

# **EVALUATING SERVICE QUALITY & CUSTOMER SATISFACTION IN EMERGING MARKETS**

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## **Abstract**

Organizations regularly monitor service quality and satisfaction in an attempt to improve customer retention. SERVQUAL and regression are commonly used for this purpose. SERVQUAL measures perceived importance and performance along key service dimensions. Regression derives importance by linking service ratings to a satisfaction measure. There is dispute over which approach is more appropriate, as well as the specifics of each application. To add to this debate both are applied to retail banking in an emerging market. SERVQUAL and regression results identify different service dimensions as being most important to bank customers.

Implications for the service mix therefore differ depending upon the approach adopted. During analysis thirteen service dimensions emerge, indicating that standardized instruments developed in the West may miss attributes important in developing countries. In conclusion, regression is considered more statistically reliable for evaluating service quality and satisfaction. Furthermore a multinomial method is more appropriate than conventional multiple regression given the data's categorical nature.

## **Key words**

Emerging markets, service quality, customer satisfaction, SERVQUAL, multinomial regression

## Introduction

In retail banking, service quality is perhaps the most critical aspect of the customer experience. Accordingly organizations regularly monitor service quality and satisfaction in their quest to improve customer retention. Both SERVQUAL (Parasuraman *et al* 1988) and regression are commonly used in this regard.

SERVQUAL is based on the notion that service quality can be measured by comparing customer expectations against the service received. The gap between expectation and actual service is measured along key service dimensions. These dimensions have been applied to service quality evaluations across many industries. SERVQUAL is easy to use and is based on an empirically derived, well-validated approach. However, there have been numerous criticisms of the approach particularly in terms of the relevance of the SERVQUAL dimensions to different industry and geographical contexts (e.g. Angur *et al.* 1999; Cronin and Taylor 1992; Grönroos *et al.* 2000). If the SERVQUAL instrument is not universally applicable it is debatable whether it should be modified to the service context, which can be time consuming and costly, or replaced by an alternative method altogether.

Regression on the other hand derives the importance of service dimensions by linking service ratings (the independent variables) to a measure of satisfaction (the dependent variable). Regression models determine the significant drivers of satisfaction. They identify the amount of variation in satisfaction and thereby offer an objective, statistically driven methodology. However, the approach requires managers to have a greater statistical knowledge and the level of explanation provided by the model may be low in some situations (Chu 2002). There also

appears to be some confusion over which method of regression is the more appropriate, although conventional multiple regression appears to be the more commonly used (e.g. Andaleeb 1998; Chu 2002; Terziovski and Dean 1998).

Both the SERVQUAL and regression approaches for evaluating service quality and satisfaction have supporters as well as detractors. Despite ongoing debate within the service sector and scholarly journals there is actually little empirical evidence to suggest which is the more appropriate. In this article we inform the measurement of service quality debate by applying both SERVQUAL gap analysis and multinomial regression analysis for evaluating customer satisfaction and perceptions of bank service quality. Furthermore since service quality is investigated in an emerging market, contextual issues surrounding the use of a standardized research approach are addressed and a contribution is made to the dearth of service quality studies relating to developing countries (Angur *et al.* 1999, Sureshchandar *et al.* 2003).

In this article we firstly outline constructs important to an evaluation of service quality and provide details of the SERVQUAL and regression approaches. The research objectives, context and methodology are then discussed. Following this the findings are presented and the implications for theory and empirical research outlined.

### **Evaluating Service Quality**

Service quality has been defined by Robinson (1999) as “an attitude or global judgement about the superiority of a service”. Service organizations frequently regard it as the Holy Grail that will provide distinct competitive advantages. Effective service quality evaluation and identifying ways to improve it are therefore paramount

and significant resources are ploughed into these activities. Myriad qualitative and quantitative research activities are employed in this regard and may encompass customers, competitor customers, as well as staff. They frequently include mystery-shopping exercises, in branch observation, depth interviews, questionnaire surveys, advisory panels, complaints and suggestion boxes, as well as secondary data sources.

SERVQUAL and regression analyses are different survey techniques commonly used for assessing service quality and customer satisfaction (e.g. Avkiran 1999; Caruana *et al.* 2000; Chang *et al.* 2002; Lassar *et al.* 2000; Newman 2001, etc.). A brief overview of these approaches is now presented.

