An Examination On E-Banking Service Quality And Its Significance On E-Satisfaction And E-Loyalty: An Asian Study

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Abstract: This research aims to explore the importance of e-service quality dimensions in an e-banking atmosphere by providing a review of how e-service quality perceptions have evolved through the continuing stream of change in banking technology. This paper also helps to ascertain the complex relationship between e-service quality, customer satisfaction and the customer loyalty amongst e-banking customers. Data were collected from an online survey, based on the responses of 376 online customers of different banks, the "Structural Equation Modelling" (SEM) techniques was used to test the "reliability and validity" of the suggested model. The analysis was performed on the service quality dimensions from the SERVQUAL scale. The study re-examines traditional service quality in the e-banking era and the findings are important to have a better understanding of customers' perception of service quality of internet banking and consequently on how to improve their satisfaction with respect to the online aspects of service quality.

Keywords: SERVQUAL, Service Quality, E-Banking, Customer services quality, Customer satisfaction.

1. Introduction

A substantial amount of growth has been noticed in electronic or e-banking transactions in Asian countries. Although the US, the UK, Japan and other developed countries are quite accustomed to e-banking, it is still relatively new in developing countries such as India, Cambodia, Vietnam and other Asian countries (Bashir & Madhavaiah, 2014). As the popularity of internet banking has been growing in Asia and e-commerce markets have become well known, it gives banks the leverage to attract more e-banking users.

Among the Asian countries, China, India and Malaysia have recorded exponential rise in e-banking. In China, "e-banking subscribers went up by 20.5% to 429 million in 2016" (The Asian Banker, 2017). Similarly, statistics from Bank Negara Malaysia shows that "online banking is still dominant channel for Malaysians" to perform financial transactions with an 85.1% e-banking penetration (Fong, 2018). In India, "the number of users opting for e-banking is expected to double to reach the 150 million marks by 2020, from the current 45 million active urban e-banking users" (Ani, 2017).

The trend of electronic banking (e-banking) makes it a competitive advantage for banks to interact with their valued customers. According to Wolfinbarger & Gilly (2003), due to the experience and success in using e-banking, banks have started to analyse the main reasons behind their achievement. Eventually, it has become obvious to the banks that it is the quality of e-services rather than mere presence of a website that plays a major role behind it. Overall customer evaluation of delivery and other services in the virtual banking environment can be termed as service quality (Parasuraman et al., 2005).

The quality of service is not easy to describe as it is an intangible and abstract concept (Cronin & Taylor, 1992). For measuring clients' perception of service quality, the SERVQUAL model introduced by Parasuraman et al. (1988) has been widely used. There are 5 dimensions of the SERVQUAL model, namely "tangibility, reliability, responsiveness, assurance and empathy". Moreover, for the past few years, the quality of service for e-banking settings has been measured by utilizing the SERVQUAL model (Li et al., 2002; Negash et al., 2003; Kuo, 2003). Previous research works on e-service quality measurement concentrated simply on applying the SERVQUAL model by rephrasing its core measuring items.

However, "service researchers need to pay more attention to customer evaluations of e-banking services, because methods of measuring service quality differ between physical and online environment" (Rahman et al., 2018). But the need of current times is to revise the "SERVQUAL scale items" in the context of online shopping (van Riel et al., 2001).The present study's objective is to identify the impact of e-service quality on e-banking by using a revised SERVQUAL model.

Santos (2003) stressed out the need to conduct further research on the impact of e-services on customer responses, such as the relationships among the perceived "service quality, customer satisfaction and purchase intentions". The research on e-banking is crucial for both financial researchers and bank managers. Even though past studies have emphasized on e-service quality for effective e-commerce (Janda et al., 2002), there is still a lack of research on the relationship among e-service quality dimensions in predicting customers' satisfaction in e-banking.

With the help of a modified SERVQUAL scale in e-banking, this study intends to develop a research model to test the impact of "e-service quality dimensions" on the "overall service quality, customer satisfaction and customer loyalty". Based on the responses of 376 online customers of different banks, the "Structural Equation Modelling" (SEM) techniques were used to test the "reliability and validity" of the suggested model. The outcome is expected to become a meaningful resource for the bank managers as well for the e-banking researchers.

1.1. Significance and objectives of this research

A literature survey in the field of Internet banking revealed that "in Asia a limited number of studies have been conducted, out of which none has attempted to study the perception of Internet banking users in Asia" (Gerard, 2003). The obvious questions may arise in this regard about the key dimensions of e-banking websites and the impact of this new banking environment made increasingly popular through e-services on customers' satisfaction. These queries have not duly been addressed in the Asian e-banking literature. Thus the general aim of this paper is to test the effect of service quality in the Asian e-banking sector.

