



## Exploring Service Quality in Islamic Banking Industry of Afghanistan: An Analysis of Customer Satisfaction

Abdullah Zubair<sup>1</sup>, Hamid Hasan<sup>2</sup>

<sup>1</sup> School of Islamic Banking and Finance, IIIIE, IIU, Islamabad, Email: [abdullahzubair.msifb@gmail.com](mailto:abdullahzubair.msifb@gmail.com)

<sup>2</sup> Assistant Professor, IIIIE, IIU, Islamabad, Email: [hamidiiiiephd@yahoo.co.uk](mailto:hamidiiiiephd@yahoo.co.uk)

### ARTICLE INFO

#### Article History:

Received: October 03, 2020  
Revised: November 27, 2020  
Accepted: December 07, 2020  
Online: December 31, 2020

#### Keywords:

Service quality  
Customer satisfaction  
Islamic banking  
CARTER

#### JEL Classification Codes:

C63, G21, L15

#### Funding:

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

### ABSTRACT

**Theoretical framework:** Service quality (SQ) is a required organizational component that positively relates to customer satisfaction (CS).

**Objective:** In this paper, we measure service quality (SQ) of Afghanistan's Islamic banking industry and customer satisfaction (CS).

**Model/Methodology:** We use the modified CARTER model in our study to analyze the data through PLS-SEM by using the Smart PLS 3.2.9 software package.

**Data:** We collected data in Kabul province from customers of the following banks: Afghanistan International Bank (AIB), Afghan United Bank (AUB), Bank-e-Millie Afghan (BMA), Ghazanfar Bank (GB), and Islamic Bank of Afghanistan (IBA).

**Findings:** In a nutshell, our study results reveal that in the Islamic banking industry of Afghanistan out of seven dimensions of service quality (SQ) only four dimensions are significant namely, compliance (COM), reliability, empathy (EMP), responsiveness (RES) while the other three dimensions namely; assurance (ASR), tangibles (TAN), and corporate social responsibility (CSR) are insignificant for the customers of Islamic banking in Afghanistan.

**Policy implications:** Our study suggests that Afghanistan's Islamic banking industry needs improvement in innovative products and services with their pricing and designing policies. Similarly, Afghanistan's Islamic banking industry needs to determine fair profit ratio for bank management, make comfortable required conditions and terms in the agreement with customers, and take a fair commission on services.

**Practical implications:** This research will help Afghanistan's Islamic banking industry adjust and design their operational and managerial policies.



© 2020 The Authors, Published by iRASD. This is an Open Access Article under the [Creative Common Attribution Non-Commercial 4.0](https://creativecommons.org/licenses/by-nc/4.0/)

Corresponding Author's Email: [abdullahzubair.msifb@gmail.com](mailto:abdullahzubair.msifb@gmail.com)

Citation: Zubair, A., & Hasan, H. (2020). Exploring Service Quality in Islamic Banking Industry of Afghanistan: An Analysis of Customer Satisfaction. *IRASD Journal of Economics*, 2(2), 73-97. <https://doi.org/10.52131/joe.2020.0101.0018>

## 1. Introduction

It is integral for Islamic banking industries to set economic and Shariah parameters. Therefore, they should improve SQ dimensions to meet customers' expectations. Among all

dimensions of SQ in Islamic banks, customers are more motivated by compliance (COM) (Lone, 2017; Obeid & Kaabachi, 2016; Okumus & Genc, 2015; Bizari, 2014; Muhammad et al., 2013; Lee & Ullah, 2011; Gaith & Worthington, 2008; Naser et al., 1999). SQ dimension is the comparison between perceived service (PS) and expected service (ES) of the customer (Purnama, 2006). Indeed, SQ can be treated as a competitive advantage and can benefit the long-term Bank (Culiberg & Rojsek, 2010). In order to, measure the SQ of Bank to evaluate CS many researchers (Yilmaz et al., 2018; Akhtar & Zaheer, 2014; Misbach et al., 2013; Zavareh et al., 2012; Akhtar et al., 2011; Arsali et al., 2005; Zhu et al., 2002) use SERQUAL model which was introduced by Parasuraman et al. (1988). Mainly, SERQUAL model has five core components, namely, assurance (ASR), reliability (REL), tangible (TAN), empathy (EMP), and responsiveness (RES). However, later researchers develop other dimensions such as technology (TECH), innovation (INNOV), competitiveness (COMPET), compliance (COM), corporate social responsibility (CSR), and so on. In Islamic banking, most researchers use a modified SERQUAL model, the CARTER model developed by two researchers Othman and Owen (2001) from the SERVQUAL model with an additional dimension of compliance (COM).

Indeed, each of SQ dimensions has individually and collectively crucial roles such as compliance dimension (COM), suggesting implementing and adopting Islamic laws in Islamic financial institutions' financial transactions. Thus, through this dimension, those customers who care about Shariah-compliant products and financial institutions' services can be increased. Similarly, assurance (ASR) represents strength in the inspiration of customers' trust by Bank employees through staff' and employees' effort, expertness toward their responsibilities, and the task of banking. Similarly, reliability (REL) represents Bank employees' accurate performance, which leads to customer satisfaction and makes them loyal to the Bank. Moreover, tangibles (TAN) represent presences of tangible assets, physical facilities, and instruments used for providing the services of Bank, which show the modernization and technological status of the banking system.

Furthermore, empathy (EMP) represents the bank staff's treatment and attention to their customers, which leads to encourage and persuade customers toward Bank. Similarly, responsiveness (RES) represents bank employees' relationship and attachment style with customers, making customers friends and cooperatives with Bank. And finally, corporate social responsibility (CSR) represents those activities which develop the society and support the community. Thus, through fulfilling corporate social responsibility (CSR), Bank creates positive thoughts on customers and other community members' minds. Thus, Bank and community relations will be closer to each other.

Since there are recently seven financial institutions offering Islamic banking in Afghanistan, one is full-fledged Islamic Bank, and others are Islamic windows. A survey conducted by Bakhtar Bank (recently Islamic Bank of Afghanistan) with the help of a foreign company Ernst & Young (EY) in 2015 shows that about 80% of the Afghanistan population demand Islamic banking. Thus, most people, such as depositors and investors, prefer Islamic returns through Islamic modes' products and services. Though the Islamic banking in Afghanistan is in initial stages but with Bakhtar Bank's conversion to full-fledged Islamic Bank in April 2018 (Islamic Bank of Afghanistan, 2018) raises competitions between banks. Moreover, many industrialists and businesspeople who were not involved in the banking channel are now customers of the Islamic banking industry. So Islamic banking industry in Afghanistan needs improvement of service quality such as ensuring service excellence through well-trained employees and investing in human resources, increasing awareness of customers regarding Islamic banking products and services through educational workshops, promotional campaign procedure, and advertisements, and improvement of the operational and managerial system, and framework through, investing in information technologies.

Moreover, in Afghanistan, the Islamic banking industry needs the support of the community through social responsibilities and improvement in innovative products and services with their pricing and designing policies, making comfortable required conditions and terms in agreement and contracts, taking a fair commission on services, increasing number of branches and so on. Shortly, we can say that the Afghanistan Islamic Banking industry is in initial stages to attract more customers through better service quality.

## 2. Literature review

Based on many research studies, SQ has significant impacts on the client's satisfaction. For the support of this argument, we mention several past pieces of literature in tabulate form as following:

**Table 1**  
**Service Quality (SQ) and Customer Satisfaction (CS) in the Conventional Banking Sector**

S. No	Author (s)	Year	Findings
1	Raza et al.	2020	Dimensions of SQ have a positive and significant impact on CS
2	Yilmaz et al.	2018	Responsiveness (RES), the physical appearance of the Bank, and ease of accessibility to the Bank all have positively impacted students' satisfaction with their banks. Furthermore, an increase in the banks' level of satisfaction leads to an increase in the students' loyalty toward the Bank.
3	Zavareh et al.	2012	A positive relationship exists between (e-SQ) and (e-CS) of internet banking.
4	Culiberg and Rosjek	2010	Dimensions of SQ positively impact customer satisfaction
5	Arsali et al.	2005	Assurance (ASR) has more impact on customers
6	Zhu et al.	2002	Customers are more likely that Bank invest and place a great value on excellence service of IT based services
7	Avarkain	1994	SQ is expected to be an essential and key predictor of branch performance and potential.

Based on highlighted literature in the above table we can conclude that SQ has positive and significant relations and impact on client satisfaction (Raza et al., 2020; Yilmaz et al., 2018; Ali, and Raza, 2017; Faisal et al., 2016; Ali et al., 2015; Zavareh et al., 2012; Arsali et al., 2005; Zhu et al., 2002; Naser et al., 1999; Avarkain, 1994).

**Table 2**  
**Service Quality (SQ) and Customer Satisfaction (CS) in Islamic Banking Sector**

S.No	Author (s)	Year	Findings
1	Haron et al.	2020	Through meditating, the role of trust dimensions of SQ and CS positively relates to customer loyalty.
2	Ali	2018	SQ and customer perception are significantly related to corporate social responsibility (CSR) and not an alien to Islamic banks.
3	Prastiwi et al.	2017	only the tangibles (TAN) influence CS positively while other components failed to enhance CS.
4	Ali and Raza	2017	SQ components are positively related to the customer CS. Moreover, compliance (COM) indicates the highest contribution in the model.
5	Lone	2017	Compliance dimension (COM) of SQ is at relatively a lower rate.
6	Faisal et al.	2016	A positive relationship exists between SQ dimensions and CS
7	Obeid and Kaabachi	2016	Religious commitment, the amount of information held by customers about Islamic finance, the relative advantage of Islamic banking, and its compatibility with customer value, lifestyle, and banking habits are predictors for adopting Islamic banking.

