

The Effect of Digital Banking Service Quality on Customer Satisfaction: A Case Study on the Malaysian Banks

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ABSTRACT

The changes occurring in business environment, especially strong competition and the changes in customer's preferences require the bank management team to define, implement and monitor proactive marketing strategy constructed on the basis of continuous evaluation of the quality of its services. Solution of this problem is advocated in all organisational parts of a bank, which makes it the most critical for service quality and survival of banks in the market. This research study has employed a quantitative research approach with a planned data collection and analysed using correlational survey design. A developed and validated questionnaire was used to collect data from the sample of 384 participants selected from the five major commercial banks (Maybank, Hong Long Bank, CIMB Bank, RHB Bank and Muamalat). The data collected were analysed using Partial Least Square Structural Equation Modeling (PLS-SEM) using SmartPLS software. Measurement and structural model were assessed with all adequate validity and reliability evidences. The results revealed that, reliability, tangibility, responsiveness and assurance has a positive influence on customer satisfaction (P-value 0.05). The study has also recommended that the regulatory bodies responsible for regulating financial regulations in Malaysia should provide a standard guideline and encourage all banks in the country to properly implement an improved digital services quality.

Keywords: E-banking, Digital service, Customer satisfaction, SEM and Malaysian Commercial Banks.

1. INTRODUCTION

The exponential transformation brought by emerging technologies have put the banking sector in a tight corner to adapt to these recurring changes to satisfy their clients and as well retain their loyalty. In Malaysia, the challenges faced by financial institutions, especially in the banking sector, have resulted in more burdens to these banks in developing various strategies to attract huge number of customers and again to retain them as clients (Tadic et al., 2018). Customers are serving to more flexible method where the trendy digital platform is the preferred method and when transactions are easily performed with another bank or another provider (Asian Banking They emphasised and Finance Retail Banking Forum 2017). In the digital platform of Malaysian banks, customer loyalty has always been a matter of concern as fintech booms money has been spent by banks on loyalty programs, but not all of them yield the exacted return.

Few studies have examined the different perceptions of customers on the delivery of services by Malaysia Commercial Bank Limited. This is a significant gap and in order to identify the banks' strengths and or weaknesses, customer perceptions of service delivery are a basic instrument (Chesaina, and Gitonga, 2019). According to Pakurar et al. (2019), more studies should consider the dimensions of access, financial aspect, and employee competencies as essential parts of service quality dimensions with the other subscales.

Banks in Malaysia have been in the business of integrating digital banking through various means of mobile banking, internet banking, online banking, and automated banking to satisfy the demand of their respective clients. However, there are concerns over the ever-changing business environment and the customers' demand which is always marked to be fluctuating (Jo, & Mo, 2018).

The changes prompted by digitization has always rendered customers sceptics about doing business, due to fraudulent activities by bank fraudsters; customer feel reserved in terms of satisfaction and loyalty to the digital

services rendered by their banks. Similarly, in order to achieve a remarkable customer satisfaction and loyalty, banks in Malaysia have to commit resources in the areas of digital banking (Choong et al., 2017). Bank chiefs ought not just to build the nature of their banking services, in addition, consider the most ideal approach to guarantee consumer satisfaction (Yilmaz, 2018).

Few studies in Malaysia have considered relationship between digital banking, customer satisfaction and customer loyalty (Moghavvemi et al., 2018; Magotra, 2018), that plays a significant role in the success of any service, as well as assists these banks in Malaysia to maintain the lead in the committee of banks. Consequently, banking sector in Malaysia is supposed to know how digital service quality affects customer satisfaction and loyalty, in order to improve their digitization strategies and processes.

The greater part of the past researches solely discussed service quality impacts on client satisfaction individually (Aisyah, 2018). Numerous studies have researched how computerized banking service quality is estimated; however, few have considered the relationship between the nature of digital banking service, customer loyalty and consumer satisfaction in Malaysia. This research work fills a gap in the literature since it tends to focus on the digital banking issues in Malaysia. The consequences of this investigation accentuate impact of banking service quality on consumer satisfaction. These investigate the relationship between digital banking service quality, customer satisfaction.loyalty.

