

Online Service Quality and Customers' Satisfaction: A Case Study of the selected Commercial Banks in Riyadh (Saudi Arabia)

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Abstract

Online banking is one of the key features of today's world modern banking system. This system enhances the performance of the banking industry and helps their customers in reducing their transaction costs. This study aims to investigate the relationship between online banking services provided by different banks in Riyadh (Saudi Arabia) namely; Al- Rajhi bank, National commercial bank and Riyadh bank- Riyadh. The different dimensions such as tangibles, reliability, responsiveness, and empathy have been taken as determinants of customer satisfaction. These dimensions are based on the SERVQUAL model proposed by Han and Beak (2004). The reliability and validity of the dimensions have been investigated by Cronbach's Alpha test. The observed value of this test is 0.74 which represents a good scale of internal consistency. Descriptive statistics and dichotomous logistic regression model are used to investigate the relationship between each individual dimension and customer satisfaction. The sample size of the respondents is 100 customers. Purposive sampling technique was used to collect information from only those clients of the corresponding banks who are familiar with online banking services, the selected customers are the students of the selected universities of the Kingdom of Saudi Arabia located in Riyadh. These universities are namely: King Saud University, Imam Muhammad Bin Saud Islamic University and Prince Sultan University. The study reveals that all the selected dimensions; tangibles, reliability, responsiveness and empathy are the significant determinants of overall satisfaction of the customer but with diverse significance levels. The study further reveals that tangibles and reliability are most influential dimensions to enhance customers' overall probability of satisfaction as compared to the rest of dimensions proposed in this study.

Keyword: Online banking, Customer satisfaction, Islamic banks

JEL classification codes: M39, O32

1. Introduction

Web-oriented services have brought novel changes in all sectors of a modern economy particularly, in the banking sector. Perhaps the banking industry is more competitive, innovative and customer oriented than any other industry in the services sector. Online banking services are becoming an attractive alternative to visit service outlets or phoning call centers for increasing the number of customers (Kenova P, 2006). E- service technology facilitate both; stakeholders and clients in different ways and channels. Internet banking helps banks to build and maintain close relationships with their customers, reduces operating and fixed costs and achieves more efficient and enhanced financial performance (Rod M, 2008). On the other hand, the customers also benefit from this technology having easy access to financial services and reduction in transaction cost (Yang, 2004). The provision of online quality services to the banking customers plays a vital role to maintain or enhance customer satisfaction. The facility of internet banking to the customers is considered as a competitive necessity. The banks assure quality online services to their customers in order to enable them to enjoy the latest wide range of financial facilities with minimum transaction cost (Rod M A. N., 2008). The success or failure of any business entity including the banking sector depends on their corresponding customers' satisfaction. Increasing customer satisfaction will yield material benefits such as higher market shares, more profit and non-material benefits such as good reputation, confidence of the customers, good will etc.

The study aims to investigate the relationship between online banking services provided by different banks in Riyadh (Saudi Arabia) namely; Al- Rajhi bank, National commercial bank and Riyadh bank- Riyadh to gauge how efficiently these banks provide online banking facilities to their corresponding clients? Different dimensions such as; tangibles, reliability, responsiveness, and empathy have been taken as determinants of customer satisfaction. These dimensions are based on the SERVQUAL model proposed by (Han Sang, 2004).

There is no principal difference between conventional and internet banking except accessing and making

transactions of financial matters through your computer rather than paper completed transactions. Internet banking facilitates you in performing multiple financial tasks such as checking your balance, payment of utility bills, money transfers, online purchasing and investment etc. This ease has attracted many customers and has enhanced customer satisfaction across the world.

2. Material and Methods

In order to investigate the relationship between online service quality and customer satisfaction, the theoretical framework has designed in the context of the SERVQUAL model originally developed and modified by (Zeithaml, 1990). We have used the modified version of the SERVQUAL model refined by (Han Sang, 2004). This model suggests four important dimensions of service quality. These are namely; Tangibles, reliability, responsiveness, and empathy. The following table gives a detail description of these dimensions.