The paper proceeds in the following manner. First, the theoretical background and the relevant literature are reviewed. Next, the methodology is discussed. Then the analysis of results and discussion are provided followed by a conclusion including the study limitations and the implications and future directions for marketers, researchers and managers.

2. Literature Review

2.1 E-service quality

E-service quality can be denoted as the customer perception relating to the quality of online services (Gerard, 2003). Recently the impact of e-service quality upon the consumption decision has been applied to e-banking (Yang & Jun, 2002). To add more, Jiayuan et al. (2018) have used service quality measures to examine the quality of auction sites, and Amin (2016) studied the satisfaction of e-banking channels. Pasha and Razashah (2018) found that "service quality has a positive impact on customer satisfaction and loyalty".

E-banking has several sub-processes. These consist of navigation, information searching, e-transactions, and interactions with customers. It is not possible for the customers "to evaluate each sub-process during a single visit to a bank website" (van Riel et al., 2001). Due to the convenience in performing the transactions compared to the traditional banking, e-service quality is now a major factor for banking success (Santos, 2003). This makes the online customers confident of a bank's higher service quality.

2.2 Dimensions of service quality

Parasuraman et al. (1988) hypothesized service quality by utilizing "a multi-item scale" named the SERVQUAL model. The model consists of 5 dimensions. These are "tangibility" (visible amenities), "reliability" (ability to deliver the guaranteed service consistently and precisely), "responsiveness" (inclination to assist clients and deliver rapid service), "assurance" (knowledge of employees which invokes clients' trust), and "empathy" (consideration for clients).

SERVQUAL scale is widely used "to measure information system service quality" (Iwaarden et al., 2003), and thus includes "e-commerce system service quality" (Sahadev and Purani, 2008). The scale has been employed in various contexts of service. For example, Yoo and Donthu (2001) have used it for web-based services; Lee and Lin (2005) have implemented it on internet retailing; Herington and Weaven (2009) used it in electronic banking. Majority of those researchers have emphasized on revising the items of the scale.

Parasuraman and Grewal (2000) emphasized on further research to investigate if "the definitions and relative importance of the SERVQUAL dimensions change when customers interact with technology rather than with service personnel". Similarly, many past researchers have stressed on reformulating the SERVQUAL scale items to effectively use it in online platforms (Santos, 2003). In the same line, the present study too has reformulated the SERVQUAL model to complement to the quality aspects e-banking. Its aim is to:

a) Modify the SERVQUAL model instrument based on relevant literature and in the context of e-banking, and

b) Determine the impact of e-service quality dimensions towards customers' "overall service quality, satisfaction and loyalty".

3. Research Model and Hypotheses

As the available literature proves "insufficient to provide a conceptual model of e-service quality, empirical research is required to clarify the detailed determinants of e-service quality and their influence on customer perceptions of online stores" (Rahman et al., 2018). The present study offers e-service quality dimensions such as Information, Responsiveness, Accessibility, Security and Site aesthetics (Website Design) and also develops a convincing research model for reflecting upon customers' perceptions of e-banking. As the model postulates it, the "e-service quality dimensions" are related with the two "performance measures" of Customer Satisfaction that is, "Overall Service Quality" and "Customer Loyalty" (see Figure 1).
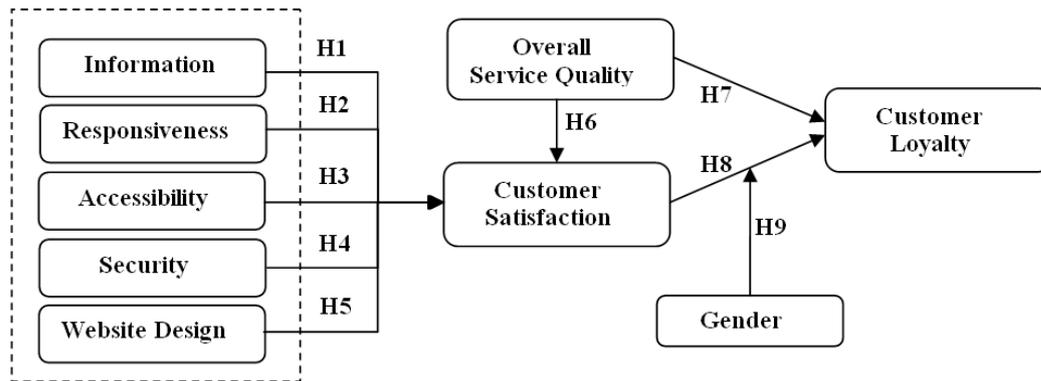
Figure 1: Conceptual Model

3.1 Dimensions of e-service quality

The present study has used the modified SERVQUAL scale to establish e-service quality dimensions through Information, Responsiveness, Accessibility, Security and Site aesthetics (Website Design). The relationship of these dimensions with "Overall Service Quality and Customer Satisfaction" is discussed below and the respective hypotheses are provided accordingly.

