dependent Variable: performance 1996-2000

Table 7.2 H7c, d and e for the Plastics Industry.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	83.650	16.146		5.181	.000
	available slack p.yr.	17.134	5.009	1.351	3.420	.002
	recoverable slack 1996-2000	-53.341	15.130	-1.456	-3.526	.001
	potential slack 1996-2000	41.151	12.291	.599	3.348	.002

a. Dependent Variable: performance 1996-2000

As demonstrated in results of the analysis for the Hypotheses of 7c,d and e above, specific industry significant relationship behaviours may now be confirmed between the elemental components of hard slack resources and performance. However, there exist distinctive differences within the different industries. The Food industry displays a significant relationship between Available and Recoverable slack resources and Performance but the Plastics industry demonstrates a significant association between all of the classes of Hard Slack and Performance. However, as observed previously this conformation of Bourgeois's (1981) original hypothesis maybe misleading. As confirmed above, within the Plastics and the IT industries Slack Resources are facilitating organisational change and it is this that is significantly associated with performance. This argument fails for the Food Industry for the

present but the reasoning for this will be explored below (sec. 7.2) when each industry and their confirmed internal relationships of the various variables will be explored in depth.

A reason for why different industries display varying levels of Hard Slack (see fig.7.2 below) may be found in an examination of the industries distinctive environmental flux as demonstrated in their organisational changes (fig. 7.3 below).

Fig.7.2 The Relative Holdings of Hard Slack Resources per Industry

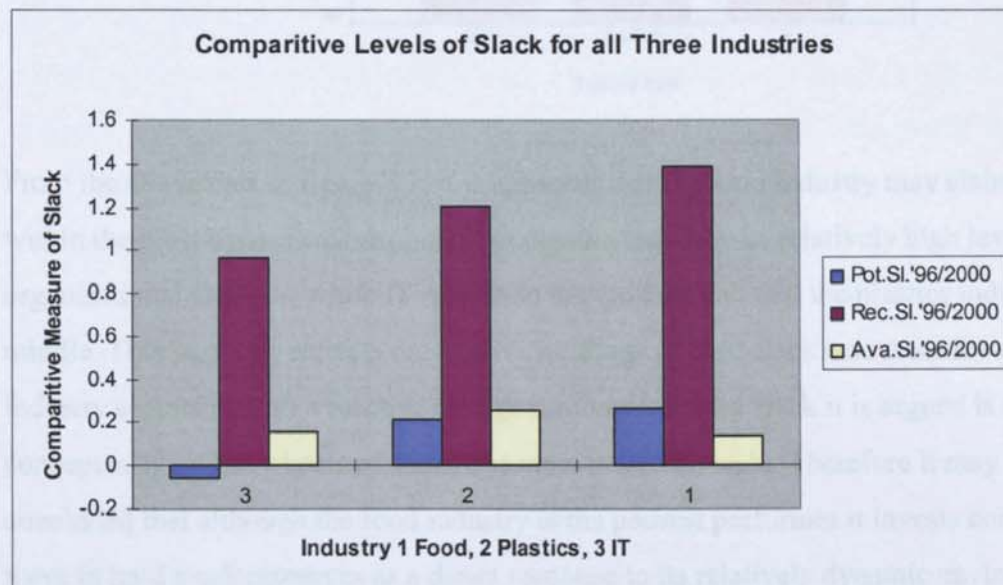
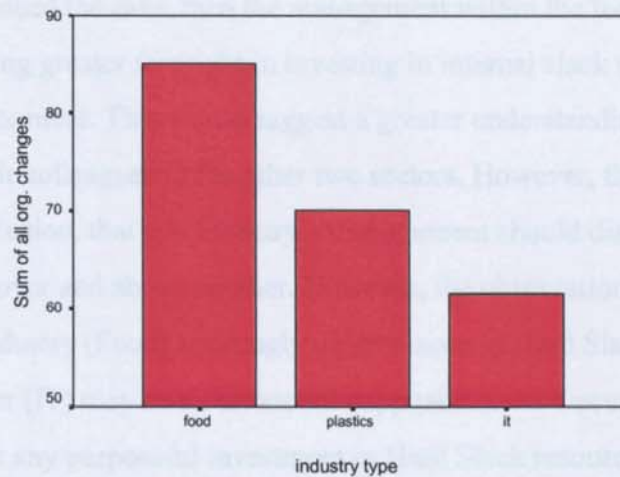


Fig. 7.3 The Mean Annual Comparative Rate of all Operational and Strategic Changes Per Industry Over Five Years 1996-2000.



From the above data at figure 7.3, it is apparent that the food industry may claim that it exists within the most dynamic environment as demonstrated by its relatively high level of organisational changes, while IT resides in the quietest and that the plastics industry sits in the middle. This perfectly reflects the relative holdings of hard slack resources for each of the industry sectors and, as a reactive change mechanism, hard slack it is argued is required to conceptually oil the wheels of change to meet these demands. Therefore it may be logically concluded that although the food industry is the poorest performer it invests comparatively more in hard slack resources as a direct response to its relatively dynamic environmental. The plastics and IT industries likewise invest comparative amounts that match the requirements of their own environments.

However, it may be argued that these organisational change rates may just be a reflection of the comparative ability to change (the anthropic argument). In other words, an industry that holds the greatest stock of slack, in this case food, displays the greater number of changes just because it can. When we compare the management's perception of their respective environments we witness a reversal of the environmental flux versus organisational change results, the management of the food industry believe their environment to be relatively quiet while the management of the IT industry believe theirs to be the most dynamic. As discussed

above (sec. 5.4) it is suspected that the food industry's management are displaying a relatively relaxed attitude to the buffering of environmental flux due to their superior stock of hard slack resources. If this is indeed the case, then the management within the food industry could be thought of as displaying greater foresight in investing in internal slack resources to meet the demands of the environment. This would suggest a greater understanding of the external environment than their colleagues in the other two sectors. However, this would be a counterintuitive conclusion, that one industry's management should display a superior conscious behaviour over and above another. However, the observation that the poorest overall performing industry (Food) seemingly invests more in Hard Slack resources than the relative best performer (IT) may be an erroneous supposition. As discussed previously there exists no evidence for any purposeful investment in Hard Slack resources and the research has revealed that within the older industries of Food and Plastics the elements of Hard Slack resources are significantly ($p < .01$) associated with organisational age. Therefore it may be concluded that the organisations of the Food industry display a greater stock of Hard Slack resources because they are relatively old. This is confirmation of earlier discussion above that proposed that the acquisition of slack resources was an unconscious result of past organisational changes.

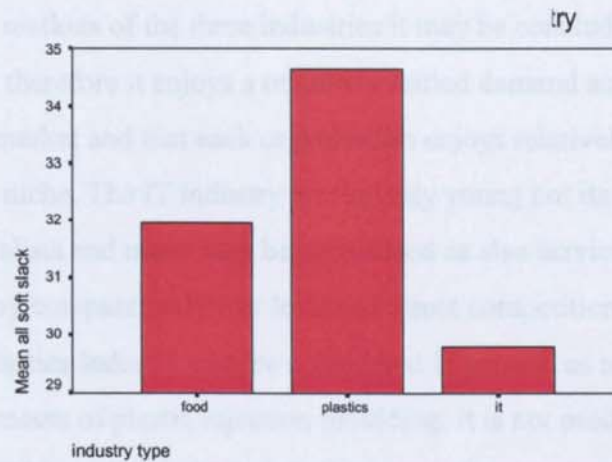
However, although the acquisition of Hard Slack resources may be a result of organisational longevity its toleration and operationallisation may be the result of other factors. The obvious candidate that requires examination is Soft Slack and its association with organisational Hard Slack resources.

To recap the dimensions of Soft Slack:

- i. Level of management education.
- ii. Management industry specific experience.
- iii. Other industries management experience.
- iv. Available management time.
- v. Further management training.
- vi. Employee further training.
- vii. Employee further education.

Fig. 7.4

Mean Soft Slack per Industry



The K-W one-way analysis of variance displays no significant difference between the three industries of their stock of Soft Slack Resources. However, what is significant is the process by which soft slack is applied within the three different industries.

Soft Slack has not been operationalised before in any slack resource research and as such a question mark may be said to hang over the validity of this variable. Experience, training and education together with 'slack management time' (defined as the management work time difference between periods of heavy and routine operations), intuitively will impact on management's ability to initiate new programs, to recognise and incorporate hard slack resources and organise and reinvest in their acquisition. However this may be quite rightly, academically challenged and the problems of introducing a new conceptual dimension to management science will be discussed below (chapter 8.0, Further Research). However, for the present the inclusion of Soft Slack as defined and captured in this work it is argued, is valid by virtue of the significant relationships discovered in the analysis.