Table 1: Modified dimensions of SERVQUAL model and their description

SERVQUAL Dimensions	Description of dimension
Tangibles	The online bank has up-to-date equipment. Easiness and availability of information on the bank website.
Reliability	Involves the correct technical functioning of the site and the accuracy of service promises (delivering when promised) and product information
Responsiveness	Quick response and the ability to get help if there is a problem or question
Empathy	Provision of caring and individualized attention to customers provided by call centers or web administrators.

Source: (Han Sang, 2004)

2.1 Nature of Data and its Description

The study uses a purposive sampling technique because the data is collected from all those clients who are familiar with the online banking system. Therefore, this study takes into consideration only online banking customers while the rest of the customers are lying outside the scope of the study.

The selected customers are the students of the selected universities of the Kingdom of Saudi Arabia located in Riyadh. These universities are namely: King Saud University, Imam Muhammad Bin Saud Islamic University and Prince Sultan University. The data collected from the students through a detailed questionnaire

developed by (Han Sang, 2004) to investigate online banking services and customer satisfaction¹.

The questionnaire covers four dimensions of online banking services; Tangibles, Reliability, Responsiveness and Empathy. Four to five questions, related to each dimension, were asked from the respondents. The measurement scale of the questions was ordinal scale and thus the responses of the respondents were ordered from 1-5 (1=strongly disagree, 5=strongly agree).

2.2 Analytical Techniques

A set of analytical techniques has been used to investigate the relationship between online banking services available to customers and customers' satisfaction in Saudi Arabia.

Firstly, the reliability and validity of the dimensions have been investigated by Cronbach's Alpha test. Internal reliability can be tested by using alpha (Cronbach). It measures the extent to which the responses are collected for a given item correlate highly with each other (Kenova P, 2006; Sidat, 2008)

Cronbach's α is defined as;

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \sigma_{Y_i}^2}{\sigma_X^2} \right) \quad (1)$$

where K is the number of components (K -items or *testlets*), σ_X^2 the variance of the observed total test scores,

and $\sigma_{Y_i}^2$ the variance of component i for the current sample of persons.

Secondly, As the data is collected on the ordinal scale therefore Median and Mode are the best measures of calculating central tendency of the data.

Thirdly, we have used the binary logistic model to show that how the probability of overall satisfaction changes given that a change in the selected dimensions occurs. The overall satisfaction has been proxied by median score.

¹ For detail of questionnaire please see appendix-I

If a respondent scores four or more in at least two dimensions then this situation is considered as overall satisfaction and vice versa.

Logistic model is thus specified as:

..... (2)
Where; are odd ratios in favor of an increase in individual respondents' overall satisfaction to the probability that an individual overall satisfaction has not increased.

X_1 = Age of the customers

X_2 = Median tangible score of the customers.

X_3 = Median reliability score of the customers.

X_4 = Median responsive score of the customers.

X_5 = Median empathy score of the customers.

3. Analysis and Discussion

The Cronbach's α result is reported here to show the reliability of different dimensions we proposed for investigating the relationship between online banking services and customer satisfaction.

Table-1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.741	0.743	18

Source: Author's own calculation (SPSS 19 version estimation)

Chronbach's Alpha value is 0.741 which represents a good level of internal consistency of the scale for all eighteen numbers of questions. Ideally, the Cronbach alpha coefficient of a scale should be 0.70 and above (Pallent, 2007).

Table-2: Item-Total Statistics²

Dimension	Questions	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Tangibility	Q1	67.7250	41.589	.314	.503	.730
	Q2	67.5000	42.205	.409	.620	.725
	Q3	67.8500	42.592	.254	.420	.734
	Q4	67.8500	41.464	.350	.529	.727
	Q5	68.0000	40.615	.375	.498	.724
Reliability	Q6	67.9500	41.741	.297	.657	.731
	Q7	67.6750	42.225	.288	.519	.732
	Q8	67.7250	41.999	.307	.424	.730
	Q9	67.7250	41.897	.259	.636	.735
	Q10	67.7500	42.551	.230	.597	.737
Responsive ness	Q11	67.6500	40.131	.413	.559	.721
	Q12	67.7250	41.333	.322	.390	.729
	Q13	67.7500	40.910	.338	.699	.728
	Q14	67.9500	40.459	.317	.476	.730
Empathy	Q15	68.0000	42.410	.240	.326	.736
	Q16	67.7000	42.010	.336	.410	.728
	Q17	68.2250	38.846	.404	.378	.721
	Q18	67.8500	41.669	.284	.481	.732

