TYPOLOGY OF SERVICE QUALITY MODEL OF BANK SERVICES : BSQ v/s BANKQUAL

Dr. Bhavesh Vanparia, Dr.Vinod Patel

ABSTRACT

Objective: The objective of this study was to assess the applicability of the BSQ and BANKQUAL in banking sector for measuring service quality performance. This was achieved by examining the reliability, validity and component structures of the Scale. Furthermore, the study is set to provide supplementary input to discuss over generic against setting typology specific industry/ time-specific quality metrics.

Design/methodology/approach: The data was collected at bank for period of three months during the evenings and weekends from the customer of bank who has at least three month old account with particular bank and was willing to respond. Researcher has used instrument BSQ (proposed by Bahia and Nantel, 2000) and BANKQUAL (proposed by Tsoukatos and Mastrojianni, 2010) for measuring service quality in bank .The research instrument was administered through face to face personal interviews conducted outside the bank to immediate transaction effect on response.. The sample size was 720 and data was analyzed through SPSS 19.0 and AMOS 18.0.

Findings: In cross Validation of BSQ and BANKQUAL in banking through Confirmatory factor analysis, we found that BANKQUAL is more reliable and valid instruments in service quality measurement of bank than others in India.

Practical Implication: Cultural distances are leads to the differences in religions, social norms, ethical values and languages among countries. View and posit that the cultural differences in terms of individualism, collectivism and power distance between countries are likely to have varying different effects on the definition of service quality. New quality dimensions that had not been a part of service quality concept until then have been identified, not only that but also demonstrated that the number and meanings of service quality dimensions varied between different consumers.

Originality/Value: Although the subject of "service quality measurement" is extensively and deeply researched, the continuously changing marketing environment and industry scenario required for an assessment of quality factors. With respect to its academic value, the study builds up knowledge that will in due course outgrow the boundaries of academia and pervade management.

Keywords: Service Quality, BSQ, BANKQUAL, Structural Equation Model.

I.   INTRODUCTION

In this 21st century the digital revolution has transformed the economy into a new economy which empowered the customer with new set of capabilities such as; 1. Access to greater amount of information, 2.Wider variety of available goods and services, 3.Greater ease of interacting with the service provider. The services sector accounts for 54 per cent of GDP and is currently the fastest-growing sector of the economy, growing at 9 per cent per annum since the mid-1990s. The sector has the unique opportunity to grow due to its labor cost advantage reflecting one of the lowest salary and wage levels in the world, coupled with a rising share of working age population. The 11th Plan must, therefore, put special focus on this sector so that its potential to create employment and growth is fully realized.

The banking sector is the backbone of any financial system and economy. Commercial banks play an important role in the development of underdeveloped-developing economies by mobilization of resources and their better allocation. The Indian banking system has changed a lot over the last five decades, especially in the last 15 years, with India taking to the path of free market economy and globalization.

The Retail Banking environment today is changing fast. The changing customer demographics demands to create a differentiated application based on scalable technology, improved service and banking convenience. Higher penetration of technology and increase in global literacy levels has set up the expectations of the customer higher than never before. Increasing use of modern technology has further enhanced reach and accessibility.

A service is an act or performance offered by one party to another. Although the process may be tied to a physical product, the per¬formance is transitory, often intangible in nature, and does not normally result in owner¬ship of any of the factors of production. Lovelock (1983) believes that in order to have effective managers in the service sector, they must improve marketing and development skills. Schmenner (1986) warned that service businesses should not consider themselves to be drastically different and remain cut off from each other, because this could increase their fatality rate. As an alternative, businesses in the service sector should consider themselves to be similar, instead of exclusive businesses on their own (Schmenner, 1986).

According to the US news and world report market research on lost customers by major companies shows that 14% for better product, 9% for cheaper product,

68% left because of poor service (service provider's attitude) which can be easily avoided by designing effective customer service process which enables the company to respond. The study clearly demonstrates the significance of soft service quality in relation to product quality.

Defining the dimensions of service quality is a more daunting task. A number of scholars have developed lists of service quality dimensions. These consist of 5 to 10 dimensions and are general lists which serve as good starting points. But, current research indicates that in terms of service quality, the dimensions and the relative emphases on each are different for different industries. So dimensions developed in one or a group of service industries may not be directly applicable to another group of service industries.

Yavas (2002) argued that despite the recent trend of globalization, the foreign markets are still different from each other. She notes that there are four dimensions of distance-cultural, administrative, geographic, and economic. Cultural distances are the differences in religions, social norms, and languages among countries. Administrative distances are the differences in historical and political aspects, such as the government's actions towards foreign investors. Geographic distances are related to physical differences. For example, the size of the country is definitely a factor affecting the transportation costs of the company. And for the last one, economic distances are determined by the wealth and the income of residents of the countries. Also, the cost of products will affect pricing and may lead to economic distances, too. Hence, because of these four distances, a big global market and standardized products are not possible and adjustments and changes must be made from country to country. If local factors such as cultural background and geographical issues are important factors affecting people's decisions, distances between national markets still exist. In other words, the markets are not converting into one big market and hence people in the East and the West make their consumption choices with different bases. This debate highlights the importance of empirical studies of consumer behavior and service quality across cultures.

