Developing a scale for service quality measurement in banks

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**Introduction**

Banks and financial institutions play an important role in the economic development of a country. Modern developments in the banking sector, pertaining to regulations, technology adoption, and use of advanced management practices, have changed the banking environment throughout the world. In an effort to place high value on customer relationships banks have integrated latest technological developments in their operations, resulting in services such as ATMs, telephone based operations, electronic banking, and smartphone applications. However, the need for personalised services and improving service quality remains unaffected. Indeed as the use of technology in the banking sector becomes widespread, its (i.e., technology’s) role as a unique selling proposition diminishes, and service quality emerges as the key differentiating factor, i.e., shift from ‘high-tech’ to ‘high-touch’ ([Angur *et al.*, 1999](#_ENREF_6)). Further, frequent use of aggressive marketing tactics by banks have resulted in decline in customer loyalty ([Beckett *et al.*, 2000](#_ENREF_11); [Corelli, 2002](#_ENREF_25)) creating pressure to retain existing customer and attract new customers through improved service quality. Therefore, need to measure and manage service quality is a core factor affecting performance of banking institutions.

Effective service quality measurement requires determining ‘what to measure’([Dagger *et al.*, 2007](#_ENREF_28); [Ho and Lee, 2007](#_ENREF_43)). The critical factors of service quality need to be determined so that service quality could be measured. One aspect of service quality measurement is scale development ([Dabholkar *et al.*, 1996](#_ENREF_27); [Dagger *et al.*, 2007](#_ENREF_28)). A scale can provide a valid and reliable instrument for measuring service quality in banks. In addition, the scale can be used as a diagnostic tool for measuring the level of service in various areas. In this way, the scale can be used for mapping of service processes and initiating targeted improvement program more effectively.

The literature on service quality in banks is rich and varied. Several studies have been carried on service quality in banking institutions in different countries. The existing research has two main limitations. First, although there is a plethora of literature on measuring service quality in banks, there is relatively a paucity of studies on measuring service quality in developing countries ([Arasli *et al.*, 2005](#_ENREF_7)). Second, since the significance of various dimensions of service quality is context dependent, the measures of service quality and instruments for measuring service quality have limited applicability in settings other than where they were developed. Such instruments, therefore, have limited usefulness in other sectors and countries. As a result service providers face difficulties in implementing meaningful customer-oriented quality assessment measures ([Dagger *et al.*, 2007](#_ENREF_28)), resulting in deployment of service improvement measures that are not aligned with the unique contingencies of banking institutions.

This paper develops a scale for measuring service quality of banks using the data from Pakistan, a developing country. The scale was developed using modified SERVQUAL instrument ([Parasuraman *et al.*, 1991](#_ENREF_60); [Parasuraman *et al.*, 1988](#_ENREF_61)). Although previous research has addressed such issues in other contexts, none pertains directly to Pakistani banking institutions. Although research on bank service quality has been carried out in other developing countries, such as India ([Angur *et al.*, 1999](#_ENREF_6); [Sureshchandar *et al.*, 2003](#_ENREF_73)) and Bangladesh ([Siddiqi, 2011](#_ENREF_68)), caution is needed in generalising the findings of these studies to other developing countries as the definition of service quality varies from one context to another ([Winsted, 1997](#_ENREF_75)) and the critical factors of service quality are significantly influenced by socio-cultural differences ([Karatepe *et al.*, 2005](#_ENREF_50); [Malhotra *et al.*, 1994](#_ENREF_57); [Mattila, 1999a](#_ENREF_58); [2002](#_ENREF_79)). Due to broad socio-cultural differences among the mentioned countries, generalisation of research findings will be futile. The scale developed in this study can be used to measure service quality and initiate targeted improvement in poor performing areas.

**Literature review**

The need to measure service quality in banks is driven by the fact that quality service increases customer satisfaction ([Avkiran, 1994](#_ENREF_8)), creates opportunities for cross-selling, and increases customer loyalty, customer retention, tolerance for service failures, and positive word of mouth advertising ([Arasli *et al.*, 2005](#_ENREF_7); [Kumar *et al.*, 2010](#_ENREF_54)). Since banks compete in a marketplace where different competitors use similar technology (e.g., ATMs, electronic banking, and telephone banking, etc.) and generally undifferentiated products and services ([Camarero, 2007](#_ENREF_19)), the means of competitive advantage shifts away from product- and service-offerings to the quality of services ([Kumar *et al.*, 2010](#_ENREF_54)). The quality of services, therefore, can be a major differentiating factor and a ‘unique selling proposition’ ([Angur *et al.*, 1999](#_ENREF_6)). A unique selling proposition is the key benefit offered that differentiates a product or service from competing offerings ([Kotler, 1997](#_ENREF_52)). A number of studies have shown how top-notch organisations – such as Singapore Airline, Four Seasons Hotels and Resorts, IKEA, McKinsey & Co, Ritz-Carlton, and The Walt Disney Company – used excellent service quality as their unique selling proposition ([Gouthier *et al.*, 2012](#_ENREF_37); [Heracleous and Wirtz, 2010](#_ENREF_42); [Solnet *et al.*, 2010](#_ENREF_70); [Wirtz *et al.*, 2008](#_ENREF_76); [Wirtz and Johnston, 2003](#_ENREF_77)). Service quality can provide a key differentiating factor and a means for competitive edge in the services of banks ([Angur *et al.*, 1999](#_ENREF_6); [Kumar *et al.*, 2010](#_ENREF_54)). Therefore, measurement and management of service quality is critical to the profitability and sustainable competitive advantage of banks ([Jabnoun and Al-Tamimi, 2003](#_ENREF_46)).