Soft Slack resources within the IT display no significant associations, but within the Plastics sector Soft Slack is significantly related to Available, Recoverable and Potential Capacity Slack. Within the Food industry Soft Slack is significantly associated ($p < .01$) with Recoverable and Potential Capacity Slack resources. The intuitive conclusion for this behaviour is that 'required reaction time' is playing a significant role in the different industries. Available Slack is, as discussed above, by definition more accessible, its

energies capable of being more quickly applied than the other two hard slack dimensions. When considering the markets of the three industries it may be concluded that the Food industry is mature and therefore it enjoys a relatively settled demand and supply system with a regular, repeat market and that each organisation enjoys relatively little real competition within its niche. The IT industry is relatively young but its organisations may be considered as specialists and many may be considered as also servicing niche markets and therefore may enjoy comparatively low levels of direct competition. However, the organisations of the Plastics Industry may be considered in general as non-specialists. In consideration of the process of plastic injection moulding, it is not product specific, moulds are interchangeable and therefore virtually any product produced by one firm may also be supplied by another given the same capabilities. Therefore, speed as well as cost and quality will become of paramount importance for competitive advantage and when tactical or strategic change is required by external demands Available Slack may prove to be of the greatest importance. For example, the speedy commission of a new mould requires Available Slack Resources, namely cash. In contrast the companies of the Food industries may enjoy the comfort of a more leisurely reaction to unusual demands and hence displays a greater concern with the relatively more time consuming elements of Recoverable and Potential Capacity Slack. This supposition is supported by the evidence of the managements 'Perceived Environmental Flux', where the management of the Food industry was discovered to be relatively 'at ease' with the demands of the environment.

Curiously, the IT industry displays no significant relationships between any of the Hard Slack elements and Soft Slack. Therefore, within the IT Industry, management's intellectual capacity, training, spare time and experience displays no significant relationship with the levels of Hard Slack Resources. Hard Slack in this process is acquired despite management and its proportions may be considered to be a consequence of pure happenstance.

The above observations intimate that environment flux impacts on the slack resource acquisition behaviour and it may explain why the Food and IT industries collectively display a

relatively low stock of Available Slack Resources. However, as discussed above there exists yet another factor that impacts on the acquisition of Hard Slack, that of Organisational Age.

Within the older industries of Food and Plastics the age of the individual organisation is significantly ($p < .01$) related to the levels of both Recoverable and Potential Capacity Slack and in the Plastics Industry with Available Slack also. The Organisational Age, Hard Slack behaviour as argued in the main text, is a reflection that as a company matures it collects and absorbs Slack within its routines that become variously recoverable. Likewise, as a firm matures it intuitively grows, acquiring new assets that increase its Potential Capacity to acquire resources externally, but within the relatively young industry of IT no significant relationship may be found between Organisation Age and Hard Slack Resources. Intuitively, no significant differential of age is discernible between the companies of the IT industry and therefore no relationship is displayed between age and Hard Slack.

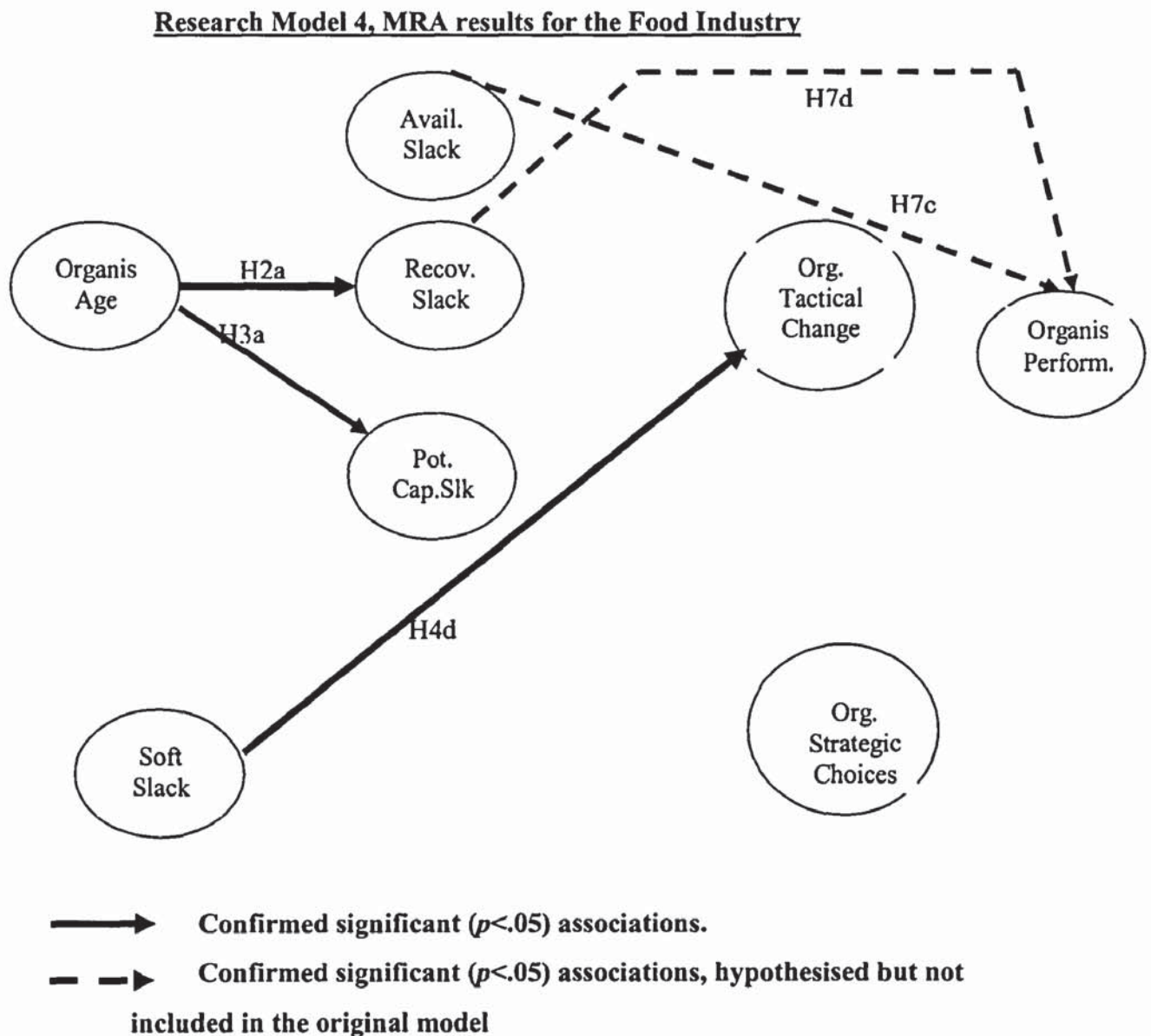
Therefore although the IT industry enjoys a significantly higher performance, its relative youth precludes it from relatively high stocks of Hard Slack Resources and indeed in terms of overall Slack Resource wealth puts it at the bottom of the league table of these three industries. This is demonstrated by the IT industries negative mean sum holdings of Potential Capacity Slack (see fig.7.2 above) that reflects a young sector that is financially highly geared. Therefore, it may be further speculated that within the IT industry its superior performance feeds, relative to the sectors of Food and Plastics, little into Available and Recoverable Slack, but its superior performance is being mostly absorbed by the mean negative Potential Capacity, i.e. the IT Industry is collectively paying off its initial seed capital costs. In conclusion, this supports the observation above that a sector displaying superior performance does not necessarily make it the wealthiest.

The behaviour of Slack Resources and its consequences have been discovered to be industry distinct, therefore the MRA findings for each industry will be examined in the following sections.

However one common result of the analysis for all three industries was the identification that the variable of Strategic Options generation played no significant role for any industry in the research model. Therefore this variable has been removed from the model.

7.2 Multiple Regression Analysis for The Food Industry

Fig 7.5 (adapted from the previously displayed Research Model 4, Fig. 3.19d)



It may be concluded from the above results that for the Food industry;

- Organisational Performance is significantly ($p < .05$) associated with Recoverable and Available Slack Resources. This confirms Thompson's (1969) speculative hypotheses that

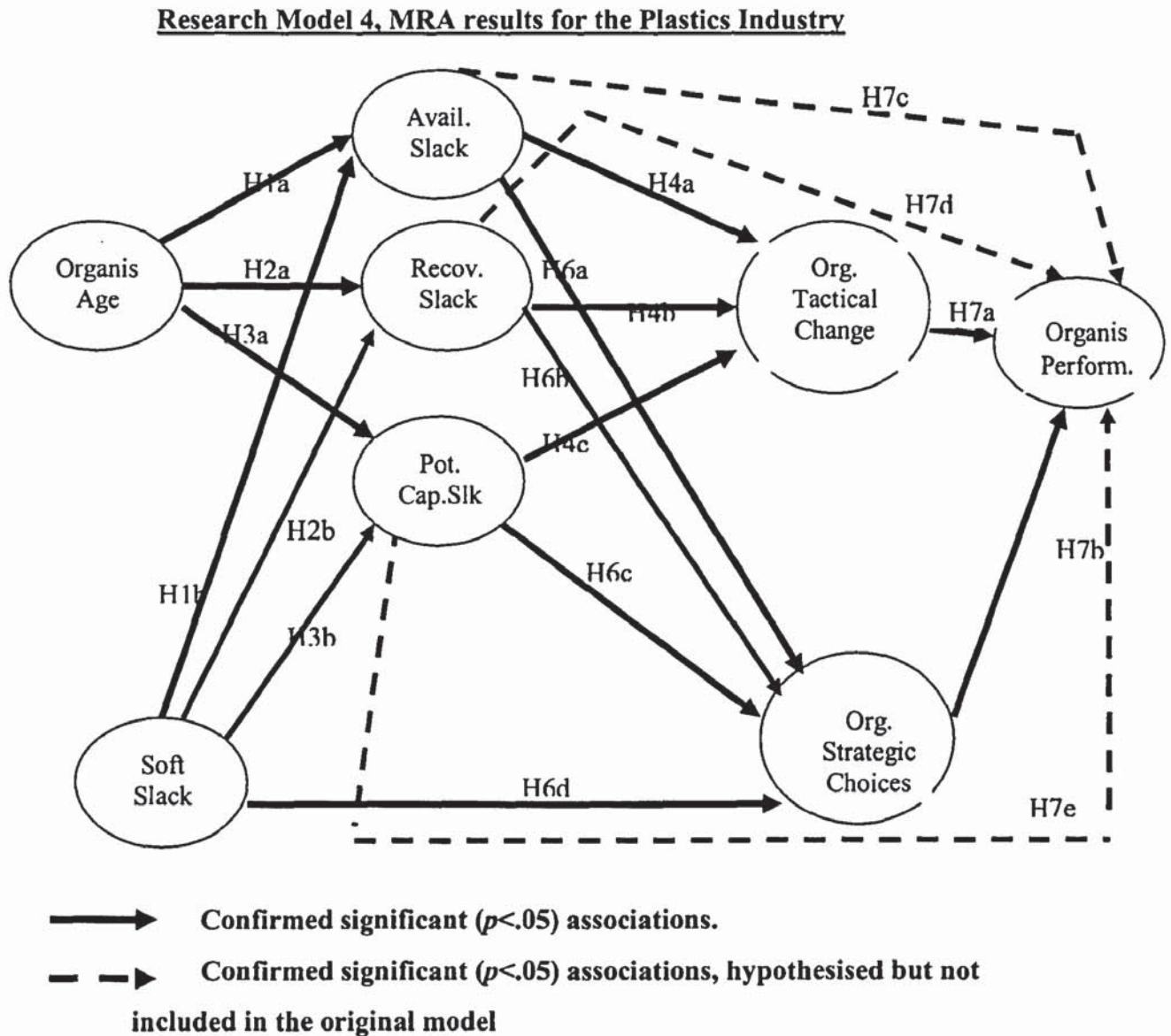
Slack Resources act as a 'Buffer', they may possess the capability of smoothing Performance during lean times, periods of poor market munificence.