8	Okumus and Genc	2015	Majority of the customers prefer religious beliefs as a fundamental factor for making a selection of a bank.
9	Bachari et al.	2015	56% of employees are aware and have a positive attitude toward its products and services.
10	Maswadeh	2015	Customers judge assurance (ASR), and Empathy (EMP) as most satisfactory dimensions. While the responsiveness (RES), reliability (REL), and tangibility (TAN) are rated as least satisfactory dimensions.
11	Abduh and Othman	2014	Speedy approval of opening a new account, speedy approval of financing proposal, cost of services and products, and Islamic working environment needs to be developed and improved to keep repeated existing customers and enhance potential customers.
12	Akhtar and Zaheer	2014	Differences exist in SQ components of banks concerning several demographic variables.
13	Bizari	2014	Customers consider modes of finance, trust in Islamic banks and their true compliance with Shariah, cost of financing and other transaction, accessibility of Islamic banks and the quality of service provided by Islamic banks.
14	Mahmood et al.	2013	A large gap exists between management perceptions that provide SQ of banks and customers who are not satisfied with SQ of Islamic banks.
15	Misbach et al.	2013	SQ has a significant influence on customer CS and their trust. Further, responsiveness (RES) inspire customer strongly. However, on the other hand, compliance (COM) is the weakest attractive to the Islamic Bank.
16	Marimuthu et al.	2010	Cost-benefits, convenience, friends/relatives influence, and service delivery have a significant relationship with Islamic banking acceptance. At the same time, religion does not significantly impact the selection of Islamic banking.
17	Muhammad et al.	2013	Customers' knowledge and awareness influence their selection criteria and preference to purchase products and services.
18	Akhtar et al.	2011	A positive relationship exists between CS and structure of SQ dimensions. Further, compliance (COM) and representativeness influence more on the satisfaction of customers.
19	Naser et al.	1999	Majority of customers are satisfied with most aspects of the Islamic Bank's products and services, which lead to competitive advantage in term of enjoying customer confidence.

Based on highlighted literature in the above table, we can conclude that among all dimensions of SQ customers of Islamic banking and in Muslims populated societies those who are not yet involved in Islamic banking channel are motivated by compliance dimension (COM) of service quality more (Lone, 2017; Obeid & Kaabachi, 2016; Okumus & Genc, 2015; Bizari, 2014; Muhammad et al., 2013; Lee & Ullah, 2011; Gaith & Worthington, 2008; Naser et al., 1999; Metawa & Almosawi, 1998). However, according to some researchers, Islamic banking customers consider first economic or material aspect rather than emotional or spiritual aspect (Misbach et al., 2013; Marimuthu et al., 2010). Islamic banking needs to improve their quality of services through awareness of employees and customers and to train them to, strength the relation of customer-employee (Ali, 2018; Ali & Raza, 2017; Prastiwi et al., 2017; Bachari et al., 2015; Akhtar et al., 2011). Furthermore, Islamic banking should improve their tangibles, IT system, and innovative products and services (Prastiwi et al., 2017; Ali & Raza, 2017; Maswadeh, 2015; Akhtar & Zaheer, 2014).

### 3. Theoretical framework

Services are non-physical or in other words, have intangible characteristics. Thus, it is not simple to describe and determine quality in services because of the intangible features and nature of services delivered or provided (Norman & Fuqua, 2003). However, service quality gives a mean of perceived service quality in the literature of service. Thus, SQ in

banking reveals CS, as Gronross (1982) describes service quality as a perceived judgment from the customer's after-assessment process. Similarly, Parasuraman et al. (1985) argue that SQ is a gap between client expectations and delivered service standards. Besides this, Chiou and Shen (2012) suggest that clients compare SQ expectations and perception after receiving the actual SQ. We define SQ as a judgment of how well a provided service conforms to customer expectations. Therefore, service provider operators often evaluate the service quality served and delivered to their customers to develop and improve their provided service, recognize problems, and better evaluate CS. Since quality includes both outcome and delivery of service as Parasuraman et al. (1985) explain that quality measurement and evaluations are not made merely on the outcome of a service; they require and incorporate the evaluations of the process of service delivery too. Thus, to determine the perceived SQ that indicates the CS and their behavioral intentions and thoughts about them' services, bank researchers use various tools.

### **3.1. SERQUAL Model**

This model is a multi-dimensional research tool used to determine service quality by capturing customers' expectations and service perceptions. Firstly, this two-scales model was suggested by Parasuraman et al. (1988) with ten dimensions namely, responsiveness (RES), reliability (REL), communication (COMM), courtesy (C), competence (COMP), understanding (UND), credibility (CRED), security (SECY), access (AC), and tangibles (TAN). Though later, though several studies by the authors among the dimensions mentioned above courtesy (C), communication (COMM), competence (COMP) melding into the unique components called assurance (ASR). Further, the credibility (CRED), access (A), understanding (UND), and security (SEC) melding into the unique dimension called empathy (EMP). Finally, all ten dimensions reduced to five essential dimensions of SQ namely, assurance (ASR), reliability (REL), tangibles (TAN), empathy (EMP), and responsiveness (RES). Therefore, this model is also called ARTER model.

### **3.2. SERVPERF Model**

This model is one scale measurement introduced by Cronin and Taylor (1992) to measure service quality performance by capturing customers' perceptions of service or measuring perceived SQ only. SERVPERF model follows five dimensions of SERQUAL model introduced by Parasuraman et al. (1988).

### **3.3. CARTER Model**

This model is a modified form of SERQUAL/ARTER which incorporates ethical/religious dimension of Compliance (COM). Mostly, researchers use this model to capture customers' expectations and perceptions of the Islamic banking industry's service. Firstly, CARTER Model is developed by Othman and Owen (2001) that incorporates six dimensions. Among the six dimensions of CARTER Model, five of them are from model SERQUAL model introduced by Parasuraman et al. (1988), and the sixth one is the compliance dimension (COM). Similarly, researchers develop the scale to measure service quality (SQ) and suggest new dimensions such as technology (TECH), innovation (INNOV), competitiveness (COMPET), features (FEAT), performance (PERF), and so on.

## **4. Model**

To, measure and evaluate the relationship of service SQ with CS in the Islamic banking industry of Afghanistan we use modified CARTER model by adding the corporate social

responsibility (CSR) dimension to the CARTER model developed by Othman and Owen (2001). Every Islamic Bank should engage in corporate social responsibility (CSR) to aim for the society's development and support (Ali, 2018). So in our research modified CARTER model has seven main dimensions of SQ namely; compliance (COM), assurance (ASR), reliability (REL), tangibles (TAN), empathy (EMP), responsiveness (RES), and corporate social responsibility (CSR).

We use a modified form of Ali and Raza (2017) model and other studies that show the effects of SQ dimensions on CS.

Thus, we present the following mathematical model for our research:

$$CS = f(COM, ASR, REL, tan, EMP, RES, CSR) \dots\dots\dots (I)$$

$$CS_i = \beta_1 + \beta_2 COM_i + \beta_3 ASR_i + \beta_4 REL_i + \beta_5 tan_i + \beta_6 EMP_i + \beta_7 RES_i + \beta_8 CSR_i + \mu_i \dots\dots\dots (II)$$

#### 4.1. Description of Variables

Customer Satisfaction (CS) is used as an endogenous variable. It is explained based on five items from past literature of various studies and our analogy from studies such as Ali and Raza 2017, Akhtar and Zaheer 2014, Akhtar et al. 2011 and others. While dimensions of service quality (SQ) are used as exogenous variables in which each dimension of service quality is identified based on five items from past literature and our analogy from studies such as Lone 2018, Maswadeh 2015, AAOIFI 2010, and other studies. Thus, in this research, we only measure our model's dependent variables (Customer Satisfaction) through seven independent variables (Perceptions of customers about SQ dimensions) described in Appendix A.

#### 4.2. Preliminary list of factors

Appendix A list indicates those factors that determine the latent (unobserved) variables of the model. Based on prior researchers' studies and our hard efforts and investigations, these factors were categorized under their relative latent variables. Finally, all these factors were written in our structured questionnaire. Thus, a customer of the Islamic banking industry in Afghanistan was asked about our survey factors.

#### 4.3. Method of Estimation

The methodology which is adopted in the current research paper is in the following format: As in our study the sample data is primary, and responses for designed questionnaires of this research with the help of modified CARTER model dimensions requires the descriptive statistical analysis such as frequencies, percentiles which are employed through Microsoft Excel 2020 program. For statistical analysis of responses, PLS-SEM is applied mainly, through using the Smart PLS 3.2.9 software package to validate the scale to evaluate and measure the SQ and CS. Our dependent variable is ordered in nature, and we use 5 for strongly agree; 4 for agree; 3 for neutral; 2 for disagree and 1 for strongly disagree. Similarly, the independent variables (dimensions of SQ) are determined on the 5-point Likert scale.