### **SERVQUAL - measuring importance and performance**

Since its inception, SERVQUAL has become a popular method for measuring service quality (e.g. Bojanic and Rosen 1993; Llosa *et al.* 1998; Oldfield and Brown 2000; Saleh and Ryan 1991). Service quality is defined as the result of the comparison that customers make between their expectations about service and their perceptions of the manner in which service has been performed (Grönroos 1990). It involves measuring both customer perceptions and expectations of service along key service quality dimensions. Examining differences or gaps between the desired level of service and that actually delivered reveals where improvements in the service mix are required. In their original paper, Parasuraman *et al.* (1985) identify the 10 core components of service quality as reliability (consistent performance and dependability), responsiveness (willingness/readiness to serve), competence (possessing knowledge and skills), access (approachability and ease of contact),

courtesy (politeness, consideration and friendliness of staff), communication (updating and listening to customers), credibility (trustworthy and reputable, with customer interests at heart), security (freedom from danger and risk), customer knowledge (understanding needs and personalized attention), as well as tangibles (facilities and physical features).

In subsequent research (Parasuraman *et al.* 1988, 1991, 1994a), the service dimensions are collapsed into to five categories tangibles, reliability, responsiveness, assurance and empathy. They are assessed using a 22 item scale, with customers providing performance and expectation, or importance scores using Likert scales. However, there is some evidence that the number of categories is not stable (Bouman and van der Wiele 1993; Cronin and Taylor 1994; Gagliano and Hathcote 1994). Indeed, Parasuraman *et al.* (1994b) move away from their five dimensions to three – reliability, tangibles, while responsiveness, assurance and empathy are collapsed into a single category.

Practitioners like SERVQUAL because the gap analysis approach seems a logical and straightforward concept. In addition, once data have been analyzed they can be visually presented so that it is easy to identify strengths and weaknesses relative to competition. However, the many operational and theoretical shortcomings associated with SERVQUAL are well documented (e.g. Bebko 2000; Buttle 1996; Carman 1990; Grapentine 1998; Newman 2001; Robinson 1999). The more commonly reported criticisms of the SERVQUAL approach include:

From a conceptual point of view:

- SERVQUAL assumes customers evaluate service quality by comparing service received against that expected, this might not be so
- Just because a service aspect exceeds expectation does not necessarily mean it is a desirable thing from the customer's point of view
- By concentrating on measuring satisfaction and expectation there is a danger of not connecting customer needs and business activities. In other words, effective implementation and producing actionable findings may be neglected
- The complex nature of service quality means that it is unlikely that any single approach can fully capture and explain it

From a methodological point of view:

- Respondents fatigue at having to rate all service attributes twice
- They also tend to rate most dimensions as being highly important, since they are unable to distinguish between aspects that are very and extremely important
- Respondents may interpret the expectation / importance questions in different ways

Concerning the research instrument:

- Dispute over which scale is most appropriate and the number of points to include on it
- And perhaps most important, the number and dimensions of service quality vary depending on the context and culture involved

This last point is of particular concern when evaluating service quality in developing countries. For example, Imrie *et al.* (2002) highlight interpersonal relations as a

dimension important to Taiwanese customers not adequately addressed by SERVQUAL. Sureshchandar *et al.* (2003) emphasize the significance of technological and human factors with bank customers in India. Other studies such as Angur *et al.* (1999) and Wang *et al.* (2003) have also found the SERVQUAL dimensions to be inadequate in that they do not fully describe the service criteria important to customers of emerging markets.

### **Regression analysis - measuring performance and deriving importance**

Other studies attempt to improve service quality by linking customer satisfaction to service performance (e.g. Bolton and Drew 1994; Hill 1986; Liljander and Strandvik 1995). Rather than collect customer ratings of the perceived importance associated with the various service attributes, regression models are used to identify the significant drivers of satisfaction. With this approach, the performance ratings alone are viewed as an effective indicator of service quality and customer satisfaction. The SERVQUAL dimensions are frequently used as the independent variables. Indeed the 22 item SERVPERF is a performance only version of the original SERVQUAL scale (e.g. Cronin and Taylor 1992). A general indicator of overall customer satisfaction serves as the dependent variable and regression analysis is used to identify the key drivers of satisfaction. However, there appears to be some vagueness over which regression method is the more appropriate. For example, Lassar *et al.* (2000) use ordinary least squares (OLS) regression to examine ratings of seven service quality dimensions to predict three measures of satisfaction. Caruana *et al.* (2000) use moderated regression analysis for a similar goal, whilst several other studies use multiple regression analysis (e.g. Andaleeb 1998; Chu 2002; Terziovski and Dean 1998).



Chu (2002) describes some of the more elementary benefits and limitations of the regression derived importance approach. Advantages are that regression enables the relative importance of predictor variables in explaining the criterion variable to be established (provided a 'stepwise' approach is used). As with most statistical methods, it determines the statistical significance of the relationship. Regression identifies the amount of variation in satisfaction that is accounted by the model and thereby offers a more objective, statistically driven approach. Lastly using a derived importance measure also has the advantage of only having to ask respondents to rate the set of attributes once; interview length is therefore considerably shorter. The main disadvantages Chu (2002) reports are that the level of explanation of the regression equation may be low and multicollinearity may mean attributes are highly correlated with one another. However, this latter problem is readily overcome by application of the Ridge Regression method (Coshall 1993; Hoerl and Kennard 1970), which is available in the widely used SPSS statistical package.