- No significant relationship between Soft Slack and the elements of Hard Slack Resources is discernible. This may demonstrate that the collective management within the Food Industry is little concerned, and demonstrates no visible control over the acquisition of Hard Slack Resources.
- Organisational Age demonstrates a significant ($p < .05$) association with both Recoverable and Potential Capacity Slack Resources. It may be concluded that the collection of Hard Slack resources are therefore a consequence of past organisational changes.
- Soft Slack resources demonstrate a significant ($p < .05$) association with Organisational Tactical Change. This discovery lends support for the validity of the Soft Slack variable and demonstrates that Organisational Tactical Change is enhanced by it.

The next section will use the same presentation for MRA results for the Plastics industry.

7.3 Multiple Regression Analysis for the Plastics Industry

Fig 7.6 (adapted from the previously displayed Research Model 4, Fig. 3.19d)



It may be concluded from the above results that for the Plastics industry;

- Organisational Performance is significantly ($p < .05$) associated with Recoverable, Available and Potential Capacity Slack Resources. Again this lends support to Thompson's (1969) speculative hypotheses that Slack Resources act as a 'Buffer', they may possess the capability of smoothing Performance during lean times, periods of poor market munificence. However,

this behaviour may be a manifestation of the behaviour discussed below in the next two observations.

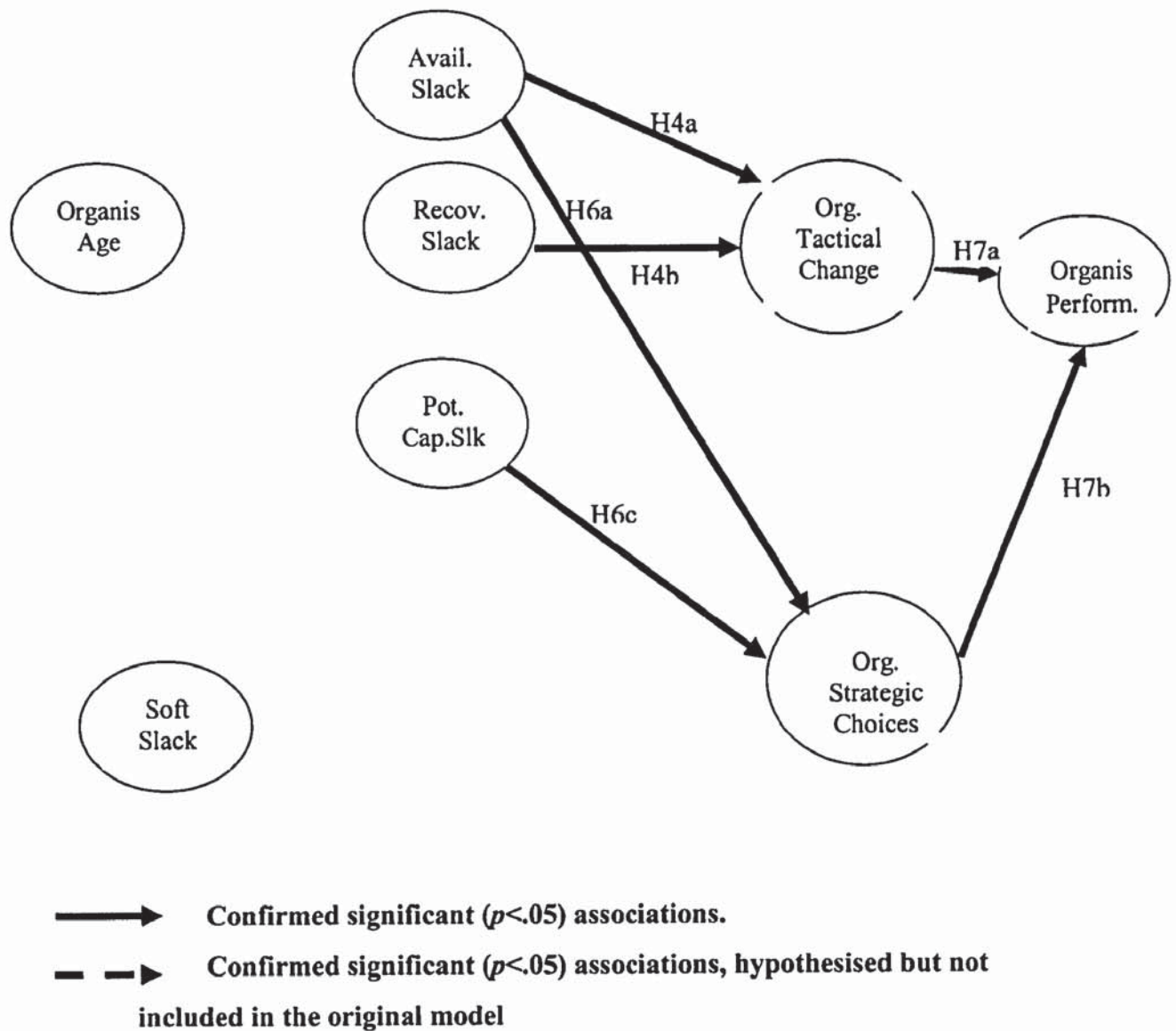
- Available, Potential and Recoverable Slack are significantly ($p < .05$) associated with both Tactical and Strategic Change, these two variables represent all organisational change. It may therefore be concluded that within the Plastics industry Slack Resources facilitate organisational flexibility. However, Soft Slack is also significantly ($p < .05$) associated with Strategic Change. This supports the earlier argument that for Hard Slack resources to impart their benefits Soft Slack must also play a role in driving Organisational Change.
- Both Tactical Change and Strategic Change are significantly ($p < .05$) associated with Organisational Performance. Therefore given the above, it may be further concluded that as Hard Slack resources facilitate organisational change this has a significant consequence for organisational performance. This is the first evidence that supports the argument that Slack Resources aid Organisational Flexibility that may lead to sustained improved Organisational Performance.
- The management of the Plastics Industry is overtly, but not necessarily consciously, concerned with all Hard Slack as demonstrated with the significant ($p < .05$) relationship of Soft Slack with each element of Hard Slack. Therefore, speed of reaction to environmental flux may well be important in this industry.
- Organisational Age has a direct significant positive effect on Available, Recoverable and Potential Capacity Slack Resources. This suggests that as a Plastics organisation matures it naturally acquires Hard Slack resources.

The next section will use the same presentation of MRA results for the IT industry.

7.4 Multiple Regression Analysis for the IT Industry

Fig 7.7 (adapted from the previously displayed Research Model 4, Fig. 3.19d)

Research Model 4, MRA results for the IT Industry



It may be concluded from the above results that for the IT industry;

- Organisational Age displays no significant relationship with the levels of Hard Slack Resources. This may be a reflection of the industries relative immaturity.
- The IT industries collective mean level of negative Potential Capacity Slack demonstrates the collective high gearing ratio of its member organisations.
- Again, as witnessed with the Plastics industry, the IT industry demonstrates that All Organisational Hard Slack Resources, Available, Potential and Recoverable Slack, are significantly ($p < .05$) associated with both Tactical and Strategic Change. It may therefore again be concluded that as demonstrated within the Plastics industry, Hard Slack resources facilitate organisational flexibility..
- All Organisational Change, captured as Tactical Change and Strategic Choices (Changes) are significantly ($p < .05$) associated with Organisational Performance. This is further evidence that supports the argument that Slack Resources aid Organisational Flexibility that in turn may lead to sustained improved Organisational Performance

The complex behaviour of Hard Slack Resources, its acquisition and internal behaviour and consequences for the organisation is now comprehensively if not completely, displayed above for the three industries of Food, Plastics and IT.

