

## Relationship between E-Banking Service Quality and Customer Satisfaction in Commercial Banks in Jordan

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### **Abstract**

*The aim of this study is to examine the relationship between e-banking service qualities on customer satisfaction in the commercial banking industry in Jordan. Partial least squares structural equation modelling (PLS-SEM), adopted to analyse the casual relationships between exogenous variables and endogenous variable. The model was developed and later tested by using the Partial Least Square (smart PLS) procedure on data collected from a survey that yielded 107 usable questionnaires. The findings demonstrated that efficiency of online service quality and Responsiveness of online service quality have significant and positive influence on customer satisfaction in the commercial banking industry in Jordan. The findings imply that the relationship of the efficiency of online service quality and Responsiveness of online service quality on customer satisfaction could lead to commercial banks' profitability.*

**Keywords:** E-service quality, Customer satisfaction, and dimensions of service quality.

### **1. Introduction**

Nowadays, the increasing progress in technology makes the service organizations like banks provide e-banking services or online banking in order to access the competitive advantage and dedicate much market share for themselves (Beigi, Jorfi, Tajarrood, & Beigi, 2016). consequently service quality assessment in organizations which provide electronic and on line services differs with the quality of traditional services (Ardakani, Ardakani, & Mohammad Fotouhi Ardakani, 2015). In supplying new services, in addition to the correspondence of recent services to customer needs, the manner by means of which those services are brought to the customer is also vital. The developing IT and ICT applications have had ways reaching implications for the mode of operation in all sectors, consisting of the banking industry. The net has greatly modified the established concepts in marketing and provision of products and services as well as the customer expectations concerning quality of services and products. the new means in the provision of banking services that is closely tied to ITC plays an important role in customer satisfaction and retention and in giving the bank a competitive edge over the competitors (Doost & Ashrafi, 2014). E-banking has accomplished wonders in handing over banking products & services to the clients. Even though, banks still want to enhance with a purpose to satisfy the customers. customer satisfaction could be very crucial for business success in today's market in order to build long- term and profitable customers which in the long run results in consumer loyalty and repeat business (Punyani, Dash, & Sharma, 2015). most banks within the developed world and some within the developing world are now providing internet banking services with diverse levels of sophistication (Bawumia, 2007). as an example, even as some banks have adopted net banking for communicating to the consumer on concerning financial institution statements, other banks use net banking services to permit customers to access their financial institution accounts and carry out different banking transactions (Bawumia, 2007). Electronic Service Quality (E-SQ) is a newly developing area of research, which has strategic importance for businesses striving to address customers in the electronic marketplace (Parasuraman & Zinkhan, 2002).

The paper explores e service quality dimensions based on a review of the development of e-service quality dimension. It proposes a four-dimension scale for measuring eservice quality: efficiency; reliability; responsiveness; and privacy.

### **2. Customer satisfaction (CS)**

customer satisfaction considered as one of the most important and vital variables for long-time period business success (Ardakani et al., 2015). nowadays the need for continuing activities and maintaining the competitive gain is attention to customers (Mozaheb, Alamolhodaei, & Ardakani, 2015) . Customer satisfaction means about to what extent customer needs, wishes, and expectations towards the services and

products are fulfilled. during the period sale, customer encouraged to repurchase and be customer loyalty (Kocoglu & Kirmaci, 2012) . According to (Kotler, 2000), a highly satisfied customer can be identified as follows:

- i) The customer continues his shopping for a long time.
- ii) They buy more as long as the firm produces new products and the existing products are improve.
- iii) They speak about the firm and its products with praise.
- iv) They keep does not care about another brand that is in competition with the products of the firm and does not an emphasis on the price.
- v) They will give the firm suggestions and ideas about products and services.

In another word, customers' satisfaction obtained while banking is based on customers' expectations(Beigi et al., 2016) . Several studies have been conducted to determine the major instrument that has a substantial impact on customer satisfaction. One of the most widely used instrument to determine the customer satisfaction is SERVQUAL developed by Zeithaml et al. (2002). In this study, the researcher has paid much attention to determine the relationship between E-Banking Service Quality and customer satisfaction.