3.1.1 Information

According to Harris and Goode's (2004) research, websites for airline booking flights are more information sensitive. These findings show a stronger relationship between online client satisfaction and online client loyalty in the case of information-intensive online services. Online customers are easily dissatisfied if they cannot access all the things they desire on Internet. Due to this, online shops need to have a vast collection of products in their catalogues and their relevant information needs to be accurate (Dayal et al., 2002). In addition, a client's behaviour can be influenced by advertising, as it might offer information to lead clients' decisions of purchase. Cengiz et al. (2007) studied behaviour of bank clients in Turkey and discovered that effective publicity educates customers through the provision of information and this may lead to increased loyalty amongst bank's clients and also support to keep clients.

The following hypothesis is proposed in this regard:
H1. Information has a significant association with customer satisfaction in e-banking.

3.1.2 Responsiveness

It would be an immense competitive leverage for banks if they can develop a system that provides rapid responses to its client requests (Roth & van der Velde, 1991a; 1991b). Similarly, for the responsiveness aspect, Karjaluoto et al. (2002) state that e-banking clients endorsed that the response of e-banking to their needs was much faster than other conventional banking methods, for example, payment of bills online. Yavas et al. (1997) found that "tangibles, responsiveness and empathy to be significant predictors of consumer satisfaction in Turkey".

The following hypothesis is thus proposed:
H2. Responsiveness has a significant association with customer satisfaction in e-banking.

3.1.3 Accessibility

One of the commonly stated important factors why clients prefer to make online purchase is the significant amount of available information of the products, its organization and accessibility (Wolfinbarger & Gilly, 2001). An accessible website is an online website that is adequately flexible to be used by all of these supported technologies (Slatin & Rush, 2003).Telephone, internet and mobile have become "major communication service channels, making them important for banks' survival through the advantages of convenience and anytime anywhere service access" (Sundarraj & Wu, 2005). The "site organisation" factor includes items from Parasuraman et al.'s (2005) original scale "concerning the ease of access to the web site due to good web site organisation". It was also found that "accessibility is the foremost important aspect in determining e-customer satisfaction, while security is also important determinant of

behavioural intentions" (Ramseook-Munhurrun & Naidoo, 2011)

The following hypothesis thus is proposed:
H3. Accessibility has a significant association with customer satisfaction in e-banking.

3.1.4 Security

The prime degree due to which clients can truly trust the service providers to keep their commitment and perform for the benefit of the client is the aspect of security (Lee & Moghavvemi, 2015). In Hong Kong, 4 dimensions were found when Siu and Mou (2005) studied the "customers' service quality perceptions" in the case of e-banking. The discovered dimensions were credibility, efficiency, handling problems and security. There is assumed to be a "direct connection between security and satisfaction" and an "indirect connection amongst security, trust and commitment" (Chung & Shin, 2010).

The following hypothesis thus is proposed:
H4. Security has a significant association with customer satisfaction in e-banking.

3.1.5 Website design (site aesthetics)

The design or aesthetic layout of a webpage is known as web design and corresponds with the aspects of studies done previously (Aladwania & Palvia, 2002; Yang et al., 2004; Yang & Fang, 2004). The design of the e-banking website can further aid clients in the case of accessibility and usability while performing bank transactions online. A website's quality of service refers to the "technical functionality" of it, meaning the degree of availability and ability to function as necessary. (Zeithaml et al., 2002; Parasuraman et al., 2005). A few researchers claim that the characteristics of websites are the main determinant of e-customers satisfaction (Anderson & Swaminathan, 2011). Therefore, e-tailers (e-retailers) are recommended to enhance their web-site design as it is a direct channel communication with the customers.

The following hypothesis thus is proposed:
H5. Website Design has a significant affiliation with customer satisfaction in e-banking.

3.1.6 Customer satisfaction

Smith and Houston (1982) claim that "satisfaction with services is related to confirmation or disconfirmation of expectations". Evans and Lindsay (1999) stated that "customer satisfaction results from the provision of goods and services that meet or exceed customer needs". Customer satisfaction is "recognized as being highly associated with 'value' and is based, conceptually, on the amalgamation of service quality attributes with such attributes as price" (Athanassopoulos, 2000, p. 192).

In the recent few years the perception of quality has evolved for bank clients; in current time the term quality means to improve and innovate constantly, maintain healthy relationships interms of service.

The following hypotheses are thus proposed:
H6. Customer Satisfaction has a significant affiliation with overall Service quality in e-banking.
H7. Overall Service quality has a significant affiliation with customer loyalty in e-banking.
H8. Customer Satisfaction has a significant affiliation with customer loyalty in e-banking.

