MPRA

Munich Personal RePEc Archive

# Measurement of Service Quality Perception and Customer Satisfaction in Islamic Banks of Pakistan: Evidence from Modified SERVQUAL Model

Muhammad Ali and Syed Ali Raza

IQRA University, Karachi

21. April 2015

# Measurement of Service Quality Perception and Customer Satisfaction in Islamic Banks of Pakistan: Evidence from Modified SERVQUAL Model

**First Author**

**Muhammad Ali**
IQRA University
Karachi-75300, Pakistan
Email: alisaleem_01@yahoo.com
Tel: +92-300-229-3688

**Second Author**

**Syed Ali Raza**
IQRA University
Karachi-75300, Pakistan
Email: syed_aliraza@hotmail.com
Tel: +92-333-344-8467

# (Preliminary Draft)

# Abstract

The aim of this study is to measure the relationship between the service quality and customer satisfaction among the customers of Pakistan Islamic bank customers. This study employed a modified SERVQUAL model by introducing a unique dimension of compliance in the context of service industry. Data were gathered from 450 walk-in customers of Islamic bank from the largest city of Pakistan. Results from regression analysis revealed that the multi-dimensional service quality scale is positively and significantly associated with the unidimensional scale of customer satisfaction. The results signify and validate the importance of service quality aspects in maintaining the customer satisfaction in Islamic bank of Pakistan. In addition, the compliance dimension of the SERVQUAL model proved its importance by showing the highest contributing factor in the overall model. This study has practical implications for the policy makers of Islamic banks to better understand the behavioral intentions of Islamic bank customers.

**Keywords:** Service quality, Customer satisfaction, Islamic bank, Pakistan

## 1. Introduction

Service quality has gained a considerable amount of interest for researchers and practitioners in past two decades. The practitioners' belief that service quality can increase the performance of a firm (Caruana, 2000; Al-Hawari, 2006; Haynes and Fryer, 2000; Black et.al, 2001; Yoo and Park, 2007 Cheruiyot and Maru, 2013). However, practitioners refer service quality and customer satisfaction as interchangeable terms. Past studies relate the concept of service quality and customer satisfaction to each other (Le Blanc and Nguyen, 1988; Avkiran, 1994; Angur et.al, 1999; Arsali et.al, 2005; Amin and Isa, 2008; Awan et.al, 2011). The findings from Raza et. al (2014) study suggests that service quality is positively associated with customer satisfaction. Further, a considerable amount of work has been done in different service industries to better understand the dimensions of service quality and customer satisfaction (Lewis, 1991; Zhu et.al, 2002; Chumpitaz, 2004; Pantouvakis, 2014 ).

The service quality model has paid much attention after the revolutionary work of Parasuraman et.al (1985).In their study, results revealed ten dimensions of service quality measurement and proposed a service quality gap model. In 1988, they reduced ten dimensions of service quality measurement to five dimensions. They established a questionnaire of 22-items and suggest it as SERVQUAL model. Parasuraman (1991, 1994) further stated that the SERVQUAL model has diagnostic characteristics and has some practical implications. Angur et.al (1999) suggest that the SERVQUAL model is a multidimensional and can provide more diagnostic information in the banking sector as compared to other service measurement scales like SERVPERF. This SERVQUAL model has been used by many academic researchers and service industries as well(Yavas et al, 1997; Lam et al , 1997; Lim and Tang, 2000; Zhu et.al 2002; Wang et al, 2003; Cui, et.al, 2003; Sureshchandar et al, 2003; Awan et.al, 2011; Raza et.al, 2014). These five dimensions of service quality are:

(1) Reliability (ability to perform services accurately);
(2) Tangibles (physical facilities, staff, equipment, building, appearance etc.);
(3) Responsiveness (willingness to help and respond customer need);
(4) Empathy (attention, caring, individual service is given to the customer);
(5) Assurance (staff ability to inspire, confidence, trust and courtesy to bank staff);

Additionally, SERVQUAL model has provided conceptual and comprehensive knowledge to the service quality. But some critics pointed out that service quality has multidimensional properties. Carman (1990) argued that the SERVQUAL framework required some changes in items which may allow SERVQUAL to be more predictable in service quality. Babakus and Boller (1992) found measurement and methodological flaws and suggest that the SERVQUAL is not a multi-dimensional and failed to measure service quality comprehensively. It is further suggested that SERVQUAL dimensions depend on the nature of the industry. In the banking industry, SERVQUAL considered as multi-dimensional and it can predict better service quality which is further need to explore some other dimensions as well (Cui, et.al, 2003). Another study of Amin and Isa (2008) revealed that service quality in Islamic banking should be six dimensional scales. They used factor of compliance as a sixth dimension of SERVQUAL model. To support this fact, the present study also uses six dimensions of service quality to better understand the relationship between service quality and customer satisfaction.

Banking environment is significantly affected by technological, structural and regulatory factors throughout the world. Banking has integrated globally by implementing regulatory changes (Angur, 1999). Banks can perform a wide range of activities by implementing structural changes to become more competitive in the financial market. In recent times, banks are involved to provide quality services by using technological changes in the environment. These rapid changes allow the banking sector to improve service quality and customer satisfaction (Metawa and Al-Mosawwi, 1998; Angur et.al, 1999; Newman, 1996; Arsali, 2005; Herington, 2007; Raza et.al, 2014).

In Pakistan, the banking sector is improving service quality dimensions with an active participation of local and foreign stakeholders (Awan et.al, 2011). This results in competing to increase more customers in the long-term by providing better service quality. The Pakistan banking industry consists of 19 conventional and 5 fully fledged Islamic banks where they are involved in a highly competitive environment with continuous improvement of quality service. Ahmad et.al (2010) suggests that the Islamic banks' customers have a greater perception of service quality in Pakistan. Islamic banks have created awareness to their customers, which results more customer satisfaction towards Islamic product and services. It is obvious that Islamic banks in Pakistan work with the guidelines of Sharia rules and it also helps to increase customer satisfaction.