One of the emerging themes from the growing body of literature is that, as is the case with other marketing and management constructs and measures quality constructs/measures in general and service quality constructs/measures in particular (Mattila, 1999a) that are developed in one culture (notably a western culture) may not be applicable in a different cultural setting. Drawing attention to this limitation of extant research.

The literature review proves that Service Quality measurement varies from country to country and culture to culture. Till today all the measurement of service quality were developed and tested in different countries and different cultures. So this is required to test service quality measurement instrument in an Indian culture context. Since service quality is a theoretical construct, researchers have defined its dimensions based on the setting used to explore the construct.

II. RESEARCH GAP

Bhattacharjee, P. K. (2010), found that researchers have explained the importance of quality to service firms and have demonstrated its positive relationship with profits, increased market share, return on investment, customer satisfaction and future purchase intentions or market, rate of customer retention etc. Quality measurement and improvement of service industries has been perceived differently. It is based on different conceptualizations. Various scales have been investigated for service quality measurement. Since one of the scales is not so accurate enough for measuring and comparing service quality value. Empirical efforts are not well diagnosed for corrective actions in case of quality shortfalls. Moreover, practical implementation to the applicability of these scales is very much limited to the service industries in developing as well as developed countries.

Despite its popularity, the concept of service quality in the marketing literature is still ambiguously and vaguely defined. Several measurement scales have been proposed, but some of these take into account only the method of measurement and ignore the idea that the same instrument may not be able to be automatically applied in different industries or in different cultures. Several research projects concerning the relationship between perceived quality and customer satisfaction and loyalty have been conducted, although the majority has been implemented in developed economies, especially the us (Yavas, Benkenstein, and Stuhldreider, 2007).

Even as researchers continue to debate the determinants of service quality a few important issues remain unanswered. Is there a universal set of determinants that determine the service quality across a section of services? Does the service characteristic gets reflected in what customers expect out of delivery of a particular service? Is there an inherent difference in services because they must be delivered in a particular way and does that have a bearing on what becomes important for the customer? Practitioners continue to look for advice and

suggestion as to what constitute service quality for their offers and furthermore, if they tend to reposition their offers by varying some characteristics of their offers, for example, by increasing or reducing tangibility or customer contact, etc. What are the operating characteristics of determinants as they together constitute the service quality? (Chowdhary & Prakash, 2007).

III. OBJECTIVES

So, the purpose of this study is to prove batter understanding of which Service Quality Measurement Model is effective to measure service quality of Bank sector in Indian context and how managers increase patronage intension among customers. To achieve the stated purpose above and research questions mentioned at the end of literature review, following research objectives will be further investigated:

Primary Objective:
Based on research Gaps and research problems mentioned at the end of literature review following objectives will be studied in this study. To analyze service quality formulation and its measurement and to assess applicability of service quality constructs to be used for diagnostic purposes in bank .

The objective of this study was to assess the applicability of the BSQ (proposed by Bahia and Nantel, 2000) and BANKQUAL (proposed by Tsoukatos and Mastrojianni, 2010) for measuring service quality of Bank in India. This was achieved by examining the reliability, validity and component structures of the Scale.

Kindly Refer Figure No. 1: Assess Structural Model Validity

IV. LITERATURE REVIEW
Ghani and Bhatt (2003), in their paper, Comparative Study,studied service quality in a commercial bank with a view to make it better. The result concludes that the service quality of foreign banks is much better than that of Indian banks and suggests heavy investment by Indian banks in tangibility dimension to improve the quality of service.

Sureshchandar, Rajendran, Chandrasekharan.,Anantharaman (2003),Customer perceptions of service quality in the banking sector of a developing economy: a critical analysis critically examined the service-quality issues(from the perspective of customers) with respect to a developing economy-India. The

three groups of banks in India (public sector, private sector and foreign banks) have been compared with respect to the factors of service quality. They concluded that the technological factors (core service and systematization of the service delivery) appear to contribute more in differentiating the three sectors while the people-oriented factor (human element of service delivery) appears to contribute less to the discrimination. The results have also indicated that foreign banks seem to be performing well followed by private sector banks and public sector banks.

Sharma Alka and Mehta Versha (2004) in their study on Service Quality Perceptions in Financial Services-A Case Study of Banking Services found that public sector banks enjoy a better quality perception among their customers as for public sector banks, three out of five dimensions have scored higher than average, however, in case of private banks, only two dimensions have higher than average values.