3.1.7 Gender

The moderator for the structural relationships was found to be gender. It was further revealed that in the case of online brand trust, both men and women felt the same levels of trust for e-tail brand experience. Nonetheless, for clients who were male, it was the positive e-tail brand experiences that invoked their loyalty towards e-tail brands (Khan & Rahman, 2016). A study on customers of a prominent Taiwanese internet service provider-ISP indicates that for male clients the effects of individual alertness of security for both attitude and online purchase intentions is strong, but it is non-existent for clients who are female. But then again, in the case of "perceived ease of purchasing" online for attitude and intentions therein are stronger for females clients rather than males (Chiu et al., 2005).

The following hypotheses thus are proposed.
H9. Gender has a moderating effect between customer satisfaction and customer loyalty in e-banking.

4 Research Methodology

4.1 Measures

The items from Herington and Weaven (2009) and Ho and Lin (2010) were used to measure the

service quality of e-banking. Total five items were utilized from Ribbink et al. (2004), Herington and Weaven (2009), and Munhurrun and Naidoo (2011) to measure e-customer satisfaction. Another five items were adapted from Zeithaml et al. (1996); Ribbink et al., (2004), and Amin et al. (2013), to measure e-customer loyalty. The questionnaire items were modified to contexualise the e-banking service in Asia. The questionnaire was written in bi-lingual (English and Chinese) form. The questionnaires were pre-tested among the experts to clarify the structure and content. A five-point Likert scale from "strongly disagree (1)" to "strongly agree (5)" was utilized to measure "e-banking service quality" and "e-customer loyalty" as per the hypotheses.

4.2 Subjects and procedure

The study intends to develop a scale to measure the service quality of e-banking. In order to accomplish the objective, an online survey was conducted for collecting the data for this study. Online survey was considered as the appropriate medium as the sample respondents too belong to online users.

4.3 Sample

Using systematic random sampling by "picking every 100th individual customer in succession" from the bank's database, a total of 400 questionnaires were given out by email. The samples covered Asian online banking customers.

The survey link was sent to each individual in duration of four weeks, from April 25 until May 25, 2019. 376 questionnaires were returned, making the response rate 94 percent. Majority of the respondents were male with the females being only 34. Surprisingly majority of the respondents (55%) belong to 20-30 years old age group. This represents the preference of internet banking among the younger generation.

Table 1: Sample characteristics

Construct	Classification	Number	%
Gender	Male	247	65.69
	Female	129	34.31
Age	< 21	52	13.90
	21 – 30	206	55.08
	31 – 40	97	25.94
	above 40	19	5.08
Nationality	Indian	284	76.34
	Malaysia	64	17.20
	Chinese	24	6.45
Education Level	High school or less	18	4.84
	Diploma	43	11.56
	Bachelor	213	57.26
	Master	88	23.66
	PhD	10	2.69
Occupation	Student	134	36.02
	Service	109	29.30
	Self-employed	63	16.94
	Others	66	17.74
Note: n=376			

