Managing Service Quality with BSQ Index

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Abstract— **This study aims to design and validate a new measuring instrument of service quality, and to establish a national service quality index for the banking sector. The new Bank Service Quality (BSQ) Index is expected to be an important complement to traditional measures of economic performance. The proposed 29-item instrument has been empirically tested for unidimensionality, reliability and validity using both exploratory and confirmatory factor analysis. A factorial analysis suggests that service quality has three dimensions namely 'Systemization', 'Reliable Communication' and 'Responsiveness'. Specific strategies are recommended for the design of an efficient service delivery process for the banking institutions.**

Keywords- service quality, index score, banking sector

I. INTRODUCTION

As the financial landscape evolves dramatically and competition intensifies in the light of current global financial crisis, financial institutions need to respond to the radical change in market needs, and continually reassess their strategies and alternatives. Technology, government regulation, and increasing customer sophistication are forcing these institutions to reevaluate their current business practices. Financial institutions across the globe are reexamining how they are meeting their customer's needs today and developing business plans needed to align them strategically to remain competitive and profitable in the future.

Service quality in banking has recently become a topic of interest for academicians and researchers alike despite being considered markedly important over the years. Such interest may be the result of a reduced customer base and decreased market share affecting a portion of the banking industry [1]. Banks that excel in quality service can have a distinct marketing edge since improved levels of service quality are related to higher revenues, increased cross-sell ratios, higher customer retention [2] and expanded market share [1]. Likewise, provision of high quality services enhances customer retention rates, helps attract new customers through word of mouth advertising, increases productivity, leads to higher market shares, lowers staff turnover and operating costs, and improves employee morale, financial performance and profitability [3, 4, 5].Therefore, delivering quality service to customers is a must for success and survival in today's competitive banking environment [6].

II. RESEARCH BACKGROUND

A substantial number of empirical studies on bank service quality was sighted in the literature, however most of these studies measured service quality by replicating or adapting the SERVQUAL model [7, 8, 9, 10, 11, 12] Perhaps the most comprehensive study thus far was conducted by Avkiran [13] who developed a utilitarian multi-dimensional instrument for measuring customer-perceived quality of retail branch banking.

Berry *et al* [14] noted that most financial institutions are alike in the services provided to their customers, and as they grow there is a tendency for service to give way to volume delivery to enhance profitability. These large banks appear to have mistakenly concluded that quality service caused profits to erode. It would appear that service quality could make a difference according to Lewis [5] who noted that service quality leads to reduced costs, increased profitability, and other beneficial elements. Acquiring customers and having them leave is not only disconcerting but it is counterproductive and a profit drains on the organization.

In today's banking environment, banks' profitability levels have been compressed due to increased competition and spread reductions. Banks once relied upon products to make their profit margin in a highly regulated industry, and the customers basically were on the sidelines, but today banks are driven by customers who demand service quality [15]. Banks seeking to maximize profitability have come to realize that good quality helps a bank obtain and keep customers and poor quality will cause customers to leave a bank. Lewis [4] found that service quality was one of the most effective means of establishing a competitive position and improving profit performance.

III. RESEARCH DESIGN AND METHODOLOGY

The draft questionnaire consisted of four sections. The first section contained 10 questions pertaining to respondent profile. Whereas second section contained 31 items related to different aspects of bank's service offering, and the items were presented randomly as statements on the questionnaire, with the same rating scale used throughout. The items were measured on five-point Likert-type scales that vary from 1=strongly disagree to 5=strongly agree.

The target population consisted of customers of banking institutions. Multistage sampling procedure was used where the respondents were stratified based on their geographical location, followed by type of institution and the gender, and

care was taken to randomize the data collection. A total of 3380 questionnaires were distributed. However, only 1519 completed questionnaires were deemed usable, yielding a response rate of 44.9%.

A. Factor Analysis

Both exploratory and confirmatory factor analyses were used to assess the dimensionality of the service quality measure. One critical assumption underlying the appropriateness of factor analysis is to ensure that the data matrix has sufficient correlations to justify its application. A first step is visual examination of the correlations, identifying those that are statistically significant. All correlations are above 0.30 which is considered substantial for factor analysis [16]. Furthermore, an inspection of the correlation matrix reveals that practically all correlations are significant at $p<0.01$, and this certainly provides an excellent basis for factor analysis.

