

Effects of e-service Quality Dimensions on Overall e-banking Service Quality, Customer Satisfaction and Customer Loyalty in Hong Kong Banking Sector

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Abstract — Acting as one of International Financial Centre, Hong Kong is the home city of retail and institutional banks which has adopted e-banking services rapidly. Quality is indisputably the focus; therefore, the purpose of paper is to examine the relationship of e-service quality dimensions with overall e-banking service quality and subsequent effects on customer satisfaction and customer loyalty in Hong Kong banking sector. 172 valid surveys are collected from e-banking users. By performing correlation analysis, there are significant relationship among the e-Service Quality. Besides, it is observed that assurance of e-Service is the most critical factor to influence the Customer Satisfaction and Customer Loyalty in line with best-fitted regression models. This present study is also an alternative reference for banks in Hong Kong to prioritize and re-allocate the resources to strengthen corresponding components of e-Service quality and ultimately enhance customer satisfaction.

Index Terms — e-Banking Service, e-Service, Customer Loyalty, Banking Sector

I. INTRODUCTION

E-banking, an online service with electronic payment system for customers, has become a major distribution channel for financial institutions [8]. The traditional banking services conducted in the branch or counter in the banks has been gradually replaced by e-banking platform. Customers are allowed to retrieve their account summary, conduct money transfer and investment activities in that platform through their personal electronic devices such as computers, tablets or mobile phones. This kind of e-service makes the firms outshine the others by differentiating their service offerings and hence building competitive advantages [1,16]. As a result, to maintain e-banking service quality and provide excellent experience to the users becomes an important issue

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in the financial sectors.

Perceptions of the e-service quality should be different from that of service quality which involves human interactions. Some critics are founded on the value of adapting the traditional SERVQUAL dimensions directly into the e-service environment since the form of service is changed from the original human-to-human interaction into the new machine-to-human interaction. e-service quality measurement has been raised to substitute the traditional SERVQUAL instrument [1,13]. New electronic service quality should measure the quality of service provided through technology or the machine to a real customer without human interaction [4,19].

Customer Satisfaction and Loyalty are indicators to reflect the quality of the services provided to the customers. Conventionally, the level of success regularly is monitored by measure the market share. On the other hand, this indirect way of measurement lacks consideration of the overall situation and thus, customer-based measurement should be introduced in order to have the comprehensive understanding. For the types of product given in the form of service, including e-service, relationship-marketing strategy should be adopted to build a long-term relationship with customers, in which the dominating quality dimension changed from the Quality of Output to the Quality of interactions [6].

II. LITERATURE REVIEW

Proposed by Parasuraman, Zeithaml and Malhotra [13], e-Service Quality Instrument measuring the quality of the e-service. It could be divided into two parts, one was the e-Service Quality (E-S-QUAL) with 4 core dimensions and another was the e-Recovery Service Quality (E-RecS-QUAL) with 3 core dimensions. Former consisted of efficiency, fulfillment, system availability and privacy while later includes responsiveness, contact and compensation. Santouridis, Trivellas and Tsimonis [17] used the e-S-QUAL to measure the internet service quality of e-commerce web site in Greece, in which the researchers found that the four dimensions of Efficiency, Fulfillment, System Availability and Privacy had positive and significant impacts on the perceived value and loyalty of the customers.

Efficiency referred to whether users could efficiently access the information of their designate products or services

with ease through e-service platform. Fulfillment referred to whether the accuracy of e-service provided was consistent with that provided in physical banks. System Availability indicated the technical performance of the e-service platform, for example, whether the website could function properly for accessing. Privacy referred to security protection on sensitive customer information by e-service provider. Moreover, responsiveness was the ability of e-service handle customer enquiry or tackle any technical problems from customers. Contact referred to the ease of the customers to get access to the customer service officer through any other means of instance communications such as online live-chat or telephone call. Compensation was the return of money in different meant such as guarantees, shipping cost, delivery cost etc. However, this dimension should be excluded in this project due to no evidence proved the existence of the fulfillment of this dimension. Nathan [12] conducted a study in the USA suggesting that Assurance and Site Aesthetics were also dimensions mentioned in many researches to reveal its importance or effects on e-banking Service. Assurance was the ability for the e-service providers to build up its secure and reliable image through service delivery and Site Aesthetics referred to the internet service provided of the website.