#### **4.4. Partial Least Square Structural Equation Modeling (PLS-SEM)**

PLS-SEM is a new technique based on a regression which illustrates the linear interconnection between multiple exogenous variables and single or multiple endogenous variables. This technique accurately functions with SEM that has unobserved variables and series of a cause-and-effect interrelation. With PLS-SEM technique researchers' help, researchers can identify interconnection among variables and identify the variables' existing pathways. Thus, it is considered a suitable technique for building the statistical model and prediction (Ringle et al., 2012).

##### **4.4.1. Parts of PLS-SEM**

PLS-SEM has two subparts first, the measurement model specifies the interconnection between unobserved variables and their manifest indicators, and second is the inner model which illustrates the interconnection among exogenous and endogenous unobserved variables. Further, the measurement model can be either reflective or formative construct.

To present a better understanding of the approach, as in figure E.1 (Appendix E) our model is a sample of the reflective PLS-SEM in which blue-coloured circles and indicators show the yellow-coloured rectangles show unobserved variables, so the factor ellipses and arrow creating them is called the inner model and the indicator rectangles and arrows connecting them are called the measurement model. As shown in figure E.1 (Appendix E) for statistical analysis, we run our model through the Smart PLS 3.2.9 software package that supports and allows both the reflective and formative models.

#### **4.5. Data**

We started surveying distributing questionnaires among Islamic banking customers from 1st July 2019, and finally, after taking two months on 30<sup>th</sup> August, we have completed our survey. Since, to take perceptions of clients regarding SQ offered to them by IBs we have considered four conventional Islamic windows namely, Afghanistan International Bank (AIB), Afghan United Bank (AUB), Bank-e-Millie Afghan (BMA), and Ghazanfar Bank (GB), similarly, one full-fledged Islamic Bank which is Islamic Bank of Afghanistan (IBA). In our research among the Islamic Bank's customers, the purposive sampling method was adopted. The purposive sampling is a type of non-probability sampling, also called judgment sampling technique in which people are sampled based on researcher experience and knowledge. So, through this non-random technique, a researcher collects data from a specified chosen people who are ease of access, qualified to be a part of the sample.

A designed questionnaire was structured to collect the primary data in Kabul Province, the capital of Afghanistan. We took the sample of 400 customers of the Islamic banking industry at 5% level of acceptable error or concerning marginal error ( $P=0.05$ ) for categorical data developed by Bartlett et al. (2001). And interviews were also held by enumerators from some customers. And finally, overall, 400 questionnaires were distributed to clients of the banks mentioned above in Kabul province. However, about 50 questionnaires were disappeared during the survey or not truly filled either by enumerators or customers. Thus, we ignore those questionnaires, so we only consider that overall, 350 questionnaires equate to 87.5% response rate were ultimately returned and filled by enumerators or customers. So, these 350 observations are carried out throughout our research to analyses the data. Thus, we used a useful survey method of Schedule in which the questionnaire is filled, translated, and explained by the enumerator to customers. All customers from both genders were adult

over 18 years and were residents of Kabul province. The survey was collected from various branches of every conventional Islamic window and Islamic Bank in Kabul province.

## **5. Results and Discussion**

In order to, evaluate impacts of services provided by a service provider on customer satisfaction many researchers (Ali, 2018; Yilmaz et al., 2018; Ali & Raza, 2017 Prastiwi et al., 2017; Faisal et al., 2016; Maswadeh, 2015; Akhtar & Zaheer, 2014; Mahmood et al., 2013; Misbach et al., 2013; Zavareh et al., 2012; Akhtar et al., 2011; Cliberg & Rojsek, 2010; Arsali et al., 2005; Zhu et al., 2002; Othman & Owen, 2001; Parasuraman et al., 1988) do not incorporate controlled variables in their studies model. Similarly, Hair et al. (2013) argue that researchers usually do not interpret controlled variables in PLS-SEM models, whether they are significant or not. Thus, in this research, we only measure dependent variables of our model through seven SQ dimensions discussed in this study by using Smart PLS 3.2.9 software package following PLS-SEM model. As for statistical analysis, we do not consider the controlled variable in our study model this, and we do not discuss descriptive statistics.

### **5.1. Statistical Analysis of Model**

#### **5.1.1. Evaluation of Reflective Measurement Model**

In our study to analysis PLS-SEM model, we first begin to evaluate the measurement model. The measurement model describes the rules of correlation among measured and unobserved variables (Hair et al., 2010). Moreover, through a measurement model, the researcher can employ any number of variables for a single endogenous or exogenous construct. To evaluate the measurement model in PLS analysis, two main criteria exist validity and reliability (Ramayah et al., 2011).

### **5.2. Assessment of Reliability**

#### **5.2.1. Variable Reliability**

A single manifest variable or indicator reliability denotes an individual's variance manifest relatively to a latent variable by assessing the manifest (observed) variables (Gotz et al., 2010). Generally, manifest variables with an outer loading of 0.7 or higher are regarded as completely acceptable, while the outer loading with a value less than 0.7 should be ignored (Hair et al., 2012). However, we can keep the outer loading with a value less than 0.7 if the variable is determined through few indicators, mainly when we have just 3 or 4 factors for a latent (unobserved) variable (Hulland, 1999). Similarly, stated by Hair et al. (2017) the indicators with the outer loadings of 0.4 to 0.7 may also be retained if their ignoring does not increase either average variance extracted (AVE) or composite reliability (CR). On the other hand, in the reflective model's case to check the reliability, we can observe single indicator reliability through squaring outer loading of reflective constructs. The minimum acceptable value is 0.40. However, the preferred level is 0.7 (Hulland, 1999).

In our study, at the first step, we check our reflective model variable reliability in which the outer loading is shown in (Appendix B). As it is observed in (Appendix B) we have few indicators with outer loading value less than 0.7, so for the further statistical analysis, we denoted among those low outer loading indicators some of them from our model because they have low outer loading value and have theoretically less importance for the measurement of the corresponding latent variable to explore service quality in the Islamic banking industry. However, we keep few other indicators (see Appendix C) in spite their outer loading value is less than threshold because according to the justification of Hulland (1999) and Hair et al.



(2017) briefly written above. And similarly, we keep them due to their crucial role in determining corresponding latent (unobserved) variables to measure SQ in the Islamic banking industry. In the below, we mention those denoted indicators with their outer loading value.

**Table 3**  
**Removed Indicators**

ASR5	0.659
CSR5	0.615
EMP4	0.526
RES1	0.666
TAN2	0.664

After removing a few indicators mentioned in Table 1.3, we finally carry out the outer loading. All their t-statistics are more extensive than the recommended value and statistically significant ( $P= 0.000$ ). Thus, the measurement model loadings could be called to be highly significant (see Appendix C).

### **5.3. Discussion on retained outer loading**

In Appendix C (Table C.1), those outer loadings are mentioned that are retained for further statistical analysis. In this study, except for a few retained indicators based on Hulland's (1999) justification and Hair et al. (2017), all others are higher than 0.7. Thus, it denotes that these loadings are highly satisfactory and indicate that individual item reliability criterion has successfully been met. Thus, all indicators in Appendix C (Table C.1) denote their corresponding unobserved variable explained their variance highly. Similarly, in Appendix C (Table C.2), we observe outer loading with their significance through t-statistics and p-values.

### **5.4. Discussion on the significance of outer loading**

PLS-SEM results in Appendix C show that the reliability of the indicator of all items loadings are significant, greater than the recommended minimum acceptable value of 0.40, and close to the preferred level of 0.7 (Hulland, 1999). The t-statistics results of the measurement model shown in Appendix C (Table C.2) denote that all t-statistics are higher than 1.96 and statistically significant ( $p = .000$ ). Thus, the measurement model loadings are considered highly significant.

### **5.5. Construct Internal Consistency**

It is used to check the joint measurement of each construct. Cronbach Alpha and composite reliability (CR) are two standard measures of the construct's reliability. The internal reliability is thought to be achieved when the Cronbach's Alpha value is 0.7 or greater (Nunnally & Beinstein, 1994; Pallant, 2001). Another well-known alternative to coefficient alpha is composite reliability (CR), usually calculated in conjunction with SEM (Peterson & Kim, 2013). The construct reliability is thought to be achieved when the CR value varies between 0.6 and 0.7 (Henseler & Sarstedt, 2013). To measure the internal consistency of our model constructs, we prefer to use the composite reliability (CR), which is mostly used in PLS-SEM models. In our estimation results, all CR values (composite reliability) are above 0.7 so that scales are reasonably reliable.

**Table 4**  
**Composite Reliability**

<b>Indicators</b>	<b>Composite Reliability</b>
ASR	0.915
COM	0.941
CS	0.866
CSR	0.863
EMP	0.829
REL	0.764
RES	0.841
TAN	0.812

## 5.6. Discussion

Table 1.4 represents that the composite reliability (CR) for each construct is greater than the required value of 0.7. Thus, the above results reveal that items of the constructs have adequate internal consistency reliability.

## 5.7. Assessment of Construct validity

Construct validity describes the robustness of the accuracy of a measure (Zikmand et al., 2013). To, achieve validity analysis for the measurement model of this study, we employ two following tests.

## 5.8. Convergent validity

Convergent validity is the extent to which a measure correlates positively with an alternative measure of the same construct. Our study for analysis of the convergent validity the average variance extracted (AVE) and factor loadings are employed (Hair et al., 2013). AVE is the average variance shared between a construct and its measures. The rule of thumb is that an AVE value higher or equal to 0.50 is acceptable (Hair et al., 2013; Barclays et al., 1995). However, if the composite reliability (CR) values are higher than the model's recommended value, the AVE values, which are less than 0.50, are also acceptable (Fornell & Larcker, 1981). Similarly, as Hair et al. (2009) discuss in some cases, especially a new measure,  $\lambda \geq 0.5$  ( $AVE > 0.25$ ) can be regarded to be acceptable.