Previously, many studies have been conducted in the context of service quality and customer satisfaction (Woodside et.al 1989; Peterson and Johnson, 1993; Taylor and Baker, 1994; Rust and Oliver, 1994; Newman and Cowling, 1996; Yavas et.al 1997; Caruana, 2000; Zhu et.al, 2002; Wang et.al 2003; Arsali, 2005; Ahmadet.al, 2010). These studies suggest that service quality and customer satisfaction are key factors of service industry. Parasuraman et.al, (1985) argued that the service quality concept is inconclusive in the context of customer satisfaction. However, most of the studies have been linked service quality and customer satisfaction with banking industry (Le Blanc and Nguyen, 1988; Avkiran, 1994; Blanchard and Galloway, 1994). Wang et.al (2003) and Lewis Pescetto (1996) supports to the fact that service quality is an essential factor for success in a banking environment. Awan et.al (2011) findings validate the importance of service quality in the banking sector. Results from Ahmad et.al (2010) study suggest that Pakistan bank customers have superior service quality perception of Islamic banks.

Despite the existing literature on service quality, fewer studies have been conducted on service quality and customer satisfaction in the Pakistani banking sector. Up till now, to the best of the authors' knowledge, no such studies have been found relative to service quality dimensions and customer satisfaction specifically in Islamic banks in Pakistan. The present study, we use modified form of SERVQUAL model and also added the compliance dimension of Islamic banks as a unique measure to identify the relationship between service quality and customer satisfaction. Islamic banks follow strict Sharia compliance procedures, specifically the prohibition of taking or giving interest. It is due to the fact that deciding interest before any economic activity is not fair. In Islamic banks, the idea of profit is based on the profit and loss sharing after the completion of business transactions. In addition, Islamic banks are restricted to invest customers' money in the businesses that are unlawful under Sharia principles, such as alcohol business, gambling, and pork business and so forth (Siddiqui, 1992). In this sense, there is need of this study and is conducted in order to analyze the factors which effect the customer satisfaction in Islamic banks of Pakistan.

This study aims to identify the relationship between service quality and customer satisfaction in Pakistan by determining different dimensions of service quality in Islamic banks by adapting and modifying SERVQUAL scale (Othman and Owen, 2001, 2002; Parasuraman et.al, 1988). It is believed that the present study of service quality and customer satisfaction will provide a platform to discuss the service quality issues in Islamic banks of Pakistan.

## 2. Conceptual background

### *Customer satisfaction*

In 1980, Oliver referred customer satisfaction to the complete fulfillment of one's expectations. It is an attitude or feeling that results in having use of some product or service. Marketing activities are directly linked to customer satisfaction and some time it is associated with consumer buying behavior. If a customer is satisfied with a service or product after having use of it, then the chances are increases to repeat purchase of that service or product (East, 1997). The intentions to repeatedly purchase the product are heavily relying on customer satisfaction (Taylor and Baker, 1994). Not only this, that satisfied customer share his positive experience with others and became a source of word of mouth advertising. On the other hand, dissatisfied customer results in negative word of mouth advertising and more likely to switch the brand or product.

### *Service quality*

Past research findings validate the fact that service quality is a better measurement of customer satisfaction (Cronin and Taylor, 1992; Anderson and Sullivan, 1993; Taylor and Baker, 1994; Levesque and McDougall, 1996). Most of the empirical investigations have tried to propose a causal relationship between service quality and customer satisfaction. This means that service quality is viewed at global level (Oliver, 1981; Parasuraman et.al, 1988; Bitner, 1990) while customer satisfaction is treated at the experimental level. Bitner (1990) study investigated the linkage between customer satisfaction judgment and service quality of travelers. Evidence suggests that customer satisfaction judgments are antecedents of service quality. In addition, the study further proposed a research dimension for the causal linkage between customer satisfaction and service quality.

### *Influence of quality on customers*

The performance of a company in the long run is depending on the quality of a good product and services. The Business can grow by improving its quality which leads to increase in market share and market expansion as well (Buzzle and gale, 1987). For a service business, issues related to the delivery of services and customer's experience are the key factors to improve the quality of services. Past literatures on service quality paid much attention to the quality perception and customer satisfaction (Taylor et.al, 1994; Cronin and Taylor, 1992). Evidences provided in the

literature suggest that good service quality increases customer satisfaction and helps to attract new customers also to retain existing one's (Lian, 1994a, b; Keiser, 1993). Similarly, the majority of the banks believes that service quality should refer to service excellence in order to gain customer satisfaction (Mahone, 1994). One study of Madsen (1993) suggested a brief definition of service excellence that firms can exceed customer satisfaction to delight and retain them. He further explains service excellence as listening, allow customers to be a part of action, innovation and empowerment.

### Service quality in banking

In the banking industry, service quality plays a vital role in improving customer satisfaction. Berry and Thompson (1982) findings suggest that strong relationship between banks and customers build customer loyalty which give competitive advantage to the banks. Similarly, Teas (1993) investigation explained the long term relationship between bank and customer satisfaction. Many of the studies have provided a basis for financial institutions to improve customer satisfaction (Wilkinson et.al, 1991; Laroche and Taylor, 1988; Lewis and Smith, 1989; Tilston, 1989; Smith and Lewis, 1988, 1989; Howcroft, 1993; Boaden and Dale, 1994; Kwan and Hee, 1994).

### Dimensions of service quality

Previous studies suggest that service quality is not associated with uni-dimensional construct. However, most of the researchers support service quality as multi-dimensional construct such as tangibles, responsiveness, reliability, empathy and assurance (Parasuraman et.al, 1985; 1988; Carman 1990; Lewis, 1993; Bitran and Lojo, 1993; Amin and Isa, 2008). Generally, service quality has two overriding dimensions (Gronroos, 1984; Levesque and McDougall, 1996; McDougall and Levesque, 1994; Parasuraman et.al, 1991a). The first dimension is referred to as a core aspect of the service (reliability) whereas the second dimension is referred to as process aspects of the service (tangibles, responsiveness, empathy and assurance). More precisely, reliability is mainly associated with the service outcome while tangibles, responsiveness, empathy and assurance are associated with the deliverance of service (Parasuraman et.al, 1991a). Supporting to these facts, this study suggest that both aspects are essential and interactive dimensions of service quality and can be antecedents of customer satisfaction.

*Compliance dimension of service quality in Islamic banks*

Islamic banks follow strict Sharia compliance procedures, specifically the prohibition of taking or giving interest. It is due to the fact that deciding interest before any economic activity is not fair. In Islamic banks, the idea of profit is based on the profit and loss sharing after the completion of business transactions. A Bank may have a chance of losing money if a particular business is unsuccessful to yield a profit. Thus, it assumes unfair if an entrepreneur faces loss and bank gains profit or vice versa. In addition, Islamic banks are restricted to invest customers' money in the businesses that are unlawful under Sharia principles, such as alcohol business, gambling, and pork business and so forth (Siddiqui, 1992).