### 3. E-Service Quality

Electronic Service quality refers to the consumer's overall evaluation and judgment of the excellent and quality of electronic service providing in the virtual marketplace (Santos, 2003). In trendy, E-service do continue to be defined as like an interactive, content-centred, then net-based customer service to that amount is driven through customers or clients and integrated along the assist on technologies and systems provided through service providers, who aim at strengthening the customer-provider relationship (De Ruyter, Wetzels, & Kleijnen, 2001) . The appearance of net paved the way for the emergence of the concept of E-service. E-services have two major characteristics: the service is available with electronic networks, and the service is consumed via someone via the internet (Batagan, Pocovnicu, & Capisizu, 2009). The discussion of service quality may be extended to the overall assessment of a particular service with ten service quality dimensions: tangibles, responsiveness, competence, reliability, courtesy, access, communication credibility, security, and understanding the customer (Parasuraman et al., 1985, 1988).

Five dimensions of SERVQUAL have been developed for the service sectors: Reliability, assurance, tangibility, responsiveness, and empathy (van Iwaarden, van der Wiele, Ball, & Millen, 2003) . It was concluded by many researches that that SERVQUAL is the best model to measure service quality in the banking industry (Angur, Nataraajan, & Jahera Jr, 1999).similarly, other research showed, in brief, SERVQUAL is a proper and good assessment tool to measure service quality in the retail banking industry (Lau, Cheung, Lam, & Chu, 2013).

Zeithaml, Parasuraman, and Malhotra (2000, 2002) developed E-SERVQUAL for measuring e-service quality through a three-stage process using exploratory focus groups and two phases of empirical data collection and analysis. This process produced seven dimensions reliability, fulfilment, compensation, efficiency, privacy, responsiveness, and contact that form a core service scale and a recovery service scale. Four dimensions efficiency, fulfilment, reliability, and privacy—form the core E-SERVQUAL scale that is used to measure the customers' perceptions of service quality delivered by online retailers.

Those dimensions consist of the criteria customers use to assess routine on-line service once they revel in no questions or troubles in the usage of the site. Efficiency refers back to the ability of the customers to get to the internet website online, discover their desired product and information associated with it, and check out with minimum effort. Reliability is associated with the technical functioning of the website, specifically, the extent to which it is available and functioning properly. The privacy dimension consists of assurance that shopping behaviour data aren't shared, and that credit card information is secure(Zeithaml, Parasuraman, & Malhotra, 2002).

According to (Khan, Khan, Khan, Naseem Bakht Yar, & Khan, 2014), the dimensions of service quality can be identified as follows:

**Efficiency** is about the proper working of the internet services. Customers can get all the information from the website easily. It refers to the ability to get the reliable and related information on the website.

**Reliability** is related to the technical working of the website. It involves the proper functionality of the website.

**Responsiveness** is related to the customer representative services. It measures the ability of e-tellers to provide timely information to the customers, handling the quarries and complains of the clients and provides online guarantees.

**Privacy** is the most important and mostly preferred dimension of service quality. Customers are reluctant to provide personal data and credit card information on the website because of the threat of being theft. So this dimension provides the assurance of security and privacy of data.

#### 4. Hypothesis and research framework

In this study, we used to Kim and *et al.* (2008) and SERVQUAL for measurement of eService Quality of Point of Sale (POS). In finally, authors used four variables as the independent variable and one as the dependent variable for the survey. This study proposes the following hypothesis.

- 1) There is a relationship between Efficiency of online service quality and customer satisfaction.
- 2) There is a relationship between Reliability of online service quality and customer satisfaction.
- 3) There is a relationship between Responsiveness of online service quality and customer satisfaction.
- 4) There is a relationship between the privacy of online service quality and customer satisfaction.