In the following, all AVE values are higher than the threshold value except REL (reliability). Though, we accept the REL (reliability) AVE value according to arguments of Hair et al. (2009). Thus, in some cases, lower AVE values are also acceptable.

**Table 5**  
**Average Variance Extracted**

<b>Indicators</b>	<b>Average Variance Extracted (AVE)</b>
ASR	0.729
COM	0.762
CS	0.564
CSR	0.613
EMP	0.552
REL	0.398
RES	0.571
TAN	0.521

## 5.9. Discussion

In the above table, the results of AVE including REL (reliability) value according to arguments Hair et al. (2009) indicate statistical significance of all outer models' items. They are consistent with the guidelines of Fornell and Larcker (1981).

## 5.10. Discriminant validity

Discriminant validity focuses on the uniqueness of a construct, that whether the statement captured by a construct is unique and not followed by the other constructs in The model (Hair et al., 2013). In this study, we measured discriminant validity by employing the cross-loadings among constructs. To, realize discriminant validity, the loadings of the construct requires the loadings of each indicator to be higher than its cross-loadings constructs (Chin, 2010; Gotz, 2010; Vinzi et al., 2010).

## 5.11. Cross loading

Cross-loadings: all observed variable should be more than inter-correlation of the construct of all other observed variables in the model.

## 5.12. Discussion

To, achieve discriminant validity in the second way we use cross-loading so by observing the Appendix D (Table D.1) which indicates almost the loading of each indicator is higher than its cross-loadings constructs, we can conclude that our measurement model each indicator holds cross validity.

## 5.13. Evaluation of the Inner Structural Model

The inner model which illustrates the relationships between dependent and independent latent variables. To evaluate the significance of all path coefficients, we have to employ bootstrapping in PLS. Bootstrapping is the only procedure for testing the significance of path coefficients (Chin, 2010).

## 5.14. Path coefficient

Path coefficient illustrates the endogenous variable's response to a unit change in an exogenous variable when other variables in the model are held constant (Bollen, 1989).

**Table 6**  
**Path coefficient**

Indicators	CS
ASR	0.1
COM	0.404
CSR	-0.056
EMP	0.218
REL	0.133
RES	0.233
<b>TAN</b>	-0.083

## 5.15. Discussion

We have two types of path coefficient in the above table, dimensioned with negative path coefficients and dimensions with positive path coefficients. Though generally, it is normal to have negative path coefficients in PLS-SEM. As per Hair et al. (2012), the software standardizes the data. As a result, the algorithm calculates standardized coefficients between -1 and + 1. The important decision should after run the significance test. Secondly, in the above table dimensions with negative path coefficients such as CSR (corporate social responsibility) and TAN (tangibles) are insignificant dimensions according to a bootstrap test of the hypothesis (see Table 1.7). So according to Deveaux et al. (2012), it is not required to interpret them. Thus, here in this discussion, we only interpret the significant dimensions which are COM (compliance), REL (reliability), EMP (empathy), and RES (responsiveness). Thus, we can interpret the mentioned significant dimensions as following:

Keeping other variables constant if COM (compliance) increase by one standard deviation CS (customer satisfaction) will increase by 0.4 standard deviations on the average.

Keeping other variables constant if EMP (empathy) increase by one standard deviation CS (customer satisfaction) will increase by 0.21 standard deviations on the average.

Keeping other variables constant if REL (reliability) increase by one standard deviation CS (customer satisfaction) will increase by 0.13 standard deviations on the average.

Keeping other variables constant if RES (responsiveness) increase by one standard deviation CS (customer satisfaction) will increase by 0.23 standard deviations on the average.

## 5.16. Bootstrapping process for testing hypothesis

Bootstrapping employs a resampling procedure to estimate PLS coefficients' significance (Hair et al., 2017). Shortly, it is a nonparametric resampling mechanism that allows the variability of a statistic by testing the sample data's variability rather than employing parametric assumptions. According to Mooney and Duval (1993) and Wood (2005), bootstrapping has various merits for applied researchers. First, the procedure is easy, thus requires little study of mathematics or probability theory. Second, PLS-SEM's bootstrap mechanism is nonrestrictive, particularly used by applied researchers whose data distribution does not fulfil restrictive assumptions such as normality and existence components of unobserved variables. Third, bootstrapping is widely applicable because a researcher can bootstrap any number in PLS-SEM. In this study, we do two- trialled test in the bootstrap process at 5% significance level for our categorical data.

**Table 7**  
**Bootstrap output**

	T ( O/STDEV )	Statistics	P Values	Conclusion
ASR -> CS	1.718		0.086	Statistically insignificant
COM -> CS	9.239		0.000	Statistically significant
CSR -> CS	1.302		0.193	Statistically insignificant
EMP -> CS	4.161		0.000	Statistically significant
REL -> CS	2.161		0.031	Statistically significant
RES -> CS	3.949		0.000	Statistically significant
TAN -> CS	1.498		0.134	Statistically insignificant

## **5.17. Discussion**

In our study through the bootstrap procedure, we find that in the Islamic banking industry of Afghanistan out of seven dimensions of SQ only four dimensions are significant namely, compliance (COM), reliability (REL), empathy (EMP), and responsiveness (RES). While on the hand, the other three dimensions, namely, assurance (ASR), tangibles (TAN), and corporate social responsibility (CSR) are insignificant for the customers of Islamic banking in Afghanistan.

The logic behind the significance of the SQ dimensions is that for customers firstly, distinguishing Islamic banking from the conventional banking compliance dimension (COM) is a key dimension for Islamic banking. Thus, in Afghanistan based on the survey conducted by Bakhtar Bank (recently Islamic Bank of Afghanistan) with the help of a foreign company Ernst & Young (EY) in 2015, about 80% of the population in Afghanistan's demand for Islamic banking. Most people, such as depositors and investors both prefer Islamic returns by providing Islamic products and services. Thus, we can finally conclude that compliance (COM) is the most significant dimension in Afghanistan customers' Islamic banking industry prefer religious profits. Secondly, according to our survey results in Afghanistan's Islamic banking industry, the reliability dimension (REL) is also highly significant because Islamic Bank should have an accurate and diligent performance, suggesting that Islamic banking should create innovative products and services. Thus, Afghanistan's Islamic banking industry needs to improve banks products and services through Islamic way and modes. Thirdly, in our study hypothesis empathy (EMP) is also significant. Because customers not only consider Islamic banking emotional aspect but instead, they consider more on the economic aspect too. The Islamic banking industry of Afghanistan should impose reasonable service charges, provide higher profit ratio to customers, and create Shariah-compliant profitable business. Finally, responsiveness (RES) is significant in this study. Thus, Afghanistan's Islamic banking industry should make a better relationship attachment style with its customers, such as availability of credit on justly agreement terms, efficient and fast counter service, and so on.

While on the other hand, based on our study, three dimensions of SQ are not insignificant, namely, assurance (ASR), tangibles (TAN), and corporate social responsibility (CSR). Because Islamic banking in Afghanistan is at initial stages, the investors who are customers of Islamic banking are few thus, and their demands are limited because they want that Islamic bank/window provides several profitable Shariah-compliant products and services. Secondly, in Afghanistan, staffs of every Bank, in general, are friendly, and the Bank has a comfortable environment; thus, based on our study assurance (ASR) is insignificant. Similarly, in Afghanistan, almost banks physical equipment is modernized, and its quality is better. Thus, we come up with the result that the tangibles dimension (TAN) is insignificant. Finally, based on our study results, corporate social responsibility (CSR) is also insignificant. Since Islamic banking industry of Afghanistan up to some extent, is engage in social welfare.

Similarly, most Islamic banking customers are current account holders; thus, they only deposit their money on Qard based, and ordinary people are not aware of Islamic banking even though they have opposing views because they are not truly aware of Islamic banking. Thus, for customers of the Islamic banking industry in Afghanistan specifically, investors social responsibilities of Islamic banking industry such as Waqf, charity, and Qard ul hasan are not core components rather, they patronize compliance (COM), reliability (REL), empathy (EMP), and responsiveness (RES). (See also Appendix E)

### 5.18. Coefficient of determination (R-Squared value)

In PLS-SEM  $R^2$  is a unit of the model's predictive accuracy which compute the overall effect size and variance explained in the dependent construct for the inner model. R-squared results denote the amount of variance in the construct which the model expresses. R-squared is a major part of an inner model evaluation in PLS-SEM.

**Table 8**  
**Coefficient of determination ( $R^2$ )**

	<b>R Square</b>	<b>R Square Adjusted</b>
CS	0.631	0.623

### 5.19. Discussion

In our study, the inner model is 0.623 for the quality dependent unobserved (latent) construct (see Appendix E). This denotes that the seven exogenous constructs substantially describe 62.3% of the quality variance. It denotes that about 62.3% of the change in the CS is due to seven unobserved constructs in the model. According to Chin (1998) the R-squared value of 0.67 as substantial, 0.33 as moderate and 0.19 weak. Hence, this study's R-squared value is closer to substantial based on Chin's (1998) study.