In this study, compliance dimension is used by keeping in view of Muslims belief. It is clearly mentioned in the *Quran* (the Holy book) that giving or taking interest is *haram* (prohibited) and considered as a major sin. In the light of this argument, Islamic banks are liable to provide Islamic product and services that are in line with Sharia rules in order to protect Muslims from interest. Therefore, the most common Islamic products are;

- Ijarah (leasing)
- Mudarbah (profit sharing)
- Wadiah (safe keeping)
- Murabaha (cost plus)
- Musharkah (joint venture)

According to the Banking Act 1983, Islamic financial institutions and Islamic banks are liable to establish a Sharia Advisory Board, which is responsible to advise Islamic banks about Islamic product and services also to ensure the operational activities of Islamic banks comply with Sharia rules. In this regard, after the re-launching of Islamic banking in Pakistan, State bank of Pakistan established an Islamic banking department on Sep 15th, 2003 to promote Islamic banking services in Pakistan. The department comprises of Sharia division, Policy division, Promotion and development division and Market analysis and Research division ensure Islamic principles. These departments are working hard in adopting prudential standards of Islamic Financial Service Board (IFSB) along with Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) accounting standards.

**Review of past literature**

The extensive work of Parasuraman et.al (1985, 1988, 1991 & 1994) added literature to the service quality and proposed SERVQUAL instrument which is further used by many researchers (Arasli et.al, 2005). This instrument is extended to 22 item scale and many researchers have used to study service quality in different research context (Fick and Ritchie, 1991; Babakus and Boller, 1992; Avkiran, 1994; Smith, 1995; Buttle, 1996; Newman, 2001).

Initially, it was understood that customer satisfaction can result from any quality or non-quality dimension (Awan, 2011). Howard and Sheth (1969) argued that customer satisfaction requires experience of the service provider. This fact further validate by Taylor and Baker (1994). Attention given to this fact, researcher added to the literature a concept of "service quality" through which customer satisfaction can predict well. Past researchers argued that the service quality concept is inconclusive that whether service quality is an antecedent of customer satisfaction or vice versa (Parasuraman et.al, 1985; Bitner, 1990; Anderson and Sullivan, 1993; Cronin and Taylor, 1992).

Avkiran (1994) measured service quality in the Australian commercial banking sector. This study found four factor scales in 17 items. Newman and Cowling (1996) measured service quality by comparing two British clearing retail banks. The findings concluded that banks strategic interest in service quality is due to the connection between productivity, quality and profitability as well as cost reduction in the retail banking sector. Caruana (2000) investigated the relationship between service quality and the mediating role of customer satisfaction in retail banking by structural equation modeling and regression analysis. Results suggest that customer satisfaction has mediating role among service, loyalty and service quality. Zhu et.al (2002) investigated the linkage between service quality and information technology (IT) in the consumer banking sector. They suggest that SERVQUAL dimensions are directly associated with IT based services while indirect association found between IT based services and customer satisfaction and their perceived service quality. Lewis (1991) examined overall satisfaction of student's while Goode and Moutinho (1995) evaluated students and normal bank customer satisfaction related to free banking (ATM services).

It has been reported that SERVQUAL in banking industry of developing countries are given full attention. Yavas et.al (1997) study finds out the relationship between customer satisfaction and service quality in the Turkish banking industry. Evidence presented in their study

suggests that service quality is positively associated with the bank personal. Angur et.al (1999) argued that the SERVQUAL instrument plays vital role in determining service deficiencies than any other service measurement scale. Their investigation was conducted in the banking sector of India. One study of Wang et.al (2003) investigated the product quality and service quality antecedents on Chinese bank reputation. They concluded that both antecedents have significant impact on Chinese bank reputation. Another study of Arsali (2005) conducted a study on service quality in the banking system of small economy countries. They found that bank customer's expectations were not met and word of mouth has positive linkage with overall and customer satisfaction. Awan et.al (2011) analyzed SERVQUAL and customer satisfaction in the banking sector of Pakistan. The findings of the study suggest that the relationship between customer satisfaction and service quality validate the importance of service quality aspect in the Pakistan banking sector.

More precisely in Islamic banking, Othman and Owen (2001, 2002) study investigated the service quality by using SERVQUAL dimensions. Their study proposed an insight view that how to improve service and developed a model, called CARTER. Findings suggest that CARTER model is a multi-dimensional variable containing six different dimensions in which Islamic bank's customer emphasize on compliance dimension. In addition, Haron et.al (1994) findings revealed that 40 percent of Malaysian Muslims customers select Islamic banks due to the compliance factor. Gerrad and Cunningham (1997) findings reported that Singaporean Muslims customers are profit oriented while selecting Islamic banks product and services while these Muslims customers are better aware of Islamic banks compared to non- Muslims. In addition, Erol and El-Bdour (1989) investigated behavior, attitude and Patronage factors of Jordan's Islamic bank customers. Evidence of the study suggested that the religious factor plays insignificant role in selecting Islamic banks.

Other than the banking sector, SERVQUAL model has been used widely in other service sectors such as airport services, educational services, travel and tourism services and hospital services (Fick and Ritchie, 1991; Buttle, 1996; Lam et.al, 1997; Oldfield and Baron, 2000; Lim and Tang, 2000).

Previously, many studies have been conducted on SERVQUAL dimensions, but past researchers suggested some criticism about this model. This criticism widely focused on the implementation and interpretation of the SERVQUAL instrument (Babakas and Boller, 1992;

Smith, 1995; Buttle, 1996; Lama et.al, 1997; Newman, 2001). Researchers pointed out the problem with dimensions of SERVQUAL instrument. These researchers have identified SERVQUAL dimensions for perceptions, expectations and gap scores. Due to this fact, the five dimensions of SERVQUAL are inconclusive (Carman, 1990; Buttle, 1996). SERVQUAL on the other side, many studies have adopted this model to enhance the literature on SERVQUAL dimensions and provide support to the organization in specific research need (Parasuraman et.al, 1988). Despite of criticism, service quality can better measure through SERVQUAL model (Buttle, 1996).

**Methodology**

Figure-1 shows the conceptual model of our study. This model demonstrated SERVQUAL measurement dimensions comprising of six dimensions such as: compliance, assurance, reliability, tangibles, empathy and responsiveness. These dimensions are used to measure service quality in Islamic banks of Pakistan. In addition, based on past literature, Fig-1 further illustrate the relationship between service quality and customer satisfaction.