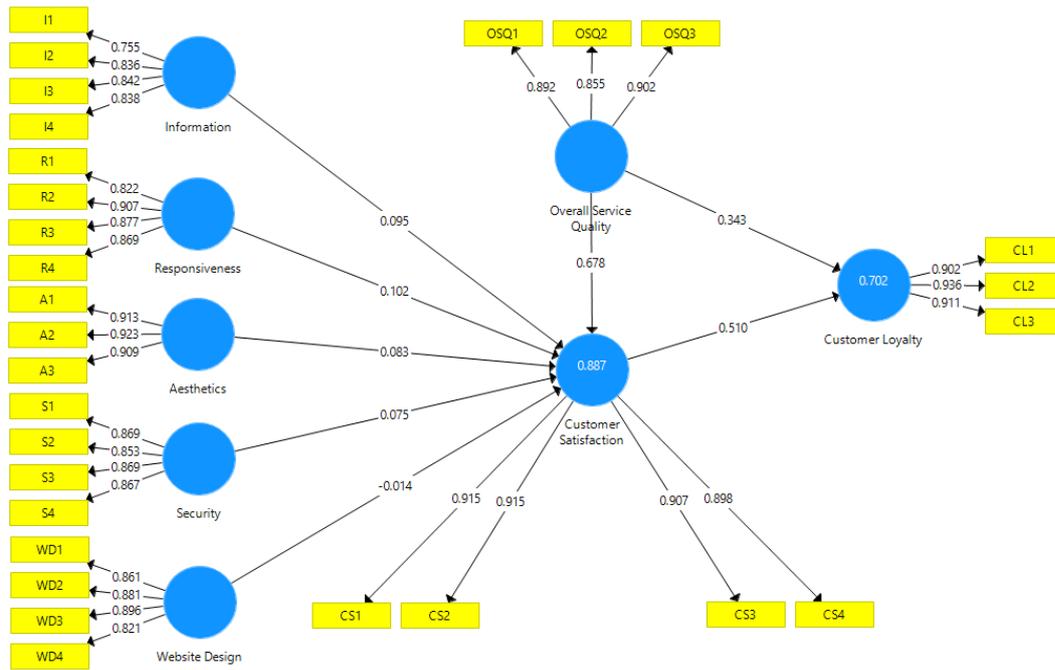## 5 Data analysis and Results

Direct Model
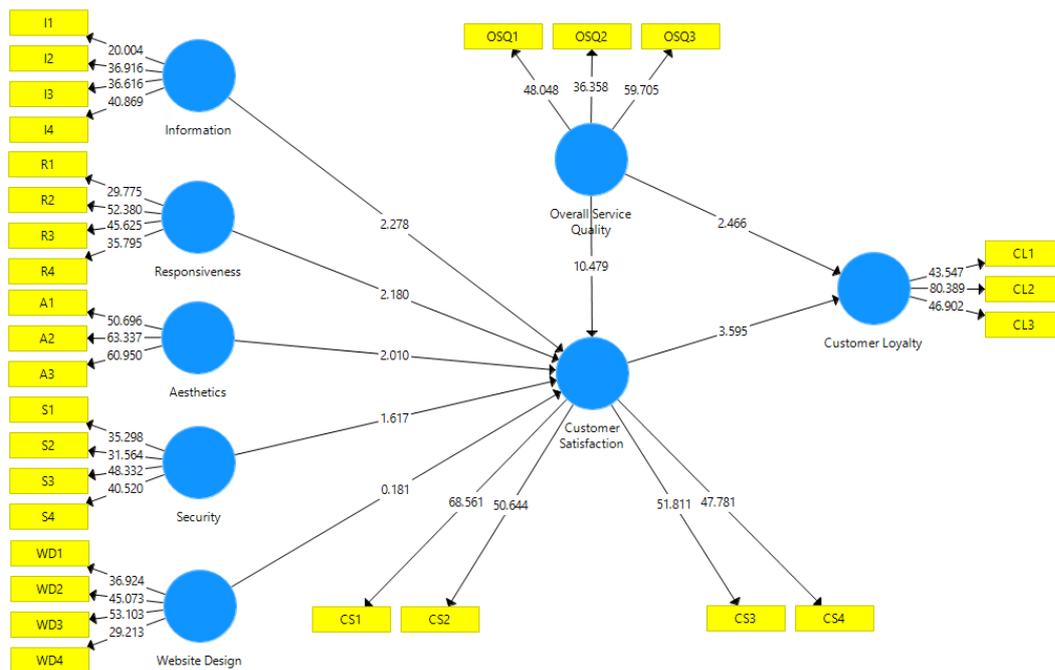
Figure 2 Direct Model 1

Figure 3: Direct Model 2

Figure 1 and Figure 2 depicts the model for this study. The good fit of the model is presented with acceptable R^2 values and has good construct reliability (Gefen et al., 2000). The R^2 value of this model represents the predictive capability of the model (Chin, 1998; Komiak and Benbasat, 2004). Table 1 provides the data for the corresponding reliability, composite reliability and average variance extracted (AVE) assessments. The Composite Reliability (CR) makes an assumption

that all indicators are not weighted equally (Chin, 1998) thus attesting to the fact that composite reliability is a more acceptable assessment to evaluate the model's reliability. The cut off value for the composite reliability is suggested to be above 0.7 (Barclay et al., 1995; Fornell and Larcker, 1981). On the other hand, the AVE values represent the amount of variance of a construct in ratio to the measurement error (Chin, 1998). The proposed model is a first order factor model.

Therefore, the minimum critical AVE value is 0.5 (Hu et al., 2004). The composite reliability and AVE values in Table 1 meet these requirements.

Table 2: Constructs Validity & Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Aesthetics	0.903	0.903	0.939	0.837
Customer Loyalty	0.905	0.906	0.941	0.841
Customer Satisfaction	0.93	0.93	0.95	0.826
Information	0.836	0.847	0.89	0.67
Overall Service Quality	0.859	0.865	0.914	0.78
Responsiveness	0.892	0.892	0.925	0.756
Security	0.887	0.888	0.922	0.747
Website Design	0.888	0.888	0.923	0.749

Convergent validity assessment refers to the items in the questionnaire to load simultaneously as a sole construct. This assessment can be assessed by studying the resulting loading for each set of indicators representing a particular dimension. The values for the standardized loading are suggested to exceed 0.7. This means that the respective indicator has more variance with their respective latent variable compared with its error variance. Chin (1998) has a lesser stringent cut off value at 0.5. All the path coefficients in this model is statistically significant. Discriminant validity assessment refers to how each item loads on its construct compared to other constructs (Kerlinger, 1973; Swafford et al., 2006). This value is assessed via cross loadings and the correlated value among first-order constructs and the square roots of AVE (Chin, 1998; Fornell and Larcker, 1981). These values are shown in Table 2.