The next step involves assessing the overall significance of the correlation matrix with Bartlett test of sphericity, which provides the statistical probability that the correlation matrix has significant correlations among at least some of the variables. The results were significant at $p<0.01$, χ^2 (31, N=1519), which further confirmed that the data were suitable for factor analysis. Finally, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was computed to quantify the degree of intercorrelations among the variables, and the results indicate an index of 0.98, a 'marvelous' sign of adequacy for factor analysis [17]. As for the adequacy of the sample size, there is a 49-to-1 ratio of observations to variables in this study. According to Nunally [18], the ratio for adequate sample size should be at least 10:1 which, in this case falls well within the acceptable limits.

All the 31 items of the questionnaire were subjected to factor analysis, utilizing the maximum likelihood procedure which was followed by a varimax rotation. The decision to include a variable in a factor was based on factor loadings greater than ±0.5 [16] and all factors whose eigenvalues was greater than 1.0 were retained in the factor solution [19].

The next step was to assess the communality of each variable in order to decide which item loadings are worth considering in interpreting the factors. The results show that communalities in five variables were below 0.50, '…too low for having sufficient explanation' [16]. Subsequently, corrected item-total correlation analysis was performed to determine which of the five items with low communalities to be eliminated. Results showed that the corrected item-total correlation values of two variables were 0.13 and 0.30 respectively, unacceptable due to low correlations with the overall score from the scale. Therefore, two variables were dropped from the scale leaving only 29 items in the final questionnaire.

The three factors identified can be described as follows:

Factor 1: Systemization of Service Delivery
This factor relates to systematic and orderly arrangement of bank's service delivery vis-à-vis their customers through effective, standardized and simplified procedures and processes.

Factor 2: Responsiveness
This factor describes the desire, willingness and readiness to assist customers and deliver prompt service. It suggests the importance of employees exhibiting a pleasant, courteous and friendly behavior in service delivery so as to instill confidence among customers.

Factor 3: Reliable Communication
This factor emphasizes the necessity to communicate and perform the services in a dependable, reliable and understanding manner. It is also concerned with the ability to ensure customer's confidentiality in banking transactions, and service personnel exhibiting professionalism, sympathy and reassurance when dealing with customers.

The Goodness-of-Fit statistic (GFI) was generally considered as the most reliable measure of absolute fit in most circumstances [20]. A GFI and AGFI value range between 0 and 1 and values of > 0.90 are usually taken as reflecting acceptable fit. In this model, the GFI=0.92 and the AGFI=0.90 indicating an evidence of unidimensionality for the scales. Next are Non-Normed Fit Index (NNFI) and the Comparative Fit Index (CFI). Bentler and Hu [21] have suggested NNFI value ≥ 0.95 as threshold. In the present model, the NNFI value is 0.99, an indication of a good fit. The next fit measure is the Comparative Fit Index (CFI), a revised form of the NFI which takes into account sample size [19]. Bentler and Hu [21] have also suggested that a CFI value of ≥ 0.95 is considered as indicative of good fit and in the present model, the CFI value is 0.99, which implies that there is a strong evidence of unidimensionality for the factors [22]. The next measure to consider is the Root Mean Square Error of Approximation (RMSEA). The RMSEA value for the three-factor model was 0.06, an evidence of reasonable fit to the data. Therefore, it was concluded that the three-factor service quality model fits reasonably well and represents a close approximation in the population.

B. Reliability Analysis

Two internal consistency estimates of reliability namely coefficient alpha and split-half coefficient expressed as Spearman-Brown corrected correlation were computed for the three service quality constructs. All the values meet the required prerequisite of 0.70 ranging from 0.87 to 0.91 thereby demonstrating that all the three constructs are internally consistent and have satisfactory reliability values in their original form.

C. Validity Test

Given that the questionnaire had been appropriately designed through a comprehensive review of relevant literature then fined-tuned based on the suggestions from various experts, both the face and content validity of the instrument were ensured [23, 24]. The correlations among the three dimensions of service quality range from 0.77 to 0.80 and this indicate a moderate positive relationship between the three dimensions of service quality indicating evidence of convergent validity. In addition to that, multicollinearity was not a threat since the correlation value is less than 0.8 [25].

A Chi-square difference test was employed to test the scale for discriminant validity. All the tests were statistically significant at the $p=0.01$ level thus indicating that all the three factors are distinct constructs, a strong indicator of discriminant validity. While criterion-related validity was established by correlating the constructs scores with three criteria namely service quality level, satisfaction level and loyalty. Likewise, all the constructs have a significant positive correlations with the overall service quality, satisfaction level and loyalty. Hence, criterion-related validity is established for all the three factors.

D. Multiple Regression Analysis

A multiple regression analysis was subsequently conducted to evaluate how well the three dimensions predicted service quality level. The linear combination of the three dimensions was significantly related to the service quality level, $R^2=0.52$, adjusted $R^2=0.51$, $\underline{F}$ (3, 1350) = 477.02, $p=0.01$. The sample multiple correlation coefficient was 0.72, indicating that approximately 52.8% of the variance of service quality level in the sample can be accounted for by the linear combination of the three dimensions.