#### E-Banking Service Quality

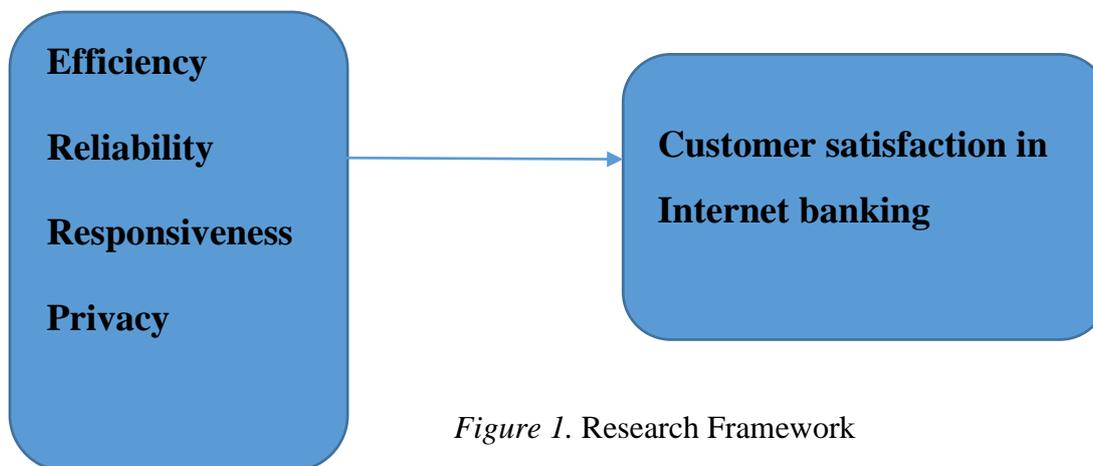


Figure 1. Research Framework

#### 5. Methodology Survey Instrument

26 observed variables form the exogenous independent variable measurement of dimensions of e-banking service quality of Efficiency 9 items, Reliability 7 items, Responsiveness 6 items and Privacy 4 items. The customer satisfaction 5 items as an endogenous variable. Survey questionnaire was designed by broadly reviewing literature in order to identify scales used in the previous studies which are having high reliability and validity. This study applied the 5-point Likert scale of 1-strongly agree, 2-agree, 3-neutral, 4-disagree and 5-strongly disagree.

To study the relationships among the main constructs by using the partial least squares (PLS) technique, Smart PLS was adopted to assess the measurement and structural model (Ringle, Wende, & Will, 2005). PLS analysis was chosen because it can evaluate all paths at the same time and does not need a large sample size (Gefen, Straub, & Boudreau, 2000). To assess the associations, all measurement items were

standardized, and missing values were substituted by sample means to check validity, reliability, and statistical power. The bootstrapping technique was used, which approximates the estimator sampling distribution by resampling with substitution from the original sample (Moore, McCabe, & Evans, 2005) to acquire more consistent results.

### Sample

Total of 150 customers from commercial banking in Jordan had been asked to answer the questionnaire. After the process of screening, 110 or 73% of the participants involved in this study were eligible and can be regarded as respondents. However, after screening the data, only 107 survey questionnaires can be utilized for this study. Therefore, the response rate is adequate for analysis of Smart PLS.

## 6. Data Analysis

In this part of the study, the fitness of measurement models has been evaluated, and the validity and reliability of the instruments of the study are investigated and interpreted. In the following, the fitness of structural model and then, the overall fitness of the model are examined, and the hypotheses are finally tested.