Table 3: Variable Correlation Matrix against AVR Square Root

	Aesthetics	Customer Loyalty	Customer Satisfaction	Information	Overall Service Quality	Responsiveness	Security	Website Design
Aesthetics	**0.915**							
Customer Loyalty	0.729	**0.917**						
Customer Satisfaction	0.764	0.828	**0.909**					
Information	0.619	0.625	0.744	**0.818**				
Overall Service Quality	0.765	0.816	0.927	0.704	**0.950**			
Responsiveness	0.603	0.624	0.742	0.766	0.693	**0.869**		
Security	0.69	0.756	0.815	0.714	0.81	0.768	**0.865**	

Website Design	0.74	0.77	0.855	0.74	0.886	0.73	0.838	**0.895**

Values for the cross loadings are shown in Table 3. The values show adequate levels of discriminant validity. The bold values in Table 3 show higher loading values to its respective construct and low loading values to other constructs. A similar conclusion is observed in the link between the AVE square root values and the correlations among the first-order latent constructs. Data from Table 2 clearly shows that the square roots of AVE (bold numbers in diagonal) are more than the correlations among the constructs (off-diagonal values).

Table 4: Cross-Loading

	Aesthetics	Customer Loyalty	Customer Satisfaction	Information	Overall Service Quality	Responsiveness	Security	Website Design
A1	**0.913**	0.642	0.701	0.556	0.671	0.551	0.632	0.651
A2	**0.923**	0.704	0.685	0.565	0.726	0.51	0.626	0.679
A3	**0.909**	0.657	0.709	0.578	0.705	0.592	0.636	0.699
CL1	0.662	**0.902**	0.774	0.614	0.722	0.601	0.696	0.681
CL2	0.686	**0.936**	0.777	0.561	0.761	0.579	0.706	0.718
CL3	0.658	**0.911**	0.726	0.544	0.76	0.536	0.677	0.72
CS1	0.686	0.715	**0.915**	0.671	0.859	0.664	0.742	0.795
CS2	0.656	0.758	**0.915**	0.689	0.899	0.684	0.737	0.769
CS3	0.668	0.771	**0.907**	0.638	0.806	0.643	0.729	0.758
CS4	0.766	0.766	**0.898**	0.707	0.804	0.704	0.756	0.787
I1	0.484	0.462	0.502	**0.755**	0.483	0.533	0.517	0.53
I2	0.455	0.506	0.581	**0.836**	0.551	0.62	0.585	0.575
I3	0.462	0.46	0.632	**0.842**	0.566	0.652	0.579	0.619
I4	0.612	0.603	0.696	**0.838**	0.68	0.684	0.642	0.679
OSQ1	0.629	0.705	0.795	0.61	**0.892**	0.6	0.701	0.769
OSQ2	0.744	0.699	0.737	0.556	**0.855**	0.546	0.709	0.821
OSQ3	0.661	0.754	0.912	0.69	**0.902**	0.681	0.736	0.763
R1	0.534	0.574	0.657	0.668	0.573	**0.822**	0.696	0.612

|								
R2	0.536	0.537	0.639	0.67	0.592	**0.907**	0.667	0.622
R3	0.522	0.543	0.648	0.655	0.615	**0.877**	0.625	0.637
R4	0.503	0.513	0.632	0.668	0.629	**0.869**	0.679	0.667
S1	0.602	0.639	0.68	0.611	0.665	0.652	**0.869**	0.677
S2	0.593	0.668	0.724	0.68	0.735	0.673	**0.853**	0.765
S3	0.627	0.696	0.719	0.627	0.731	0.673	**0.869**	0.751
S4	0.564	0.61	0.695	0.547	0.667	0.655	**0.867**	0.7
W D1	0.597	0.647	0.752	0.697	0.729	0.704	0.755	**0.861**
W D2	0.611	0.662	0.731	0.647	0.712	0.652	0.721	**0.881**
W D3	0.607	0.658	0.738	0.656	0.77	0.624	0.714	**0.896**
W D4	0.744	0.699	0.737	0.556	0.855	0.546	0.709	**0.821**