### **Comparing SERVQUAL and regression**

As discussed earlier despite both approaches being widely used there is a lack of empirical work investigating which is most appropriate. Nevertheless, appraising the predictive value of performance measures of service quality compared to the performance and expectation measures has been identified as being worthy of future research (e.g. Buttle 1996). Chu (2002) provides one of the few studies exploring the use of stated importance versus derived importance customer satisfaction measurement. He attempts this for customers of hotels in Hong Kong and reports some similarities between findings using the two approaches: The most important

service factor identified by SERVQUAL is also the key driver of customer satisfaction identified using multiple regression analysis. However, multiple regression analysis may not be the most appropriate regression technique, since the dependent variable is categorical in nature. Evidently there is a need for further research into this area.

### **Research Objectives**

The main research objective is to compare the effectiveness of the SERVQUAL and regression approaches to service evaluation in a developing country. A prerequisite for doing this is to firstly establish the dimensions of service quality important to bank customers in the emerging East African financial services market.

### **Research context: Retail banking in East Africa**

Most East African countries have well-established bank branch networks. This sector generally comprises a mix of local as well as international banks with colonial origins. As in Europe and the United States, there is a strong emphasis on retailing and the use of technology (Manson 2003) and the East African sector is now undergoing many of the network management and distribution changes experienced by these more 'developed' regions in the 1990's. (For a discussion of these changes see Greenland 1995). For example, the introduction of ATMs is a more recent development but they have now become more widespread. The retail banking customer market is characterized by a large number of unprofitable low balance accounts attributable to the comparatively low average wage. Generally, security and economic stability are lower within the African nations and accordingly in branch security guards are more evident.

## **Methodology: Qualitative phase**

The main objective of the qualitative phase was to identify the key service dimensions to include in the questionnaire for the subsequent quantitative phase. Given the reported concerns of the applicability of the SERVQUAL dimensions to other contexts and cultures it was considered necessary to develop these from scratch. Qualitative data also provide a useful resource for helping to interpret survey findings.

### Focus groups

Four focus group discussions were conducted, each comprising 8 customers of four major banks operating in East Africa. All participants had visited their regular branch at least once in the previous month and held both savings and current accounts. Groups contained both men and women and were divided into younger and older categories, i.e., 25-35 years and over 35's. Participants were full time workers recruited from offices using a recruitment or screener questionnaire. In order to achieve the 'ideal' group size of 8 and ensure starting on time, 12 potential participants were recruited for each. In the event that more than 8 turned up on time, the extras performed a depth interview conducted by another interviewer. Groups were held in a focus group facility with a viewing gallery with triple glazed, one-way mirrors and an audio link-up. This facility assisted in the refinement of the topic guide, with minimal disturbance to the group. A trained moderator conducted all group discussions. After the discussion a small cash incentive was given to the participants, along with a thank you letter acknowledging their input. Audiotapes of the discussions were transcribed and data analyzed using content analysis.

Four groups were conducted since by the fourth group few if any new service dimensions were forthcoming.

### **Methodology: Quantitative phase**

The survey was conducted to quantify expectations and perceptions regarding the service attributes identified as being important during the qualitative phase.

#### The questionnaire

From the focus groups, 55 service attributes were identified for inclusion in the questionnaire. A general satisfaction indicator was also included ('to what extent are you a satisfied customer of your regular bank?'). This serves as the dependent variable in regression analyses.

Respondents were asked to rate their bank for each attribute from 0 to 10, eleven point scale, where 0 = "extremely poor" and 10 = "extremely good". They were also asked to indicate when dealing with banks how important each service attributes is. Again a 0 -10 scale was used where 0 = "not at all important" and 10 = "extremely important". Grapentine (1998) reports that the specific number of points on the SERVQUAL scale "three, five, seven or eleven" does not make a lot of difference to the results. However, the scale was selected, since piloting phases revealed that respondents had no difficulty rating dimensions out of 10. Questionnaires were interviewer-administered in bank branches, as well as in respondents' homes and offices. Face to face interviewing was deemed the most appropriate method, given the questionnaire's length and that this is the most common way of conducting surveys in East Africa. (Higher interviewer wage costs, rather than appropriateness

of method probably prohibits more face to face surveys being conducted in developed countries). The list of service dimensions was broken up into several sections and the starting point rotated between interviews in an effort to minimize the impact of respondent fatigue.