### 5.20. Predictive Relevance of the Model ( $Q^2$ )

$Q^2$  statistics are employed to indicate the PLS path model (Stone, 1974; Geisser, 1975). It is only applicable to reflectively modelled endogenous factors. The  $Q^2$  criterion suggests that the conceptual model can predict the unobserved dependent constructs. Concerning the SEM, the  $Q^2$  values are required to be higher than zero for a specific dependent unobserved construct. So the  $Q^2$  values higher than 0 indicates that the PLS-SEM model is predictive of the given dependent variable under scrutiny. Similarly, a  $Q^2$  values with a 0 or a negative value denote the model is insignificant to predicting the given dependent factor (Garson, 2016). We use construct cross-validated redundancy approach to calculate it through a blindfolding procedure using a Smart PLS 3.2.9 software package.

**Table 9**  
**Predictive Relevance of the Model ( $Q^2$ )**

	<b>SSO</b>	<b>SSE</b>	<b><math>Q^2 (=1-SSE/SSO)</math></b>
CS	1750.000	1143.265	<b>0.347</b>
ASR	1400.000	1400.000	
COM	1750.000	1750.000	
CSR	1400.000	1400.000	
EMP	1400.000	1400.000	
REL	1750.000	1750.000	
RES	1400.000	1400.000	
TAN	1400.000	1400.000	

### 5.21. Discussion

From the above Table 1.9, we can observe that the  $Q^2$  Our study model's value is equal to 0.347, which indicates higher, and supports that the path model's predictive relevance is adequate for the dependent construct. Following Cohen (1988) those  $Q^2$  values of 0.02 denote a "small" effect size, 0.15 denotes a "medium" effect size, and 0.35 denotes a "high" effect

size. Thus, we can judge that our model has a high degree of predictive relevance regarding the dependent factor which is CS. (See also Appendix E)

## **6. Conclusion and Policy Implications**

In simple words, Afghanistan's Islamic banking industry cannot keep sustainable growth and development until they consider the persistent problems and marketing challenges undermining opportunities of trust and Satisfaction from Islamic banking service quality. Generally, lack of awareness and existence of confusion exists regarding Islamic banking channel in all Afghanistan areas. Contracting clients of Islamic banking are less aware of the terminologies of Islamic banking and agreement conditions. Generally, most people are recognized to be neutral and confused about the recent Islamic banking system, and even specifically, Madrasah mindset students reject recent adopted Islamic banking. However, the overall majority of Afghans demand actual Islamic banking.

According to our investigations and results of this study customer of Islamic banking industry of Afghanistan prefer ethical and religious profits more than economic profits. For this reason, compliance dimension (COM) of SQ is most significant dimension in order to, enhance CS (Lone, 2017; Obeid & Kaabachi, 2016; Okumus & Genc, 2015; Bizari, 2014; Muhammad et al., 2013; Lee & Ullah, 2011; Gaith & Worthington, 2008; Naser et al., 1999; Metawa & Almosawi, 1998). Based on customers' appreciations, Islamic windows lack Shariah compliance. Thus, there is a lack of customers' confidence that Islamic windows funds may be co-mingled with funds in the conventional interest-based transaction books. Similarly, accepting conventional policies and utilizing conventional accounts based on interest rates and other Islamically doubtful practices create challenges for Islamic windows, especially regarding compliance (COM).

Similarly, based on this study's findings, reliability (REL) is a significant component of banking SQ to enhance CS in Afghanistan's Islamic banking industry. Thus, based on our investigations, overall Islamic banking in Afghanistan initially lacks in products and services. Thus, Afghanistan's Islamic banking industry needs improvement in innovative products and services with their pricing and designing policies. Moreover, the process of application and opening an account should be easy for people. Registration for a bank account should become an easy process even for a layperson in Afghanistan's rural areas.

Similarly, a sufficient number of ATMs should be installed for a cash drawl, and cash should always be available on those machines. Furthermore, based on this investigation, we found that empathy (EMP), and SQ component, is significant in Afghanistan's Islamic banking industry. Therefore, this SQ dimension suggests that Afghanistan's Islamic banking industry should invest in profitable business and projects through various Islamic banking products and services. Similarly, the ratio of profit distribution related to bank management and Bank all service charges should be fair. Furthermore, this dimension of SQ suggests that Afghanistan's Islamic banking industry should create a well trusted and full of confidence environment to increase CS because the experience of Kabul Bank scandals in 2011 made customers cautious in depositing their money with banks in Afghanistan. Finally, the fourth component of SQ is responsiveness (RES) that we found it significant. This study's responsiveness (RES) suggests that credit availability conditions should be justly on favourable terms of the agreement. Because strict contract agreement makes customers not repeat the contract, it impacts client loyalty. Furthermore, Since the relationship between employee and client is considered highly interactive, so the Islamic banking industry should improve the service excellence of their employees and their awareness about Islamic transactions, communication skill, and customer care by conducting training programs to deal with clients in a professional and friendly mode, and manner, and finally, to have efficient and

fast employees (Ali, 2018; Ali & Raza, 2017; Prastiwi et al., 2017; Bachari et al., 2015; Akhtar et al., 2011).

### **6.1. Limitations of the study and future directions**

In this study, we only consider seven SQ dimensions to analyze CS in Afghanistan's Islamic banking industry. However, there are other dimensions which have a role in determining client satisfaction and exploring service provider service quality such as, access (AC), communication (COMM), creditability (CRED), competence (COMP), courtesy (C), innovation (INNOV), security (SECY), and understanding (UND). Similarly, we only consider the SQ of the Islamic banking industry. There is a gap in the comparative study of Islamic banking industry SQ versus conventional banking industry SQ in Afghanistan for future research. Furthermore, in our research, our population area was Kabul only. Future researchers should consider other provinces in which banking industries such as Balkh province and Nangarhar province. Finally, there is a gap for future researchers to analyze the SQ and CS of every Bank in Afghanistan.

### **Conflict of Interests/Disclosures**

The authors declared no potential conflicts of interest w.r.t the research, authorship and/or publication of this article.

### **References**

- AAOIFI. (2010). *Corporate social responsibility conduct and disclosure for Islamic financial institutions*. Accounting and Auditing Organization for Islamic Financial Institutions, Bahrain.
- About IBA. *Islamic Bank of Afghanistan*, <http://ibafg.com/about>.
- Akhtar, A., & Zaheer, A. (2014). Service Quality Dimensions of Islamic Banks: A Scale Development Approach. *Management and Business Research: A Administration and Management*, 14(5), 11-20.
- Akhtar, M. N., Hunjra, A. I., Akbar, S. W., Kashif-Ur-Rehman, & Niazi, G. S. K. (2011). Relationship between Customer Satisfaction and Service Quality of Islamic Banks. *World Applied Sciences Journal*, 13(3), 453-459.
- Ali, F., Zhou, Y., Hussain, K., Nair, P. K., & Ragavan, N. A. (2016). Does higher education's service quality affect student satisfaction, image and loyalty?. *Quality Assurance in Education*, 24(1), 70-94
- Ali, M., & Raza, S. A. (2017). Service quality perception and customer satisfaction in Islamic banks of Pakistan: the modified SERVQUAL model. *Total Quality Management*, 28(5), 559-577.
- Ali, Q. (2018). Service Quality from Customer Perception: Evidence from CARTER Model on Bank Islam Brunei Darussalam. *International Journal of Business and Management*, 13(2).
- Arsali, H., Katircioglu, S. T., & Mehtap-Smadi, S. (2005). A comparison of service quality in the banking industry some evidence from Turkish and Greek-speaking areas in Cyprus. *International Journal of Bank Marketing*, 23(7), 508-526.
- Avkiran, N. K. (1994). Developing an Instrument to Measure Customer Service Quality in Branch Banking. *International Journal of Bank Marketing*, 12(6), 10-18.
- Bagozzi, RP & YI, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74-94.
- Barclay, D. W., Higgins, C. A., & Thompson, R. (1995). The partial least squares Approach to causal modelling: personal computer adoption and use as an illustration. *Technology Studies*, 2, 285-309.