### Measurement models:

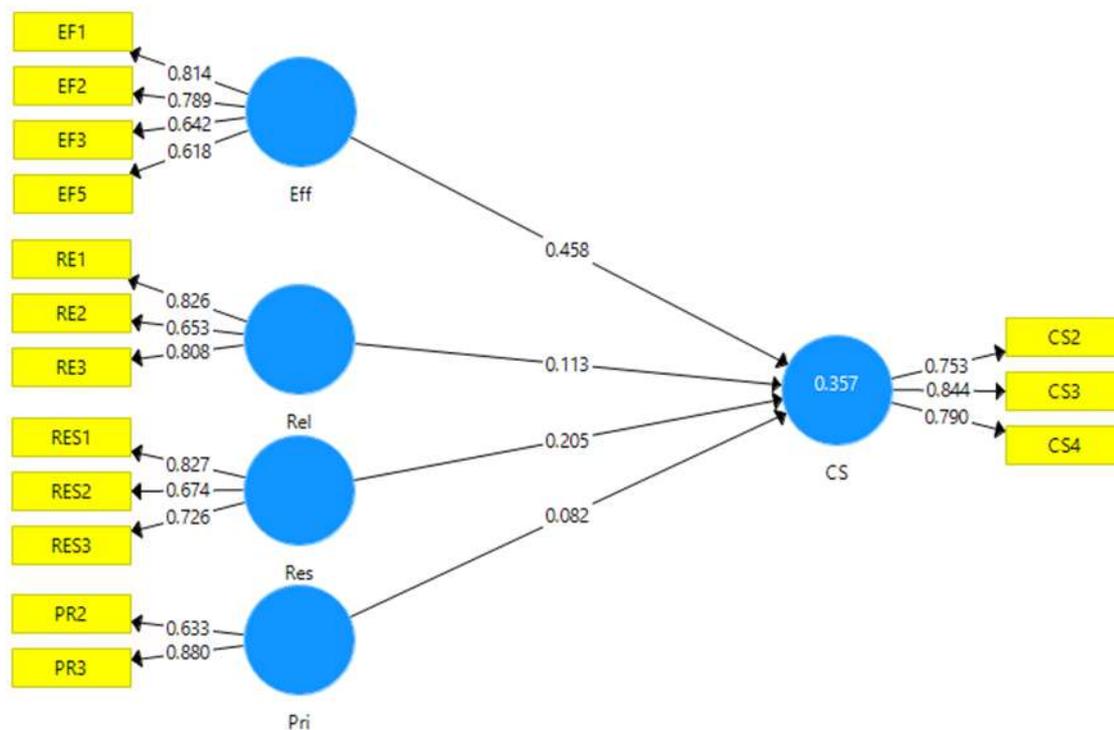


Figure 1 PLS Measurement Model

### Reliability

In this study, to evaluate the reliability of the questionnaire, three criteria of factor loading coefficients, Cronbach's alpha and composite reliability have been used that each is addressed in detail in the following and their results are interpreted and reported.

**Factor loading:**

Table 1. Factor loading coefficients of the items

Item No	Factor Loading	Item No	Factor Loading	Item No	Factor Loading
CS 2	0.753	Eff 3	0.642	Rel 1	0.826
CS 3	0.844	Eff 5	0.618	Rel 2	0.653
CS 4	0.790	Res 1	0.827	Rel 3	0.808
Eff 1	0.814	Res 1	0.674	Pri 2	0.633
Eff 2	0.789	Res 1	0.726	Pri 3	0.880

Given that the proper value of factor loadings coefficients is equal to or greater than 0.4 (Hulland & Business, 1999) and according to the results in Table 1 and the obtained values for all questions, it can be said that the reliability is good.

**Cronbach's alpha**

In this study, Cronbach's alpha related to each y variables has been separately calculated whose results are seen in Table 2.

Table 2. Cronbach's alpha coefficients for each variable.

Variable	Cronbach's alpha coefficient
CS	<b>0.716</b>
Eff	<b>0.688</b>
Pri	<b>0.318</b>
Rel	<b>0.657</b>
Res	<b>0.614</b>

Given that the proper value of Cronbach's alpha is Alpha values of more than 0.5 are generally considered acceptable and values of more than 0.6 satisfactory. And as it is seen in Table 2, the value obtained for all variables is more than 0.6. Therefore, it can be said that the reliability is good.

**Composite reliability**

Composite reliability for each variable is observed in Table 3.

Table 3. Composite reliability for each variable.

Variable	Composite reliability
CS	0.839
Eff	0.810
Pri	0.735
Rel	0.809
Res	0.788

Given that the proper value of composite reliability is 0.7 (Nunnally, 1978) ,and according to the results of Table 3, the value obtained for all variables is more than 0.7, therefore, it can be said that the reliability is good.