### Data Quality Control Measures

A team of 20 experienced market research interviewers collected the data. They received training to familiarize themselves with the questionnaire. To ensure an accurate and reliable data set the following controls were implemented:

#### *Office checks*

All questionnaires were entered into the database on a daily basis, along with information such as interviewer name, location and length of interview. A variety of quality control checks were then performed during the data collection phase. All interviewers' questionnaires were assessed using a spreadsheet recording criteria such as:

- Inconsistencies between similar factors (there should be some expected level of negative or positive correlation between certain related questions)
- Duplication of values between forms
- Unusual levels of extreme and / or missing values
- Appropriate use of scales on rating questions
- Discrepancies in terms of duration and timing of interviews
- Accurate / detailed recording of respondents occupation details
- Presence of respondent's signature and contact details

Interviewers were given feedback on a daily basis regarding their performance, quality of data received and any areas for improvement. Any questionnaires considered to have been improperly completed were repeated. The office checks were also used to help administer and target the field checks.

### *Supervision & field checks*

One research supervisor was allocated for every 10 interviewers. They monitored their team's performance using the following field checks:

- Spot checks – turning up unannounced at the interview location
- Accompanied interviews – accompanying interviewers to check they asking the questions correctly
- Phone back checks – calling respondents to ensure the interview actually took place
- Physical back checks - where respondents cannot be reached by phone visiting their home again to ensure the interview actually took place

### *Double data entry*

Just over 2,400 interviews were completed. To ensure accurate and reliable inputting a double data entry procedure was employed, whereby each and every questionnaire was inputted twice. Any inconsistencies between questionnaires were then examined and amended accordingly. Double data entry is the most effective way of ensuring accurate and reliable manual data entry.

### **Data analysis**

### **Principal component analysis of service dimensions**

Principal Component Analysis (PCA) was applied to the 55 service attributes. PCA forms linear combinations of the observed variables (here the 55 rated scales). The first principal component is that combination of service attributes, which accounts for the largest amount of variance in the sample; the second principal component is that combination accounting for the second largest amount of variance in the sample, etc. The first stage of PCA is to compute Pearsonian correlations between each pair of the 55 scales. Bartlett's test of sphericity examines the null hypothesis that the resultant 55 x 55 correlation matrix is an identity matrix; that is, all diagonal terms are unity and all off-diagonal terms are zero. Should the researcher be unable to reject the null, then use of PCA should be reconsidered. In the present study, Bartlett's test convincingly rejects the null ( $\chi^2 = 7943.4$ ,  $df = 1485$ ,  $p = 0.000$ ). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy reinforces the appropriateness of the PC approach. Small values of the KMO measure indicate weak correlations between pairs of scales and consequently that PCA is unsuitable for the data reduction process. In the present case,  $KMO = 0.841$  and it has been suggested that KMO measures in the 0.80's are 'meritorious' (Kaiser 1974).

A varimax rotation was employed to enhance interpretation of the component loadings. Varimax attempts to minimize the number of scales that have high loadings on a particular factor. Thirteen principal components with eigenvalues greater than one were subsequently extracted and named:

Take in Table 1 - The 13 components of service and the attributes loading onto each.

As might be anticipated given the greater number of service attributes or items included in the questionnaire more service factors emerge compared to Parasuraman *et al's* (1985) original study. Nevertheless, themes of their 10 original components of service quality are evident in the 13 component solution. Components 1, 7, 10 and 13 can be regarded as dimensions of specific concern to financial services in the investigated emerging market. Interestingly, factors 1 and 7 relate to banking technology which Sureshchandar *et al.* (2003) also identified as being important to bank customers in India. One might therefore conclude that adapting the SERVQUAL approach in the form of developing the battery of service attributes for the specific research context enables a more complete understanding to emerge.

#### Comparing the performance and importance/expectation scores for the factors

Mean ratings were calculated for each service attribute, since this is the norm in comparable studies. However, it should be noted that given the discrete nature of the scaled data and the level of measurement attained, a statistical purist might argue for median ratings. The following charts illustrate customers' perceptions of service delivery. The mean perceived importance and customer satisfaction scores are displayed for the thirteen core dimensions of service identified in the principal component analysis. The factors are presented in order of the mean perceived importance scores.



Take in Figure 1 - Mean importance and performance scores for the 13 service components, presented in order of importance

In Figure 1, effective queue management, ATM and card procedures, effective transaction and account management, as well as account communication emerge as the most important service dimensions. However, as has been reported in other studies, respondents have rated most of the attributes as extremely important and the difference between the scores for most is marginal. The largest gaps between customer service expectations and service delivery occur with effective queue management, physical aspects of the ATMs and attractive, effective accounts /loans. When the performance of individual institutions are examined in this manner the competitive strengths and weaknesses of the different banks become apparent.