2. LITERATURE REVIEW

The financial landscape of the Malaysian financial system (Bank Negara Malaysia, 2012) throughout this period have experienced better institutional capacity building, improved financial infrastructure development, regulatory reforms, greater usage of technology and efficient delivery channels. In the recent move, Bank Negara Malaysia has expressed that the next phase of transformation will involve a financial ecosystem that enhances the competitiveness and dynamism of the financial sector. Under the Financial Sector Blueprint (2011–2020), Bank Negara Malaysia envisages the banking sector growing to three times the gross domestic product by 2020, while the financial sector contribution to GDP is projected to be between 10% and 12% (Bank Negara Malaysia, 2012). Based on the above discussion, it seems pertinent to assess the performance of digital banking service quality and customer's satisfactions for commercial banks in Malaysia.

Based on the study by Auka, Bosire, and Matern (2013), service quality is one of the critical success factors that influence the competitiveness of a service organization. A bank can differentiate itself from competitors by providing quality service. Otherwise, customer will not hold or purchase service products from the bank. If the bank ensures the service quality, then the customer will be loyal to the bank in undertaking the required service. Customers feel secured when they obtain quality service. As a result, the main duty of the bank is to ensure quality services are rendered to the prospective customers.

In Malaysia, commercial banks play a very important role and are the largest part of financial institution. The banking industry in Malaysia has become more integrated due to the technological environment, liberalization, and deregulation. As a result, the market environment in the banking sector has become more competitive and complex. The banking product currently is very much homogeneous from one bank to another bank, and at the same time the

demand from bank customers are increasing where banks need to do more effective banking industry transformation (Osman, Mohamad and Mohamad, 2015).

Internet banking acts as a kind of financial intermediation which makes transaction through the Internet (Ahanger, 2011). In the banking industry, Internet banking uses computer technology to provide better services to customers and helps in the development of banking practices (Rahmath and Hema, 2010). Technological innovations are one of the effective ways to increase the level of service quality to satisfy customer's needs. Through the advanced technology and innovation in the financial and banking sectors, Internet banking has become more familiar to the customers of traditional banks (Acharya et al., 2008). Internet banking is offered by the retail banking in many developed countries and customers can make transactions without having to leave their home or workplace (Munusamy et al., 2010). In addition, Internet banking can help customers to manage their finances more efficiently and increase customer satisfaction toward Internet banking. An increase in the degree of convenience to customer, will increase the level of customer satisfaction (Ling et al., 2016).

2.1. Underpinning Theory

2.1.1 Theory Related with Digital Banking Service Quality (DBSQ)

Recently, service quality has appeared more prominent consideration in commercial explore because of its job as a standout amongst the most essential factor that can build banks focused position. The term service quality methods how banks customer's desires are accommodating with conveyed service (Al-Hawary et al., 2017), as indicated by (Ma and Zhao, 2012) service quality can be characterized as a judgment of customers over a bank's performance; it tends to be fantastic, prevalence or negative. Thus, banks endeavour to create and keep up amazing service quality for their customers to hold and make them faithful to the banks. In the event that the service quality is unprecedented, the customer would purchase a similar service, however in the event that a bank can't convey great support of their customers, it would lead negative effect on commercial due to unfavourable word of mouth (Ma and Zhao, 2012). Therefore, the contender would have the capacity to create amazing and high service to catch those customers and exploit decreased service nature of different banks. Service quality is the contrast between what an association gives to their customers and what customer anticipates from an organization. There are a few scales created by various researchers. For instance, (Parasuraman et al., 1991) created 22 scale to gauge different components of service quality, for example, dependability, substantial quality measurement, compassion, responsiveness, and affirmation.