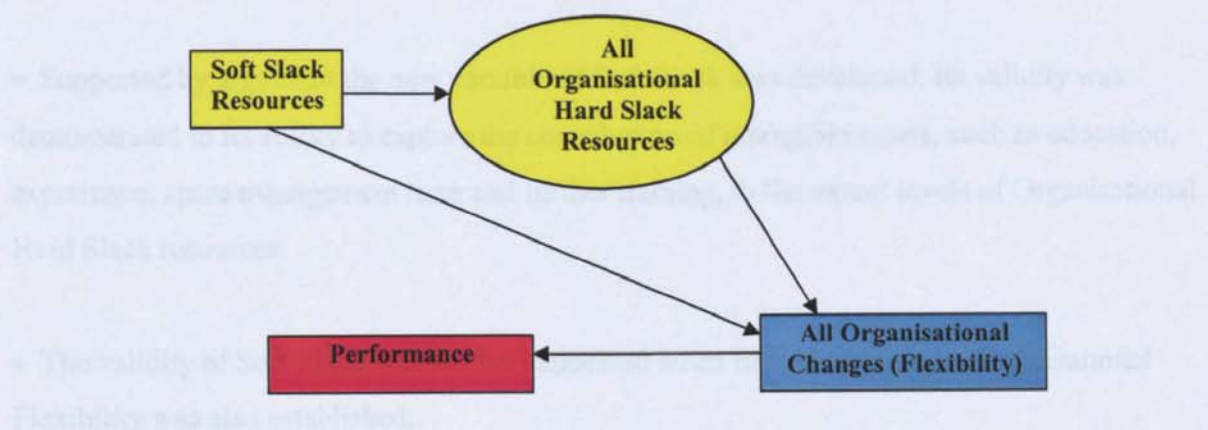
7.5 Further Observations of Slack's Impact within the Organisation

It may be envisioned that Environmental Flux impacts on the organisation and requires a response, a company action that satisfies the demand. A significant observation that emerged from the analyses was that across all three industries approximately 50% of the 'unusual' demands were absorbed at the tactical level of the organisation, but 50% were referred to senior management for further consideration and deliberation. It was further observed that management perceived the Strategic Options stage, as an 'Options Sorting House' that includes consideration of tactical change as a valid reaction in addition to the option to change strategy. It was further observed that approximately only two percent (2%) of total Environmental Flux that required organisational change effected Strategic Change in all three industries. Approximately forty-eight of the fifty percent to receive senior management

consideration is referred back to the floor of the organisation to be satisfied with a tactical change. This behaviour suggests a dearth of autonomy at the tactical level, a lack of authority at the companies interface to cope independently with many of the unusual demands. The vast majority (48 of the 50%) of this flux that is referred back to the tactical level of the organisation, where approximately half of the initial flux total has already been absorbed, is suspected to arrive with specific authority for some form of tactical change that was prohibited previously, together with permission to access further resources. These extra resources can be witnessed as being drawn from All Hard Slack Resources. Therefore it may be concluded that the 'Options Sorting House' of senior management is seemingly protecting the strategic core by deflecting the majority of Environmental Flux back to the tactical level.

When unusual demands were made of an organisation it was observed that some form of Hard and, or Soft Slack Resources were instrumental in organisational change within all of the organisations included in the study. A generalised model of this behaviour is given below, figure 7.5. However, there exist subtle differences together with some similarities, as to the precise mechanisms of the changes within the three industries.

Fig 7.5 A General Summary of the Consequences of Slack for Flexibility And Performance for all Organisations



It is now apparent that Slack resources do indeed play a measurable and significant role in improving performance but that the difficulties of previous studies in establishing a direct significant relationship may have been two-fold, firstly that each industry displays subtle

differences in its deployment of slack and secondly, that slack acts through the process of enabling organisational flexibility that eventually may produce improved performance. However, the whole process is only generally possible with the positive contribution of Soft Slack. It has not been attempted here to establish a management conscious awareness of the presence or contribution of slack resources to flexibility or performance, but the level of Soft Slack has been significantly associated with Hard Slack even if this is purely an unconscious act.

However, even a healthy stock of Hard Slack resources cannot be a guarantee of relative prosperity. As witnessed above within the Food industry, the windows of opportunity that afford competitive advantage must be present and recognised in the industry's environment in the first place. However, it is clear from this work that without the assets of Slack Resources, any window of opportunity that does present itself may be difficult to capitalise upon without them. Therefore, it may be concluded that Slack Resources are indeed the building blocks of superior competitive advantage for the company, provided it is within the right industry.

7.6 Summary of the Contribution of this Work

- This work has developed and perfected a new research model that aids the investigation of the internal behaviours and consequences of Slack Resources.
- Supported by argument the new variable of Soft Slack was developed. Its validity was demonstrated in its ability to capture the contribution of intangible assets, such as education, experience, spare management time and further training, to the extant levels of Organisational Hard Slack resources.
- The validity of Soft Slack was further supported when its contribution to Organisational Flexibility was also established.

- The original argument that Slack Resources enhance Organisational Performance has been further developed. It is now evidenced that Slack Resources facilitate Organisational Flexibility and by this process enhances Organisational Performance.
- It was also demonstrated that while a general model of Slack enhancing Flexibility that drives Performance improvement may be demonstrated, the precise mechanism is distinctive within different industries.
- A theoretical model for the achievement of Sustained Competitive Advantage was also constructed through rational argument that builds on the earlier work of Grant (1991) by incorporating slack resources into his model of a Resource Based Strategy.

The final chapter will now detail suggested further investigation and research that may aid in developing a deeper and richer understanding of the complexities of Slack Resources in the organisation.

Chapter eight will also discuss the recent findings of Tan (2003).

8.0 Suggested Further Investigation and Research

8.1 Identification of Further Research Gaps

This work has restricted itself to just three industries in an attempt to confine the data to manageable proportions. These industries purposely reflected three distinct eras of industrial age, Food >100 years, Plastics < 50 and IT <25. However, these particular industries may not be representative of the periods under investigation and further studies in other industries that roughly match the same periods are required to confirm or challenge the findings of this research.

Suggested industries for further investigation and collaborative analysis; >100 years, the Chemical Industry; <50 years the Airline industry (the Nation Health Service, although an interesting candidate may be problematic due to being highly politicised) and finally the comparatively young, <25 years old, Mobile Phone Industry.

A new variable, Soft Slack has been introduced in this work in an attempt to capture the capabilities and skills of management and indeed to evaluate their competence in managing slack resources. This element requires further research as its validity may be questionable as discussed above. Additionally, other factors of Soft Slack may be present within organisations that were not captured in this work. To increase the validity of this variable it is suggested that a phenomenological study be undertaken to broaden and deepen the understanding of this important element.

Another factor of Soft Slack that was referred to in the text but this work has not attempted to capture was that of cross cultural differences. Different national cultures may display different attitudes and therefore different behaviours with regard to slack resources. One study in particular that may prove of interest is the contrasting of East and West attitudes and behaviours regarding slack, this may illuminate different working practices.

The design of this study was grounded in a positivist philosophy and conducted within a quantitative methodology, as such it may be said to possess a high degree of reliability but then

a relatively low degree of validity, it may well address the 'how' but not the 'why' questions of the role of organisational slack resources. The secondary data employed here was accessed from the annual accounts of the organisations that submitted a completed questionnaire. This secondary data may be argued to be rather crude as it was unable to represent the subtle changes over all time that intuitively must exist as slack is depleted and then re-stocked, the hypothesised stepped slack, performance behaviour discussed and hypothesised in the main text (sec.2.9.3). It is suggested that the only way to capture the rich texture of the performance, slack behaviour is to conduct several case studies and to approach the research from a phenomenological perspective. This would enrich the understanding of the complexities of the issues and may also provide an insight into the mental processes of several of the stakeholders. In this form of research reliability is diminished but its validity would be superior to this study and having hopefully identified some new knowledge of the processes involving slack resources, this may aid the design of yet more quantitative research.

This work has employed the standard, accepted methodology of capturing Hard Slack Resources through ratio measures of profit and loss accounts data. This proves to be a very effective method of differentiating between the three classes of Hard Slack but it lacks rich detail. It is incapable of identifying specific slack that exists within the organisation. The Available, Recoverable and Potential Capacity classifications relate to ease of recovery only and fail to identify what they are in the physical processes of the company. To enable a practical identification and assessment of extant Slack Resources, again a phenomenological study could be adopted that may broaden and enrich the general understanding of slack and its consequences for the organisation.

8.2 Bourgeois and the Recent Work of Tan (Dec. 2003)

Bourgeois's (1981) assertion that; "Organisational performance is positively associated with hard slack resources up to a certain level, after which there exists a negative association", envisaged as an inverted U shaped performance behaviour, was not investigated in this work. It is speculated that those organisations displaying relatively very poor performances may be incapable of being captured employing the methods used by this work and therefore, this

investigation was incapable of testing this hypothesis. However, recent work by Tan (2003) asserts that the relationship has been discovered in an extensive sample of 17,000 Small to Medium Enterprises (SME's) in China.