- Bartlett, J.E., Kotrlik, J.W. & Higgins, C.C. (2001). Organizational Research: Determining Appropriate Sample Size in Survey Research. *Information Technology, Learning, and Performance Journal*, 19, 43-50.
- Bizari, R. M. (2014). A study of Islamic banks in the non-GCC MENA region: evidence from Lebanon. *International Journal of Bank Marketing*, 32(2), 130-149.
- Bollen, K. (1989). *Structural Equations with Latent Variables*, John Wiley & Son.
- Brown, R. M. (2006). *Factors Driving Student Satisfaction and Loyalty in Australian Universities: The Importance of Institutional Image*. Paper presented at the 20th Annual Australia & New Zealand Academy of Management (ANZAM) Conference Rockhampton.
- Brown, R. M., & Mazzarol, T. W. (2009). The importance of institutional image to student satisfaction and loyalty within higher education. *High Educ*, 58, 81-95.
- Bachari, I., Rafiki, A., & Qassab, M. A. H. A. (2015). Awareness and attitudes of employees towards Islamic banking products in Bahrain. *Procedia Economics and Finance*, 30, 68 – 78.
- Chin, W. W. (2010). How to write up and report PLS analyses, in *Handbook of Partial Least Squares: Concepts, Methods and Application*. Springer, 645-689.
- Chin, W. W., & Newsted, P. R. (1999). Structural equation modelling analysis with small samples using partial least squares. *Statistical strategies for small sample research*, 1(1), 307-341.
- Chin, W. W., & Newsted, P. R. (1999). Structural Equation Modeling analysis with Small Samples Using Partial Least Squares, *Statistical Strategies for Small Sample Research*, Thousand Oaks, CA: Sage Publications, 307-341.
- Chin, W.W. (1998). The Partial Least Squares Approach to Structural Equation Modeling. *Modern Methods for Business Research*, 295–336.
- Chiou, J. S., & Shen. C. C. (2012). The antecedents of online financial service adoption: the impact of physical banking services on internet banking acceptance. *Journal of Behavioral and Information technology*, 31(2), 859-871.
- Coelho, P. S., & Henseler, J. (2012). Creating customer loyalty through service customization. *European Journal of Marketing*, 46(3/4), 331-356.
- Couchman, P. K., & Fulop, L. (2006). *Building Trust in Cross-sector R&D Collaborations: Exploring the Role of Credible Commitments*. Paper presented at the European Group for Organizational Studies (EGOS) 22nd Colloquium Trust Within and Across Boundaries, Bergen, Norway.
- Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52(4), 281–302.
- Cronin, J., & Taylor, S. (1992). Measuring SQ: re-examination and extension. *Journal of Marketing*, 56, 55-68.
- Culiberg, B., & Rojsek, I. (2010). Identifying Service Quality Dimensions as Antecedents to Customers Satisfaction in Retail Banking. *Economic and Business Review*, 12(3), 151–166.
- DeVeaux, Velleman, & Bock (2012). *Stats: Data and Models*, (3rd ed). Addison-Wesley, 801.
- Faisal, M., Shabbir, M. S., Javed, S., & Shabbir, M. F. (2016). Measuring Service Quality and Customer Satisfaction in Pakistan: Evidence-Based Carter Model. *International Business Management*, 10(20), 5011-5016.
- Fornell, C. & David, F. L. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 39-50.
- Garson, G. D. (2016). *Partial Least Squares: Regression and Structural Equation Models*. Asheboro, NC: Statistical Associates Publishers.
- Geisser, S. (1975). The Predictive Sample Reuse Method with Applications. *Journal of the American Statistical Association*, 70(350), 320-328.
- Gronroos, C. (1982). An Applied Service Marketing Theory. *European Journal of Marketing*, 16(7), 30-41.

- Hair, J. F., JR., Black, W. C., Babin, B. J., & Andersen, R. E., (2010). *Multivariate Data analysis* (7th ed.). Upper Saddle River, NJ: Pearson Prentice Hall. 280.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed, a silver bullet. *The Journal of Marketing Theory and Practice*, 19, 139–152.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., & Tatham, R.L. (2009). *Multivariate data analysis*. Pearson Prentice Hall Upper Saddle River, NJ, 7(7ed).
- Hair, J.F., Sarstedt, M., Hopkins, L. & Kuppelwieser, V.G. (2014). Partial Least Squares Structural Equation Modeling (PLS-SEM): An Emerging Tool in Business Research. *European Business Review*, 26, 106-121.
- Hair, J.F., Sarstedt, M., Pieper, T.M. & Ringle, C.M. (2012). The use of partial least squares structural equation modelling in strategic management research: a review of past practices and recommendations for future applications. *Long Range Planning*, 45, 320-340.
- Hair, J.F., Sarstedt, M., & Ringle, C.M. (2012). An assessment of the use of partial least squares structural equation modelling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414-433.
- Hair, J.F., Sarstedt, M., Ringle, C.M., & Mena, J.A. (2012). An Assessment of the Use of Partial Least Squares Structural Equation Modeling in Marketing Research. *J. Acad. Mark. Sci.*, 40, 414–433.
- Hair, Jr., J.F., Matthews, L.M., Matthews, R.L. & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *Int. J. Multivariate Data Analysis*, 1(2), 107–123.
- Hamdard, A. K. (27<sup>th</sup> April 2011). *Practical Aspects of Islamic Banking in Afghanistan*. [http://outlookafghanistan.net/topics.php?post\\_id=326](http://outlookafghanistan.net/topics.php?post_id=326).
- Henseler, J. & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modelling. *Computational Statistics*, 28(2), 565-580.
- Henseler, J., Hubona, G. & Ray, P. (2016). Using PLS path modelling in new technology research: updated guidelines. *Industrial Management & Data Systems*, 116(1), 2-20.
- Henseler, J., Ringle, C.M., & Sinkovics, R. (2009). The Use of Partial Least Squares Path Modeling in International Marketing. *Advances in International Marketing*, 20, 277–319.
- Hair, J.F., Ringle, C.M., & Sarstedt, M. (2013). Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. *Long-Range Plan*, 46, 1–12.
- Hulland, J. (1999). Use of Partial Least Squares (PLS) in Strategic Management Research: A Review of Four Recent Studies. *Strategic Management Journal*, 20(2), 195-204.
- Ibrahim, M. Z., Rahman, M. N., & Yasin, R. M. (2014). Determining Factors of Students' Satisfaction with Malaysian Skills Training Institutes. *International Education Studies*, 7(6), 9-24.
- Kumar, B. R. (2015). Determinants of Value Creation of GCC Firms - An Application of PLS-SEM Model. *Asian Journal of Finance and Accounting*, 7(1), 76-95.
- Lone, F. A. (2017). Customer satisfaction towards Islamic banking in Saudi Arabia: an application of CARTER model. *Int. J. Services Operations and Informatics*, 8(4).
- Machado-Da-Silva, F. N., Meirelles, F. D., Filenga, D., & Filho, M. B. (July 2014). Student Satisfaction Process in Virtual Learning System: Considerations Based in Information and Service Quality from Brazil's Experience. *Turkish Online Journal of Distance Education-TOJDE*, 15(3), 122-142.
- Mahmood, C. K., Khalil, T., & Al-Hattami, A. A. (2013). Competitive Study of Service Quality Based on the Perception of Customers and Management of Islamic Banks in Pakistan. *Journal of Business and Management*, 9(3), 73-78.
- Marimuthu, M., Jing, C. W., Gie, L. P., Mun, L. P., & Ping, T. Y. (2010). Islamic Banking: Selection Criteria and Implications. *Global Journal of Human Social Science*, 10(4).
- Mastoor, S. A. (2014). *Islamic Banking in Afghanistan*. International Institute of Social and Economic Sciences: 10th International Academic Conference, Vienna.

- Maswadeh, S. N. (2015). An Evaluation of SMEs Satisfaction toward Jordanian Islamic Banks Service Quality. *Procedia Economics and Finance*, 23, 86 – 94.
- Misbach, I., Surachman, Hadiwidjojo, D., & Armanu. (2013). Islamic Bank Service Quality and Trust: Study on Islamic Bank in Makassar Indonesia. *International Journal of Business and Management*, 8(5).
- Mooney, C. Z., & Duval, R. D. (1993). Bootstrapping: A nonparametric approach to statistical inference. London: Sage.
- Muhammad, N. A. N., Hamid, A. A., bahrom, H., Haniff, M. N., Manan, S. K. A., & Aziz, R. A. (2013). Customers' Preference on Islamic Banking Products and services: the Influence of knowledge, awareness and Satisfaction. *Malaysian accounting review*, 12 (1).
- Naser, K., Jamal, A., & Al-Khatib, K. (1999). Islamic banking: a study of customer satisfaction and preferences in Jordan. *International Journal of Bank Marketing*, 17(3), 135-150.
- Norman, & Fuqua. (2003). *START ISO 9000:2000*, 9 (13).
- Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric theory*. McGraw, New York.
- Okumus, H. S., & Genc, E. G. (2013). Interest-free Banking in Turkey: A Study of Customers Satisfaction and Bank Selection. *European Scientific Journal*, 9(16), 144-166.
- Othman, A. Q. (2003). Adopting and measuring customer service quality in Islamic banks: A case study in Kuwait Finance House. PhD Thesis.
- Othman, A., & Owen, L. (2002). The multidimensionality of CARTER model to measure customer service quality in the Islamic banking industry: A study in Kuwait Finance House. *International Journal of Islamic Financial Services*, 3(4), 1-12.
- Pallant, Y. (2001). *SPSS Survival Manual: A step by step guide to data analysis using SPSS for windows (3rd ed.)*. England: McGraw Hill Open University Press.
- Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991). A Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing*, 67(4), 420-450.
- 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*, 49(4), 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, R. A., & Kim, Y. (2013). On the relationship between coefficient alpha and composite reliability. *Journal of Applied Psychology*, 98(1), 194-198.
- Prastiwi, E. H., Ridwan, M. S., & Ujianto. (2017). The Improvement of the Service Quality of The Syariah Bank in Facing The Global Competition. *Advances in Intelligent Systems Research*, 131.
- Ramayah, T., Cheah, J.-H., Chuah, F., Ting, H. and Memon, M.A. (2016). Partial Least Squares Structural Equation Modeling (PLS-SEM) Using SmartPLS 3.0: An Updated and Practical Guide to Statistical Analysis. *Pearson, Singapore*.
- Ramayah, T., Lee, J. W. C., & In, J. B. C. (2011). Network collaboration and performance in the tourism sector. *Service Business*, 5, 411-428.
- Rasoolimanesh, S.M., & Ali, F. (2018). Editorial: partial least squares (PLS) in hospitality and tourism research. *Journal of Hospitality and Tourism Technology*, 9(3), 238-248.
- Report for Selected Countries and Subjects. (2019). IMF.org. International Monetary Fund
- Ringle, C. M., Sarstedt, M., & Zimmermann, L. (2011). Customer Satisfaction with Commercial Airlines: The Role of Perceived Safety and Purpose of Travel. *Journal of Marketing Theory and Practice*, 19(4), 459-472.
- Ringle, C.M., Sarstedt, M. & Straub, D.W. (2012). A critical look at the use of PLS-SEM in MIS quarterly. *MIS Quarterly*, 36(1), 3-14.
- Ringle, C.M., Sarstedt, M., Mitchell, R. & Gudergan, S.P. (2019). Partial least squares structural equation modelling in HRM research. *The International Journal of Human Resource Management*, 31(12), 1617-1643.