Awasthi and BalramDogra (2005) in Measuring Service Quality in Banks: An Assessment of Service Quality Dimensions found that customers regard reliability to be the most important dimension of services in banks. This implies that the banks should be able to perform what they purport to perform-whether it is the functional quality aspect or the outcome quality aspect.

Joshua, Koshi & Moli (2005),in their study on Expectations and perceptions of service quality in old and new generation banks - A study of select banks in the South Canara regions observed that recognition of service quality as a competitive weapon is relatively a recent phenomenon in the Indian Banking sector. Prior to the liberalization era the banking sector in India was operating in a protected environment and was dominated by nationalized banks. Banks at that time did not feel the need to pay attention to service quality issues and they assigned very low priority to identification and satisfaction of customer needs.

Nalini Prava Tripathy (2006) in their study on A Service Quality Model for Customers in Public Sector Banks highlighted the facts of customer preferences towards the bank. It is the need of the hour for PSBs to inculcate marketing orientation in their work culture. The bankers should educate their front-end staff about the need to meet the customer expectations which alone can build the reputation and image of the bank.

Purohit, Pathardikar & Avinash (2007) in their study on Service Quality Measurement and Consumer Perception about the Services of Banking

Institutions covered the issues related with the measurement of service quality and recorded responses of the bank customers about the services of the Nationalized Banks in India. They identified key elements of strategies seen to be adopted by leading Indian banks include building a strong presence in India and international markets, customer-focused product innovation, financial resilience and a strong operating environment. They stressed the need that the policy decision makers should make multi-cornered efforts to have a new perception of quality.

Girdhar Seema (2008) in their study on Banking on Relationships" related to service quality of three co-operative banks in Surat found that the perceived performance of Prime Bank (one of the bank) is relatively close to expectations in comparison to other two banks. They also studied the variations in service quality across demographic variables and income of customers.

Chowdhary and Prakash (2007) investigated if any generalization in importance of service quality dimensions is possible. Service providers are often not sure of the amount of tangible necessary and the right mix of other service quality dimensions – reliability, assurance, empathy, responsiveness, and the role of price-added by researcher. Their paper emphasis that considering the two important dimensions tangibility of service act and whether such an action is targeted at the customer or their possessions, the paper details what service quality issues are important for which service type.

They concluded the research as follows:
· Tangibility is more important for services with more tangible actions. Further, the importance reduces as one shifts from services targeted at people to service targeted at possessions.
· Need for reliability is more for services with intangible nature of service act.

Mohanty (2008) in their study on Hunting Customer Satisfaction in Banks observed that there are wide gaps exist between the expectations and views of customers on one hand and products and service delivery by banks on the other hand. Also, there exist many socio-cultural aspects quite specific and relevant from the viewpoint of customers as well as banks. Many of these issues are either not addressed so far or to a little extent. Customer satisfaction is not only applicable to external customers; but also equally applicable to internal customers (i.e. employees).

Bhattacharjee (2010) propose a solution for measuring service quality in an industry or organization having human and machine services by considering the most important three attributes like responsiveness, empathy and innovative power of the involved human beings in a real time basis. Accordingly a new method or process is suggested with human or worker involved in the service to the organizer for affording better and result oriented service. Now based on these three attributes, different weightage apply as per Cronin and Taylor's equation.

About BSQ

BSQ scale was proposed by Bahia and Nantel in 2000 by study conducted in Canada. The BSQ scale was extension of SERVQUAL scale. In SERVQUAL scale there are five dimensions, while BSQ scale is composed of six dimensions which have 31 items. The BSQ scale proposed with key dimensions Effectiveness & Assurance, Access, Price, Tangibles, Service Portfolio and Reliability.

About BANKQUAL:

BAKQUAL scale was proposed by Tsoukatos and Mastrojianni in 2010 by study conducted in Greece retail banking industry. The BANQUAL scale proposed, with key dimensions assurance/empathy, effectiveness, reliability and confidence, a combination of SERVQUAL and BSQ dimensions. The 27-item BANQUAL scale consists of twelve SERVQUAL, seven BSQ, two common in SERVQUAL and BSQ and six setting-specific items. In this respect, the scale is a mixture of the SERVQUAL and BSQ scales. The factorial structure of BANQUAL consists of SERVQUAL's Empathy, and Assurance (Parasuraman et al., 1988), BSQ's Effectiveness (Bahia and Nantel, 2000), Reliability which is common in SERVQUAL and BSQ and finally Confidence.

V. RESEARCH METHODOLOGY

The purpose of this research is mainly descriptive and exploratory. In this study, survey methods have been preferred. Researcher adopts well-known service quality measurement. For banking study, BSQ and BANKQUAL instruments for measuring service quality have been used for measuring service quality in bank. Researcher preferred to use a probabilistic systematic random sample method of data collection. The instrument was administered by a researcher himself and the investigators trained by the researcher till they were familiar with the instrument. The data was collected from the respondents at outside bank. The data was collected at bank period of three months during the evenings and

weekends from the customer of bank who have at least three month old account with particular bank and was willing to respond.