**Convergent validity**

Average Variance Extracted (AVE) from the variables is applied to evaluate convergent validity. AVE for each study variable is given in Table 4.

Table 4. Average variance extracted from the variables.

Variable	Average Variance Extracted (AVE)
CS	0.634
Eff	0.520
Pri	0.587
Rel	0.587
Res	0.555

Given that the proper value of AVE is 0.4 (Magner, Welker, & Campbell, 1996) and according to the results of Table 4, the value obtained for all variables is more than 0.5, therefore, it can be said that the convergent validity is good.

### Predictive Relevance ( $Q^2$ )

Models with acceptable fitness for the structural part should have the predictive power of indexes related to endogenous structures of the model. On the severity of the predictive power of the model in endogenous structures. The following 0.02, 0.15 and 0.35 indicating the weak, medium and strong predictive power of a structure, respectively for the indicators of the structure (Henseler, Ringle, & Sinkovics, 2009). Table 5 shows the values of  $Q^2$  for each endogenous variable of the model.

Predictive Relevance ( $Q^2$ )	0.185
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According to the values obtained for  $Q^2$  for endogenous variables of internet banking service quality and customer satisfaction equal to 0.185, the medium capabilities of internet banking service quality and customer satisfaction are confirmed.

### Discriminant Validity

Table 6. Discriminate Validity test based on fornell-larcker Criterion

	CS	Eff	Pri	Rel	Res
CS	<b>0.797</b>				
Eff	<b>0.541</b>	<b>0.721</b>			
Pri	<b>0.151</b>	<b>0.057</b>	<b>0.766</b>		
Rel	<b>0.322</b>	<b>0.417</b>	<b>0.093</b>	<b>0.766</b>	
Res	<b>0.294</b>	<b>0.154</b>	<b>0.161</b>	<b>0.048</b>	<b>0.745</b>

Table 6. Showed that the values of the square root of AVE for each construct are higher in that particular diagonal and it indicates good discriminant validity.