The results of this study are a surprising confirmation of the speculated non-linear relationship hypothesised by Bourgeois's (1981). The capture of extremely low performing companies, either displaying excessive Hard Slack Resources or indeed a dearth, intuitively are difficult to operationalise as they would be quickly eliminated and would fall out of the population. However, an explanation for their survival and subsequent capture in the Tan (2003) study may be sought in the population parameter of geographic and hence political location. As Tan (2003) observes China is in a transitional economy, it is seeking, in a controlled and managed manner to move from a 'Planned Economy' into the global 'Free Market Economy', a shift from a Marxist to a Capitalist philosophy. It may be observed that under a Planned Economy where organisations are state owned and controlled, enterprises are not allowed to fail and hence Tan (2003) may have (just) managed to capture these still existent poor performing organisations that may soon be allowed to 'sink or swim' in the free market.

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Regression H1 (Food)- Dependant - Available Slack; Independents - Age & Soft Slack

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	all soft slack, Org. Age	.	Enter

a. All requested variables entered.

b. Dependent Variable: available slack p.yr.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.173 ^a	.030	-.024	11.5883659

a. Predictors: (Constant), all soft slack, Org. Age

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	148.704	2	74.352	.554	.580 ^a
	Residual	4834.448	36	134.290		
	Total	4983.152	38			

a. Predictors: (Constant), all soft slack, Org. Age

b. Dependent Variable: available slack p.yr.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.019	5.824		1.377	.177
	Org. Age	-.022	.036	-.103	-.595	.555
	all soft slack	-.112	.173	-.111	-.644	.524

a. Dependent Variable: available slack p.yr.

Regression H2: (Food)- Dependant - Recoverable Slack; Independents - Age & Soft Slack

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	all soft slack, Org. Age	.	Enter

a. All requested variables entered.

b. Dependent Variable: recoverable slack 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.632 ^a	.399	.339	.2735541

a. Predictors: (Constant), all soft slack, Org. Age

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	529.037	2	264.518	.493	.615 ^a
	Residual	19332.490	36	537.014		
	Total	19861.527	38			

a. Predictors: (Constant), all soft slack, Org. Age

b. Dependent Variable: recoverable slack 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.819	11.646		3.444	.002
	Org. Age	3.695E-02	.001	.388	2.909	.006
	all soft slack	-.227	.346	-.113	-.655	.516

a. Dependent Variable: recoverable slack 1996-2000

**Regression (Food) H3 Dependent - Potential Capacity Slack;
Independents - Organisation Age & Soft Slack Resources**

Variables Entered/Removed(b,c)

Model	Variables Entered	Variables Removed	Method
1	Organisation Age, Soft Slack Resources(a)	.	Enter

a All requested variables entered.

b Dependent Variable: Potential Cap. Slack 1996-2000

c Models are based only on cases for which Industry = Food

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	Industry = Food (Selected)			
1	.579 ^a	.335	.303	7.88554

a. Predictors: (Constant), Organisation Age, Soft Slack Resources

ANOVA(b,c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1285.390	2	642.695	10.336	.000(a)
	Residual	2549.453	41	62.182		
	Total	3834.844	43			

a Predictors: (Constant), Organisation Age, Soft Slack Resources

b Dependent Variable: Potential Cap. Slack 1996-2000

c Selecting only cases for which Industry = Food

Coefficients^{a,b}

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.605	3.659		-1.258	.215
	Soft Slack Resources	-1.70E-02	.118	-.020	-.144	.886
	Organisation Age	.105	.025	.587	4.208	.000

a. Dependent Variable: Potential Cap. Slack 1996-2000

b. Selecting only cases for which Industry = Food

**Regression H4 (Food)- Dependant - Tactical Change;
Independents - Soft Slack, Available Slack & Potential Capacity Slack**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	potential slack 1996-2000, all soft slack, available slack p.yr., recoverable slack 1996-2000 ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: Tactical Change

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.374 ^a	.140	.039	5.738

a. Predictors: (Constant), potential slack 1996-2000, all soft slack, available slack p.yr., recoverable slack 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	182.489	4	45.622	1.386	.260 ^a
	Residual	1119.254	34	32.919		
	Total	1301.744	38			

a. Predictors: (Constant), potential slack 1996-2000, all soft slack, available slack p.yr., recoverable slack 1996-2000

b. Dependent Variable: Tactical Change

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.711	3.484		3.074	.004
	all soft slack	.195	.084	.380	2.324	.026
	available slack p.yr.	.318	2.754	.623	.116	.909
	recoverable slack 1996-2000	.303	1.761	1.182	.172	.865
	potential slack 1996-2000	-.990	2.555	-1.694	-.388	.701

a. Dependent Variable: Tactical Change

**Regression H5 (Food)- Dependant - Strategic Options;
Independents - Soft Slack, Available Slack & Potential Capacity Slack**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	potential slack 1996-2000, all soft slack, available slack p.yr., recoverable slack 1996-2000 ^a		Enter

a. All requested variables entered.

b. Dependent Variable: Strategic Options

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.464 ^a	.215	.123	60.904

a. Predictors: (Constant), potential slack 1996-2000, all soft slack, available slack p.yr., recoverable slack 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34617.763	4	8654.441	2.333	.075 ^a
	Residual	126114.6	34	3709.253		
	Total	160732.4	38			

a. Predictors: (Constant), potential slack 1996-2000, all soft slack, available slack p.yr., recoverable slack 1996-2000

b. Dependent Variable: Startegic Options

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	48.179	36.986		1.303	.201
	all soft slack	-.858	.892	-.150	-.963	.342
	total available slack p.yr.	-43.568	29.228	-7.671	-1.491	.145
	annual recoverable slack 1996-2000	22.820	18.691	8.022	1.221	.231
	potential slack 1996-2000	5.580E-02	27.116	.009	.002	.998

a. Dependent Variable: Strategic Options

**Regression H6 (Food)- Dependant - Strategic Change (Choices);
Independents - Soft Slack, Available Slack & Potential Capacity Slack**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	potential slack 1996-2000, all soft slack, available slack p.yr., recoverable slack 1996-2000 ^a		Enter

a. All requested variables entered.

b. Dependent Variable: S4 total strat changes 5years

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.390 ^a	.152	.052	2.907

a. Predictors: (Constant), potential slack 1996-2000, all soft slack, available slack p.yr., recoverable slack 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51.558	4	12.889	1.525	.217 ^a
	Residual	287.416	34	8.453		
	Total	338.974	38			

a. Predictors: (Constant), potential slack 1996-2000, all soft slack, available slack p.yr., recoverable slack 1996-2000

b. Dependent Variable: strat changes 5years

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.569	1.766		2.588	.014
	all soft slack	-.007	.043	-.027	-.169	.867
	total available slack p.yr.	-1.502	1.395	-5.759	-1.076	.289
	recoverable slack 1996-2000	1.006	.892	7.700	1.127	.267
	potential slack 1996-2000	-.478	1.294	-1.604	-.370	.714

a. Dependent Variable: total strat changes 5years

**Regression H7 a & b (Food)- Dependant - Organisational Performance;
Independents - Strategic Change & Tactical Change**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Tactical Changes Strat Changes ^a	.	Enter

a. Tactical Change Strat Changes

b. Dependent Variable: performance 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.173 ^a	.030	-.017	40.56882

a. Predictors: Tactical Change Strat Changes

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2086.879	2	1043.440	.634	.536 ^a
	Residual	67478.985	41	1645.829		
	Total	69565.864	43			

a. Predictors: (Constant), Tactical Change, Strat Changes

b. Dependent Variable: performance 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.298	20.341		.605	.549
	Strategic Changes	-.207	2.176	-.015	-.095	.925
	Tactical Changes	1.176	1.065	.177	1.104	.276

a. Dependent Variable: performance 1996-2000

**Regression H7 c, d & e (Food)- Dependant - Organisational Performance;
Independents - Available, Recoverable and Potential Capacity Slack Resources**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	potential slack 1996-2000, available slack p.yr., recoverable slack 1996-2000 ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: Performance 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534 ^a	.286	.224	34.30662

a. Predictors: (Constant), potential slack 1996-2000, available slack p.yr., recoverable slack 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16468.924	3	5489.641	4.664	.008 ^a
	Residual	41193.050	35	1176.944		
	Total	57661.973	38			

a. Predictors: (Constant), potential slack 1996-2000, available slack p.yr., recoverable slack 1996-2000

b. Dependent Variable: Performance 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	72.882	12.103		6.022	.000
	available slack p.yr.	52.769	16.407	15.513	3.216	.003
	recoverable slack 1996-2000	-37.949	10.517	-22.272	-3.608	.001
	potential slack 1996-2000	26.714	15.047	6.868	1.775	.085

a. Dependent Variable: performance 1996-2000

**Regression (Plastics) H1 Regression (Plastics) - Dependant - Available Slack;
Independents - Age & Soft Slack**

Variables Entered/Removed^{b,c}

Model	Variables Entered	Variables Removed	Method
1	Soft Slack, Age of ^a Organ.	.	Enter

a. All requested variables entered.

b. Dependent Variable: Available Slack 1996 - 2000

c. Models are based only on cases for which Industry = Plastics

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	Industry = Plastics (Selected)			
1	.997 ^a	.993	.993	.04841

a. Predictors: (Constant), Soft Slack, Age of Organ.