*<Insert figure- I here>*

*Research hypotheses*

Based on past empirical findings, the research hypotheses of the present study are as follows;

H1: Compliance dimension of service quality will have a positive impact on customer satisfaction.

H2: Assurance dimension of service quality will have a positive impact on customer satisfaction.

H3: Reliability dimension of service quality will have a positive impact on customer satisfaction.

H4: Tangible dimension of service quality will have a positive impact on customer satisfaction.

H5: Empathy dimension of service quality will have a positive impact on customer satisfaction.

H6: Responsiveness dimension of service quality will have a positive impact on customer satisfaction.

*Measurement Instrument*

The SERVQUAL five dimensions are suggested by Parasuraman et,al (1998), Jabnoun and Al-Tamimi (2003) and Otman and Owen (2001,2002) which is further modified and adapted by this study. Questionnaire items were modified and substituted carefully in the service industry, specifically Islamic banks of Pakistan. All items in the instrument were translated in English, whereas their content validity was confirmed by academic and market expert. A pilot study was also conducted and the questionnaire is distributed to academic and market professionals that have an Islamic bank account. It is therefore confirmed that all items are relevant and convenient to understand the instrument.

A five-point Likert scale ranging from (1) "strongly disagree" (2) "disagree" (3) "neutral" (4) "agree" and (5) "strongly agree" is used to measure the perception of service quality in Islamic banks. In addition to service quality for Islamic banks, Jabnoun and Al-Tamim (2003) and Othman and Owen (2001) study is used to adapt the appropriate items and incorporated into our research. Furthermore, items for customer satisfaction in Islamic banks were identified from past literatures (Fornel et.al., 199; Levesque and McDougall, 1996). These items reflect level of customer satisfaction with Islamic banks product and services. Lastly, demographic information is also collected from the respondents of our study.

Sample data is used and done with data collection via survey method. This study aims to target those customers that have at least Islamic bank account. Data collection is based on a 5 point Likert scaling questionnaire which was adopted by previous literature. The present study is conducted in January – March 2015 where as non probability sampling technique (convenience sampling) was applied. According to Bank and financial institution Act 1989 (BAFIA), financial institutions are responsible for non-disclosure of customers' information (Ramayah et.al 2003; 2006). Therefore, this method is preferable for data collection due to the above restriction. Comrey and Lee (1992) suggest that, a sample of 50 as poor, 300 as good, 500 as very good and 1000 as excellent for factor analysis. In this study, we have used these guidelines and use a sample of the total 477 respondents which are Islamic bank customers based in Karachi, Pakistan. The total no. of items is 25 which satisfies the minimum requirement of items in a questionnaire suggested by Hair et.al (2006). Out of 477 responses, only 450 responses were used in the analysis, whereas 27 responses were ignored due to incomplete responses, missing data or lack of participation by

respondents. During the data collection time, all respondents were requested politely to participate in the study on voluntarily basis while their information will remain kept confidential. In addition, the questionnaire is based on service quality dimensions (independent variables) such as compliance, assurance, reliability, tangibles, empathy and responsiveness where as customer satisfaction (dependent variable) is tested with these service quality dimensions.

*Model specification*

The basic regression model service quality dimensions and customer satisfaction is written as follows;

$$y_n = \alpha + \beta x_n + \varepsilon_n \quad (1)$$

Where, y denotes a dependent variable (customer satisfaction) and $\alpha$ denotes intercept term. X represents explanatory variables (compliance, assurance, reliability, tangibles, empathy and responsiveness) while $\beta$ is regression coefficient. The basic functional form of study model is as follows:

*Customer satisfaction = f (*compliance, assurance, reliability, tangibles, empathy and responsiveness*)* (2)

From the above discussion, following regression model is used in this study which is as follows:

$$CS_n = \alpha + \beta_1 COM_n + \beta_2 ASR_n + \beta_3 REL_n + \beta_3 TAN_n + \beta_3 EMP_n + \beta_3 RES_n + \varepsilon_n$$

(3)

Where,

CS represents customer satisfaction, COM denotes compliance, ASR represents assurance, REL is reliability, TAN shows tangibles, EMP reflects empathy and RES denotes responsiveness while $\varepsilon$ is the error term.

## 4. Estimations and results

The respondents' profile of our study is presented in Table-I. This table provides the overall description of sampled respondents. In this table, 73% respondents were male, while 27% of respondents were female during the survey period. The majority of the respondents was married i.e. 63% where as 37% were participated in our study as single. During the data collection time, the most of the respondents were between 31 – 40 years of age bracket (42%) followed by 41 – 50 (27%), 20 – 30 (20%), less than 20 (6%) and 50 & above (5%).

*<Insert table- I here>*

Table-II presents the test of correlation between all independent variables. Multi-collinearity issue in our model is tested by using correlation matrix. Therefore, the model suffers multi-collinearity problem only if the variables are correlated at equal to or greater than 0.80. Our results from correlation matrix indicate that there is no multi-collinearity exists in our model due to a weak correlation between the all independent variables.

*<Insert table- II here>*

### *Reliability analysis*

Table- III presents the test for reliability and Cronbachs' – α value. Reliability test is essential for data validation (Nunnally, 1978) whereas it highlights the consistency between the two measures (Black, 1999). Alpha value is considerable for Likert-type scale data for composite scores (Raza et.al, 2015) Further, our estimations indicate that all items Cronbachs' – α values are ranging from 0.60 – 0.84 supports the minimum criteria of 0.60 (Hair et.al, 1998).

*<Insert table- II here>*

### *Kaiser–Meyer–Olkin and Bartlett's tests of sampling adequacy*

In Table- IV, Kaiser–Meyer–Olkin (KMO) and Bartlett's tests have been performed to check the sampling adequacy of our research. The value of Kaiser-Meyer-Olkin (KMO) for all items is 0.847 i.e. 84.70%, indicating that our sampling adequacy is satisfactory compare with 0.5 i.e. 50% of benchmark (Leech et al., 2005, p. 82). Bartlett's test of sphericity confirms the significant differences in the properties of the correlation matrix and identity matrix. If the prob value of this test is less than 0.05, then it shows the significant difference in the properties of the

correlation matrix and identity matrix which is desirable (Leech et al., 2005, p. 82). In our findings, the value of Bartlett test of sphericity shows significance at the 1 percent level which implies that our sample data is appropriate for factor analysis (Bartletts, 1954).