**Models of service quality**

The literature presents various models of service quality. Seth *et al*. ([2005](#_ENREF_67)) reviewed 19 service quality models and found that outcomes and measurement of service quality is dependent on the types of service setting, situation, time, need, and so on. From the perspective of service quality in banks, three models are of particular interest ([Arasli *et al.*, 2005](#_ENREF_7); [Karatepe *et al.*, 2005](#_ENREF_50); [Sangeetha and Mahalingam, 2011](#_ENREF_63)), including Grönroos model ([1984](#_ENREF_38)), internal service quality model ([Frost and Kumar, 2000](#_ENREF_35)), and SERVQUAL ([Parasuraman *et al.*, 1991](#_ENREF_60); [Parasuraman *et al.*, 1988](#_ENREF_61)). Grönroos model conceptualises service quality in terms of technical and functional quality. Technical quality is about perceptions of customers about service outcomes whereas functional quality is about how a service is provided. Technical quality is about what a customer is left with after the provision of service whereas functional quality is about the process of delivering the service. In other words, technical quality is about ‘what’ whereas functional quality is about ‘how’ aspects of a service. The second model, internal service quality model, states that the perceptions and expectations of internal customers (front-line staff) and internal suppliers (support staff) play a critical role in determining the level of perceived internal service quality ([Frost and Kumar, 2000](#_ENREF_35)). These two models provide a sound conceptualisation of service quality, but do not mention how to measure service quality from the perspective of (external) customer. The third model, SERVQUAL, covers this limitation.

SERVQUAL provides the most suitable option when purpose is perceived quality measurement rather than internal assessment of adequacy of service operations ([Chatzoglou *et al.*, 2013](#_ENREF_22)). The instrument consists of five dimensions, namely ‘reliability’, ‘responsiveness’, ‘assurance’, ‘tangibles’, and ‘empathy’. The instrument measures ‘expectations’ of customers about a service, and then compares them against ‘perceptions’ of the service quality offered. The theoretical development of the instrument is not discussed here because it has been covered in other publications ([Ladhari, 2009](#_ENREF_56); [Parasuraman *et al.*, 1991](#_ENREF_60); [Parasuraman *et al.*, 1988](#_ENREF_61)). A brief summary of the five dimensions of SERVQUAL and their brief description is provided in Table 1.

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| **SERVQUAL dimension** | **Definition** | **Number of items** |
| Reliability | The ability to perform the promised service dependably and accurately | 4 |
| Responsiveness | The willingness to help customers and to provide prompt service | 4 |
| Assurance | The knowledge and courtesy of employees and their ability to convey trust and confidence | 5 |
| Tangibles | The appearance of physical facilities, equipment, personnel and communication materials | 4 |
| Empathy | The provision of caring, individualised attention to customers | 5 |

Table 1: Five dimensions of SERVQUAL, their definitions, and number of items in each dimension

The key advantage of SERVQUAL, compared with other instruments, is that it offers customer perspective approach in the measurement of service quality, and provides managers superior diagnostic capabilities to determine room for improvement ([Donnelly *et al.*, 1995](#_ENREF_30); [Wisniewski, 2001](#_ENREF_78)). Further, it provides a skeleton that can be adapted to measure service quality in different settings: “SERVQUAL provides a basic skeleton […] for each of the five service quality dimensions. The skeleton, when necessary, can be adapted or supplemented to fit the characteristics or specific research needs of a particular organisation” ([Parasuraman *et al.*, 1991, p. 261](#_ENREF_60)).

SERVQUAL has also been criticised in several publications ([Buttle, 1996](#_ENREF_17); [Ladhari, 2009](#_ENREF_56)). Criticism at the theoretical level includes ([Buttle, 1996](#_ENREF_17)): (i) the five dimensions of the instrument are not universal; (ii) items do not always load on the corresponding dimension; and (iii) the number of dimensions in the instrument vary from one service sector to another. Criticism at the operational level includes ([Buttle, 1996](#_ENREF_17)): (i) four or five items in each dimension cannot fully capture the characteristics of a dimension; (ii) customers’ assessment of service quality varies from one moment-of-truth (MOT) to another (MOT is the brief time when customer evaluates the quality of a service); (iii) ambiguity in the use of term ‘expectations’, as consumers use standards other than expectations to evaluate service quality; (iv) the instrument fails to measure absolute service quality; and (v) for the instrument to function correctly, it is assumed that expectations remain constant. However, that is not the case because expectations change with familiarity with the service ([Carman, 1990](#_ENREF_20)). Further, Gilmore ([2003](#_ENREF_36)) noted that there is a high correlation among the dimensions of SERVQUAL. Studies also show that there is overlapping among reliability, responsiveness, assurance, and empathy dimensions; and tangibles being a distinctive factor ([Bouman and Van der Wiele, 1992](#_ENREF_15); [Cui *et al.*, 2003](#_ENREF_26)).

Despite criticism, SERVQUAL remains a popular instrument for the measurement of perceived service quality in different settings ([Arasli *et al.*, 2005](#_ENREF_7); [Jabnoun and Al-Tamimi, 2003](#_ENREF_46)). The widespread use of SERVQUAL has led researchers to conclude that it is the most popular instrument for measuring service quality ([Chatzoglou *et al.*, 2013](#_ENREF_22)). It is also clear from the contemporary research that SERVQUAL can be used for measuring service quality in banks ([Arasli *et al.*, 2005](#_ENREF_7); [Jabnoun and Al-Tamimi, 2003](#_ENREF_46); [Kumar *et al.*, 2010](#_ENREF_54); [Kumar *et al.*, 2009](#_ENREF_55)).

One aspect of the measurement of service quality is scale development ([Karatepe *et al.*, 2005](#_ENREF_50)). Scale development allows identification of the critical factors of service quality in a particular setting, and provides a tool for precise mapping of key service processes ([Dagger *et al.*, 2007](#_ENREF_28)). Managers can use the identified factors to initiate targeted performance improvement, thus enabling efficient utilisation of resources ([Ho and Lee, 2007](#_ENREF_43)). The importance of scale development can be recognised from the idea that anything that cannot be measured cannot be improved. Harrington ([1991](#_ENREF_40)) put it like this, “if you cannot measure it, you cannot control it. If you cannot control it, you cannot manage it. If you cannot manage it, you cannot improve it” (p. 164). Similarly,Sink and Tuttle ([1989](#_ENREF_69)) argue that from the management perspective, performance measurement provides the necessary information for management feedback for decision makers and process managers.