Past research [9] stated that the Efficiency is positive determinants on customer satisfaction in Hong Kong. Assurance positively correlated on the e-banking service quality. Nevertheless, no significant relationship among responsiveness, assurance and customer satisfaction in Malaysia were observed [21]. Efficiency, fulfillment, assurance and privacy were all summarized as e-service quality. System Availability was an important factor effecting on the satisfaction [10]. To put it simply, all eight dimensions including mentioned 7 core dimensions excluding Compensation, Assurance and Site Aesthetics were positively related to the e-service Quality in USA [12].

Furthermore, previous studies already proved that overall e-service Quality was positively related to Customers Satisfaction Better the customers' perception on the e-banking service quality implied higher overall satisfaction with the bank [2,14,15]. Regarding customer loyalty, it was perceived as an intention to remain with a company and considered an important goal for many banking institutions. Customer satisfaction had consistently been viewed as antecedent to loyalty [2].

Despite that, less studies focused to investigate the e-service quality of the banking sector in Hong Kong. Considering the situation now in Hong Kong, ten research hypotheses in this paper were defined below to investigate how the customers perceived about this new interaction method between banking and customers.

H1: Efficiency is positively related to overall e-banking service quality.

H2: Fulfillment is positively related to overall e-banking service quality.

H3: System Availability is positively related to overall e-banking service quality.

H4: Privacy is positively related to overall e-banking service quality.

H5: Responsiveness is positively related to overall e-banking service quality.

H6: Contact is positively related to overall e-banking service quality.
H7: Assurance is positively related to overall e-banking service quality.

H8: Site Aesthetic is positively related to overall e-banking service quality.

H9: Overall e-banking service quality is positively related to Customer Satisfaction.

H10: Customer Satisfaction is positively related to Customer Loyalty.

III. METHODOLOGY

Questionnaires were distributed and 172 valid responses were returned with 86% response rate. Targeted respondents were customers who had experiences in using the e-banking services before. A pilot survey was conducted prior to distributing survey to improve the readability of the questions. The questionnaire designed for this research consisted of three sections. The first contained some general personal information of the respondents. The second part explored the usage data on e-banking services such as durations and frequencies of accessing to the e-banking website. The last session, the core part, revealed the respondents' perceptions of e-banking Service Quality and include 31 questions.

A seven-point Likert scale with "1" for strongly disagree and "7" for strongly agree was used to quantify the perceptions of different dimensions of e-banking service quality, overall e-service quality, customer satisfaction and customer loyalty. Rationale of adopting Likert rating scale was that its suitability on research designs of self-administered surveys [7].

Moreover, to reveal the reliability of the data collected, Cronbach's Alpha was determined for each dimension. All of them showed a satisfactory level of reliability with the range from 0.90 to 0.92 [5].

IV. RESULTS

As aforementioned, total 172 valid surveys were collected, and the sample consisted of 102 males and 70 females. Dominant age groups of the respondents were aged between 18 and 30 (88%). 86% of them are undergraduate or postsecondary students while 14% of them are master students. The employment status of the respondents are evenly distributed among Full-time, Part-time and unemployed.

In regard of usage of e-banking, it is found that about two-fifth of the respondents are experienced in operating e-banking platform for 2 or more years. 22% of the respondents have 1 to 2 years length of using of e-banking. For usage frequencies, around 40% of them login e-banking 1 to 3 times per month. For the ways used to access to the e-banking, nearly ninety percent of respondents access e-banking through computer and forty percent of them mobile phone is the second at the same time.

From the Table I, Pearson's correlation coefficient, r was used to measure the association stated in the hypothesis H_1 to H_{10} . Inter-correlation among the eight dimension is also identified and concluded that there are significantly positive relationships at level of significant, 0.05. Apart from that,

eight linear regression models fitted by least-square method is to examine the importance of these eight dimensions on overall e-banking service quality. R-square as known as coefficient of determination is used for measuring goodness of fit and thus importance of those eight dimensions. The statistical result from regression model could also be referred in Table I for Hypothesis 1 to 8.