*<Insert table- IV here>*

### Total variance explained

The explanation of variance partition among the potential variables, total variance explained is used. The usefulness of a factor can be determined by the general criteria of Eigenvalues which must be greater than 1.0 for all factors. The measure of variance explained is usually determined by Eigen values. Therefore, less than 1.0 Eigenvalues indicate that particular factor expose less evidence compare with an individual item would have explained. Thus, Table-V presents the results of total variance explained. In this table, the cumulative variance explained by all seven factors is 70% which is very good and considerable.

*<Insert table- V here>*

### Factor analysis

To validate the construct of dependent and independent variables, factor analysis is used which has the characteristics to minimize large set of information into small factors. In this study, we have used Principal component method with varimax rotation. Tabachnick and Fidell (1996) study suggests that factor analysis can be useful to examine a theory of the underlying process of nature. In addition, several methods can be applied for a rotation such as Quartimax, Oblimin and Varimax. Thus, we have used a Varimax rotation, which is widely used by previous researchers (Amin, 2012a; 2012b; Raza and Hanif, 2012, Raza et.al, 2015). A total of 29 questionnaire items related to SERVQUAL and customer satisfaction in seven groups of items have been categorized. In addition, factor loadings in our case for all items are greater than 0.50 which is practically significant and is considerable for analysis (Kaiser, 1974). The results of factor analysis are reported in table - VI.

*<Insert table- VI here>*

### Regression analysis

Table VII reports the results of regression analysis. Findings suggest that all dimensions of service quality have a positive and significant impact on customer satisfaction in Islamic banks of

Pakistan. Past empirical findings also suggest that service quality has significant impact on customer satisfaction. Our findings are in line with past studies (Parasuraman et.al, 1988; Cronin and Taylor, 1992; Anderson and Sullivan, 1993; Haron et.al, 1994; Taylor and Baker, 1994; Levesque and McDougall, 1996; Othman and Owen, 2001; 2002; Arasly et al., 2005a, b; Amin and Isa, 2008; Awan et.al, 2011; Raza et.al, 2015). The coefficient value of compliance dimension is the highest (0.111) among the all dimensions of service quality which supports Haron et.al, (1994) findings as well. This means that Pakistan, Islamic bank customers' satisfaction is linked to the perception that Islamic banks product and services are running within the Sharia principles. One explanation of compliance dimension could be that respondents of this study may have believed and faith in Islamic banks consistency with the Sharia rules and the operations of Islamic banks.

For Pakistani Islamic banks, compliance dimension is the key driver of service quality followed by responsiveness (0.107), Tangibles (0.099), assurance (0.096), empathy (0.028) and reliability (0.012) as reported in table- VII. In addition, 98% of the variance in the overall customer satisfaction is explained by this SERVQUAL model while the prob. value of F-statistics confirm that overall model is significant.

*<Insert table- VII here>*

## 5. Conclusion and managerial implications

The aim of this study is to examine the relationship between service quality and customer satisfaction in the context of Pakistan Islamic banks. This study has also aimed to measure service quality and customer satisfaction by using the modified SERVQUAL model and adding compliance dimension in the basic model. A survey questionnaire has been adopted and modified carefully which comprises of total 29 items. In this study, we have used a sample of the total 477 respondents which are Islamic bank customers based in Karachi, Pakistan. After the data collection process, we have applied various statistical tests. The reliability of the data is confirmed by the test of reliability and then factor analysis has been performed to confirm the value of KMO which signify the sampling adequacy. This test is also used to confirm that the items in the questionnaire are in proper format. Finally a regression analysis has been performed in order examine the relationship between service quality and customer satisfaction in Islamic banks of Pakistan.

The results of this study confirmed that all six dimensions (compliance, assurance, responsiveness, tangible, empathy and reliability) of service quality are distinct constructs. These dimensions have a positive and significant impact on customer satisfaction in Islamic banks of Pakistan. Findings indicate that service quality with the six dimensions of our study has suitable reliability whereas each dimension is positive and significantly associated with Islamic bank service quality. In general, our estimations highlights that Pakistan Islamic bank customer is more satisfied with the compliance dimension. They believe that Islamic banks in Pakistan are consistent with Sharia principles and the operations and mechanism is running under Sharia compliance.

This study contributes to the literature on service quality and customer satisfaction. Prior empirical studies have been conducted in other services industry like hospital, higher education, consumer goods, and travel and tourism sectors in Pakistan. Few of the studies in conventional banks have been conducted, but specifically Islamic banks were inconclusive. Therefore, this research contributes to the existing body of knowledge by giving a substantial knowledge over service quality and customer satisfaction in Islamic banks of Pakistan. In addition, a comprehensive measurement scale is developed, including SERVQUAL dimensions in order to measure service quality and customer satisfaction.

Based on our findings, it is recommended that Islamic banks should provide more product and services to attract more customers and the Sharia advisory board need to supervise and assist the compliance aspects. By keeping in view of other dimensions of service quality, Islamic banks may require to focus on strategic choice and provide innovative products to gain competitive advantage. Now days, potential target market for Islamic banks is available where they have no choice other than to develop, attract and retain customer satisfaction. Future research can be done by gathering more information from the other cities of Pakistan regarding service quality and customer satisfaction to represent the whole Pakistan.

**References**

Ahmed, I., Nawaz, M. M., Ahmad, Z., Ahmad, Z., Shaukat, M. Z., Usman, A., & Ahmed, N. (2010). Does service quality affect students performance? Evidence from institutes of higher learning. *African journal of business management*, *4*(12), 2527-2533.

Al-Hawari, M. (2006). The effect of automated service quality on bank financial performance and the mediating role of customer retention. *Journal of Financial Services Marketing*, *10*(3), 228-243.

Amin, M., & Isa, Z. (2008). An examination of the relationship between service quality perception and customer satisfaction: A SEM approach towards Malaysian Islamic banking. *International Journal of Islamic and Middle Eastern Finance and Management*, *1*(3), 191-209.

Amin, M., & Isa, Z. (2008). An examination of the relationship between service quality perception and customer satisfaction: A SEM approach towards Malaysian Islamic banking. *International Journal of Islamic and Middle Eastern Finance and Management*, *1*(3), 191-209.

Anderson, E. W., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing science*, *12*(2), 125-143.

Anderson, E. W., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing science*, *12*(2), 125-143.

Angur, M. G., Nataraajan, R., & Jahera Jr, J. S. (1999). Service quality in the banking industry: an assessment in a developing economy. *International Journal of Bank Marketing*, *17*(3), 116-125.