**Service quality in banks**

Previous studies on measuring service quality in banks can be divided into two main streams. The first stream discusses the theoretical aspects of service quality in banks. Some representative examples in this stream include exploring the role of technology in service quality delivery ([Joseph *et al.*, 1999](#_ENREF_48)), determining the impact of service quality and service characteristics on customer retention in banks ([Ennew and Binks, 1996](#_ENREF_32)), investigating the role of customer satisfaction in automated service quality and financial performance ([Al-Hawari *et al.*, 2009](#_ENREF_4)), and determining as to how service quality is perceived by the customers of banks at organisational and transactional levels ([Aldlaigan and Buttle, 2002](#_ENREF_5)). The findings of these studies are summarised in Table 2.

Bellou and Andronikidis ([2008](#_ENREF_13)) investigated the relationship between internal and external service quality in banks. They found that provision of high quality internal services increases the quality of services provided to customers (external quality) and hence customer satisfaction. Internal service quality in this study was measured in terms of reliability, responsiveness, competence, communication, understanding, courtesy and access. External service quality was determined in terms of prosocial behaviour of employees. Moreover, Sangeetha and Mahalingam ([2011](#_ENREF_63)) reviewed 14 different service quality models applicable to the banking sector and concluded that a generic instrument for the measurement of service quality or even one specifically developed for banking sector may not be applicable in its original form, and development of the customized scale for measuring the service quality for a particular cultural and country context and at a particular time is warranted.

The second stream of literature is about developing scale and measuring service quality in different settings. These studies usually use the gap model ([Parasuraman *et al.*, 1991](#_ENREF_60); [Parasuraman *et al.*, 1988](#_ENREF_61)) that measures differences between customers’ expectations and perceptions about a service. The purpose of such studies is to develop a scale for measuring service quality in different settings. Some representative examples of this stream are as follows. Kumar *et al.* ([2010](#_ENREF_54)) developed service quality model for Malaysian banks. Their model indicates that service quality is a four-dimensional construct, comprising tangibles, reliability, competence, and convenience. In another similar study, Taap *et al* ([2011](#_ENREF_74)) compared the service quality of Islamic and conventional banks in Malaysia and found that there are large differences between respondents expectations and perceptions. Further, they found that convenience, competence, reliability, and tangibles are key determinant of service quality in Malaysian banks. Bahia and Nantel ([2000](#_ENREF_10)) developed a scale for the measurement of service quality in Canadian banks – the developed scale comprised six dimensions, namely effectiveness and assurance, access, price, tangibles, services portfolio, and reliability. Cui *et al*. ([2003](#_ENREF_26)) developed service quality scale for Korean banks and found that the main determinants of service quality are tangibles, reliability, and empathy. They further noted that psychometric properties of the original SERVQUAL instrument could not be confirmed. Angur *et al.* ([1999](#_ENREF_6)) developed service quality scale in Indian banks and found that although the instrument was uni-dimensional but five-factor conceptualisation of the instrument did not hold in their study. Jabnoun and Al-Tamimi ([2003](#_ENREF_46)) developed service quality scale for UAE banks. Factor analysis in their study found three factors as the main determinants of service quality, namely human skills, tangibles, and empathy. The human skills dimension consisted of items originally included in the reliability and assurance dimensions. Arasli *et al.* ([2005](#_ENREF_7)) developed service quality in the banks in Turkish and Greek speaking areas of Cyprus. In their study the responsiveness dimension of SERVQUAL failed to load and service quality emerged as a four dimension construct. Karatepe *et al.* ([2005](#_ENREF_50)) developed a scale for measuring service quality in Northern Cyprus. They found that service quality could be conceptualized and measured as a four-dimensional construct consisting of service environment, interaction quality, empathy, and reliability. The two streams of literature on service quality in banks are summarised in Table 2.

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| **Topic of study** | **Findings** |
| **First stream (theoretical aspects of service quality in banks)** | |
| Role of technology in service quality delivery ([Joseph *et al.*, 1999](#_ENREF_48)) | Consumers face perceptual problems with some aspects of electronic banking. The research suggested the need for improvement in several areas of electronic banking. |
| Impact of service quality and service characteristics on customer retention in banks ([Ennew and Binks, 1996](#_ENREF_32)) | Focusing on functional and technical quality can significantly enhance customer loyalty and customer retention in banks. |
| Investigating the role of customer satisfaction in automated service quality and financial performance ([Al-Hawari *et al.*, 2009](#_ENREF_4)) | Customer satisfaction acts as a mediator between automated service quality (such as the internet, ATMs, and telephone banking) and financial performance |
| SYSTRA-SQ model of service quality ([Aldlaigan and Buttle, 2002](#_ENREF_5)) | Customer evaluate bank service quality at two levels, i.e., organisational and transactional level |
| An overview of different service quality models employed in banks ([Sangeetha and Mahalingam, 2011](#_ENREF_63)) | The existing models of service quality in banks are not applicable in their original form; and there is a need to develop customised model for different contexts. |
| Role of IT in customer satisfaction ([Zhu et al., 2002](#_ENREF_81)) | IT based services positively influence customer satisfaction in banks |
| Relationship between internal and external service quality ([Bellou and Andronikidis, 2008](#_ENREF_13)) | The quality of services provided to the customers (external service quality) increases as the internal service quality of a bank improves |
| **Second stream (measuring service quality)** | |
| Comparing service quality of conventional and Islamic banking ([Taap *et al.*, 2011](#_ENREF_74)) | There are significant differences in the perception and expectations of bank customers. These differences vary with each dimension of SERVQUAL in both conventional and Islamic banking |
| Service quality scale in Malaysian banks ([Kumar et al., 2010](#_ENREF_54)) | Service quality emerges as a four-dimensional construct, comprising tangibles, reliability, competencies, and convenience |
| Service quality scale in Korean banks ([Cui et al., 2003](#_ENREF_26)) | Tangibles, reliability, and empathy emerge as the key determinants of service quality |
| Service quality scale in Indian banks ([Angur et al., 1999](#_ENREF_6)) | Five-factor conceptualisation of the SERVQUAL instrument does not hold in this study |
| Service quality scale in the banks of UAE ([Jabnoun and Al-Tamimi, 2003](#_ENREF_46)) | Human skills, tangibles, and empathy emerge as the critical factors of service quality |
| Service quality scale in the banks in Turkish and Greek speaking areas of Cyprus ([Arasli et al., 2005](#_ENREF_7)) | The responsiveness dimension of SERVQUAL fails to load and the instrument emerged as a four dimension instrument |
| Service quality scale in the banks in Northern Cyprus ([Karatepe et al., 2005](#_ENREF_50)) | Service quality emerges as a four-dimensional construct, including service environment (four items), interaction quality (seven items), empathy (five items), and reliability |
| Service quality scale in Canadian banks ([Bahia and Nantel, 2000](#_ENREF_10)) | The developed scale comprises six dimensions, namely effectiveness and assurance, access, price, tangibles, services portfolio, and reliability |
| Determinants of service quality in Indian banks ([Sureshchandar et al., 2002](#_ENREF_72)) | Perceived service quality in banks is a function of core service quality, human elements of service delivery, systemisation of service delivery, tangibles of service, and social responsibility. |