Moderating Model
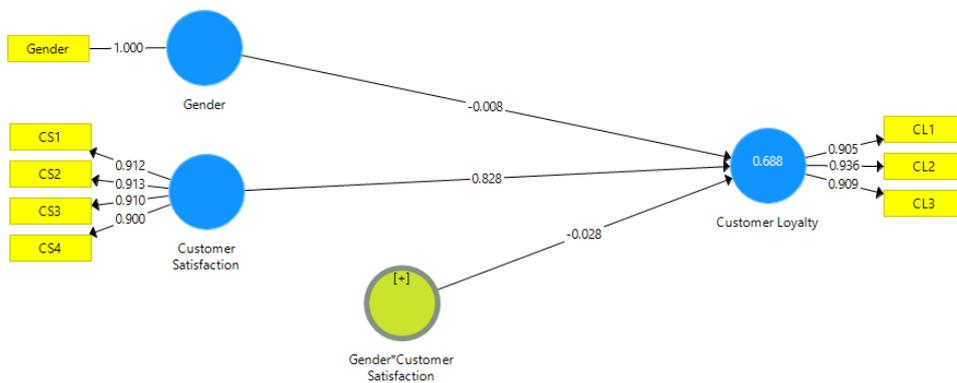
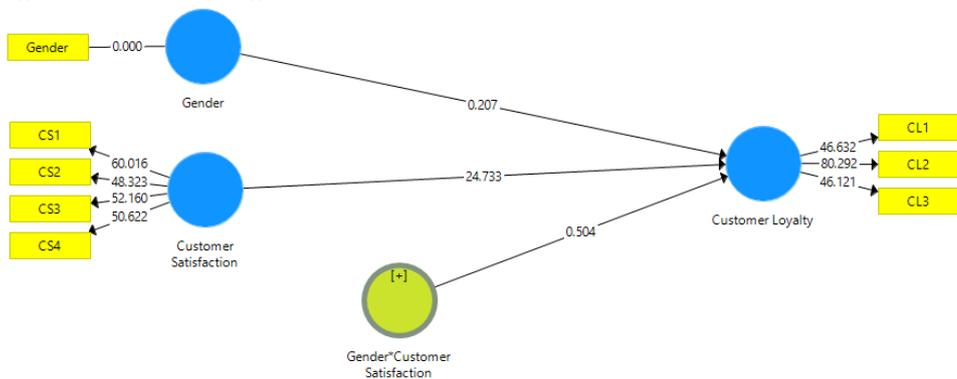

Figure 4: Moderating Model 1.1

Figure 5: Moderating Model 1.2

Moderating effect Customer Satisfaction-Gender-Customer Loyalty

From the path model analysis, it shows that gender has a positive moderating effect of the relationship between Customer Satisfaction and Customer Loyalty with path coefficient of -0.028 and it is not significant with T-value of 0.504 (one tail). From the result, it can be concluded that gender not significantly moderate the relationship between Customer Satisfaction and Customer Loyalty for this study.

6 Discussion

The purpose of this paper is to develop an e-service quality model of online banking service and assess its implication for online "customer satisfaction and loyalty" in the context of e-banking in Asia. Through the SERVQUAL model in the context of online banking, this research has come up with some viable dimensions of e-service quality that comprise information, responsiveness, ease of access, security and website aesthetics. Moreover, this study has established a research model to assess how e-service quality aspects affects "overall service quality, customers satisfaction, and customer loyalty". The summary outcomes of this study are deliberated in the following sections.

Information facilitates customers to use internet banking services. In e-banking, offering sufficient information for conducting smooth transactions and providing efficient services is very important (Ho & Lin, 2010). According to Surjadjaja et al., (2003), a good example of information is "tracking facility giving information about the status of an order so that a customer can monitor and track the order". Information content is important as it supports customers "to control the content and improve their ability to integrate" (Ariely, 2000).

Accessibility or "the way in which the service is delivered online" plays a crucial role in determining e-consumer satisfaction. Accessibility of Internet banking is found to be "an important factor which affects customer satisfaction in banking sector of Pakistan" (Raza et al., 2015). Liébana-Cabanillas et al. (2013) found that, emphasized that internet banking customers are mostly satisfied with the internet accessibility. Harison and Boonstra (2009) concluded that, accessibility is one of the important technical adequacies that determine e-service quality.

The present research has found that security is a key variable in influencing customer satisfaction. The findings of this paper match with the previous study by Sohail and Shaikh (2008) who found that "the users of e-banking services have been more satisfied with protective measures such as protection of banking information, personal information and feeling a sense of security". E-banking customers "heavily rely on the non-human interface of banking services", so their evaluations of service quality "are mainly influenced by the features and the security of online bank web sites" (Rod et al., 2009).

In line with the relevant literature (Francis &White, 2001; Aladwani & Palvia, 2002), navigation and aesthetics are found in this study to be the "central aspects of e-banking web usability". Fassnacht and Ko¨se (2007) found that "high electronic service quality in web-based services had an important role in building overall customer trust for the service provider". Online system quality performs effectively with six dimensions and one among them is website design (Jun and Cai, 2001). Previous research proved that, the web site design influences the user satisfaction (Jayawardhena and Foley, 2000b).

Finally, responsiveness is revealed as important in appraising internet service quality. Although it was difficult to make comparisons in this regard due to the literature being minimal in this field, responsiveness is regarded in the existing studies "as having significant relationship with online service quality" (Mulvenna et al., 2000). Responsiveness influences customer satisfaction, as electronic banking customers believed that e-banking responds more rapidly to their requirements than the traditional banking, for example, the instant transactions via the internet (Karjaluoto et al., 2002).