- Sarstedt, M., Ringle, C.M. & Hair, JF (2017). *Partial least squares structural equation modelling*. Handbook of Market Research, Springer, Heidelberg.
- Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill-building approach* (5th ed.). Haddington: John Wiley & Sons.
- Stone, M. (1974). Cross-validators choice and assessment of statistical predictions. *Journal of the Royal Statistical Society, Series B*, 36(2), 111–133.
- The World Factbook*. CIA.gov. Central Intelligence Agency.
- Tore, D. (2005). An empirical investigation of the key factors for success in software process improvement. *IEEE Transactions on Software Engineering*, 31(5), 410- 424.
- Twaissi, N. M., & Al-Kilani, M. H. (2015). The Impact of Perceived Service Quality on Students' Intentions in Higher Education in a Jordanian Governmental University. *International Business Research*, 8(5), 81-92.
- Vinzi, V.E., Chin, W.W., Henseler, J., & Wang, H. (2010). *The Handbook of Partial Least Square: Concepts, Methods and Applications*: Springer Berlin Heidelberg.
- Völckner, F., Sattler, H., Hennig-Thurau, T., & Ringle, C. M. (2010). The role of parent brand quality for service brand extension success. *Journal of Service Research*, 13(4), 379–396.
- WONG, KK (2011). Review of the book Handbook of Partial Least Squares: Concepts, Methods and Applications. *International Journal of Business Science & Applied Management*, 6(2), 52-54.
- Wood, M. (2005). Bootstrapped confidence intervals as an approach to statistical inference. *Organizational Research Methods*, 8, 454-470.
- World Bank forecasts for Afghanistan. (2018). World Bank, 153.
- Yilmaz, V., Ari, E., & Gürbüz, H. (2018). Investigating the relationship between service quality dimensions, customer satisfaction and loyalty in the Turkish banking sector an application of structural equation model. *International Journal of Bank Marketing*, 36(2), 423-440.
- Zavareha, F. B., Ariffa, M. S. M., Jusoha, A., Zakuana, N., & Bahari, A. Z. (2012). E-Service Quality Dimensions and Their Effects on E-Customer Satisfaction in Internet Banking Services. *Procedia - Social and Behavioral Sciences*, 40, 441 – 445.
- Zhu, F. X., Jr, W. W., & Chen, I. (2002). IT-based services and service quality in consumer banking. *International Journal of Service Industry Management*, 13(1), 69-90.
- Zikmand, W.G., Babin, B.J., Carr, J.C., & Griffin, M. (2013). *Business Research Methods* (9th ed). Nelson Education Ltd. Canada.
- Haron, R., Subar, N. A., & Ibrahim, K. (2020). Service quality of Islamic banks: Satisfaction, loyalty and the mediating role of trust. *Islamic Economic Studies*, 28(1), 3-23.
- Raza, H., Burney, A. I., & Ahsanullah. Impacts of Service Quality on Customer Satisfaction: A Comparative study on Banking Sector of Pakistan through Weighted SERVPERF Model. *INT TRANS J ENG MANAG SCI TECH*, 11(2), 1-15.

## APPENDICES

### Appendix A

**Table A.1: Preliminary list of factors**

Code	Factors
<b>CS</b>	<b>Customer Satisfaction:</b> It indicates overall satisfaction customers
CS1	Overall satisfaction with the products and services offered by Islamic Bank/Islamic Window
CS2	General Satisfaction with employees performance and attitudes
CS3	Satisfaction with Islamic banking profitability
CS4	Satisfaction with Islamic banking system
CS5	Satisfaction with number of recent branches and its location
<b>COM</b>	<b>Compliance:</b> It indicates implementation and adoption of Islamic laws by a service provider organization.
COM1	All banking provided products and services are compatible with Islamic laws.
COM2	Profit and loss sharing basis in Investment Products. (Maswadeh, 2015)

COM3	Islamic Bank/Islamic Window is not involved in impermissible business activity.
COM4	Islamic Bank/Islamic Window care to achieve objectives of Shariah.
COM5	Awareness of Employees from term and condition of related products and services
<b>ASR</b>	<b>Assurance:</b> It represents strength in inspiration of customers trust by employees of an organization through their efforts, built skills and expertness toward organization professions and responsibilities.
ASR1	Adequate number of Bank staff/employees
ASR2	Well trained and highly knowledgeable employees in Bank
ASR3	Access to account information is easily
ASR4	Politeness and friendly staff
ASR5	Interior comfort in Bank (Lone, 2018)
<b>REL</b>	<b>Reliability:</b> It indicates accurate and diligent performance of a service provider.
REL1	Easy Process of Application
REL2	Always Availability of Cash in ATM machine
REL3	Security of transactions
REL4	Bank offers many products and services
REL5	Convenience (short time for service anywhere) (Lone, 2018)
<b>TAN</b>	<b>Tangibles:</b> This dimension represents presences of tangible assets and other physical facilities and tools which are used for providing the services of an organization.
TAN1	Technology, provided facilities of Bank Such as computers, ATM and other facilities etc
TAN2	Clear and understandable Brochures and forms of Bank
TAN3	Number of Branches(Branching facility)
TAN4	Bank size in assets and capital
TAN5	Location of banks branches
<b>EMP</b>	<b>Empathy:</b> This dimension indicates treatment, care and attention a service provider with its clients
EMP1	Lower service charge (Lone, 2018)
EMP2	Products and service profitability (Lone, 2018)
EMP3	Speed and efficiency of transactions
EMP4	Confidence in Bank's management (Lone, 2018)
EMP5	Enough Park spacing and accessible location:
<b>RES</b>	<b>Responsiveness:</b> This dimension indicates relationship attachment style of an organization staffs with their customers.
RES1	Opening hours of operations
RES2	Credit Availability on justly favorable terms(Lone, 2018)
RES3	Efficient and fast counter services (Lone,2018)
RES4	Way staff treat customers (Lone ,2018)
RES5	Restore error quickly
<b>CSR</b>	<b>Corporate Social Responsibility:</b> This dimension of service quality represents all those activities that an Institution is carrying to support community and for society development. It includes all religious, economic, legal, ethical, and discretionary responsibilities.
CSR1	Policy for Qard al Hasan (AAOIFI, 2010)
CSR2	Policy for Waqf Management (AAOIFI, 2010)
CSR3	Policy for charitable activities (AAOIFI, 2010)
CSR4	Environmental Impact Investment Policies (AAOIFI, 2010)
CSR5	Policy for Social /Development Impact Investment (AAOIFI, 2010)

## Appendix B

**Table B.1: Original data outer loadings**

	ASR	COM	CS	CSR	EMP	REL	RES	TAN
<b>ASR1</b>	0.845							

ASR2	0.868							
ASR3	0.859							
ASR4	0.79							
ASR5	0.659							
COM1		0.916						
COM2		0.856						
COM3		0.899						
COM4		0.871						
COM5		0.82						
CS1			0.831					
CS2			0.754					
CS3			0.769					
CS4			0.729					
CS5			0.664					
CSR1				0.615				
CSR2				0.834				
CSR3				0.844				
CSR4				0.726				
CSR5				0.613				
EMP1					0.78			
EMP2					0.782			
EMP3					0.774			
EMP4					0.526			
EMP5					0.547			
REL1						0.724		
REL2						0.738		
REL3						0.599		
REL4						0.511		
REL5						0.55		
RES1							0.666	
RES2							0.593	
RES3							0.8	
RES4							0.832	
RES5							0.739	
TAN1								0.608
TAN2								0.664
TAN3								0.733
TAN4								0.731
TAN5								0.738

**Appendix C**  
**Retained Outer loading**  
**Table C.1: Outer loading**

	ASR	COM	CS	CSR	EMP	REL	RES	TAN
ASR1	0.86							
ASR2	0.889							
ASR3	0.865							
ASR4	0.8							
COM1		0.916						
COM2		0.856						
COM3		0.899						
COM4		0.871						
COM5		0.82						
CS1			0.832					
CS2			0.752					
CS3			0.772					
CS4			0.729					

CS5	0.66			
CSR1	0.68			
CSR2	0.855			
CSR3	0.848			
CSR4	0.735			
EMP1		0.808		
EMP2		0.802		
EMP3		0.757		
EMP5	0.58			
REL1			0.724	
REL2			0.738	
REL3			0.599	
REL4			0.512	
REL5			0.55	
RES2				0.647
RES3				0.796
RES4				0.844
RES5				0.722
TAN1				0.64
TAN3				0.743
TAN4				0.756
TAN5				0.742