Source: Author's own calculation (SPSS 19 version estimation)

This table represents the statistics for relationships between individual items and the whole scale. Column 3 and 5 are the most important calculations for the establishment of a relationship between variables. Corrected item-total correlations are the correlations between scores on each item and the total scale scores. If the scale is internally consistent, you would expect these correlations to be reasonably strong. The final column represents that what Cronbach's alpha would be if we deleted an item and re-calculated it on the basis of the remaining items. We can observe that removal of any question would result in a lower Cronbach's alpha.

² Questions related to different dimensions have been assigned different colors.

Therefore, we would not want to remove any of these questions. Cronbach's alpha simply provides you with an overall reliability coefficient for a set of variables, e.g. questions.

Next, we calculate descriptive statistics of the proposed dimensions to investigate the average behavior of the respondents regarding their overall satisfaction towards the online banking facilities in Riyadh (Saudi Arabia). As the data is collected on the ordinal scale therefore Median and Mode is the best measures of central tendency, the range and Inter Quartile Range (IQR) are the best measures of dispersion.

Taking median and mode for each dimension to reveal the respondents' satisfaction about the online banking facility in Riyadh (Saudi Arabia), Table-3 reveals that overall median for each dimension is 4. This reveals that respondents are satisfied with the online banking facilities provided by the commercial banks in Riyadh. These results provide an insight into the updated facilities, use of modern technology, the efficiency of the banking industry in Riyadh in particular and Saudi Arabia in general. Table-3 shows descriptive statistics of respondents' responses.

	Tangi bility	Reliab ility	Respo nsiven ess	Empathy									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Mean	4.0	4.4	4.0	3.9	4.0	3.9	4.1	4.1	4.1	3.9	4.1	4.0	4.0
Stand ard Error	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Media n	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Mode	4.0	4.0	5.0	3.0	5.0	3.0	4.0	4.0	5.0	3.0	5.0	5.0	4.0
Stand ard Deviat ion	0.8	0.6	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.6
Sampl e Varia nce	0.7	0.3	0.7	0.7	0.8	0.7	0.6	0.6	0.8	0.7	0.7	0.7	0.4
Kurto sis	-1.3	1.6	-1.5	-1.5	-1.3	-1.4	-1.4	-0.8	-1.2	-1.4	-1.0	-1.6	1.0
Skew ness	0.0	-0.6	-0.1	0.2	-0.2	0.0	-0.1	-0.3	-0.3	0.1	-0.4	0.0	-0.3
Range	3.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	2.0	3.0
Mini mum	2.0	2.0	3.0	3.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0	3.0	2.0

Maximum	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Sum	392	437.0	400.0	387.0	397.0	391.0	403.0	406.0	401.0	388.0	405.0	396.0	399.0
Count	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0

Table-3 Descriptive statistics of respondents' responses³

Source: Author's own calculation (Excel sheet 2010)

³ Questions related to different dimensions have been assigned different colors.

L Poistic regressions estimates are reported along with other statistics are reported in table-4.

Table-4: Logistic Regression Estimates

	Bi	S.E	Wald-test	df	Sig.	Exp(B)
Age	-0.71	.164	.186	1	.666	0.4932
Tangibles	2.467	.986	6.257	1	.012	11.782
Reliability	2.332	.840	7.699	1	.006	10.297
Responsiveness	1.251	.781	2.567	1	.109	3.495
Empathy	.975	.584	2.791	1	.095	2.652
Constant	-22.917	8.360	7.515	1	.006	.000

Source: Author's own calculation (SPSS 19 version estimation)

The binary logistic regression estimates reveal an overall positive relationship between online facilities provided by the banking industry in Saudi Arabia and customers' satisfaction. All slope coefficients are positive except age of the customers. In order to interpret the logistic estimates, it is oftenly preferred by the econometrisions to take a anti-log of the estimates for meaningful interpretation of the results. The effect of age on overall satisfaction of customers is negligible (0.4932). Tangibles dimensions are the most important determinants of customer overall satisfaction. If the median tangible dimensions increase by one unit then the probability of customers' overall satisfaction increases by 11.78 times. Similarly, reliability dimensions are the 2nd important determinants of customers' overall satisfaction. If the median reliability dimensions increase by one unit then the probability of overall customer satisfaction increases by 10.29 times. In the similar way, median reliability and responsiveness increases by one unit the probability in favor of overall satisfaction increase by 3.45 and 2.652 respectively. All dimensions are statistically significant at 99 percent confidence level except reliability and responsiveness.