ANOVA^{b,c}

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.370	2	5.685	2425.872	.000 ^a
	Residual	.077	33	.002		
	Total	11.447	35			

a. Predictors: (Constant), Soft Slack, Age of Organ.

b. Dependent Variable: Available Slack 1996 - 2000

c. Selecting only cases for which Industry = Plastics

Coefficients^{a,b}

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.192	.029		-6.713	.000
	Age of Organ.	.013	.001	.755	23.602	.000
	Soft Slack	.008	.001	.262	8.201	.000

a. Dependent Variable: Available Slack 1996 - 2000

b. Selecting only cases for which Industry = Plastics

**Regression(Plastics)H2 Regression (Plastics) - Dependant - Recoverable Slack;
Independents - Age & Soft Slack**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Soft Slack, Organisati onal Age	.	Enter

a. All requested variables entered.

b. Dependent Variable: Recoverable Slack 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.996 ^a	.992	.992	.07462

a. Predictors: (Constant), Soft Slack, Organisational Age

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.830	2	11.915	2139.693	.000 ^a
	Residual	.184	33	.006		
	Total	24.014	35			

a. Predictors: (Constant), Soft Slack, Organisational Age

b. Dependent Variable: Recoverable Slack 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.657	.031		20.912	.000
	Organisational Age	.015	.000	1.076	40.165	.000
	Soft Slack	-.005	.001	-.099	-3.702	.001

a. Dependent Variable: Recoverable Slack 1996-2000

**Regression (Plastics) H3 Regression (Plastics) - Dependant - Potential Capacity Slack;
Independents - Age & Soft Slack**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Soft Slack, Organisational Age	.	Enter

a. All requested variables entered.

b. Dependent Variable: Potencial Capacity Slack 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.989 ^a	.978	.977	2.32606

a. Predictors: (Constant), Soft Slack, Organisational Age

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8052.990	2	4026.495	744.196	.000 ^a
	Residual	178.548	33	5.411		
	Total	8231.537	35			

a. Predictors: (Constant), Soft Slack, Organisational Age

b. Dependent Variable: Potencial Capacity Slack 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.451	.979		-3.524	.001
	Organisational Age	.229	.012	.868	19.233	.000
	Soft Slack	.124	.039	.144	3.182	.003

a. Dependent Variable: Potencial Capacity Slack 1996-2000

**Regression (Plastics) H4 Regression (Plastics) - Dependant - Tactical Change;
Independents - Available, Recoverable, Potential Capacity & Soft Slack Resources**

Variables Entered/Removed^{b,c}

Model	Variables Entered	Variables Removed	Method
1	Soft Slack Total, Available Slack (1996-2000), Potential Slack (1996-2000), Recoverable Slack (1996-2000)	.	Enter

a. All requested variables entered.

b. Dependent Variable: Tactical Change

c. Models are based only on cases for which Industry = Plastics

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	Industry = Plastics (Selected)			
1	.999 ^a	.998	.998	.158

a. Predictors: (Constant), Soft Slack Total, Available Slack (1996-2000), Potential Slack (1996-2000), Recoverable Slack (1996-2000)

ANOVA^{b,c}

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	506.200	4	126.550	5082.404	.000 ^a
	Residual	.772	31	.025		
	Total	506.972	35			

a. Predictors: (Constant), Soft Slack Total, Available Slack (1996-2000), Potential Slack (1996-2000), Recoverable Slack (1996-2000)

b. Dependent Variable: Tactical Change

c. Selecting only cases for which Industry = Plastics

Coefficients^{a,b}

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.812	.601		-1.350	.187
	Available Slack (1996-2000)	.705	.065	.995	10.925	.000
	Recoverable Slack (1996-2000)	.166	.032	.442	5.221	.000
	Potential Slack (1996-2000)	-1.317	.129	-.445	-10.237	.000
	Soft Slack Total	.000	.002	.001	.187	.853

a. Dependent Variable: Tactical Change

b. Selecting only cases for which Industry = Plastics

**Regression H5 (Plastics) - Dependant - Strategic Options;
Independents - Available, Recoverable, Potential Capacity & Soft Slack Resources**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	potential slack 1996-2000, available slack p.yr., all soft slack, recoverable slack 1996-2000 ^a		Enter

a. All requested variables entered.

b. Dependent Variable: Strategic Options

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.377 ^a	.142	.020	45.688

a. Predictors: (Constant), potential slack 1996-2000, available slack p.yr., all soft slack, recoverable slack 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9703.148	4	2425.787	1.162	.349 ^a
	Residual	58446.731	28	2087.383		
	Total	68149.879	32			

a. Predictors: (Constant), potential slack 1996-2000, available slack p.yr., all soft slack, recoverable slack 1996-2000

b. Dependent Variable: Startegic Options

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-12.685	30.376		-.418	.679
	all soft slack	.677	.448	.272	1.509	.143
	available slack p.yr.	-9.950	8.988	-.539	-1.107	.278
	recoverable slack 1996-2000	25.369	26.987	.475	.940	.355
	potential slack 1996-2000	-8.644	22.034	-.084	-.392	.698

a. Dependent Variable: Startegic Options

**Regression (Plastics) H6 Regression (Plastics) - Dependant - Strategic Changes;
Independents - Available, Recoverable, Potential Capacity & Soft Slack Resources**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Soft Slack, Recoverable Slack 1996-2000, Available Slack 1996-2000, Potencial Capacity Slack 1996-2000 ^a		Enter

a. All requested variables entered.

b. Dependent Variable: Strategic Changes 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.984 ^a	.968	.964	1.17258

a. Predictors: (Constant), Soft Slack, Recoverable Slack 1996-2000, Available Slack 1996-2000, Potential Capacity Slack 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1303.016	4	325.754	236.923	.000 ^a
	Residual	42.623	31	1.375		
	Total	1345.639	35			

a. Predictors: (Constant), Soft Slack, Recoverable Slack 1996-2000, Available Slack 1996-2000, Potential Capacity Slack 1996-2000

b. Dependent Variable: Strategic Changes 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.832	1.820		2.655	.012
	Available Slack 1996-2000	-.252	.077	-.543	-3.260	.003
	Recoverable Slack 1996-2000	-5.866	1.858	-.784	-3.156	.004
	Potential Capacity Slack 1996-2000	.833	.087	2.061	9.601	.000
	Soft Slack	.063	.026	.181	2.442	.021

a. Dependent Variable: Strategic Changes 1996-2000

**Regression (Plastics) H7a & b Regression (Plastics) - Dependant - Organisational Performance;
Independents - Strategic Changes & Tactical Changes**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Tactical Changes 1996-2000, Strategic Changes 1996-2000 ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: Performance 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.977 ^a	.955	.953	6.59746

a. Predictors: (Constant), Tactical Changes 1996-2000, Strategic Changes 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30778.025	2	15389.013	353.555	.000 ^a
	Residual	1436.373	33	43.526		
	Total	32214.398	35			

a. Predictors: (Constant), Tactical Changes 1996-2000, Strategic Changes 1996-2000

b. Dependent Variable: Performance 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-24.759	3.064		-8.082	.000
	Strategic Changes 1996-2000	1.700	.418	.347	4.067	.000
	Tactical Changes 1996-2000	3.263	.427	.652	7.636	.000

a. Dependent Variable: Performance 1996-2000

**Regression H7c, d & e (Plastics) - Dependant - Organisational Performance;
Independents - Available, Recoverable & Potential Capacity Slack Resources**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	potential slack 1996-2000, available slack p.yr., recoverable slack 1996-2000 ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: performance 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.568 ^a	.322	.259	26.12117

a. Predictors: (Constant), potential slack 1996-2000, available slack p.yr., recoverable slack 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10380.696	3	3460.232	5.071	.006 ^a
	Residual	21834.094	32	682.315		
	Total	32214.791	35			

a. Predictors: (Constant), average potential slack 1996-2000, average total available slack p.yr., average annual recoverable slack 1996-2000

b. Dependent Variable: performance 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	83.650	16.146		5.181	.000
	available slack p.yr.	17.134	5.009	1.351	3.420	.002
	recoverable slack 1996-2000	-53.341	15.130	-1.456	-3.526	.001
	potential slack 1996-2000	41.151	12.291	.599	3.348	.002

a. Dependent Variable: performance 1996-2000

Regression H1 (IT) - Dependant - Available Slack; Independents - Age & Soft Slack

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Org.Age, all soft slack	.	Enter

a. All requested variables entered.

b. Dependent Variable: available slack p.yr.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.190 ^a	.036	-.017	77.4737160

a. Predictors: (Constant), Org.Age, all soft slack

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8084.732	2	4042.366	.673	.516 ^a
	Residual	216078.4	36	6002.177		
	Total	224163.1	38			

a. Predictors: (Constant), Org.Age, all soft slack

b. Dependent Variable: available slack p.yr.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-58.378	37.884		-1.541	.132
	all soft slack	1.063	1.042	.169	1.020	.314
	Org.Age	.658	1.637	.066	.402	.690

a. Dependent Variable: available slack p.yr.