2.1.1.1 Reliability

In general understanding, when we say 'something' is reliable it connotes many positive aspects of that 'something'. For example, when we say that a person is reliable it indicates that the transaction (financial or social) we want to have with the person will be successfully accomplished without any disruption. That is, the reliability of the person makes other persons who deal with him feel secure, that their task will be accomplished, in control, and that the other persons are forthright due to that person's overall outstanding performance, which we can say is due

to the integration of many excellent characteristics (Jokisuu et al., 2016). Due to which customers feel independent, accomplished, confident, novel, enjoyable, empowered, and engaged (Chun-Wei et al., 2016).

2.1.1.2 Tangibility

The data highlights the difference in the perceptions of the public sector banks and private sector banks with the respective customers on the tangibility dimension. The data reveals the private sector banks are exceeding the perceptions while comparing to public sector banks.

Public sector banks at the lower side on perceptions of their customers on the dimension of service quality when compared to private sector banks. The factors such as up to date equipment, banks physical facilities, well dressed and neat appearance, and the facilities used in banks are comparatively at the lower end as perceived by the banks customers (Shrivastava and Shah, 2018).

2.1.1.3 Empathy

Individual attention, customized service and convenient banking hours are very much important in today's service (Malik, 2018).

2.1.1.4 Assurance

Customer expects that the bank must be secured and the behavior of the employees must be encouraging (Malik, 2018).

2.1.1.5 Responsiveness

Customers expect that the banks must react their request quickly. Responsiveness depicts how frequently a bank deliberately gives services that are essential to its customers. Analysts analysing the responsiveness of banking services have featured the significance of seen service quality and consumer satisfaction (Malik, 2018).

Service quality is so vital for bank long run achievement. As a matter of first importance, service quality speaks to a unique upper hand for association against different contenders from banks (Ayo et al., 2016). Taking service quality as a standout amongst the most vital needs upgrade bank to deliver services with prevalent quality dimensions (Amin, 2016). Achieving this objective in certainty can assist the manage an account with stabilizing their long haul productivity and it upgrades their chances to even now make due later on (AL-Adwan and AL-Tarawneh, 2017). This isn't all, it is vital for banks to keep up their service quality and enhance it over the time, this is on the grounds that customer recognitions are generally ascending by time (AlSudairi, 2016).

Rowley (2006) characterized digital service as an intuitive service among customer and bank utilizing the web. Parasuraman et al., 2005 additionally included digital service is a mechanism of collaboration among customer and friends where the organization needs to ensure about the productivity and adequacy of their services. Along these lines, banks must tune in to their customer's need and desire to get by in this focused commercial world (Santos, 2003). In this way, the customer has more power in the event of online based services in light of the fact that numerous contenders are putting forth the equivalent or surprisingly better services. The customer can move to

different banks with no expense if the present bank does not enhance their services. Santos (2003) expressed that computerized service quality is a procedure of customer's evaluation and an official choice on serve.

2.1.2 Theory Related with Customer Satisfaction (CS)

Consumer satisfaction is a standout amongst the most essential ideas in the field of advertising ponders today (Jamal, 2004). Comprehensively, it joins forms finishing in acquiring with post buy wonders, for example, frame of mind change, rehash buy, and brand reliability (Churchill and Surprenant, 1982). Oliver 1980 clarifies that the sentiment of satisfaction emerges when customers look at their impression of real product service performance with desires. Various changing definitions have been proposed to clear up consumer satisfaction. However, the idea of contrasting post product service performance and pre framed desires is by all accounts normal to generally definitions.

Oliver 1981 characterizes satisfaction as an enthusiastic post utilization evaluative judgment concerning a product or service. Thus, Tse and Wilton, 1988 characterized consumer satisfaction as a "customer reaction to the assessment of the apparent contrast among desires and last outcome after utilization. Satisfaction can likewise be depicted as the input of a post buy evaluation of certain service product's quality, and contrasted and the desire for the earlier obtaining stage (Kotler and Keller, 2011).