4. Conclusion and Findings

The study aims to investigate the relationship between online banking services provided by different banks in Riyadh (Saudi Arabia) namely; Al- Rajhi bank, National commercial bank and Riyadh bank- Riyadh. The study uses three empirical investigation techniques e-g, Chronbach's Alpha statistics for internal scale of consistency of various dimensions proposed, Descriptive statistics especially, median and mode to reveal the average satisfaction of the customers and finally, the binary logistic regression model to predict changes in overall level of satisfaction given that a

median change in any dimension. The results of the study favor the previous important studies such as; (Yang, 2004; Yang Z. J., 2004; Mobarek, 2007; Nupur, 2010).

The study reveals the following important findings:

1. The Chronbach's Alpha statistics for internal scale of consistency was used. The value of this test is reported as 0.741 which represents a good scale of internal consistency and relevancy of all questions related to the overall level of satisfaction.
2. The overall median score, for all customers, is 4 which represent an overall level of satisfaction of customers regarding the various online facilities provided by the selected banks in Riyadh.
3. The empirical results of logistic regression reveal that age of the customers does not significantly influence their corresponding overall level of satisfaction. The results further reveal that all the selected dimensions; tangibles, reliability, responsiveness and empathy are the significant determinants of overall satisfaction of the customer but with diverse significance levels.
4. The study further reveals that tangibles and reliability are most influential dimensions to enhance customers' overall probability of satisfaction as compared to the rest of dimensions proposed in this study.

5. Recommendations and Policy Implications

Based on the findings of the study, the study summarizes the recommendation of the study as;

1. Diverse online banking facilities are the important determinants of overall customers' satisfaction therefore customers' oriented banks should make note this phenomenon to increase their customers' circle by providing more reliable, innovative online facilities to their customers.
2. Dimensions such as tangibles and reliability among others are the most important determinants of customers' overall level of satisfaction. This phenomenon can be used by the banking industry in Riyadh to accelerate the growth of their customer satisfaction by focusing on all other dimensions with a particular focus on tangibles and reliability dimensions of customer satisfaction.

6. Limitation of this study

The findings and recommendations of this study are based on the respondents' perception. The information about the online service quality and customer satisfaction, regarding the commercial banks in Riyadh is collected from 100 students. The sample is considerably low and thus the result can't be generalized for the entire commercial banks operating across the Saudi Arabia.

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Appendix-1: Questionnaire

Dimensions	Questions
Tangibles	Q1) XYZ online bank has up-to-date equipment & technology. Q2) The website of the XYZ online bank is visually appealing. Q3) The website of the XYZ online bank makes you find information easily. Q4) The website of the XYZ online bank provides you with valuable information. Q5) The website of the XYZ online bank is easy to use and navigate.
Reliability	Q6) When XYZ online bank promises to do something by a certain time, it does so. Q7) When there is a problem; XYZ online bank shows a sincere interest in solving it. Q8) XYZ online bank performs the service right first time. Q9) XYZ online bank provides its services at the time it promises to do so. Q10) XYZ online bank insists on error-free records.
Responsiveness	Q11) Administrators of XYZ online bank tell you exactly when the service will be performed Q12) Administrators of XYZ online bank give you prompt service. Q13) Administrators of XYZ online bank are always willing to help you. Q14) Administrators of XYZ online bank are never too busy to respond to your questions.
Empathy	Q15) XYZ online bank gives you individual attention. Q16) Helpdesks or call centers of XYZ online banks have operating hours convenient for all its customers. Q16) Help desks, call centers, and web administrators of XYZ online bank give your personal attention. Q17) Help desks, call centers, and web administrators of XYZ online bank have your best interests at heart. Q18) Help desks, call centers, and web administrators of XYZ online bank understand your specific needs