Table 2: Research streams on service quality in banks

Different studies on the measurement of service quality have led to the development of different factor structures. The replication of the original five-factor structure of Parasuraman *et al.* ([1988](#_ENREF_61)) is scarce in the banking sector. None of the mentioned studies confirms all five dimensions of SERVQUAL. Further, the factor-structures of service quality emerged in these studies do not even match with each other – all the mentioned studies have unique factor structures. These findings of literature show that the models and measures of service quality are context specific, and generic models of service quality cannot capture the unique contingencies of service quality.

A number of authors have attributed the context-specific nature of service quality to the institutional, economic, and socio-cultural factors ([Karatepe *et al.*, 2005](#_ENREF_50)). Mattila ([1999a](#_ENREF_58)) and Malhotra *et al*. ([1994](#_ENREF_57)) noted that cultural factors (e.g., collectivism vs individualism, power distance, and communication context) influence the definition of service quality. Yavas and Konyar ([2002](#_ENREF_79)) and Mattila ([1999b](#_ENREF_59)) argued that like marketing and management constructs and measures, service quality constructs/measures developed in one culture (notably the Western culture) may not be applicable in a different cultural setting. Winsted ([1997](#_ENREF_75)) compared service experiences in Japan and the US and found that the number and meanings of service quality dimensions varied between the consumers of the two countries. For instance, the ‘authenticity’ dimension – genuineness of service providers’ behaviours – was an important component in the case of Japanese consumers while this dimension did not emerge in the case of the US consumers.

Therefore, the need of country-specific and sector-specific models of service quality is obvious. Cui *et al*. ([2003](#_ENREF_26)) found that the psychometric dimensions and measurements identified by Parasuraman *et al.* ([1988](#_ENREF_61)) do not find support in other contexts, and concluded that service quality measurement scales developed in the West cannot be used as such in other banking contexts. In conclusion, the literature highlights the need for developing “new, culturally bounded measure of service quality” ([Imrie *et al.*, 2002, p. 17](#_ENREF_45)) and “using the original measurement scales without adaptation will give misleading results” ([Cui *et al.*, 2003, p. 199](#_ENREF_26)).

**An overview of Pakistan’s banking sector**

The banking sector of Pakistan was heavily regulated until the end of 1980s. A reform process in financial sector was initiated in 1990s, resulting in privatisation of state-owned banks and the induction of new ones from the private sector ([Akhtar, 2010](#_ENREF_3)). The banking system has witnessed significant improvements in the last few years. The share of the private sector in bank assets has increased from 43.9% in the year 2000 to 77.1% in the year 2005 ([SBP, 2013a](#_ENREF_64)). As a part of the on-going reforms process, considerable efforts have been made encompassing enhanced capital adequacy, strengthening asset quality, and improved management practices. As a result Pakistan’s banking sector has witnessed a visible improvement in its size, structure, outreach, overall level of competition, and financial health during the last few years ([Akhtar, 2010](#_ENREF_3)). Currently the banking market in Pakistan is diverse, and comprises the public, private, and foreign banks.

The banking sector of Pakistan has been a subject of several studies. Most of these studies determine the efficiency of banks. A common approach in this regard is using data envelopment analysis method (DEA) that is used to compare the efficiency of similar decision making units, such as branches of a bank or comparison of different banks. This method compares inputs and outputs of different banks to determine their efficiencies, see for example Ahmed *et al*. ([2009](#_ENREF_2)) and Akhtar ([2010](#_ENREF_3)). However efficiency of internal operations of a bank is not a substitute of customer-perceived service quality. A bank may have efficient technical operations, such as through automation and electronic services, but poor service quality may be counterproductive to internal efficiencies. Empirical evidence in the specific context of Pakistan suggests that there is a strong relationship between service quality provided by banks and customer satisfaction ([Ahmad *et al.*, 2010](#_ENREF_1); [Jamal and Naser, 2003](#_ENREF_47)). This highlights the importance of measuring and improving service quality as a means to enhance customer satisfaction. The first step in this regard could be to determine the measures of service quality and their significance from customers’ stand-point. Literature in this direction of research is scarce and warrants the need for further research.

**Methodology**

The methodology proposed by Churchill ([1979](#_ENREF_24)) for scale development was used for this research (Figure 1). Scale development process starts from specifying the domain of a construct to determine as to what is included and what is excluded from the definition of a construct. The approach follows developing measures, also called items generation, for the constructs. Extensive review of literature provides foundation to develop items for the constructs. The developed measures are refined using techniques such as focus group discussions. Once the measures are refined, then next stage is data collection followed by data analysis. The latter usually involves techniques such as factor analysis. Finally, the developed scale is tested for reliability and validity, including content, convergent, and discriminant validity.