Indeed, there are some "similarities between traditional service quality dimensions and e-service quality dimensions" (Gro¨nroos, 1984; Lehtinen & Lehtinen, 1991). In line with the e-service quality literature (Yoo & Donthu, 2001; Ridings et al., 2002), e-dimensions such as information quality arose as important to e-banking. However, a major contribution of this study is related to the suggested dimensions of e-banking.

7 Conclusion

There are two major contribution areas from the findings of this research. Firstly, by the modification of the SERVQUAL model in the

context of e-banking, this research has developed the dimensions of e-service quality. Secondly, this research has recognised e-service quality impacts the overall quality of service and customers' satisfaction. These factors are significantly correlated to the loyalty of customers. The implications and limitations of this study are deliberated below with future directions for practitioners and researchers.

7.1. Implications

There are several implications for practitioners of E-banking based on this study. Firstly, banks should develop appropriate e-marketing strategies. This helps to enhance customer loyalty. Based on the e-service quality aspects recognised by this research, banks should also effectively plan to deploy their valuable corporate resources. As a part of the plan, banks can improvise the level of credibility, security, and promptness. These will not only help to derive attention towards potential online customers but also influence customers' satisfaction and loyalty. On the contrary, banks should safeguard the customers' privacy as many studies have highlighted online customers' concern regarding this issue (Graeff & Harmon, 2002).

Secondly, web site design is an important element in the online transaction processes. Aladwani and Palvia (2002) have highlighted that web usability is considered as one of the leading dimensions and "pre-qualifier to e-banking service quality". In a UK context, Jayawardhena and Foley (2000b) exemplified that "such web site features ultimately influence user satisfaction". Liao and Cheung (2008) mentioned that other recent work in this area stressed on the ease of use in website.

For the information dimension, e-banking manages should ensure the website has information that is "well organized and easily accessed". It corroborates with findings of earlier studies by Wolfinbarger and Gilly, (2001) which found that information dimensions is "frequently mentioned by consumers as an important reason" to engage in online transaction. Bank managers should also take note of the findings within the Malaysian e-banking context (Poon, 2008) which advocate improving the content of website to improve users' adoption of e-banking services.

Responsiveness is found important in this study in satisfying e-banking customers. Correspondingly, a research by Kadir et al. (2011) recommended that the e-banking management should emphasise more on enhancing the responsiveness aspect of online banking, so that the customer needs and requirements are met suitably. In the banking industry, e-banking is gradually yet rapidly becoming a popular practice, a fresh aspect anticipated by the bank clients. Bank users are looking for more than just conveniently placed physical service equipment such as ATMs facilities; they are also expecting innovative technology to perform effortless bank transactions regardless of time and place. Former researchers revealed that the quality of e-service is established on the responsiveness dimension (Butt & Aftab, 2012).

This study also found the importance of accessibility dimension for e-banking users which correlate earlier findings by Polatoglu and Ekin (2001) who scrutinized the acceptance of e-banking services by customers in Turkey. The customers reported that "they are using e-banking services because of its accessibility and convenience". Banks can enhance accessibility dimension with the help of the advanced technology such as using multiple e-banking services such as mobile services and web based services.

7.2 Limitations and Future Research

This study has outlined several directions for future research. Firstly, longitudinal studies and qualitative techniques can be used in the future attempts of research to examine the relationship between e-service quality and customer loyalty. Secondly, future studies can measure the actual e-banking behaviours instead of intentions due to the advancement of e-banking. It will help to understand the difference in the bank customers' perceptions of e-service quality. Thirdly, future research may consider developing more extensive measures of e-service quality scales. Finally, cultural differences can have different meaning towards the e-banking website quality (Tsikriktsis, 2002), so future studies can consider cultural aspects. Future research could look into customer retention beyond the satisfaction of e-banking services in order to retain customers along with increasing their profitability. Using wider sample of banks in various countries or testing the hypotheses in multiple service contexts in the future studies will help to achieve model's generalisability.

Conducting this research in other countries with varied degree of internet proliferation due to infrastructure can add new insights in this study. This is because of customers expectation on service quality varies based on the level of industrialisation in their respective countries (Hernandez and Mazzon, 2007). Upcoming research might look into the rate of customers' e-banking adoption based on different phases of traditional service quality. Besides, the mediating role of trust and commitment can also be further examined. The attitude of aging population along with other demographic variables and their influence on e-banking usage behaviour should also be analysed.

Lastly, the future study should incorporate larger sample size with coverage of wider geographical locations to achieve more generalisability of the current result. Besides, interactivity and website services ability should be also taken into consideration. Moreover, as suggested by Yu et al. (2015), it is also necessary to incorporate perceived risk and trust "as a predictor of e-customer satisfaction and loyalty" by the future researchers.

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