Arsali, H., Katircioglu, S. T., & Mehtap-Smadi, S. (2005). A comparison of service quality in the banking industry. *International Journal of Bank marketing*,*23*(70), 508-526.

 Awan, H. M.,  Bukhari, K. S., &  Iqbal, A.  (2011). Service quality and customer satisfaction in the banking sector: A comparative study of conventional and Islamic banks in Pakistan*, Journal of Islamic Marketing*, 2 (3,),  203- 224.

Babakus, E., & Boller, G. W. (1992). An empirical assessment of the SERVQUAL scale. *Journal of Business research*, *24*(3), 253-268.

Berry, L.L., Thompson, T.W., 1982. Relationship banking: the art of turning customers into clients. *Journal of Retail Banking,* 4 (2), 64–73.

Bitner, Mary Jo. (1990). Evaluating service encounters: The effects of physical surroundings and employee respouses. Journal of M&ring, 54 (April), 69-82.

Bitran, G., & Lojo, M. (1993). A framework for analyzing the quality of the customer interface. *European Management Journal*, *11*(4), 385-396.

Black, S., Briggs, S., & Keogh, W. (2001). Service quality performance measurement in public/private sectors. *Managerial Auditing Journal*, *16*(7), 400-405.

Blanchard, R. F., & Galloway, R. L. (1994). Quality in retail banking.*International Journal of Service Industry Management*, *5*(4), 5-23.

Buttle, F. (1996). SERVQUAL: Review, critique and research agenda. *European Journal of Marketing*, 30 (1), 8-32.

Buzzell, R. D., & Gale, B. T. (1987). The PIMS principles. New York: The Free Press.

Carman, J. M. (1990). Consumer perceptions of service quality: An assessment of the SERVQUAL dimensions. *Journal of retailing*.

Caruana, A., Money, A. H., & Berthon, P. R. (2000). Service quality and satisfaction-the moderating role of value. *European Journal of marketing*,*34*(11/12), 1338-1353.

Cheng Lim, P., & Tang, N. K. (2000). A study of patients' expectations and satisfaction in Singapore hospitals. *International Journal of Health Care Quality Assurance*, *13*(7), 290-299.

Cheruiyot, T. K., & Maru, L. C. (2013). Service quality and relative performance of public universities in East Africa. *The TQM Journal*, *25*(5), 533-546.

Chi Cui, C., Lewis, B. R., & Park, W. (2003). Service quality measurement in the banking sector in South Korea. *International Journal of Bank Marketing*,*21*(4), 191-201.

Chumpitaz, R., & Paparoidamis, N. G. (2004). Service quality and marketing performance in business-to-business markets: exploring the mediating role of client satisfaction. *Managing Service Quality: An International Journal*, *14*(2/3), 235-248.

Comrey, A.L., Lee, H.B., 1992. A First Course in Factor Analysis, 2nd Edition. Erlbaum, Hillsdale, NJ. Davis, F.D., 1989. Perceived usefulness, perceived ease ofuse and user acceptance of information technology, *MIS Quarterly,* 13, 319–340.

Cronin Jr, J. J., & Taylor, S. A. (1992). Measuring service quality: a reexamination and extension. *The journal of marketing*, 55-68.

Dale, B. G. (1994). A framework for quality improvement in public sector organizations: A study in Hong Kong. *Public Money & Management*, *14*(2), 31-36.

Erol, C., & El-Bdour, R. (1989). Attitudes, behaviour, and patronage factors of bank customers towards Islamic banks. *International Journal of Bank Marketing*, *7*(6), 31-37.

Fick, G. R., & Ritchie, J. B. (1991). Measuring service quality in the travel and tourism industry. *Journal of Travel Research*, *30*(2), 2-9.

Gerrard, P., & Barton Cunningham, J. (1997). Islamic banking: a study in Singapore. *International Journal of Bank Marketing*, *15*(6), 204-216.

Goode, M., & Moutinho, L. (1995). The effects of free banking on overall satisfaction: the use of automated teller machines. *International Journal of Bank Marketing*, *13*(4), 33-40.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1998), Multivariate Data Analysis, 5th ed., Prentice-Hall, Englewood Cliffs, NJ.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006), Multivariate Data Analysis, 6th ed., Prentice-Hall, Englewood Cliffs, NJ.

Haron, S., Ahmad, N., & Planisek, S. L. (1994). Bank patronage factors of Muslim and non-Muslim customers. *International Journal of Bank Marketing*,*12*(1), 32-40.

Haynes, P., & Fryer, G. (2000). Human resources, service quality and performance: a case study. *International Journal of Contemporary Hospitality Management*, *12*(4), 240-248.

Herington, C., & Weaven, S. (2007). Can banks improve customer relationships with high quality online services?. *Managing Service Quality: An International Journal*, *17*(4), 404-427.

Howard, J. A., & Sheth, J. N. (1969). *The theory of buyer behavior* (Vol. 14). New York: Wiley.

Howcroft, B. (1993), Staff perception of service quality in a UH clearing bank: some empirical findings, *International Journal of Service Industry Management*, 4(4), 5-24.

Jabnoun, N., & Hassan Al-Tamimi, H. A. (2003). Measuring perceived service quality at UAE commercial banks. *International Journal of Quality & Reliability Management*, *20*(4), 458-472.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*(1), 31-36.
Keiser, A. W. 1993. Keeping the customer satisfied begins with asking questions. *Bank Management*, 69 (10), 48-51.

Kemal Avkiran, N. (1994). Developing an instrument to measure customer service quality in branch banking. *international journal of bank marketing*, *12*(6), 10-18.

Kwan, W. and Hee, T.J. (1994), Measuring service quality in Singapore retail banking: a gap analysis and segmentation approach, *Singapore Management Review*, 16 (2), 1-24.

Kyoon Yoo, D., & Ah Park, J. (2007). Perceived service quality: Analyzing relationships among employees, customers, and financial performance.*International Journal of Quality & Reliability Management*, *24*(9), 908-926.

Lam, S. S., & Woo, K. S. (1997). Measuring service quality: A test-retest reliability investigation off SERVQUAL. *International Journal of Market Research*, *39*(2), 381-396.

Laroche, M., & Taylor, T. (1988). An empirical study of major segmentation issues in retail banking. *International Journal of Bank Marketing*, *6*(1), 31-48.

LeBlanc, G., & Nguyen, N. (1988). Customers' perceptions of service quality in financial institutions. *International Journal of Bank Marketing*, *6*(4), 7-18.