### **Regression analysis of the service factors and satisfaction score**

An important part of PCA is to generate component scores for each case, or individual survey respondent. Component scores reflect the importance or otherwise of each component to each respondent. In essence, component scores represent the values of the individual components (Norusis 1988). In the present study and as a conclusion to the PCA procedure, Anderson-Rubin (A-R) component scores were obtained for each respondent for each of the thirteen extracted principal components. The A-R method of deriving component scores generates uncorrelated scores with zero mean and unit standard deviation.

The survey asked customers to rate their general degrees of satisfaction or otherwise with their regular bank branch. A 0 (“highly dissatisfied”) to 10 (“highly satisfied”) scale was employed. Regression analysis was employed to seek a relationship between the component scores and respondents’ general level of satisfaction with their branch. The latter acted as the dependent variable in the regression procedure; the component scores were the independent variables. The different levels of customer satisfaction in this study constitute a categorical, dependent variable. As discussed earlier, conventional multiple regression models are commonly used in comparable studies. Such models assume that if the regression errors follow a normal distribution, then for each value of X, we have a (continuous) normal distribution for y (Maddala 2001). Therefore, the present study adopts a multinomial logistic regression (MLR) approach. MLR is especially designed for situations in which the dependent variable is categorical or discrete in nature. Given eleven categorizations for our dependent variable, MLR is simply a polychotomous extension of the widely applied dichotomous logistic regression model (e.g. see Montgomery and Peck 1992; Myers 1990). Additionally, MLR permits independent variables that may be factors (e.g. customer background characteristics like age, gender, etc.) or covariates. (Although not relevant to this analysis, factors should also be categorical). The covariates must be continuous and this is indeed the case for the survey respondents’ A-R factor scores.

Application of MLR indicated that in order of importance, principal components 3, 5, 11, 6 and 2 are the only statistically significant components that impact on customer satisfaction:

Take in Table 2 - Results of the multinomial logistic regression

The chi-square statistic in Table 2 is the difference in the  $-2 \log$ - likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters (or MLR coefficients) of that effect are zero. Cox/Snell and Nagelkerke pseudo ( $r^2$ ) coefficients are respectively 46.0% and 47.0% for the final model tabulated above.

As mentioned, comparable studies often apply traditional multiple regression to analyses such as the above, despite the fact that the dependent variable (customer satisfaction) is not continuous. Applying multiple regression, the above five factors were statistically significant but factor 9 additionally entered this latter model ( $r^2 = 26.8\%$ , though not strictly and directly comparable with the Cox/Snell and Nagelkerke measures above). More reliance should be placed on the multinomial regression results, since there is no violation of the statistical underpinnings of the model, which is not the case in the multiple regression approach.

### **Conclusions and implications**

The adaptation of the SERVQUAL approach, measuring both perceived importance and performance along the service attributes, produced a thirteen component solution. This is an important finding and challenges research conducted using

Parasuraman *et al.*'s (1988, 1991, 1994a, 1994b) five or three prescribed service dimensions. In the thirteen component solution, relative to the other core service quality dimensions, effective queue management, ATM and card procedures, effective transaction and account management, as well as account communication emerge as the more important. The largest gaps between customer service expectations and service delivery occur with effective queue management, physical aspects of the ATMs and attractive, effective accounts /loans.

The findings in our study support others such as Angur *et al.* (1999), Cronin and Taylor (1992) Grönroos *et al.* (2000) who suggest that SERVQUAL cannot be applied universally without considering the different contexts. The research also adds to the limited literature available concerning service quality evaluation for different cultures, particularly developing economies. It emphasizes the need to adapt methodologies and systems for evaluating service quality that have been produced in the developed world; otherwise there is a danger of important attributes being ignored. For example, aspects of technology particularly in relation to ATMs and product or service specific attributes would be missed if the 22 SERVQUAL scales had been used. This finding is consistent with the work of Sureshchandar *et al.* (2003), who also identify the significance of technology to consumers of an emerging market; India. As it was the initial qualitative phase of the research ensured that all service dimensions relevant to banking in East Africa were included in the questionnaire.

The derived importance approach uses regression, in this case multinomial logistic regression (MLR) analysis to examine the relationship between the 13 factors and

customers' degree of satisfaction with their regular bank branch. Five elements were identified as significant drivers of overall satisfaction. This is a significant departure from other studies which have more commonly used conventional multiple regression (e.g. Andaleeb 1998; Chu 2002; Terziovski and Dean 1998). MLR should be regarded as the statistically more appropriate, since the underlying assumptions of the model are met. (It is only coincidence that conventional multiple regression produced similar results. In experiments with more variation this might well not be the case).