Regression H2 (IT) - Dependant - Recoverable Slack; Independents - Age & Soft Slack

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Org.Age, all soft slack	.	Enter

a. All requested variables entered.

b. Dependent Variable: annual recoverable slack 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.193 ^a	.037	-.016	60.1213209

a. Predictors: (Constant), Org.Age, all soft slack

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5059.441	2	2529.720	.700	.503 ^a
	Residual	130124.6	36	3614.573		
	Total	135184.1	38			

a. Predictors: (Constant), Org.Age, all soft slack

b. Dependent Variable: recoverable slack 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	47.432	29.399		1.613	.115
	all soft slack	-.836	.809	-.171	-1.034	.308
	Org.Age	-.535	1.271	-.070	-.421	.676

a. Dependent Variable: recoverable slack 1996-2000

Regression H3 (IT) - Dependant - Potential Capacity Slack; Independents - Age & Soft Slack

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Org.Age, all soft slack	.	Enter

a. All requested variables entered.

b. Dependent Variable: potential slack 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.088 ^a	.008	-.047	.9682344

a. Predictors: (Constant), Org.Age, all soft slack

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.265	2	.133	.141	.869 ^a
	Residual	33.749	36	.937		
	Total	34.014	38			

a. Predictors: (Constant), Org.Age, all soft slack

b. Dependent Variable: potential slack 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.445E-02	.473		.199	.843
	all soft slack	2.497E-03	.013	.032	.192	.849
	Org.Age	-.011	.020	-.087	-.518	.607

a. Dependent Variable: potential slack 1996-2000

**Regression H4 (IT) - Dependant - Tactical Change;
Independents - Available, Recoverable, Potential Capacity & Soft Slack**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	available slack p.yr., all soft slack, potential slack 1996-2000, recoverable slack 1996-2000 ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: Tactical Change

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.576 ^a	.332	.253	6.683

a. Predictors: (Constant), available slack p.yr., all soft slack, potential slack 1996-2000, recoverable slack 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	753.278	4	188.320	4.216	.007 ^a
	Residual	1518.619	34	44.665		
	Total	2271.897	38			

a. Predictors: (Constant), available slack p.yr., all soft slack, potential slack 1996-2000, recoverable slack 1996-2000

b. Dependent Variable: Tactical Change

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.813	3.031		4.887	.000
	all soft slack	-.127	.091	-.200	-1.397	.171
	recoverable slack 1996-2000	.115	.031	.886	3.719	.001
	potential slack 1996-2000	-.481	1.399	-.059	-.344	.733
	available slack p.yr.	5.768	1.960	.759	2.944	.006

a. Dependent Variable: Tactical Change

**Regression H 5 (IT) - Dependant - Strategic Options;
Independents - Available, Recoverable, Potential Capacity & Soft Slack**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	available slack p.yr., all soft slack, potential slack 1996-2000, recoverable slack 1996-2000 ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: Strategic Options

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.427 ^a	.182	.086	23.656

a. Predictors: (Constant), available slack p.yr., all soft slack, potential slack 1996-2000, recoverable slack 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4242.497	4	1060.624	1.895	.134 ^a
	Residual	19025.862	34	559.584		
	Total	23268.359	38			

a. Predictors: (Constant), available slack p.yr., all soft slack, potential slack 1996-2000, recoverable slack 1996-2000

b. Dependent Variable: Strategic Options

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	47.180	10.728		4.398	.000
	all soft slack	-.597	.322	-.294	-1.857	.072
	recoverable slack 1996-2000	4.697E-02	.109	.113	.430	.670
	potential slack 1996-2000	7.762	4.951	.297	1.568	.126
	available slack p.yr.	2.486	6.936	.102	.358	.722

a. Dependent Variable: Strategic Option

**Regression H6 (IT) - Dependant - Strategic Changes;
Independents - Strategic Options, Available, Recoverable, Potential Capacity & Soft Slack**

Variables Entered/Removed^d

Model	Variables Entered	Variables Removed	Method
1	Strategic options, recoverabl e slack 1996-2000, all soft slack, potential slack 1996-2000, available ^a slack p.yr.	.	Enter

a. All requested variables entered.

b. Dependent Variable: strat changes 5years

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.491 ^a	.241	.126	3.509

a. Predictors: (Constant), Strat options, recoverable slack 1996-2000, all soft slack, potential slack 1996-2000, available slack p.yr.

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	129.256	5	25.851	2.099	.090 ^a
	Residual	406.334	33	12.313		
	Total	535.590	38			

a. Predictors: (Constant), Strat options, recoverable slack 1996-2000, all soft slack, potential slack 1996-2000, available slack p.yr.

b. Dependent Variable: strat changes 5years

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.895	1.993		1.452	.156
	all soft slack	3.443E-02	.050	.112	.688	.496
	recoverable slack 1996-2000	9.424E-03	.016	.150	.580	.566
	potential slack 1996-2000	-1.688	.761	-.425	-2.219	.033
	available slack p.yr.	2.151	1.031	.583	2.087	.045
	strat options	4.619E-02	.025	.304	1.816	.078

a. Dependent Variable: strat changes 5years

**Regression H7a & b (IT) - Dependant - Organisational Performance;
Independents - Strategic Changes, Tactical Changes**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Tactical Changes 1996-2000, Strategic Changes 1996-2000 ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: Performance 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.977 ^a	.955	.953	6.59746

a. Predictors: (Constant), Tactical Changes 1996-2000, Strategic Changes 1996-2000

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30778.025	2	15389.013	353.555	.000 ^a
	Residual	1436.373	33	43.526		
	Total	32214.398	35			

a. Predictors: (Constant), Tactical Changes 1996-2000, Strategic Changes 1996-2000

b. Dependent Variable: Performance 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-24.759	3.064		-8.082	.000
	Strategic Changes 1996-2000	1.700	.418	.347	4.067	.000
	Tactical Changes 1996-2000	3.263	.427	.652	7.636	.000

a. Dependent Variable: Performance 1996-2000

**Regression H7c, d & e (IT) - Dependant - Organisational Performance;
Independents - Strategic Options, Available, Recoverable, Potential Capacity Slack**

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	potential slack 1996-2000, recoverable slack 1996-2000, available ^a slack p.yr.	.	Enter

a. All requested variables entered.

b. Dependent Variable: performance 1996-2000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.213 ^a	.046	-.036	78.94359

a. Predictors: (Constant), potential slack 1996-2000, recoverable slack 1996-2000, available slack p.yr.

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10404.038	3	3468.013	.556	.647 ^a
	Residual	218123.2	35	6232.091		
	Total	228527.2	38			

a. Predictors: (Constant), potential slack 1996-2000, recoverable slack 1996-2000, available slack p.yr.

b. Dependent Variable: annual performance 1996-2000

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	71.330	14.252		5.005	.000
	available slack p.yr.	10.184	23.110	.134	.441	.662
	recoverable slack 1996-2000	.350	.363	.269	.964	.342
	potential slack 1996-2000	-6.397	16.460	-.078	-.389	.700

a. Dependent Variable: performance 1996-2000



**A Survey
of Resource Utilisation
Within a Cross Section
of UK Industry**

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The questionnaire was constructed in an A3 pamphlet format

The MD/CEO Questionnaire

This questionnaire relates to organisational events in the last five years, should your tenure (in any capacity) with the company be less than five years please pass to a Director with the relevant experience.

Dear Director

The following questionnaire forms the central component of my PhD research without which I shall be unable to complete my studies, consequently I thank you now in anticipation of your response.

The questionnaire, which should take approximately 20 minutes to complete, is designed to gather information relating to UK company resource usage in relation to industry age, the hostility of the environment, managerial experience and finally, how all this relates to company performance.

All the questions relate directly to your company and its responses to certain external demands made upon it, as such let me assure you:

Your individual responses will be completely confidential and the information you provide as an individual or company will not be divulged to any other individual, company, or organisation.

Thank you again for your help and support. Should you wish to receive a word processed (MS Word) disk containing my final thesis including the composite findings of this survey, please tick here :

☐

Paul Adkins

Paul Adkins

Aston University researcher & tutor of Marketing & International Business

The Company in general

A1. What is your companys primary product/service?

A2. In which year did your company start trading?

A3. How many Company Directors (including self) do you have?

A4. How many Company Senior Managers are there in your firm
(Managers who report direct to a Director)?

External Environment

Please score the following statements by ringing your response on the scale bellow the individual observations.

E1. Many opportunities are available to my Company in new markets.
Strongly Disagree Strongly Agree
1 2 3 4 5 6 7

E2. There are many opportunities available to my Company from
its existing products.
Strongly Disagree Strongly Agree
1 2 3 4 5 6 7

E3. The potential for growth in the markets currently served by my
Company is substantial
Strongly Disagree Strongly Agree
1 2 3 4 5 6 7

E4. The strategies of our competitors are not predictable.
Strongly Disagree Strongly Agree
1 2 3 4 5 6 7

External Environment Cont.						
E5. The demands of the market(s) served by my Company are difficult to predict						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
E6. Customers served by my Company vary greatly in terms of their preferences and expectations.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
E7. In order to compete effectively in the markets served by my Company new technologies must be continually mastered.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
E8. Competition in the markets served by my Company is severe.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
E9. In the markets served by my Company, the firm that reduces its marketing efforts will loose customers to their competitors.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
E10. My Company has to deal with a great complexity of new rules and/or regulations.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

Company Resources

R1. Do you agree or disagree with the statement:

'To be competitive a company must remain responsive to all the demands made upon it'

Please ring your response

Strongly Disagree Strongly Agree
 1 2 3 4 5 6 7

R2. Do you consider that all the resources of your Company, including personnel, are working at full capacity?)

Please ring your response

Low capacity Moderate capacity Full capacity
 1 2 3 4 5 6 7

R3. Do you consider this level of efficiency to be high or low?

Please ring your response

Far too High OK Far too Low
 1 2 3 4 5 6 7

R4. Do you consider it important for your company to be able to respond quickly to customer requests for product/service modifications?

Please ring your response

Of little consequence Moderately Important Very Important
 1 2 3 4 5 6 7

R5. Do you consider your Company to be responsive to unusual customer demands?

Please ring your response

Very Responsive Moderately Responsive Unresponsive
 1 2 3 4 5 6 7

R6. Do you consider it important for your Company to be able to respond quickly to new legislation or rules of conduct?