Leech, N. L, Barrett, K. C, Morgan, G. A (2005), SPSS for intermediate statistics use and interpretation. Job Characteristics and Organizational Commitments of Taiwanese Expatriates Working in Mainland China Li- Fen Tsai 180 Mahwah, Lawrence Erlbaum, USA.
Levesque, T. J., & McDougall, G. H. (1996). Customer dissatisfaction: the relationship between types of problems and customer response. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, *13*(3), 264-276.

Levesque, T., & McDougall, G. H. (1996). Determinants of customer satisfaction in retail banking. *International Journal of Bank Marketing*, *14*(7), 12-20.

Lewis, A., Pescetto, G., (1996), EU and US Banking in the 1990s, Academic Press, London.

Lewis, B. R. (1991). Service quality: an international comparison of bank customers' expectations and perceptions. *Journal of Marketing Management*,*7*(1), 47-62.

Lewis, B. R. (1993). Service quality measurement. *Marketing Intelligence & Planning*, *11*(4), 4-12.

Lian, T. (1994a), "Customer retention through service quality", *Bank Marketing*, Vol. 26 No. 1, pp. 15-20.

Lian, T. (1994b), "Putting together the pieces of service quality*", Bank Marketing*, Vol. 26 No. 4, pp. 22-30.

McDougall, G, H, G,, 8c Levesque, T, 1, (1994), A revised view of service quality dimensions: An empirical investigation*, Journal of Professional Service Marketing*, 11 (1), 189- 209.

Metawa, A. S., & Al-Mossawi, M. (1998). Banking Behavior of Islamic Bank Customers: Perspectives and Implications. *International Journal of Bank Marketing*, 16(7), 299-313.

Newman, K., & Cowling, A. (1996). Service quality in retail banking: the experience of two British clearing banks. *International Journal of Bank Marketing*, *14*(6), 3-11.

Nunnally, J. C. (1978). Psychometric Theory. New York, NY: McGraw-Hill.
Oldfield, B. M., & Baron, S. (2000). Student perceptions of service quality in a UK university business and management faculty. *Quality Assurance in education*, *8*(2), 85-95.

Oliver, R.L., 1981. Measurement and evaluation of satisfaction processes in retail settings. *Journal of Retailing,* 57(3), 25—48.

Othman, A., & Owen, L. (2001). The multi dimensionality of Carter Model to measure customer service quality (SQ) in Islamic banking industry: a study in Kuwait finance house. *International Journal of Islamic Financial Services*, *3*(4), 1-12.

Othman, A., & Owen, L. (2002). The multidimensionality of CARTER model to measure customer service quality in Islamic banking industry : a study in Kuwait Finance House. *International Journal of Islamic Financial Services*, 3(1).

Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991). Refinement and reassessment of the SERVQUAL scale. *Journal of retailing*.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *the Journal of Marketing*, 41-50.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual. *Journal of retailing*, *64*(1), 12-40.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1994). Alternative scales for measuring service quality: a comparative assessment based on psychometric and diagnostic criteria. *Journal of retailing*, *70*(3), 201-230.

Peterson, Robert A. and William R. Wilson (1992). Measuring Customer Satisfaction: Fact and Artifact, Journal of the Academy of Marketing Science, 20( 1): 61-71.

Ramayah, T., & Leen, Y. A. J. and Siron, R.(2003),"Service quality of a foreign bank: myth and reality".

Raza, S. A., Jawaid, S. T., & Hassan, A. (2015). Internet banking and customer satisfaction in Pakistan. *Qualitative Research in Financial Markets*,*7*(1).

Rust, Roland T. and RichardL. Oliver (1994). Service Quality: New Directions in Theory and Practice. London: Sage.

Smith, A. M., & Lewis, B. R. (1989). Customer care in financial service organisations. *International Journal of Bank Marketing*, *7*(5), 13-22.

Sureshchandar, G. S., Rajendran, C., & Anantharaman, R. N. (2003). Customer perceptions of service quality in the banking sector of a developing economy: a critical analysis. *International journal of bank marketing*, *21*(5), 233-242.

Taylor, S. A., & Baker, T. L. (1994). An assessment of the relationship between service quality and customer satisfaction in the formation of consumers' purchase intentions. *Journal of retailing*, *70*(2), 163-178.

Teas, R. K. (1993). Expectations, performance evaluation, and consumers' perceptions of quality. *The journal of marketing*, 18-34.

Tilston, D. (1989), Making Progress in Quality Financial Services – European Retail Finance for the 1990s, PA Consulting Group, The Economist Publications, London.

Wang, Y., Lo, H. P., & Hui, Y. V. (2003). The antecedents of service quality and product quality and their influences on bank reputation: evidence from the banking industry in China. *Managing Service Quality: An International Journal*,*13*(1), 72-83.

Wilkinson, A., Allen, P., & Snape, E. (1991). TQM and the management of labour. *Employee Relations*, *13*(1), 24-31.

Woodside, Arch G., Lisa L. Frey, and Robert Timothy Daly (1989), "Linking Service Quality, Customer Satisfaction, and Behavioral Intention*, Journal of Health Care Marketing*, (9), 5-17.

Yavas, U., Bilgin, Z., & Shemwell, D. J. (1997). Service quality in the banking sector in an emerging economy: a consumer survey. *International journal of bank marketing*, *15*(6), 217-223.

Zhu, F. X., Wymer, W., & Chen, I. (2002). IT-based services and service quality in consumer banking. *International Journal of Service Industry Management*, *13*(1), 69-90.