Table C.2: Outer loading Significance

	Original Sample	M	STDEV	T Statistics	P Values
ASR1 <- ASR	0.860	0.859	0.023	37.390	0.000
ASR2 <- ASR	0.889	0.889	0.014	64.183	0.000
ASR3 <- ASR	0.865	0.866	0.018	46.960	0.000
ASR4 <- ASR	0.800	0.800	0.033	24.358	0.000
COM1 <- COM	0.916	0.916	0.008	109.583	0.000
COM2 <- COM	0.856	0.856	0.017	49.321	0.000
COM3 <- COM	0.899	0.899	0.013	66.691	0.000
COM4 <- COM	0.871	0.870	0.017	50.169	0.000
COM5 <- COM	0.820	0.820	0.020	41.065	0.000
CS1 <- CS	0.832	0.832	0.018	46.130	0.000
CS2 <- CS	0.752	0.752	0.031	24.163	0.000
CS3 <- CS	0.772	0.772	0.025	30.430	0.000
CS4 <- CS	0.729	0.729	0.032	22.505	0.000
CS5 <- CS	0.660	0.659	0.037	17.711	0.000
CSR1 <- CSR	0.680	0.677	0.040	17.148	0.000
CSR2 <- CSR	0.855	0.852	0.023	36.419	0.000
CSR3 <- CSR	0.848	0.848	0.019	45.380	0.000
CSR4 <- CSR	0.735	0.734	0.037	19.696	0.000
EMP1 <- EMP	0.808	0.808	0.023	34.442	0.000
EMP2 <- EMP	0.802	0.802	0.023	34.610	0.000
EMP3 <- EMP	0.757	0.757	0.026	28.703	0.000
EMP5 <- EMP	0.580	0.579	0.052	11.201	0.000
REL1 <- REL	0.724	0.722	0.035	20.421	0.000
REL2 <- REL	0.738	0.737	0.037	20.068	0.000
REL3 <- REL	0.599	0.598	0.054	11.009	0.000
REL4 <- REL	0.512	0.509	0.055	9.284	0.000
REL5 <- REL	0.550	0.549	0.058	9.552	0.000
RES2 <- RES	0.647	0.648	0.037	17.732	0.000
RES3 <- RES	0.796	0.794	0.030	26.586	0.000
RES4 <- RES	0.844	0.843	0.021	40.073	0.000
RES5 <- RES	0.722	0.719	0.044	16.243	0.000
TAN1 <- TAN	0.640	0.636	0.054	11.850	0.000
TAN3 <- TAN	0.743	0.742	0.039	18.999	0.000

<b>TAN4 &lt;- TAN</b>	0.756	0.755	0.034	22.161	0.000
<b>TAN5 &lt;- TAN</b>	0.742	0.739	0.042	17.612	0.000

## Appendix D

**Table D.1: Cross Loading**

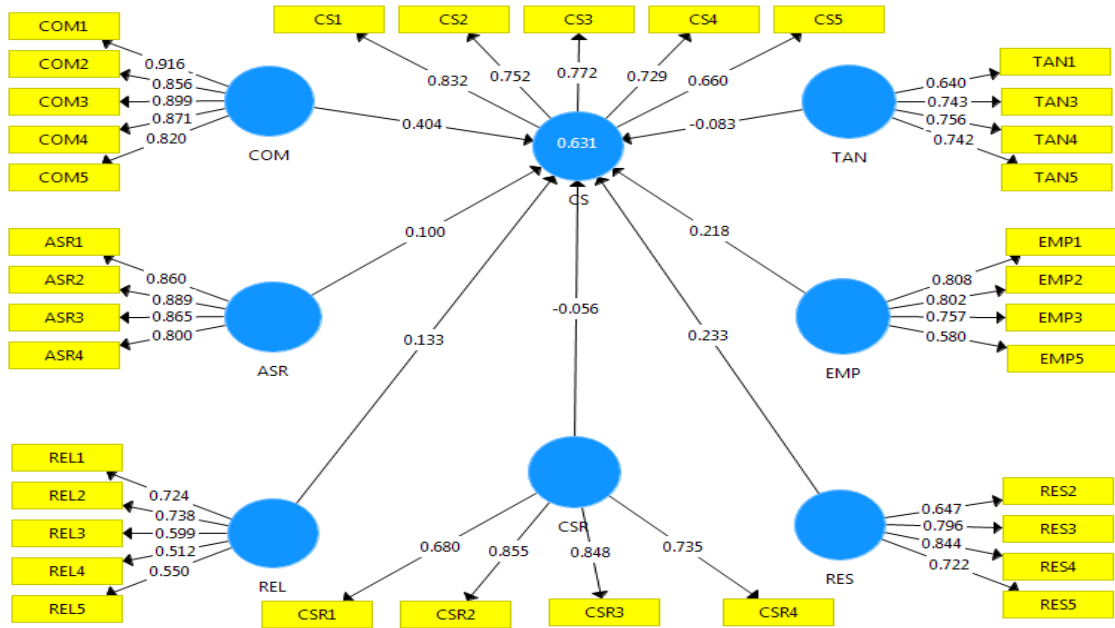
	<b>ASR</b>	<b>COM</b>	<b>CS</b>	<b>CSR</b>	<b>EMP</b>	<b>REL</b>	<b>RES</b>	<b>TAN</b>
<b>ASR1</b>	<b>0.86</b>	0.33	0.455	0.259	0.464	0.568	0.563	0.522
<b>ASR2</b>	<b>0.889</b>	0.421	0.557	0.328	0.554	0.626	0.575	0.571
<b>ASR3</b>	<b>0.865</b>	0.377	0.508	0.329	0.569	0.646	0.639	0.611
<b>ASR4</b>	<b>0.8</b>	0.329	0.459	0.252	0.464	0.511	0.512	0.423
<b>COM1</b>	0.357	<b>0.916</b>	0.616	0.471	0.407	0.451	0.372	0.35
<b>COM2</b>	0.482	<b>0.856</b>	0.611	0.499	0.493	0.481	0.455	0.447
<b>COM3</b>	0.345	<b>0.899</b>	0.576	0.43	0.413	0.43	0.38	0.344
<b>COM4</b>	0.398	<b>0.871</b>	0.535	0.544	0.46	0.439	0.386	0.323
<b>COM5</b>	0.285	<b>0.82</b>	0.548	0.438	0.375	0.422	0.345	0.235
<b>CS1</b>	0.386	0.599	<b>0.832</b>	0.383	0.556	0.513	0.479	0.364
<b>CS2</b>	0.55	0.45	<b>0.752</b>	0.259	0.464	0.488	0.468	0.393
<b>CS3</b>	0.39	0.463	<b>0.772</b>	0.385	0.61	0.446	0.492	0.299
<b>CS4</b>	0.433	0.54	<b>0.729</b>	0.349	0.421	0.422	0.401	0.342
<b>CS5</b>	0.444	0.43	<b>0.66</b>	0.264	0.355	0.49	0.507	0.479
<b>CSR1</b>	0.112	0.386	0.274	<b>0.68</b>	0.33	0.309	0.208	0.182
<b>CSR2</b>	0.283	0.395	0.318	<b>0.855</b>	0.353	0.34	0.351	0.292
<b>CSR3</b>	0.396	0.556	0.448	<b>0.848</b>	0.436	0.469	0.462	0.382
<b>CSR4</b>	0.222	0.319	0.294	<b>0.735</b>	0.354	0.335	0.307	0.187
<b>EMP1</b>	0.426	0.36	0.515	0.398	<b>0.808</b>	0.522	0.5	0.415
<b>EMP2</b>	0.424	0.372	0.532	0.343	<b>0.802</b>	0.453	0.475	0.392
<b>EMP3</b>	0.623	0.434	0.51	0.344	<b>0.757</b>	0.558	0.592	0.567
<b>EMP5</b>	0.288	0.288	0.336	0.343	<b>0.58</b>	0.51	0.348	0.264
<b>REL1</b>	0.533	0.375	0.42	0.254	0.447	<b>0.724</b>	0.467	0.474
<b>REL2</b>	0.595	0.324	0.461	0.327	0.445	<b>0.738</b>	0.451	0.51
<b>REL3</b>	0.422	0.26	0.392	0.202	0.324	<b>0.599</b>	0.413	0.446
<b>REL4</b>	0.225	0.388	0.34	0.426	0.39	<b>0.512</b>	0.318	0.241
<b>REL5</b>	0.343	0.272	0.351	0.318	0.549	<b>0.55</b>	0.369	0.289
<b>RES2</b>	0.333	0.33	0.503	0.393	0.59	0.429	<b>0.647</b>	0.333
<b>RES3</b>	0.544	0.341	0.443	0.322	0.493	0.488	<b>0.796</b>	0.722
<b>RES4</b>	0.616	0.352	0.516	0.334	0.467	0.525	<b>0.844</b>	0.579
<b>RES5</b>	0.538	0.314	0.395	0.266	0.395	0.505	<b>0.722</b>	0.582
<b>TAN1</b>	0.335	0.237	0.286	0.186	0.233	0.359	0.397	<b>0.64</b>
<b>TAN3</b>	0.526	0.285	0.359	0.314	0.474	0.582	0.536	<b>0.743</b>
<b>TAN4</b>	0.456	0.326	0.404	0.284	0.474	0.437	0.658	<b>0.756</b>
<b>TAN5</b>	0.477	0.276	0.367	0.217	0.406	0.45	0.474	<b>0.742</b>



**Appendix E**

**Graphical Representation of Model**

**Figure E.1 Graphical Representation of PLS-SEM Model of this Study**



**Figure E.2: Graphical Representation of Predictive Relevance of the Model ( $Q^2$ )**