According to guideline provided by Nunnally (1978) that ten times of total number of items, so sample size for BSQ and BANKQUAL was 360 respectively, means total sample size was 720. However, Hair et al. (1992, 1995) cautioned that, if the sample size exceeds 400, the goodness of fit is poor because almost any difference is detected. Therefore, by considering the constraints of the research setting and theoretical aspect of this study, the targeted sample size was set at 360 (n=360) for each service quality model.

Data were collected by means of a structured questionnaire. The questionnaire consisted of three sections A, B and C. Sections A and B required respondents to evaluate the service components of their regular bank and mall/supermarket. Section C contained questions pertaining to respondent profile. The perception statements were measured on a seven-point Likert type scale with "1" being "strongly disagree" and "7" being "strongly agree". All perception statements were randomly arranged and together made up the dimensions of service quality. In this study, the research instrument was administered through personal interviews conducted outside the bank. To minimize bias, caused by poor service, prospective respondents were approached and interviewed prior to conducting their intended transactions. The method of personal interviews is superior to self-administered questionnaires in perceptual or attitudinal surveys while face-to-face administration maximizes response rates and field researchers' availability to answer respondents' questions. For analyzing the data researcher used various test like Preliminary Analysis, Correlation coefficient Analysis, Chi-square test, Multiple regressions Analysis, Structural Equation Model (SEM), Confirmatory Factor Analysis (CFA) through SPSS 19.0 and AMOS 18.0.

VI. RESULTS AND DISCUSSION

Both the univariate and multivariate statistical methods are based on the assumption of univariate normality, with the multivariate methods also assuming multivariate normality. Multivariate normality (the combination of two or more variables) means that the individual variable is normal in a univariate sense and that their combinations are also normal (Hair et al. 2010). Kline (1998) suggested that all variables in the analysis for univariate skewness and kurtosis were satisfactory within conventional criteria for normality i.e. -3 to 3 for skewness and -10 to 10 for kurtosis. In BSQ data all skewness value is from -1.083 to -0.137 and kurtosis value is from 2.081 to -.032 and in BANKQUAL data, all skewness value is from -1.083 to -0.137 and kurtosis value

is from 2.081 to -.032 in Bank study. All the data sets were univariate normal and its values is in between the guideline given by Kline (1998).

Research also tests the problem of multi collinearity problem of data. According to Juie Pallant (2005) have quoted commonly used cut-off points for determining the presence of multicollinearity (tolerance value of less than .10, or a VIF value of above 10). 'Collinearity diagnostics' can pick up on problems with multicollinearity that may not be evident in the correlation matrix.

Reliability Analysis
A stable research instrument is one that can be repeated on the same individual more than once and achieve the same results.

Cronbach Reliability
Kindly Refer Table No. 2: Reliability of BSQ and BANKQUAL in Retail Bank context

Internal reliability of the BANKQUAL Scale was examined using the Cronbach alpha coefficients. The results (Table no. 2) indicate that the service quality scale is a reliable instrument, returning an overall Cronbach alpha of 0.94. Taking 0.60 and above as indicator of reliability (Malhotra& Dash, 2011), we see that all underlying dimensions are reliable. This compares to the findings of by proposed by Tsoukatos and Mastrojianni, (2010) who found the BANKQUAL scale (alpha = 0.92) in Bank and all dimensions reliable (ranged from 0.72 to 0.96).

Validity Analysis
 (i) Predictive Validity
The entire scale BSQ, is correlated with three Overall satisfaction (0.47, p<0.01), Intended to recommend (0.39, p<0.01) and Intended to extend transaction (0.40, p<0.01), thus verifying the predictive validity of BSQ. In BANKQUAL Overall satisfaction (0.60, p<0.01), Intended to recommend (0.37, p<0.01) and Intended to extend transaction (0.53, p<0.01), thus verifying the predictive validity of BANKQUAL in Bank Study.

 (ii) Convergent Validity:
Kindly Refer Table No. 2: Correlation between Service Evaluations with Overall Quality Rating, Satisfaction, Recommended and Loyalty
So both scales have good convergent validity to measure service quality of Bank.

Cross-validation of BSQ and BANKQUAL

Cross validation of BSQ and BANKQUAL done through confirmatory factor analysis. A confirmatory analysis was conducted to test three measurement models of the service quality:

i.   Model-I-An initial first-order five factor measurement model, and its reliability and validity. In other words, all the dimensions of model are reliable and valid.
ii.   Model-II-Second-order five factor measurement model reliability and validity. (If model-I was satisfactory). In other words, all the dimensions of model are adequate to measure service quality of Bank.
iii. Model-III-Structural Model Validity. (If model-I and model-II were satisfactory). In other words, Model is effective to establish relationship with theoretical construct of bank.