**Appendix**

**Fig-1**
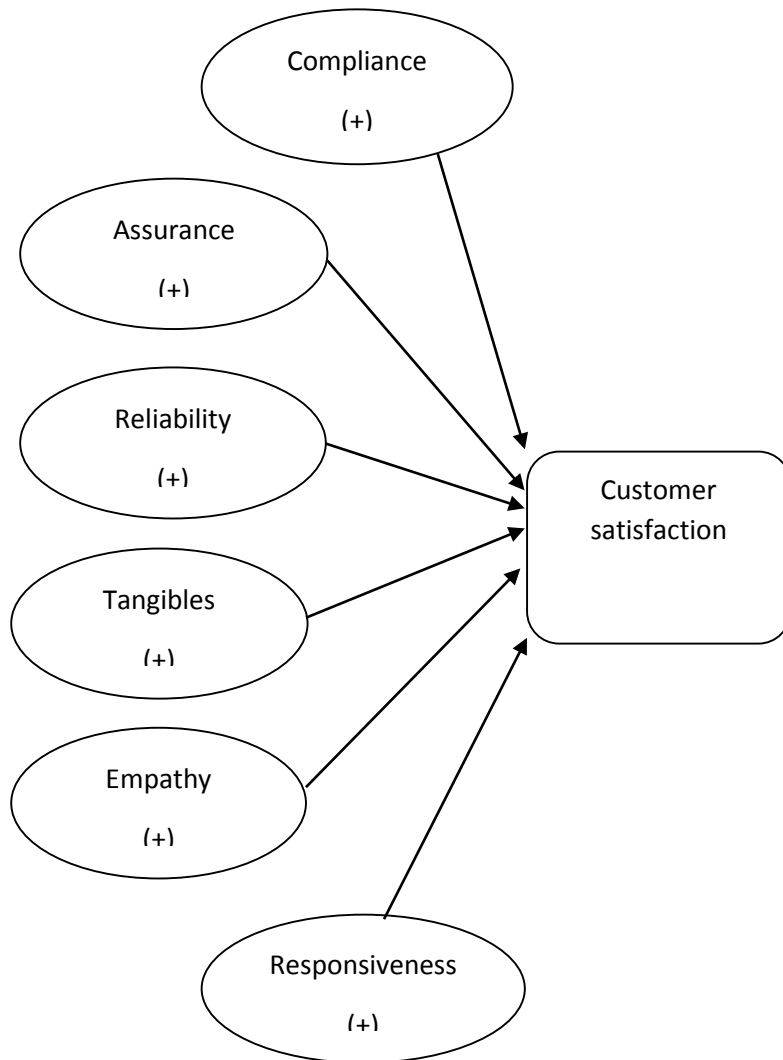


*Source: Authors' construction.*

**Table-I: Profile of respondents**

| Demographic items | Frequency | Percentile |
|---|---|---|
| **Gender** | | |
| Male | 329 | 73% |
| Female | 121 | 27% |
| **Marital status** | | |
| Single | 168 | 37% |
| Married | 282 | 63% |
| **Age** | | |
| Less than 20 | 26 | 6% |
| 20 - 30 | 92 | 20% |
| 31 - 40 | 189 | 42% |
| 41 - 50 | 121 | 27% |
| 50 and above | 22 | 5% |

*Source: Authors' estimation*

**Table-II: Correlations between independent variables**

| Independent variables | COM | ASR | RES | TAN | EMP | REL |
|---|---|---|---|---|---|---|
| COM | 1.00 | | | | | |
| ASR | 0.32 | 1.00 | | | | |
| RES | 0.07 | 0.08 | 1.00 | | | |
| TAN | 0.25 | 0.38 | 0.15 | 1.00 | | |
| EMP | 0.32 | 0.43 | 0.05 | 0.25 | 1.00 | |
| REL | 0.35 | 0.44 | 0.07 | 0.32 | 0.55 | 1.00 |

*Source: Authors' estimation*

**Table-III: Results of reliability analysis**

| Variables | Items | Cronbach's alpha |
|---|---|---|
| Compliance | 4 | 0.64 |
| Assurance | 3 | 0.60 |
| Responsiveness | 4 | 0.77 |
| Tangibles | 3 | 0.64 |
| Empathy | 6 | 0.84 |
| Reliability | 5 | 0.75 |
| Customer satisfaction | 4 | 0.67 |
| Overall | 29 | 0.87 |

*Source: Authors' estimation*

**Table-IV: Results of KMO and Bartlett's tests**

| | |
|---|---|
| KMO measure of sampling adequacy | 0.847 |
| Bartlett's test of sphericity approx. chi-square | 3522.707 |
| Degree of freedom | 300 |
| Probability | 0.000 |

*Source: Authors' estimation*

**Table-V: Results of variance explained**

| Items | COM (%) | ASR (%) | RES (%) | TAN (%) | EMP (%) | REL (%) | CS (%) |
|---|---|---|---|---|---|---|---|
| Variance explained by each factor in percentage | 20 | 13 | 11 | 10 | 8 | 7 | 7 |
| Cumulative variance explained in percentage | 20 | 33 | 44 | 54 | 62 | 69 | 76 |

*Note: Extraction method: principal components analysis.*

*Source: Authors' estimation*

**Table-VI: Results of principal components analysis**

| Items | Compliance | Assurance | Responsiveness | Tangibles | Empathy | Reliability | Customer Satisfaction |
|---|---|---|---|---|---|---|---|
| COM1 | 0.598 | | | | | | |
| COM2 | 0.627 | | | | | | |
| COM3 | 0.740 | | | | | | |
| COM4 | 0.688 | | | | | | |
| ASR1 | | 0.528 | | | | | |
| ASR2 | | 0.702 | | | | | |
| ASR3 | | 0.631 | | | | | |
| RES1 | | | 0.767 | | | | |
| RES2 | | | 0.745 | | | | |
| RES3 | | | 0.755 | | | | |
| RES4 | | | 0.811 | | | | |
| TAN1 | | | | 0.793 | | | |
| TAN2 | | | | 0.753 | | | |
| TAN3 | | | | 0.505 | | | |
| EMP1 | | | | | 0.706 | | |
| EMP2 | | | | | 0.656 | | |
| EMP3 | | | | | 0.720 | | |
| EMP4 | | | | | 0.759 | | |
| EMP5 | | | | | 0.765 | | |
| EMP6 | | | | | 0.644 | | |
| REL1 | | | | | | 0.701 | |
| REL2 | | | | | | 0.716 | |
| REL3 | | | | | | 0.728 | |
| REL4 | | | | | | 0.550 | |
| REL5 | | | | | | 0.500 | |
| CS1 | | | | | | | 0.719 |
| CS2 | | | | | | | 0.769 |
| CS3 | | | | | | | 0.738 |
| CS4 | | | | | | | 0.613 |

**Table-VII: Results of regression analysis**

| Variables | Coeff. | t-stats | Prob |
|---|---|---|---|
| C | -0.124 | -7.448 | 0.000 |
| COM | 0.111 | 29.692 | 0.000 |
| ASR | 0.096 | 25.441 | 0.000 |
| RES | 0.107 | 34.455 | 0.000 |
| TAN | 0.099 | 30.212 | 0.000 |
| EMP | 0.028 | 3.671 | 0.000 |
| REL | 0.012 | 3.061 | 0.002 |
| Adj. R2 | 0.982 | | |
| F-stats (Prob.) | 939.860(0.000) | | |

*Source: Authors' estimation*