Structural model

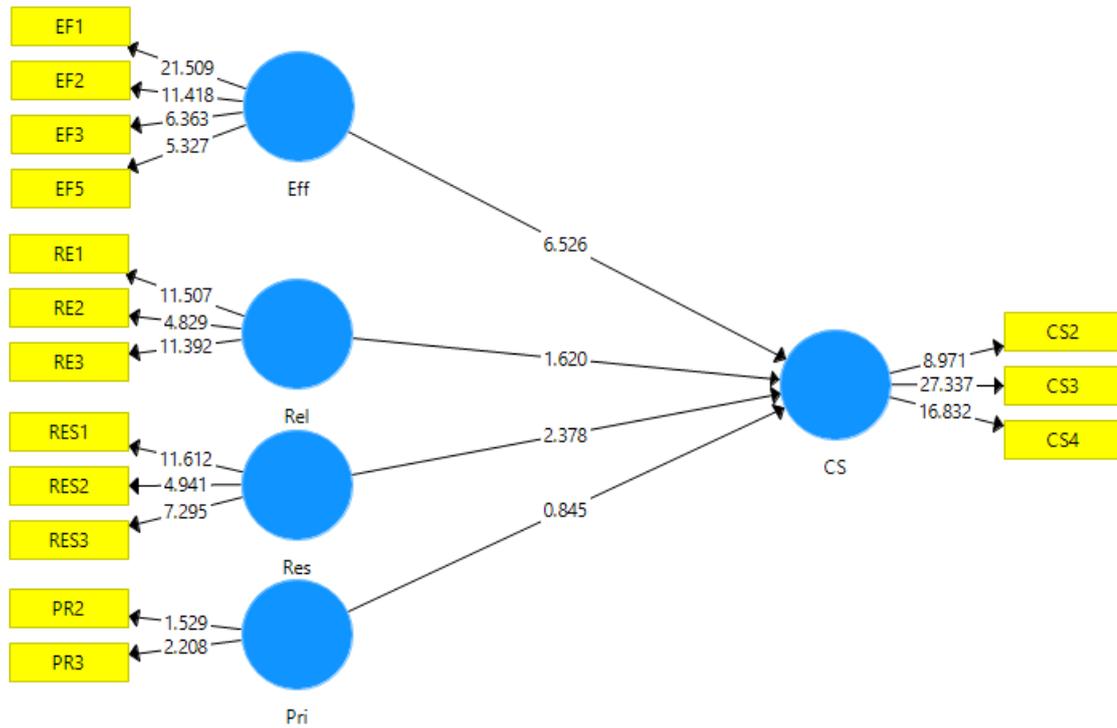


Figure 2 PLS Structural Model

In the structural model of PLS analysis, hypotheses testing can be done. Here the path coefficient, t statistics, average estimate and error are considered. Table 7 showed the structural model for hypothesis testing. Figure 2 also shows the PLS structural model output.

Table 7: Structural model output

	Hypotheses	Path Coefficient	T-Value	P-Value	Level of Significance
Eff -> CS	H1	0.458	6.526	0.000	****
Pri -> CS	H2	0.082	0.845	0.400	*
Rel -> CS	H3	0.113	1.620	0.108	**
Res -> CS	H4	0.205	2.378	0.019	***

Hypothesis Testing and Results

First hypothesis:

There is a relationship between Efficiency of online service quality and customer satisfaction.

The findings of table 4-11 indicate that the coefficient of the efficiency effect is meaningful on customer satisfaction (0.458) the corresponding t statistics is 6.526 (P<0.000). Therefore the services quality has a positive and meaningful effect on financial performance, and the first hypothesis is confirmed.

Second hypothesis:

There is a relationship between Reliability of online service quality and customer satisfaction.

The findings of table 4-11 indicate that the coefficient of **Reliability** is meaningful on the customer satisfaction (0.113) the corresponding t statistics is a 1.620 at level of  $p < 0.108$ . The second hypothesis is rejected.

### **Third hypothesis:**

**There is a relationship between Responsiveness of online service quality and customer satisfaction.**

The findings of table 4-11 indicate that the coefficient of the responsiveness effect is meaningful on customer satisfaction (0.205) the corresponding t statistics is 2.378 at the level of  $p < 0.019$ . Therefore responsiveness has a positive and meaningful effect on customer satisfaction, and the third hypothesis is confirmed.

### **Fourth hypothesis:**

**There is a relationship between the privacy of online service quality and customer satisfaction.**

The findings of table 4-11 indicate that the coefficient of privacy of online service quality effect is meaningful on customer satisfaction (0.082) the corresponding t statistics is a 0.845 at level of  $p < 0.400$ . Therefore the fourth hypothesis is rejected.

### **Conclusion**

The purpose of this study was to investigate the relationship between of E- banking service quality on customer satisfaction in the Jordanian Banking sector. In particular, four hypotheses were postulated. To test the proposed hypotheses, data were collected from commercial banks in Jordan. The empirical results supported the two posited research hypotheses in a significant way (H1 and H3). While two hypotheses (H2 and H4), although was insignificant.

Important to note about the study findings is the fact that Efficiency of online service quality has the strongest influence on customer satisfaction and followed by Responsiveness of online service quality on customer satisfaction. The paradox is on Reliability of online service quality and privacy of online service quality which was found to be negatively related to customer satisfaction.

### **6.3 Limitations and Future Research**

Although this study makes significant contributions to both academia and practice, it was limited in some ways, and therefore some future research avenues are suggested. First, the data were gathered from commercial banks in Jordan, and the sample size of 150 is relatively small. A larger sample size is suggested to be used in future studies by researchers. Therefore, future studies may be conducted by using data from Islamic banks sector. Other researchers who are interested in E-banking can improve another model that consist same variables used in this study but in different sectors such as service sector or industrial and telecommunication rather than focusing on the financial sector.

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