To assess the factor structure of the BSQ and BANKQUAL scale, the component models were subjected to confirmatory factor analysis (CFA) using AMOS 18.0.

Model 1: Assessing the initial First-order five factor measurement model of SERVQUAL

·   Hypothesis-1(H1): Initial first order factor model is reliable and valid.
Researcher estimated the structural models yield the following model fit results:

Kindly Refer Table No. 3: Goodness-of-fit Statistics (Measurement Model)

From the above table, we can summarize the fitness of structural model in service quality of bank. Collectively, these fit indices indicate that the structural model is acceptable. That is, the second-order perceived service quality model BANKQUAL is robust and theoretically explains the service quality and patronage intentions. The score obtained from the BSQ analysis suggested poor fit between the data and model ($\chi2$ =1265.183, df=419, $\chi2$/df=3.020, TLI=.718, CFI=.766, RMSEA=.075). All the fit indices not comply with the values recommended by Haireet.al.(2010) and Arbuckle and Wothke (1995). The SEM result of BANKQUAL ($\chi2$/df=2.67, TLI=.90, CFI=.90, RMSEA=.07), thus, perceived service quality model BANKQUAL is robust and theoretically explains the service quality and patronage intentions.

Kindly Refer Table No. 4 Psychometric Properties of Measurement Model-BSQ and BANKQUAL

Table No. 4 describe the factor loadings of observed variables are reliability estimates of individual construct. All the factor loadings are above suggested limit of .50 by Kline (1998). BANKQUAL seems to be superior to BSQ according to psychometric properties of scales.

Assess measurement Model Reliability and Validity
The main purpose of the measurement model is to assess and verify that indicators or scale items used for each construct are both reliable and valid. Researcher conducted test of reliability by examining composite reliability and Convergent Validity.

(i)   Composite Reliability and Convergent Validity:
Kindly Refer Table No. 5: BSQ measurement Model: Construct Reliability and Convergent Validity (AVE) and Correlation Matrix

Kindly Refer Table No. 6: BANKQUAL measurement Model: Construct Reliability and Convergent Validity (AVE) and Correlation Matrix

Only two the constructs exceed the critical level of 0.70 for composite reliability, but below 0.50 for AVE. This establishes neither reliability nor convergent validity of measurement scale in banking sectors.

Convergent validity further established if all item loadings are equal to or above the recommended cutoff level of 0.70. In BSQ scale, there are 31 items, out of 31 items, 29 items loading below .70. Thus data of BSQ study not supported to the convergent validity.

All the constructs exceed the critical level of 0.70 for composite reliability, and above 0.50 for AVE. This establishes reliability and convergent validity of measurement scale in banking sectors.

Convergent validity further established if all item loadings are equal to or above the recommended cutoff level of 0.70. In BANKQUAL scale, there are 27 items, out of 27 items, 12 items loading between .70 to .80, 12 items loading between .60 to .70 and 3 items below .60. Thus data of BANKQUAL scale was supported to the convergent validity. And AVE was also above .50, it concluded good convergent validity of BANKQUAL scale in banking sectors in India.

Overall the BSQ scale items have lack of strong both reliability and validity for testing the service quality model of Bank. Model-I is not found satisfactory, so model-II and model-III are not supposed to be tested.

After conducting the validity and reliability tests for all of the critical factors of BANKQUAL model, it is also necessary to demonstrate the overall fit of the measurement model with second-order alternative model and third order structure model.

 Model-II

Overall fit measures (CFI, NNFI, RMSEA and $\chi 2$ difference) were used iteratively to determine whether the CFA model fitted data well. Result from running this second-order model showed that all fit indices suggested good fit of data, $\chi 2 = 1069.31$, df=400, $\chi 2/df = 2.67$, NNFI/TLI=.90, CFI=.90, RMSEA=.07. According to $\chi 2$ difference test, the improvement in fit between the initial first-order and second order five factor model was not statistically significant ($\Delta \chi 2$ (5)=18.15, p > 0.05). The result suggest that the first-order and second order BANKQUAL model provide the best representation of data in this study.

Model-III

Researcher estimate the structural model of BANKQUAL with same sample yielding the following model fit results:

Kindly Refer Table No. 6a: Goodness-of-fit Statistics (Structural Model-BANKQUAL)

Collectively, these fit indices indicate that the structural model is acceptable. That is, the second-order perceived service quality model (BANKQUAL) is robust and theoretically explains the patronage intentions. The structure coefficients linking the four dimensions with second-order service quality (i.e. the second-order loading) are all significant and in the expected directions. Table contains the structure coefficient with corresponding t values.