Whilst Chu (2002) found some similarity between the findings from SERVQUAL and regression approaches, with both identifying the same service attribute as being most important, in this study the results are different. The measured importance indicates effective queue management as having the highest importance score, whereas the derived importance reveals the value of products as being the most important factor in determining customer satisfaction. Clearly different conclusions and implications for the service mix strategy would be forthcoming depending which method is used. The SERVQUAL approach seeks to identify components that constitute the customer's discriminatory process, whereas the MLR seeks to explain customer satisfaction in terms of the SERVQUAL results. These goals are distinctly different and help to explain the lack of congruence between the satisfaction and SERVQUAL results. If a bank branch does not possess the characteristic defined by factor X, then why should a high factor score on X result in greater satisfaction? Also, extracted factors are not common to all customers. A significant minority may not rate a factor highly and consequently there will be no correlation with satisfaction for them. Furthermore, any experiments may omit extraneous variables that may be

of consequence. For example, the customers could be a 'captive market', in other words customers of a particular bank, but with few if any alternatives. Such considerations merit further research.

A key question for marketing managers is whether they should concentrate on dimensions considered comparatively more important by customers or the dimensions that appear to drive satisfaction? However, it is not a simple decision and some of the disadvantages of each method reported in the literature are evident in this application. For example, the SERVQUAL findings indeed show that customers tend to rate everything as being important and find it difficult to distinguish between aspects that are very and extremely important. Similarly the level of explanation of the regression equation is on the low side at just under 50%. Is it prudent to make strategic decisions on the basis of such a low level of prediction? On comparing the two approaches and considering the limitations of each the authors support Chu (2002) and concur that derived importance is the more statistically reliable approach. However, it should be stressed again that the multinomial method is the more appropriate regression technique. If the length of questionnaire permits importance measures may also be collected, since these data could assist should any regression analysis prove ineffective.

In summing up, the research makes a contribution to the literature by adding to the sparse amount of work comparing the application of SERVQUAL and regression techniques in the evaluation of service quality and satisfaction. Regression and in particular the use of multinomial logistic regression (MLR) is viewed as being the more appropriate method for identifying how service quality and customer

satisfaction can be improved. The study also adds to the small but growing volume of literature examining service quality in developing countries. It confirms the need to tailor research techniques developed in the West in order to apply them to emerging markets and in doing so the key service attributes important in the East African financial services sector have been determined.

Finally the current study examines the views of the base of customers as a whole. Further investigation of the data in the future might examine the service needs and requirements, as well as drivers of satisfaction for specific customer types, this is of course an important way of segmenting markets and has been well documented in other studies (e.g. Sharma and Lambert 1994).

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Table 1 Results of the principle component analysis – identification of core service dimensions