Specify domain of construct

Generate sample of items

Data collection

Purify measures

Collect data

Assess reliability

Assess validity

Develop scale

Figure 1: Scale development methodology ([Churchill, 1979](#_ENREF_24))

To develop the measures of service quality applicable in banks, generic models of service quality ([Grönroos, 1984](#_ENREF_38); [Parasuraman *et al.*, 1991](#_ENREF_60); [Parasuraman *et al.*, 1988](#_ENREF_61)) and the models of service quality in banks (noted in the literature review section) were consulted. Sangeetha and Mahalingam ([2011](#_ENREF_63)) examined 14 different service quality models applicable to the banking sector, and concluded that generic instruments for measurement of service quality are not applicable in their original form. Based on the review of different models a draft of questionnaire was prepared, consisting of 7 dimensions and 34 items. The instrument was refined in a focus group discussion. The focus group comprised researchers of this study and three experts from different banks. Based on the discussion a questionnaire with 6 dimensions and 26 items was finalized for this research. The initial draft was then evaluated for statistical (Cronbach’s Alpha = 0.80) and linguistic (readability) checks. Items used in the questionnaire along with their dimensions are provided in the Appendix.

The State Bank of Pakistan (SBP) is the government bank monitoring the performance of other banks. During the past few decades several banks have been privatised as a part of the reforms in banking institutions. ([SBP, 2013b](#_ENREF_65)). Four of the five big public sector banks have been privatized. These four banks have more than 50% of the total bank branches in the country. Thus it was decided that data for this research will be collected from these four banks as these banks, according to the statistics of the SBP ([SBP, 2013b](#_ENREF_65)) have long work experience and large customer base. Research was done in Lahore city. 20 branches of the mentioned banks were randomly selected. One of the authors of this research visited these branches and distributed questionnaires to the customers visiting those branches. Respondents were asked to drop the filled questionnaire in a dedicated box placed at a prominent place in the branch. 300 questionnaires were distributed and 193 fully filled questionnaires were received, representing a response rate of 64.33%.

**Data analysis and results**

A strong a priori basis for the SERVQUAL instrument ([Parasuraman *et al.*, 1991](#_ENREF_60); [Parasuraman *et al.*, 1988](#_ENREF_61)) warranted the use of Confirmatory Factor Analysis (CFA) instead of Exploratory Factor Analysis (EFA). EFA is more useful to seek items that underpin a construct using inductive approach. However, this paper uses the SERVQUAL instrument that has strong theoretical foundation. Hence, CFA was carried out using AMOS version 21.

Before conducting CFA, data was tested for normality, and measures were taken to ensure absence of common method bias (CMB). CMB is the variance that is attributable to the measurement method rather than to the construct. An *ex ante* measure in this regard was that items from different service quality factors in the questionnaire were mixed to change their order. Then a *post hoc* Harman single-factor analysis was conducted. The assumption underlying this test is that if substantial common method variance exists in the data, a single factor will emerge when all the variables are used together, or a general factor that accounts for most of the variance will result ([Khatri and Ng, 2000](#_ENREF_51)). Factor analysis was conducted in two ways: first, the numbers of factors to be extracted were constrained to 1. This resulted in a single factor that accounted for only 17.23% of the variation which shows the absence of any significant common factor bias. Second, factor analysis with unconstrained number of factors was carried out (both rotated and un-rotated); again no general factor showing significant variance emerged, indicating the absence of CMB. Finally, using the recommendations of Podsakoff *et al*. ([2003](#_ENREF_62)), we added a single unmeasured latent factor to the AMOS model, and compared its standardized regression weights to the weights of the developed model. The differences between the standardized regression weights of the two models were very small (< 0.02 in all cases), showing the absence of a common latent factor ([Podsakoff *et al.*, 2003](#_ENREF_62)).

A model was developed consisting of six service quality dimensions and the items belonging to these dimensions. During the purification process some items were deleted. The deleted items are identified in the Appendix. The deletion of poor-loading items improves model fit and results in a parsimonious scale. The criteria for item deletion was low factor loading (< 0.60) or high standardised residual values ([DeVellis, 1991](#_ENREF_29)). The deletion of items is quite common in CFA ([Beinstock *et al.*, 1997](#_ENREF_12)) and it happens when new measures are being developed ([Krause *et al.*, 2001](#_ENREF_53)) or tested in different settings. In this research, we added a new dimension of ‘access’. Further, the scale was developed in the context of a developing country. The resulting model is shown in Table 3. The model fit was tested using certain parameters, which are discussed in the following section.

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| **Service Quality Dimensions** | **Items** | **Standardised coefficients** |
| Access | Convenience and location of the bank | 0.85 |
| Availability of ATMs at the convenient places/branches | 0.87 |
| Minimizing waiting time in the queue | 0.61 |
| Tangibles | Displaying the relevant basic (like deposit profit rates, exchange rates, issuance of fresh currency notes, and bank products) information on the prominent places in the bank premises | 0.79 |
| Visual appearance of staff is professional | 0.98 |
| Reliability | Giving correct answers to customer’s queries | 0.82 |
| Bank employees have the necessary knowledge to serve you promptly | 0.81 |
| Range of services offered by the bank is consistent with those offered by the competitors | 0.72 |
| Cash is available in the bank at all operating times | 0.79 |
| Responsiveness | Responding to the queries of the customers well in time | 0.80 |
| Bank employees strive to serve you better | 0.79 |
| Bank employees know what your needs are and how the bank’s products/services can satisfy them | 0.75 |
| Queries are answered promptly | 0.75 |
| Employees of this bank enact transactions in a timely manner | 0.71 |
| Assurance | Adequate numbers of employees are always available for serving customers | 0.68 |
| Staff provides individual attention to the customers | 0.78 |
| Staff provides precise, clear information at the time of service | 0.82 |
| Staff handles effectively the customer’s complaints/feedback and suggestions | 0.83 |
| Staff helps the customers how to avail banking services | 0.76 |
| Empathy | Staff give equal importance to all customers regardless of genders/age/race /religion & status etc. | 0.66 |
| The bank staff maintains confidentiality of your financial affairs | 0.85 |

Table 3: The developed model – individual items, factors, and standardised coefficients