TABLE I
 Correlations and regression analysis of Hypothesis 1 - 10

Hypothesis	<i>r</i>	<i>p</i> -value	R-square (w.r.t e-Service Quality)
<i>H</i> ₁	0.571	<0.01	0.326
<i>H</i> ₂	0.475	<0.01	0.226
<i>H</i> ₃	0.659	<0.01	0.434
<i>H</i> ₄	0.434	<0.01	0.188
<i>H</i> ₅	0.371	<0.01	0.138
<i>H</i> ₆	0.440	<0.01	0.194
<i>H</i> ₇	0.680	<0.01	0.463
<i>H</i> ₈	0.537	<0.01	0.289
<i>H</i> ₉	0.805	<0.01	N/A
<i>H</i> ₁₀	0.849	<0.01	N/A

V. DISCUSSION

According to the previous section, Hypothesis 1 to 8 are not rejected at the significant, 0.01. The eight proposed dimensions: Efficiency, Fulfillment, System Availability, Privacy, Responsiveness, Contact, Assurance and Site Aesthetics do have positive and significant effect on Overall e-service Quality. Top three ranked dimensions effecting on the Overall e-banking Service Quality is further discussed.

Assurance, the most impact among the eight dimensions on overall e-banking service quality was considered as key factors of studying online banking service [20] and the most critical dimension in SERVQUAL in line with the results of past research. Particularly in online banking, despite online platform being fast and convenient, background processes such as order flow and order execution are still complicated and inscrutable for users. As a result, banks or financial institutions could allocate more resources to build a reliable reputation of e-banking service to maintain satisfaction of customers.

System Availability has the second large impact among the eight dimensions on overall e-banking service quality. Technical software issues can create problems that are related to the ordering process on the Internet. When consumers browsing or making banking orders such as transactions in the web site, function failures such as missing links and non-working buttons lead to frustration and disappointment to the service. Avoiding and eliminating broken links that are under construction or even no longer exist is related to the total e-service quality [16].

Efficiency comes in third among those dimensions when it comes to the level of impact on overall e-banking service quality. Customers tend to prefer ease of access to website,

simplicity of usage and ease of looking for information etc. When it comes to the efficiency of e-banking use, it is specifically related to the web site efficiency when customers interact and transact on the platform. Difficulty in or high latency of searching lead consumers to leave those sites and visit other sites. Efficiency is also a vital determinant on whether the customer will have a second visit [12, 17]

Last but not least, a significant relationship between overall e-banking service quality and customer satisfaction is observed, and Hypothesis 9 is accepted. Customer satisfaction is likely to be even more important for e-banking since it is harder to keep online customers loyal through the e-service provided. Banks have to learn how to prioritize the dimensions of e-service quality of their e-banking service to satisfy numerous customer simultaneously [11]. It is also proved that improvement of e-service quality could enhance the perceived quality and hence the customer satisfaction [2, 15].

The relationship between customer satisfaction and customer loyalty is proved to be positively correlated at the significant level 0.01 and hence Hypothesis 11 is accepted. Secure higher levels of consumer satisfaction can possibly result in an increase in loyalty levels [22], which is also valid in retail banking [18]. A loyal customer takes less of the company's time during transactions and are less sensitive to price changes [3]. This shows the customer loyalty as an intangible asset for the long-term development of retail banking.

VI. CONCLUSION

In this paper, an empirical investigation on the Overall e-service Quality, Customer Satisfaction and Customer Loyalty is presented using E-SQ instrument and two more dimensions suggested by Nathan [12]. Contributions are made to the development of measurement of online service quality by discovering the outcomes for different service-quality dimensions in the Hong Kong Banking Sector. The research findings indicate that all eight proposed quality dimensions are positively correlated to Overall e-banking Service Quality. In which, the dimension "Assurance" is the most important among all other dimension. Moreover, overall e-banking Service Quality is also positively related to the Customer Satisfaction. Aside from the above, the relationship between Customer Satisfaction and Customer Loyalty is also found to be positively correlated. To put in simply, all the hypotheses of the research model are therefore supported. Assurance, System Availability and Efficiency are the top three ranked dimensions for the banks to prioritize the time and resources to maintain and even enhance.

It also contributes in the retail banking sector in Hong Kong by identifying the positive relationship among Overall e-banking Service Quality, Customer Satisfaction and Customer Loyalty. Banks in Hong Kong are recommended to assure the e-service qualities so as to maintain profitable relationship with their customers in such stiff competition.

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