Kindly Refer Table No. 7 : Structural Model (BANKQUAL) Coefficient

The structure coefficients linking the five dimensions with second-order service quality (i.e. the second-order loading) are all significant and in the expected directions. Table no. 99 contains the structure coefficient with corresponding t

values. Reliability is most important dimensions followed by Effectiveness, Confidence and Assurance & Empathy.

VII. FINDINGS AND CONCLUSION

The main aim of this study was to assess effectiveness of alternatives service quality measurement model which suit in Indian context. So practitioner and business man can utilized right instrument to measure their service quality and do necessary changes in different aspect of business and its related services.

Number of models and instrument are available in the literature to determine the service quality. Different authors were demonstrated different dimensions and determinants of service quality through empirical as well as conceptual research. All the models somehow appropriate and may be not appropriate due to number of factors like different culture, service setting and socio-cultural aspect of society.

Literature review chapter describe number of arguments regarding service quality formulation, its determinants and dimension. There is no general consensus regarding service quality formulation due to various factors like culture, service setting etc..

Kindly Refer Table No. 8: Comparison of overall indices for three model of Service Quality-BANKQUAL

According to $\chi2$ difference test, the improvement in fit between the initial first-order and second order five factor model was not statistically significant ($\Delta \chi2$ (2)=18.15, p > 0.05). The result suggest that the first-order and second order BANKQUAL model provide the best representation of data in this study. $\chi2$ difference between in second-order and third model were also not statistically significant ($\Delta \chi2$ (80)=182.01, p>0.05). It means that BANKQUAL model is overall fit for measure service quality of Bank in India.

For this research, three conclusions and recommendation may be drawn.

First, based on the finding, it is evident that different models of service quality have different psychometric properties of measurement model.
This reiterates our initial notion that measures developed internationally are of little use in determining service quality of Indian bank.

All kinds of reliability test suggested following sequence of models for service quality measurement in banking sectors.

Kindly Refer Table no. 9 : Effectiveness of Model: According to Reliability(Bank Study)

Finding of banks study revealed that BANKQUAL scale has highest reliability followed by BSQ.

Kindly Refer Table No. 10: Effectiveness of Model: According to Validity

Different kinds of validity were demonstrated by factor loadings and correlations between factors in CFA model. I found that Content validity was high in BSQ model because of its popularity and one of the older models in service quality measurement. According to Predictive and convergent validity, BANKQUAL has high validity than the other model.

In nutshell, BANKQUAL was found effective to measure service quality of Bank in Indian context.

Second, the study provide evidence that initial notion BSQ was not applicable in measuring service quality of Bank in Indian Context. First-order factor model suggested the goodness-of-fit of initial model; second-order factor model suggested that all the dimensions of model were adequate to measure service quality of Bank. And third order model suggested the overall fit of model with theoretical construct. I found only BANKQUAL has better fit.

Kindly Refer Table no. 11: Overall Model Soundness:

The BANKQUAL validity and reliability in the Indian banking setting indicate that the BANKQUAL can be used to assess the overall service levels provided by the bank and for tracking changes in overall service levels over a period of time.

Third, this study provides evidence that the service quality is multi-dimensional and therefore hierarchical in nature.

This provides usefulness of the scale as a diagnostic tool for providing strategic direction. Bank and researchers applying multi-dimensional service quality scales developed internationally such as the SERVQUAL and BANKQUAL to the Indian context are advised to pay special attention to scale adaptation to ensure

that the scale has reliable diagnostic ability. International financial institution like bank planning a foray into India would require careful re-thinking before applying their existing perspectives on service quality gained in other countries to Indian bank.

Due to the cultural differences, global banks and retailers need to be responsive in developing customer service. In this regard, a thoughtful customer research should be conducted to advance an understanding of local customers' behavior and their experience. Bank should develop a customized service quality measurement instrument because all available tools have some limitation.

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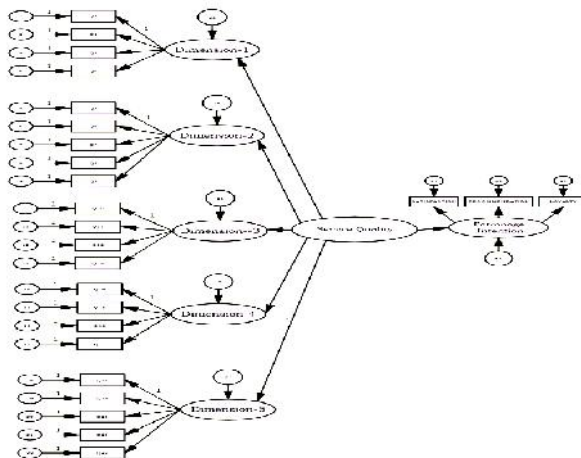
TABLES AND FIGURES