The values of fit indices and their acceptable limits are provided in Table 4. Goodness of Fit Index (GFI) is used to assess the overall fit of a model. Its value ranges from 0-1; the acceptable limit is > 0.90 ([Segars and Grover, 1993](#_ENREF_66)). The value of GFI was 0.902 which indicates a very good model fit. Adjusted GFI (AGFI) is another indicator of model fit, and is better than GFI since it is robust to departures from normality and is independent of sample size ([Bagozzi and Yi, 1988](#_ENREF_9)). A value of AGFI > 0.80 is considered acceptable ([Chau, 1997](#_ENREF_23); [Krause *et al.*, 2001](#_ENREF_53); [Segars and Grover, 1993](#_ENREF_66)). The value of AGFI was 0.870 which indicates good fit. Although GFI and AGFI are important parameters to assess model fit, some other indices are also used to assess a model, including, Incremental Fit Index (IFI) and Tucker-Lewis Index (TLI). The acceptable limits for both indices are 0.90. In the developed model the values of IFI and TLI were 0.970 and 0.963, respectively, indicating good model fit ([Byrne, 1994](#_ENREF_18); [Hair *et al.*, 1998](#_ENREF_39)).

Finally, Comparative Fit Index (CFI) is an important parameter used to assess the fit of a model ([Hu and Bentler, 1999](#_ENREF_44)). The values of CFI equal or greater than 0.90 indicate a good model fit ([Byrne, 1994](#_ENREF_18); [Hair et al., 1998](#_ENREF_39)). Bentler ([1990](#_ENREF_14)) conducted a simulation study to compare different parameters for model fit, including TLI, CFI, and IFI, and concluded that CFI is the best index and should be used to evaluate model fit. For the developed model, the value of CFI was 0.969, indicating good fit.

In addition to these indices, other measures are also used to determine model fit, including Root Mean Square Residual (RMR), Root Mean Square Error of Approximation (RMSEA), and the ratio of chi-square to degree of freedom (CMIN/DF). The limits for these parameters and their values are provided in Table 4. Overall, the model meets all the requirements of good fit.

|  |  |  |
| --- | --- | --- |
| **Model fit parameters** | **Recommended values** | **Model values** |
| CMIN/DF | < 3.0 ([Segars and Grover, 1993](#_ENREF_66)) | 1.320 |
| CFI | > 0.90 ([Byrne, 1994](#_ENREF_18); [Hair *et al.*, 1998](#_ENREF_39)) | 0.969 |
| GFI | > 0.90  ([Segars and Grover, 1993](#_ENREF_66)) | 0.902 |
| AGFI | > 0.80 ([Bagozzi and Yi, 1988](#_ENREF_9); [Chau, 1997](#_ENREF_23); [Segars and Grover, 1993](#_ENREF_66)) | 0.870 |
| IFI | > 0.90 ([Byrne, 1994](#_ENREF_18); [Hair *et al.*, 1998](#_ENREF_39); [Hu and Bentler, 1999](#_ENREF_44)) | 0.970 |
| TLI | > 0.90 ([Byrne, 1994](#_ENREF_18); [Hair *et al.*, 1998](#_ENREF_39)) | 0.963 |
| RMR | < 0.08 ([Hu and Bentler, 1999](#_ENREF_44)) | 0.036 |
| RMSEA | < 0.07 ([Steiger, 2007](#_ENREF_71)) | 0.041 |
| **Convergent and discriminant validity** | | |
| CR | > 0.70 ([Bagozzi and Yi, 1988](#_ENREF_9); [Farrell, 2010](#_ENREF_33); [Fornell and Larcker, 1981](#_ENREF_34)) | All values > 0.70 (Table 5) |
| AVE | > 0.50 ([Bagozzi and Yi, 1988](#_ENREF_9); [Farrell, 2010](#_ENREF_33); [Fornell and Larcker, 1981](#_ENREF_34)) | All values > 0.50 (Table 5) |
| MSV and ASV | < AVE values ([Bagozzi and Yi, 1988](#_ENREF_9); [Farrell, 2010](#_ENREF_33); [Fornell and Larcker, 1981](#_ENREF_34)) | < AVE (Table 5) |

Table 4: Model fit statistics and measures for the measurement scale

Content validity is the measure of the extent to which the instrument covers the conceptual domain that it intends to cover ([Sureshchandar *et al.*, 2002](#_ENREF_72)). The measurement of content validity is subjective and not open to numerical evaluations. This research used service quality dimensions given in SERVQUAL – an instrument that has been used and validated extensively in different settings ([Chatzoglou *et al.*, 2013](#_ENREF_22)). Further a review of bank service quality models ([Sangeetha and Mahalingam, 2011](#_ENREF_63)) was carried out to ensure that all critical aspects of service quality in banks were covered in this study. Finally a focus group discussion involving practitioners refined the questionnaire and further ensured content validity.

Regarding convergent validity, when there is a high correlation between a measure and other measures that are believed to measure the same construct, it indicates convergent validity ([Sureshchandar *et al.*, 2002](#_ENREF_72)). Convergent validity is measured through the Composite Reliability (CR) criterion and Average Variance Extracted (AVE) criterion ([Bagozzi and Yi, 1988](#_ENREF_9); [Fornell and Larcker, 1981](#_ENREF_34)). The recommended values of CR and AVE should be equal or greater than 0.70 and 0.50, respectively. These values for the developed model, as shown in Table 5, are greater than the acceptable limits, thus, indicating good composite reliability and convergent validity. Another closely related concept is discriminant validity which shows that different measures – such as ‘assurance’, ‘reliability’ and ‘responsiveness’ in the instrument – are adequately different from each other. It is measured through Maximum Shared Variance (MSV) and Average Shared Variance (ASV) values. The values for these two parameters should be less than the AVE value. Again MSV and ASV values for all dimensions of the scale are less than AVE values, thus indicating good discriminant validity. Finally the squared inter-construct correlations values (Table 6) are less than the AVE values (Table 5) which further confirms discriminant validity.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **CR** | **AVE** | **MSV** | **ASV** |
| **Responsiveness** | 0.873 | 0.579 | 0.055 | 0.021 |
| **Access** | 0.825 | 0.616 | 0.023 | 0.010 |
| **Tangibles**  Paste Correlations Table into **A1** and Standardized Regression Weights Table into **F1**, then click me. | 0.885 | 0.796 | 0.055 | 0.021 |
| **Reliability** | 0.865 | 0.617 | 0.021 | 0.011 |
| **Assurance** | 0.883 | 0.603 | 0.016 | 0.010 |