The resultant output had an adjusted R^2 of 0.51 ($\underline{p}=0.01$) and yielded three dimensions contributing significantly towards explaining the variance in the overall service quality level. All the bivariate correlations between the three dimensions and the service quality level were positive, and all the dimensions were statistically significant ($\underline{p}<0.01$). Systemization is found to be the most important dimension of service quality in the banking sector, accounting for 10.7% of the variance of service quality level followed by Reliable Communication and Responsiveness with 6.4% and 2.3% respectively.

E. BSQ Index

$$\text{BSQ Index} = \sum_{j=1}^{n} \left(w_j \sum_{i=1}^{m_j} X_{ij} \right)$$

where,

Wj	=	Standardized regression weight for dimension j
Xij	=	Perception of performance for item i in dimension j
Mj	=	Number of items in dimension j
N	=	Number of dimensions in BSQ scale

The dimensional weights are standardized coefficients β derived from multiple regression analysis. The weight reflects the relative influence of individual service quality dimensions based on customer perception (Parasuraman *et al.* 1988; 1991). The overall weighted score shall be within the range of 1 to 5 as per the 5-point Likert scale used in the instrument, where 1=Very Poor, 2=Fair, 3=Average, 4=Good, and 5=Excellent. The overall weighted BSQ Index is 4.00, and this implies that banking customers are generally pleased with the quality of services rendered.

IV. CONCLUSION AND RECOMMENDATIONS

The primary contribution of this study is the insight offered regarding what factors affecting service quality and the BSQ Index, a national indicator reflecting the level of service quality within the banking sector. This paper has also sought to contribute further to the fast growing literature on service quality by advancing a new 29-item measuring instrument, specifically tailored for the banking sector. Such valid and reliable measuring scale would be a tool that banking institutions could use to improve service performance in the light of increased competition and uncertainty in the global financial markets. The results from the current study are crucial because previous studies have produced scales that bear a resemblance to *SERVQUAL*, a generic measure of service quality, which may not be totally adequate to assess the perceived quality in the banking sector.

The results confirmed that the three dimensions namely and Systemization, Reliable Communication and Responsiveness were distinct and conceptually clear. Therefore, banking institutions should be able to assess all the dimensions of service quality to ascertain the level of services provided, and to determine which dimensions need improvement. Evaluating service quality level and understanding how various dimensions impact overall service quality would ultimately enable the banking institutions to efficiently design the service delivery process. While many service quality attributes may influence a customer's perception to a certain extent, the results indicate that one attribute has a greater impact on the overall perception of service quality. Systemization which relates to such aspects as systematic and orderly arrangement of bank's service delivery has significantly influenced the overall service quality perception. In other words, customers perceived systemization of service delivery to be more important than other dimensions in determining the quality of the service that they received.

However, findings suggest that banking institutions should also put emphasis on other service quality dimensions such as reliable communication and responsiveness. It is important for these institutions to provide adequate service on all dimensions, and then possibly to ascertain which dimensions may require greater attention. Results of the study reveal that reliable communication and responsiveness have a direct bearing on perceptions of quality. In terms of reliable communication, banks should be able to communicate and perform their services in a dependable, reliable and understanding manner to ensure customer's confidentiality, and service personnel exhibiting professionalism, sympathy and reassurance when dealing with customers. As for responsiveness, bank's employees must have the desire, willingness and readiness to assist customers and deliver prompt service. As for the overall

weighted BSQ Index which stood at 4.00, it implies that customers are generally pleased with the quality of services rendered by banking institutions. This new national indicator shall provide a comparative baseline for determining whether the customers are more or less pleased with the quality of services provided by the banking institutions over time.

The emphasis of this study has rightly focused on the customer side, however bank needs to determine what actions it needs to undertake to ensure that it delivers service quality. Among the specific strategies recommended include ensuring service reliability, implementing zero-defection policy, retaining experienced employees, enhancing service recovery mechanism, improving banking core technology, developing effective communication strategy, periodic measurement of service quality, developing marketing orientation, developing passion for customer responsiveness, managing customer expectations, introducing policy to reduce red tape, enhancing customer feedback mechanism, building, maintaining and enhancing reputation. While the recent global financial crisis will have significant implications on the domestic financial landscape, each banking institution will need to be able to formulate differentiated strategies to effectively respond to these forces in a strategic manner. Thus, the ability to precisely assess the institutions individual level of service quality, capabilities and strengths as well as opportunities in this changing environment is key to success.

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