ANNEXURE

Figure 1

Table No. 1

BSQ		BANKQUAL	
Dimensions	Cronbach α	Dimensions	Cronbach α
Effectiveness and Assurance	0.83	Assurance and empathy	0.875
Access	0.70	Effectiveness	0.86
Price	0.72	Reliability	0.82
Tangibles	0.78	Confidence	0.83
Service Portfolio	0.60		
Reliability	0.75		
0.924		0.937	

Table No.2

	Overall Quality	Satisfaction	Recommended /Positive WOM	Loyalty
BSQ	.403(**)	.467(**)	.403(**)	.386(**)
BANKQUAL	.484(**)	.599(**)	.531(**)	.374(**)

**. Correlation is significant at the 0.01 level (2-tailed).

Table No. 3

Goodness-of-fit model index	Recommended Value*	Measurement Model-BSQ	Measurement Model-BANKQUAL
Chi-square/degree of freedom**	≤ 5.00	3.020	2.73
Goodness-of-fit index(GFI)	≥ .90	.822	.89
Adjusted goodness-of-fit index (AGFI)	≥ .80	.776	.89
Normalized fit index (NFI)	≥ .90	.792	.83
Tucker-Lewis index (TLI/NNFI)	≥ .90	.718	.90
Comparative fit index (CFI/RNI)	≥ .90	.766	.90
Root mean square error of approximation (RMSEA)	≤ .08	.789	.06
Standardized root mean square residual (standardized RMR)	≤ .08	.075	.06

* These criterias are according to Hair et al. (1998) and Arbuckle and Wothke (1995) ** Ullman (1996) recommended chi-square/degree of freedom value of < 5.00

Table No. 4

BSQ Items and its respective dimension			Loading	BANKQUAL Items and its respective dimension	Loading
V6	<---	Effectiveness & Assurance.	0.458	P8 <--- Assurance & Empathy	0.584
V5	<---	Effectiveness & Assurance.	0.514	P7 <--- Assurance & Empathy	0.696
V4	<---	Effectiveness & Assurance.	0.551	P6 <--- Assurance & Empathy	0.577
V3	<---	Effectiveness & Assurance.	0.56	P5 <--- Assurance & Empathy	0.664
V2	<---	Effectiveness & Assurance.	0.512	P4 <--- Assurance & Empathy	0.682
V1	<---	Effectiveness & Assurance.	0.539	P3 <--- Assurance & Empathy	0.764
V7	<---	Effectiveness & Assurance.	0.486	P2 <--- Assurance & Empathy	0.781
V8	<---	Effectiveness & Assurance.	0.424	P1 <--- Assurance & Empathy	0.74
V9	<---	Effectiveness & Assurance.	0.549	P16 <--- Effectiveness.	0.703
V10	<---	Effectiveness & Assurance.	0.58	P15 <--- Effectiveness.	0.691
V11	<---	Effectiveness & Assurance.	0.553	P14 <--- Effectiveness.	0.639
V12	<---	Effectiveness & Assurance.	0.494	P13 <--- Effectiveness.	0.619
V13	<---	Effectiveness & Assurance.	0.587	P12 <--- Effectiveness.	0.658
V18	<---	Access.	0.648	P11 <--- Effectiveness.	0.643
V17	<---	Access.	0.678	P10 <--- Effectiveness.	0.639
V16	<---	Access.	0.615	P9 <--- Effectiveness.	0.65
V15	<---	Access.	0.437	P22 <--- Reliability.	0.758
V14	<---	Access.	0.478	P21 <--- Reliability.	0.699
V23	<---	Price.	0.643	P20 <--- Reliability.	0.728
V22	<---	Price.	0.57	P19 <--- Reliability.	0.493
V21	<---	Price.	0.617	P18 <--- Reliability.	0.658
V20	<---	Price.	0.568	P17 <--- Reliability.	0.615
V19	<---	Price.	0.563	P23 <--- Confidence.	0.711
V27	<---	Tangible.	0.771	P27 <--- Confidence.	0.706
V26	<---	Tangible.	0.724	P26 <--- Confidence.	0.71
V25	<---	Tangible.	0.695	P25 <--- Confidence.	0.724
V24	<---	Tangible.	0.575	P24 <--- Confidence.	0.674
V29	<---	Service Portfolio.	0.687		
V28	<---	Service Portfolio.	0.592		
V31	<---	Reliability.	0.723		
V30	<---	Reliability.	0.649		

Table No.5

Construct	Construct Reliability	Average Variance Extracted (AVE)	Correlation Matrix					
			1	2	3	4	5	6
Effectiveness and Assurance	0.79	0.49	0.70					
Access	0.60	0.52	.622**	0.72				
Price	0.65	0.49	.624**	.691**	0.70			
Tangibles	0.71	0.47	.480**	*.724**	.567**	0.69		
Service Portfolio	0.47	0.48	.502**	.575**	.535**	.619**	0.69	
Reliability	0.56	0.43	.576**	.603**	.500**	.573**	581**	0.66

*Values on the diagonal of the correlation matrix is the square root of AVE
**. Correlation is significant at the 0.01 level (2-tailed).