Table 5: The model parameters showing convergent and discriminant validity

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Constructs** | | | **Squared correlations** |  |
| Accuracy | 🡨🡪 | Tangibles | 0.023 | All the squared inter-constructs correlation values are less than the AVE values given in Table 5. This indicates discriminant validity. |
| Accuracy | 🡨🡪 | Reliability | 0.005 |
| Accuracy | 🡨🡪 | Responsiveness | 0.002 |
| Accuracy | 🡨🡪 | Assurance | 0.011 |
| Accuracy | 🡨🡪 | Empathy | 0.010 |
| Tangibles | 🡨🡪 | Reliability | 0.013 |
| Tangibles | 🡨🡪 | Responsiveness | 0.055 |
| Tangibles | 🡨🡪 | Assurance | 0.016 |
| Tangibles | 🡨🡪 | Empathy | 0.000 |
| Reliability | 🡨🡪 | Responsiveness | 0.014 |
| Reliability | 🡨🡪 | Assurance | 0.005 |
| Reliability | 🡨🡪 | Empathy | 0.021 |
| Responsiveness | 🡨🡪 | Assurance | 0.010 |
| Responsiveness | 🡨🡪 | Empathy | 0.022 |
| Assurance | 🡨🡪 | Empathy | 0.009 |

Table 6: Squared inter-constructs correlations

**Discussion**

The developed scale consists of six dimensions and 21 items (Table 3). These dimensions include access, tangibles, reliability, responsiveness, assurance, and empathy. This shows that service quality in Pakistani banks can be conceptualised and measured as a six-dimensional construct. The scale exhibited sound psychometric properties, showed high internal consistency, and met the criteria for content, convergent, and discriminant validity.

All five dimensions of the original SERVQUAL instrument appear in the developed scale. Further, a sixth dimension, namely, access – added during focus group discussion – was retained in the developed scale. This shows that the five dimensions of service quality developed by Parasuraman *et al.* ([1988](#_ENREF_61)) are relevant in the context of banking institutions. This is an important finding because several previous studies on service quality in banks extract only few of the five dimensions of SERVQUAL. For instance, Arasli *et al*. ([2005](#_ENREF_7)) found that service quality in the banks of Cyprus comprised only four dimensions: ‘assurance’, ‘reliability’, ‘empathy’ and ‘tangibles’. Jabnoun and Al-Tamimi ([2003](#_ENREF_46)) measured service quality at UAE commercial banks and extracted only two dimensions from the original instrument, namely ‘tangibles’ and ‘empathy’. Cui *et al*. ([2003](#_ENREF_26)) measured service quality in the banks in South Korea and found only three dimensions relevant in their context, namely, ‘tangibles’, ‘reliability’ and ‘empathy’.

The ‘access’ dimension of service quality, that was added during focus group discussion and retained in the developed model, refers to adequate number of service delivery channels available to customers. It is an important determinant of service quality in banks ([Avkiran, 1994](#_ENREF_8)). The emergence of ‘access’ as an independent factor is, therefore, quite intuitive. Although the original SERVQUAL instrument included items such as ‘convenient operating hours’, the findings show that regarding access to bank services, what customers want is more than just feasible operating hours. This construct is conceptualised in terms of ‘convenience and location of the bank’, ‘easy availability of ATMs’, and ‘minimization of waiting time in the queues’. The items that belong to this dimension also find support from the research of Avkiran ([1994](#_ENREF_8)), Bahia and Nantel ([2000](#_ENREF_10)), and Kumar *et al*. ([2009](#_ENREF_55)).

The emergence of a six-dimensional construct – compared to other studies with different factor structures – can be explained by the economic conditions of countries and Kano’s model ([1984](#_ENREF_49)) of customer needs. Other studies, mentioned earlier, were carried out in developed countries, including, Australia ([Avkiran, 1994](#_ENREF_8)), Canada ([Bahia and Nantel, 2000](#_ENREF_10)), South Korea ([Cui *et al.*, 2003](#_ENREF_26)), Turkey ([Arasli *et al.*, 2005](#_ENREF_7); [Karatepe *et al.*, 2005](#_ENREF_50)), UAE ([Jabnoun and Al-Tamimi, 2003](#_ENREF_46)), and UK ([Aldlaigan and Buttle, 2002](#_ENREF_5)). The mentioned countries have better banking infrastructure than that of Pakistan ([Cetorelli and Goldberg, 2010](#_ENREF_21)). Many features of service quality such as tangibles, access to advanced banking facilities through ATMs and electronic banking, and reliability of services are considered basic requirements in advanced banking infrastructures. Further, in a competitive environment, banks cannot operate without these advanced features. In Kano’s model such features are referred to as ‘basic needs’ which means that presence of these features does not improve satisfaction; however their absence elicits dissatisfaction. Some of the features of service quality such as reliability of services, access to bank facilities, and tangibles may not appear as critical determinants of service quality in advanced economies, because such features are considered as basic requirements. However, such features do matter to customers of banks in developing countries with under-developed banking infrastructure. The emergence of tangibles, access, and reliability can also be explained from the fact that the volume of online banking activities and transactions in developing countries, including Pakistan, is relatively low ([Cetorelli and Goldberg, 2010](#_ENREF_21); [SBP, 2013a](#_ENREF_64), [2013b](#_ENREF_65)), thereby further increasing the importance of tangibles, access and reliability of service. Further, frequent power outages is a common problem in Pakistan which renders ATMs and electronic services useless, and also affects internal environment of a bank, e.g., lighting, air conditioning, electronic displays, etc. This explains why these features matter to customers of banks in Pakistan and, therefore, emerge in the scale.