| Core service dimension                    | Attributes loading at 0.5 or more                 | Loading | Eigen value | % of ex var* | cumulative % of ex var |
|---|---|---------|-------------|--------------|------------------------|
| 1. Effective ATM & card procedures        | ATMs that are easy to use                         | 0.88    | 11.89       | 21.62        | 21.62                  |
|   | Efficient, fast ATMs                              | 0.85    |             |              |                        |
|   | Accurate execution of all ATM transactions        | 0.79    |             |              |                        |
|   | All ATMs in working order                         | 0.72    |             |              |                        |
|   | Extensive / easily accessible ATM network         | 0.71    |             |              |                        |
|   | Simple procedures for obtaining ATM cards         | 0.64    |             |              |                        |
|   | Fast replacement of ATM card if lost / stolen     | 0.59    |             |              |                        |
|   | Privacy of transactions at ATM                    | 0.53    |             |              |                        |
| 2. Personable, professional staff         | Smart well dressed tellers                        | 0.77    | 5.68        | 10.33        | 31.95                  |
|   | Efficient, knowledgeable tellers                  | 0.71    |             |              |                        |
|   | Friendly courteous tellers                        | 0.69    |             |              |                        |
|   | Personalized services                             | 0.65    |             |              |                        |
| 3. Value of other products excl. loan     | Ability to conduct banking transaction by phone   | 0.54    | 3.41        | 6.20         | 38.15                  |
|   | Efficient transactions for bank drafts            | 0.83    |             |              |                        |
|   | Competitive charges for bank drafts               | 0.80    |             |              |                        |
|   | Efficient transactions for money transfer / forex | 0.77    |             |              |                        |
| 4. Branch service facilitators            | Competitive charges for money transfer / forex    | 0.76    | 2.75        | 4.99         | 43.14                  |
|   | Adequate supply of transaction slips              | 0.77    |             |              |                        |
|   | Adequate supply of information pamphlets          | 0.76    |             |              |                        |
| 5. Attractive, effective accounts / loans | Readily available, working pens                   | 0.56    | 2.19        | 3.98         | 47.12                  |
|   | Flexible terms and conditions                     | 0.78    |             |              |                        |
|   | Easily available overdraft facilities             | 0.68    |             |              |                        |
|   | Competitive rates on deposit /savings accounts    | 0.68    |             |              |                        |
| 6. Effective queue management             | Easily available loans                            | 0.53    | 1.92        | 3.50         | 50.62                  |
|   | Clear and full explanation of terms & conditions  | 0.51    |             |              |                        |
|   | Minimal queuing time                              | 0.77    |             |              |                        |
|   | Counters for specific transactions & accounts     | 0.69    |             |              |                        |
| 7. Physical aspects of the ATM            | Adequate tellers / counters manned when busy      | 0.68    | 1.71        | 3.11         | 53.73                  |
|   | Privacy for in branch transactions                | 0.55    |             |              |                        |
|   | ATM cash and check deposit facility               | 0.74    |             |              |                        |
|   | Bill payment facility at ATM                      | 0.73    |             |              |                        |
| 8. Account communication                  | Adequate physical security provided at ATM        | 0.64    | 1.52        | 2.77         | 56.50                  |
|   | Privacy of transactions at ATM                    | 0.54    |             |              |                        |
|   | Clear and detailed statement of accounts          | 0.76    |             |              |                        |
|   | Monthly statement of account                      | 0.74    |             |              |                        |
| 9. Effective account manager / ment       | Effective communication of any change in rates    | 0.63    | 1.45        | 2.63         | 59.13                  |
|   | Information on new products and services          | 0.62    |             |              |                        |
|   | Manager for more complex dealings / queries       | 0.73    |             |              |                        |
|   | Accurate transactions & account management        | 0.72    |             |              |                        |
| 10. Simple account /card acquisition      | Available and helpful branch manager              | 0.66    | 1.24        | 2.25         | 61.38                  |
|   | Simple procedure for obtaining credit cards       | 0.78    |             |              |                        |
|   | Simple procedure for obtaining debit cards        | 0.69    |             |              |                        |
|   | Simple procedure for opening accounts             | 0.61    |             |              |                        |
| 11. Network accessibility                 | Simple procedure for obtaining ATM cards          | 0.54    | 1.21        | 2.21         | 63.59                  |
|   | Allow transactions at any branch                  | 0.78    |             |              |                        |
|   | Extensive / easily accessible branch network      | 0.72    |             |              |                        |
| 12. Physical environment features         | Extensive / easily accessible ATM network         | 0.50    | 1.16        | 2.11         | 65.70                  |
|   | Clean environment                                 | 0.68    |             |              |                        |
|   | Attractive and well designed environment          | 0.66    |             |              |                        |
|   | Adequate safety and personal security             | 0.56    |             |              |                        |
| 13. Clear and full service mix**          | Adequate parking nearby                           | 0.50    | 1.01        | 1.83         | 67.53                  |
|   | Clear & full explanation of terms & conditions    | 0.39    |             |              |                        |
|   | Full range of services                            | 0.34    |             |              |                        |

\*ex var = explained variance

\*\* No components loading above 0.5 for this factor

Figure 1 Mean importance and performance scores for the 13 service components, presented in order of importance