Please ring your response

Of little consequence Moderately Important Very Important
 1 2 3 4 5 6 7

R7. Do you consider your Company to be capable of responding quickly to the demands of new rules and legislation?

Please ring your response

Low Responsiveness Moderately Responsive Very Responsive
 1 2 3 4 5 6 7

Company Resources Cont.

R8. What do you consider most enhances company responsiveness to customer and other external demands for change?

(Please ring your response; score issues the same if you believe they represent the same contribution to company flexibility)

	Of little significance					Very Significant	
i.Management education and training.	1	2	3	4	5	6	7
ii.Employee education and training.	1	2	3	4	5	6	7
iii.Management time to examine new issues	1	2	3	4	5	6	7
iv.Employee autonomy	1	2	3	4	5	6	7
v.Strict procedures for all conceivable eventualities	1	2	3	4	5	6	7
vi.Spare internal resource capacity	1	2	3	4	5	6	7
vii. Liquid reserves of company funds	1	2	3	4	5	6	7
viii.Hands on management Control	1	2	3	4	5	6	7
ix.Management experience.	1	2	3	4	5	6	7
x. Access to external sources of funds	1	2	3	4	5	6	7
xi.Stock (finished/part finished goods)	1	2	3	4	5	6	7
xii.Stock (raw materials)	1	2	3	4	5	6	7
xiii.Access to temporary staff	1	2	3	4	5	6	7
xiv.Other (please specify):							

Company Resources Cont.

R9. Do you consider that your company, more than most of your competitors, has to respond to a greater number and complexity of external demands?

Please ring your response

Less				Same			More
1	2	3	4	5	6	7	

R10. Do you consider that your industry sector, more than most other industries, is subject to a greater number and complexity of external demands.?

Please ring your response

Less				Same			More
1	2	3	4	5	6	7	

R11. Do you agree or disagree with the statement:

'My organisation requires spare resources to remain responsive to external demands'

Please ring your response

Strongly Agree						Strongly Disagree
1	2	3	4	5	6	7

Tactical Operations

T1.How much of your working day do you spend addressing, what you consider to be minor internal problems?

(Please ring response number on the scale below)

None				Half my working time		All my time
1	2	3	4	5	6	7

T1a.Do you consider this an appropriate use of your time?

(Please ring response number on the scale below)

Totally Inappropriate						Perfectly Acceptable
1	2	3	4	5	6	7

T2.How much of your working day do you spend chasing up on your customers orders within your internal systems?

(Please ring response number on the scale below)

None				Half my working time		All my time
1	2	3	4	5	6	7

Tactical Operations Cont.

(Please ring response number on the scale below)

Totally Inappropriate					Perfectly Acceptable	
1	2	3	4	5	6	7

(Please ring response number on scale below)

None		Half their working time				All their time
1	2	3	4	5	6	7

(Please ring response number on scale below)

Totally Inappropriate					Perfectly Acceptable	
1	2	3	4	5	6	7

T4. In the last five years has your company made any changes to its administration and /or order processing procedures?
(e.g. This may have been the introduction of new technology, production machinery, computerisation or the need to comply with new legislation that caused changes in administration routines and organisation)
(Please delete for each year)

1996= Yes No 1997= Yes No

1998= Yes No 1999= Yes No 2000= Yes No

(i.e. did the change affect few departments-*Moderate*- or effect a total overhaul of many departments procedures-*High*)

	1996	1997	1998	1999	2000
Low Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tactical Operations Cont.

T4.b For each of the above please indicate if this represented a temporary or permanent change to normal procedure:

	1996	1997	1998	1999	2000
Temporary Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Permanent Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

T5. Which of the following are of most concern to your operations?
(Please rank the following issues 1-5)

Increased production	<input type="text"/>
Increased quality	<input type="text"/>
Reduction of costs	<input type="text"/>
New product development	<input type="text"/>
Rationalisation of complex procedures/ operations	<input type="text"/>

(Please continue in notes at end of questionnaire if necessary)

Tactical Operations Cont.

T4.b For each of the above please indicate if this represented a temporary or permanent change to normal procedure:

	1996	1997	1998	1999	2000
Temporary Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Permanent Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

T5. Which of the following are of most concern to your operations?
(Please rank the following issues 1-5)

Increased production	<input type="text"/>
Increased quality	<input type="text"/>
Reduction of costs	<input type="text"/>
New product development	<input type="text"/>
Rationalisation of complex procedures/operations	<input type="text"/>

Tactical Operations Cont.

T6.What percentage (approx.) of the orders you receive is for standard, off the shelf, products and/or services?

100% 80% 60% 40% 20% 10% None Std

T6a.What is the average delivery time for standard orders?

T6b.What is the average delivery time for non-standard orders?

Company Strategy

S1.In the last five years how many times has the company conducted meetings that have examined the fundamental strategic nature of your business (even if this resulted in no significant change) ?

	1996	1997	1998	1999	2000
Number of meetings (approximately)	_____	_____	_____	_____	_____

(i.e. considerations for strategic re-evaluation may have been the markets that you serve, the range of products/services you offer, the structure of the company etc.)

S1a. Please give brief details of the major issue examined for the year
1996-

1997-

1998-

1999-

2000-

(Please continue in notes at end of questionnaire if necessary)

Company Strategy Cont.

S2. For each of the above years that strategy meetings occurred, how many resulted in:-

(Please tick your response)

	1996	1997	1998	1999	2000
No specific change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes in operation but not fundamental company strategy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A consensus that strategy required modification (even if change did not occur)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

S3. When fundamental strategic change is required, how many different options would normally be developed? i.e. for each change required, how many different initial ideas/plans would normally be given serious consideration?

(Please ring your response)

1 2 3 4 more =

S4. What, if any, significant strategic changes (alterations to fundamental business practices) have your company undertaken in the last five years?

	<i>please tick changes implemented</i>				
	1996	1997	1998	1999	2000
target customer base	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
company structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
product range	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

others, please specify:

(Please continue in notes at end of questionnaire if necessary)

Company Strategy Cont.

S4a. For each of the above strategic changes did they lead to changes in any of the following ?

(Please pick year and ring your response)

<u>Year: 1996</u>	<u>Year: 1997</u>
Procedural changes: Yes No	Procedural changes: Yes No
Order processing changes: Yes No	Order processing changes: Yes No
Departmental structure changes: Yes No	Departmental structure changes: Yes No
Product price changes: Yes No	Product price changes: Yes No
Other changes, please give brief details:	Other changes, please give brief details:
<i>(Please continue in notes at end of questionnaire if necessary)</i>	<i>(Please continue in notes at end of questionnaire if necessary)</i>

Company Strategy Cont.

S4a. cont. For all of the above strategic changes in each year did they lead to changes in any of the following ?

(Please pick year and ring your response)

<u>Year: 1998</u>	<u>Year: 1999</u>
Procedural changes: Yes No	Procedural changes: Yes No
Order processing changes: Yes No	Order processing changes: Yes No
Departmental structure changes: Yes No	Departmental structure changes: Yes No
Product price changes: Yes No	Product price changes: Yes No
Other changes, please give brief details:	Other changes, please give brief details:

(Please continue in notes at end of questionnaire if necessary)

Company Strategy Cont.

S4a.cont. For all of the above strategic changes in each year did they lead to changes in any of the following ?

(Please pick year and ring your response)

Year: 2000

Procedural changes: Yes No

Order processing changes: Yes No

Departmental structure changes: Yes No

Product price changes: Yes No

Other changes, please give brief details:

Year: 2001

Even if only planned.

Procedural changes: Yes No

Order processing changes: Yes No

Departmental structure changes: Yes No

Product price changes: Yes No

Other changes, please give brief details:

(Please continue in notes at end of questionnaire if necessary)

Company Strategy Cont.

S4b. For each of the above years that experienced strategic change, what external influences were significant in the decision process? (i.e. What outside influences were important factors of the change?)

Suggested significant external opportunities or threats:

	<i>Please tick your responses</i>				
	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>
Currency exchange rates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer demands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interest rates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of labour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes in law and regulations etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Threat of take-over	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shareholder pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitor activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Others. Please specify -

(Please continue in notes at end of questionnaire if necessary)

Personal/Personnel Information

P1.How long have you worked in this industry? Yrs.

P2. How long have you been with this company
(in any capacity)? Yrs. Mths.

P3. Please indicate your level of education? (Please ring your response)

No formal qualifications	'O' level	'A' level	OND/C	HNC/D
Industry Apprenticeship	1 st Degree	MBA/MSc	PhD.	

P4..Please list any extra relevant industry or management training/ professional qualifications and the year(s) undertaken?

P5. How many different companies within this industry have you worked for previously (in any capacity)?

P6.What do you estimate is your average number of hours on site each week?
_____Hrs

P7. What do you estimate is your average hours on site each week during an emergency/crises or reorganisation? *(if any please give the year(s))*

19 hrs. : 19 hrs.

P8.How many days in the last year did your directors receive extra training?
(Please ring response on the scale below)

None 1 2 3 4 more =

P9.How many days in the last year did your Senior Managers receive extra training?

(Please ring response on the scale below)

None 1 2 3 4 more =

P10.How many days in the last year did other employees receive extra training?

None 1 2 3 4 more =

Thank you for your time and care in completing this questionnaire.

Any further comment or observation you care to give will be gratefully and confidentially received:
Please note the question number if applicable -