Table No. 6

Construct	Construct Reliability	Average Variance Extracted (AVE)	Correlation Matrix			
			1	2	3	4
Assurance and empathy	0.78	0.53	0.73			
Effectiveness	0.77	0.51	.522**	0.71		
Reliability	0.71	0.52	.459**	*.800**	0.72	
Confidence	0.73	0.48	.557**	.715**	.717**	0.69

*Values on the diagonal of the correlation matrix is the square root of AVE
**. Correlation is significant at the 0.01 level (2-tailed).

Table No. 6a

Goodness-of-fit model index	Recommended Value*	Structure Model
Chi-square/degree of freedom**	≤ 5.00	2.67
Goodness-of-fit index(GFI)	≥ .90	.90
Adjusted goodness-of-fit index (AGFI)	≥ .80	.85
Normalized fit index (NFI)	≥ .90	.91
Tucker-Lewis index (TLI/NNFI)	≥ .90	.90
Comparative fit index (CFI/RNI)	≥ .90	.90
Root mean square error of approximation (RMSEA)	≤ .08	.07
Standardized root mean square residual (standardized RMR)	≤ .08	.07

* These criterias are according to Hair et al. (1998) and Arbuckle and Wothke (1995)
** Ullman (1996) recommended chi-square/degree of freedom value of < 5.00.

Table No. 7

Dimensions of Service Quality	Second-order Loading Estimates	t-Values
Assurance & Empathy	.61	7.915**
Effectiveness	.96	11.533**
Reliability	.97	12.43**
Confidence	.91	Λ fixed 1

** Significant at the 0.001 level (2-tailed).

Table No. 8

Model	χ^2	df	χ^2/df	NNFI	CFI	RMSEA	Δ χ^2
Model-I: An initial first-order five factor measurement model, which was developed by Parasuraman *el.al*.(1991)	869.15	318	2.73	0.9	0.9	0.06	---
Model-II-Second-order five factor measurement model.	887.3	320	2.77	0.9	0.9	0.07	18.15
Model-I-Structural Model Validity	1069.3	400	2.67	0.9	0.9	0.07	182

Table No. 9

	Split-Half Reliability	Strictly Parallel Model	Cronbach Reliability	Composite Reliability	OVERALL RANK
BSQ	2	2	2	2	2
BANKQUAL	1	1	1	1	1

1= Most Reliable and descending order

Table No. 10

	Content Validity	Predictive Validity	Convergent Validity	Discriminant Validity	Nomological Validity
BSQ	1	2	2	1	Not
BANKQUAL	2	1	1	2	Yes

1= Most Valid and descending order

Table No. 11

	Model-I	Model-II	Model-III
BSQ	Not-Satisfactory	Not- Satisfactory	Not- Satisfactory
BANKQUAL	Satisfactory	Satisfactory	Satisfactory

ABOUT AUTHORS

Dr. Bhavesh Vanparia is Faculty at Tolani Institute of Management Studies, Adipur-Kachchh. He did his MBA with Marketing specialization and PhD in Management with special interest in Service Marketing. Dr. Vanpariya started his career HCL and moved on to academics with a special focus on research since last eight years. He has presented 31 research papers in International and National Conferences. He has also published 21 research papers in reputed refereed National and International journals. Dr. Vanparia has been the resource person and recognized guide for PhD and MPhil Courses for Management, Commerce and Economics faculties. His areas of interest include Service Economy, Neuromarketing, Behavioral Science, Marketing Research, Marketing Management and Research Methods. He is on the editorial boards and reviewers' panel of prominent international journals. He is a member of International Association of Academicians and Researchers and Research Associate of Matrix Consultancy Limited, Pune.

Prof. Vinod Patel is Professor and Dean at DBIM, Veer Narmad South Gujarat University, Surat. He did BE , MBA and PhD in Management. Prof. Patel has 30 years of professional experience out of which he has 20 years of teaching and research experience. During his 10 years in industry, he has served Soma Textiles, Mihir Textiles, Raipur Mills in Ahmadabad and NTC (SM) Ltd., Mumbai. To his credit, he has published book entitled 'Distribution Management" and co-author books entitled 'Business Communication and Correspondence', and 'Introduction to Computer and IT". He has also presented more than 40 research papers in National and International conference. He has attended conferences at USA, UK and Bangladesh. Besides Dr. Patel has published more 20 research papers in the area of management. His areas of interest include includes Sales and Distribution Management, Supply Chain and Business Communication. Dr. Patel has been the resource person for the Orientations Program and Refresher Courses for Management and Commerce faculties. He is member of the editorial board of journal entitles "Management Trends". He is a member of American Marketing Association (AMA). Dr. Patel visited China and Shri Lanka as delegated of World Teacher's Association.