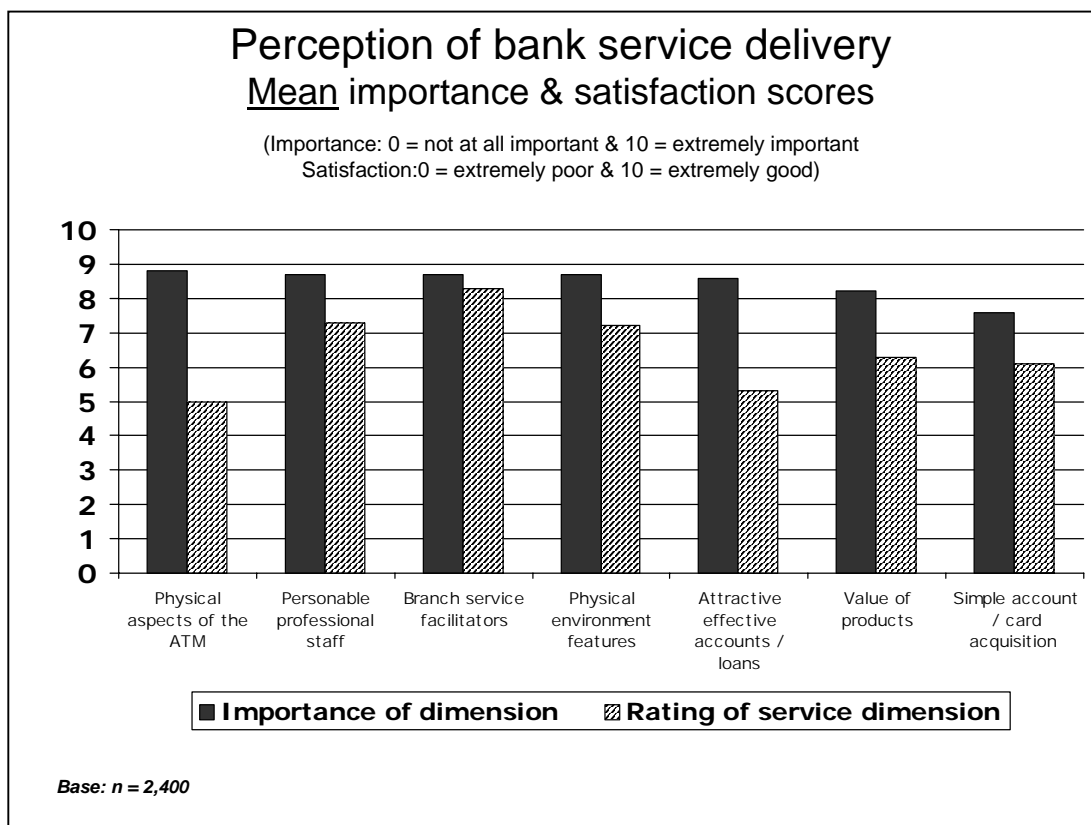
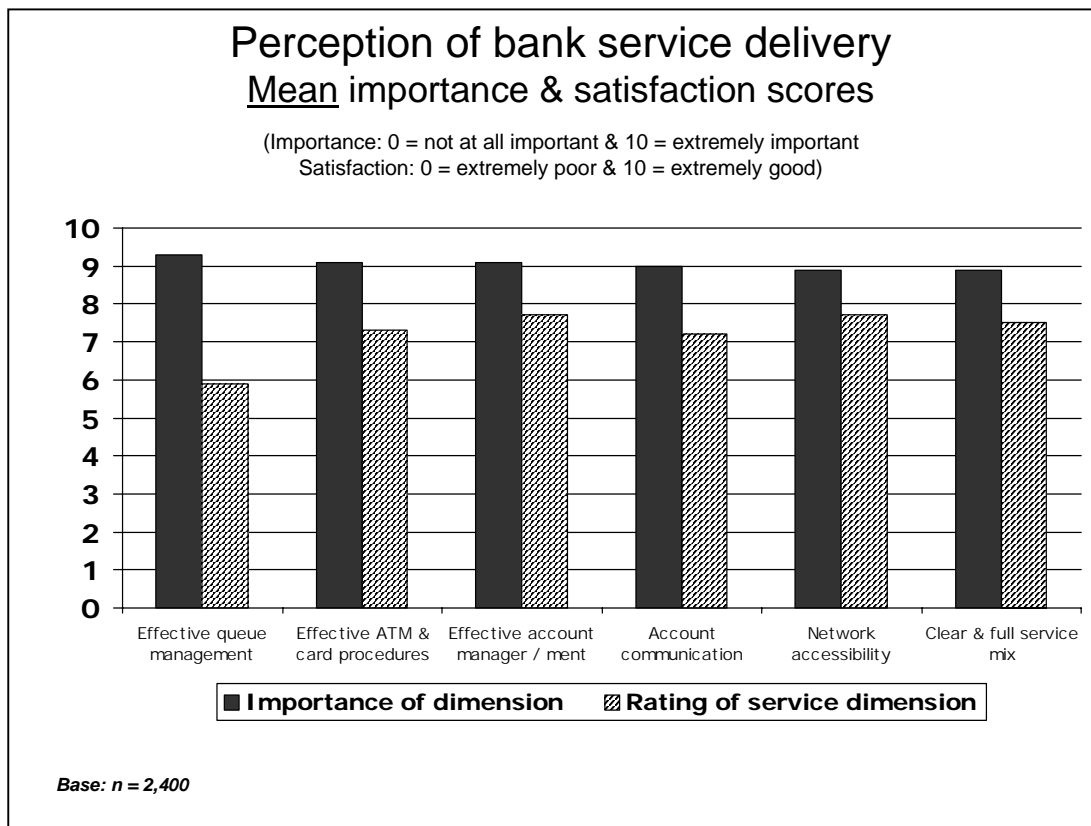


Table 2 Results of the multinomial logistic regression

| <b>Effect</b>   | <b>-2 Log likelihood of reduced model</b> | <b>Chi-square</b> | <b>Df*</b> | <b>Sig**</b> |
|---|---|-------------------|------------|--------------|
| Intercept   | 1048.48                                   | 230.07            | 9          | .000         |
| Component 3<br>Value of products                      | 860.10                                    | 41.69             | 9          | .000         |
| Component 5<br>Attractive, effective accounts / loans | 857.37                                    | 38.96             | 9          | .000         |
| Component 11<br>Network accessibility                 | 840.18                                    | 21.77             | 9          | .010         |
| Component 6<br>Effective queue management             | 839.38                                    | 20.97             | 9          | .013         |
| Component 2<br>Personable professional staff          | 836.84                                    | 18.43             | 9          | .031         |

\* Degrees of freedom

\*\* Significance levels