Further, research shows that the use of advanced technological systems can improve bank service reliability (e.g., through automation of transactions) and responsiveness (e.g., through telephone banking), and reduce waiting time (e.g., through electronic queue management system) ([Al-Hawari *et al.*, 2009](#_ENREF_4); [Joseph *et al.*, 1999](#_ENREF_48); [Karatepe *et al.*, 2005](#_ENREF_50)). The banks in developing countries with poor banking infrastructure usually lack such advanced systems and facilities. Therefore, importance of service quality to their customers appears as a full-fledged concept with all service quality dimensions included.

During the purification process, some items were deleted from all service quality dimensions except responsiveness and empathy. Such item deletion is necessary for the development of a parsimonious scale exhibiting sound psychometric properties ([Beinstock *et al.*, 1997](#_ENREF_12)). The finding of this research, when compared with the findings of other studies, show that service quality in banks has some common aspects (in terms of service quality dimensions); however variations exist regarding the complexity of the model as reflected from the number of items ([Karatepe *et al.*, 2005](#_ENREF_50)). For instance, tangibles in this study comprises two items: ‘displaying the relevant basic information (like deposit profit rates, exchange rates, and bank products) on the prominent places in the bank premises’ and ‘neat and clean visual appearance of staff’. Whereas in some other studies it is conceptualised as ‘cleanliness and decoration of facilities’ ([Bahia and Nantel, 2000](#_ENREF_10)); and ‘inside and outside attractiveness of bank’, ‘presence of modern equipment and technology’, and ‘appearance of staff’ ([Jabnoun and Al-Tamimi, 2003](#_ENREF_46)).

This research carries various managerial implications. First, as Zeithaml *et al*. ([1993](#_ENREF_80)) noted that one reason of providing poor service is that firms do not know what their customers expect from them. This study identified critical factors of service quality in Pakistani banks. Using the scale, managers can determine precisely what constitutes service quality in their context. The identified dimensions provide a compass for the focus of managerial efforts and allocation of resources. For example, in this study, emergence of access dimension of service quality shows that managers need to take measures that will improve the access of customer to service delivery channels. Indeed realising the weaknesses in access to banking services in Pakistan, some organisations have already taken some innovative actions and tapped this area as a business opportunity. One example is ‘Easypaisa’ which literally means easy (transfer of) money ([Easypaisa, 2013](#_ENREF_31)). Realising the difficulties in the access of people to banking services, this branchless service was launched to allow several types of financial transactions through mobile phones, including paying utility bills, sending and receiving money within the country, receiving money from abroad, purchasing airtime for mobile phones or giving donations etc. The service has gained significant popularity with over 22,000 outlets in more than 750 cities and towns in the country. Nearly 4 million unique users use this service every month for basic financial services like utility bill payments, money transfer and mobile accounts. Around 117 million transactions worth over Rs. 261 billion have been carried out through this service since its inception in 2009 ([Easypaisa, 2013](#_ENREF_31)). This service represents one of the innovative approaches to overcome the difficulties in access to banking services. Second, the scale can be used to measure service quality delivered to customers. Third, the scale can be used for customer segmentation. Customers having varying perceptions of service quality can help in identification of different homogenous groups within a larger population. Cluster profiles provide useful information on how to approach each segment for service quality improvement. For instance, focusing marketing efforts on most unhappy clusters can provide immediate relief to reduce customer defection rate ([Brady and Cronin, 2001](#_ENREF_16); [Karatepe *et al.*, 2005](#_ENREF_50)). Finally, the scale can provide managers useful insights about unique strengths and weaknesses across service quality dimensions.

**Conclusions and suggestions for further research**

This research developed a scale for measuring service quality in the banking institutions of Pakistan. The developed scale is a six-dimensional construct comprising tangibles, reliability, responsiveness, assurance, empathy, and access. The scale shows how service quality is perceived in the banking institutions of Pakistan. The scale shows sound psychometric properties. Scale development provides managers guidance on the areas of service quality that really matter, and, therefore, should be improved.

It is important to caution here that the validity of a scale is established only over a series of studies that further refine and test the measures across different contexts ([Hensley, 1999](#_ENREF_41); [Krause *et al.*, 2001](#_ENREF_53)). Although we followed well developed procedures and our model met all requirements of a good model, the six-factor service quality structure needs further validation. Future research involving the constructs of this study should carefully examine the items of the scale as well as deleted items. Further, the factor ‘access’ – which is not a part of the SERVQUAL instrument and has been discussed very rarely in other service quality studies – needs further re-evaluation.

**Appendix:** Questionnaire dimensions and items

|  |  |
| --- | --- |
| **Service Quality Dimensions** | **Items** |
| **Access** | * Convenience and location of the bank * Banking business hours meet expectations *(deleted during model development)* * Availability of ATMs at the convenient places * Minimizing waiting time in the queue * Enhancement of technological capability (e.g., computerization, networking of operation etc.) to serve customers more effectively *(deleted during model development)* |
| **Tangible** | * Displaying the relevant basic (like deposit profit rates, exchange rates, issuance of fresh currency notes, and bank products) information on the prominent places in the bank premises * Visual appearance of staff is professional * The physical arrangement/layouts of furnishing equipment including, teller, customer counter, customer queues, seating arrangements, entrance, and exit, are comfortable *(deleted during model development)* * Materials associated with the service are visually appealing *(deleted during model development)* |
| **Reliability** | * Giving correct answers to customer’s queries * Bank employees have the necessary knowledge to serve you promptly * Range of services offered by the bank is consistent with those offered by the competitors * Cash is available in the bank at all operating times * Errors are identified as soon as possible and providing promised services in given time *(deleted during model development)* |
| **Responsiveness** | * Responding to the queries of the customers well in time * Bank employees strive to serve you better * Bank employees know what your needs are and how the bank’s products/services can satisfy them * Queries are answered promptly * Employees of this bank enact transactions in a timely manner |
| **Assurance** | * Adequate numbers of employees are always available for serving customers * Staff provides individual attention to customers * Staff provides precise, clear information at the time of service * Staff handles effectively the customer’s complaints/feedback and suggestions * Staff helps the customers how to avail banking services |
| **Empathy** | * Staff give equal importance to all customers regardless of genders/age/race /religion & status etc. * The bank staff maintains confidentiality of financial affairs |

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