Conversely, different analysts have seen that the effect rehearsed inside the buying and expending phase of the product service may likewise importantly affect the customer's decisions toward satisfaction (Homburg et al., 2006). Accordingly, consumer satisfaction is a customer's sentiment of delight or disappointment after the individual in question has recognized a performance of a product service as for his or her anticipation (Keller and Lehmann, 2006). Steady with these definitions, and in so far as this study is concerned, consumer satisfaction is the frame of mind of the customer planned in light of utilizing any type of e banking services. As needs be, e banking properties may build, decline, or keep a similar consumer satisfaction.

One primary target of this exploration is to comprehend to what degree the nature of electronic services offered by banks would influence the satisfaction of the customer in the Malaysian banking segment. To check this relationship, Jain alters it in a simpler recipe and achieves the end that incredible consumer satisfaction tremendously relies upon accepting a superior and higher quality service (Jain and Gupta, 2004). Some of extra investigations indicate out a relationship between consumer satisfaction and e banking services. In their exploration, (Asiyanbi and Ishola, 2018) exhibited that the satisfaction level of customers in the banking area increments when utilizing e-banking services Thus, Ranaweera and Neely, (2003) checked that the nature of E-service is the initial step of customers' satisfaction. The after effects of numerous investigations have demonstrated that customers who are happy with the nature of services are faithful to their banks, and more averse to change to another bank (Blocker, 2012). From one point of view, customers need to be sure that the bank they have picked is the best chief of their cash, and on the other, they additionally anticipate great service of their services and wellbeing of financial exchanges. It is clear that service quality impacts customers' apparent esteem, satisfaction, and loyalty (Melovic et al., 2015). The social dependability mirrors customer's certain reaction to buy a specific product or service (Amin et al., 2013; Rahi, 2015; Rahi, 2016; Rahi and Ghani, 2016). Customers who are

steadfast with banks spend substantially more than different customers (Amin et al., 2013). In like manner, look into led in the banking area by Bei and Chiao 2006 perceived a noteworthy relationship between the nature of the service and the consumer satisfaction level of customers. At last, Lianxi Zhou 2004 expressed that the e banking service quality identified with unwavering quality significantly affects the level of consumer satisfaction.

2.1.2.1 Technical and Functional Quality

The model describes how the quality of service will be perceived by customers and in what way service quality will be influenced. He emphasizes the interactive service nature and posits that service quality should be a two-prong conceptualization, namely, the process functional dimension (i.e., how the service is delivered) and the outcome technical dimension (i.e., what is delivered). In his model (Grönroos, 1984) has depicted two variables, namely, technical quality, functional quality. (2009) investigate the influence of technical and functional dimensions of service management on customer satisfaction with bank.

The study has found that both the technical and functional dimensions of service management correlate significantly with customer satisfaction. De Keyser and Lariviere, 2014 argued that both technical and functional service quality have positive impacts on consumer happiness. These recent studies underline the fact that both functional and technical qualities have vital effect on satisfaction of the customer in delivering high quality service. Therefore, to employ different strategies in order to boost service quality, it is desirable to evaluate the effect of each strategy on different aspect of service quality.

2.1.2.2 Standardization and Customization

Standardization is defined as the process of setting generally uniform characteristics for a particular good or service. Standardization is used in order to help the management control, predict and minimize mistakes, and reduce deviation among employees (Jones et al., 1994). Standardization also provides a means to maintain reliability and be free of defects. Other services associated with standardization include facilitation of contracting, monitoring performance and pricing in services provision, increasing protection of consumers, and raising confidence and satisfaction of consumers. On the contrary, the customized product or service is defined in the context where a new product is rendered with variations on existing configurations. Thus, customers express their needs in consonance with their specific requirements and this can help marketers to exactly meet customers' specific needs (Wind and Rangaswamy, 2001).

Researchers in service quality tend to treat customization and standardization separately, based on the argument that the two cannot coexist concurrently (Almodóvar, 2012). However, when investigating today's marketing activities, for example, the levels of standardization and customization can be different for the home and international markets (Almodóvar, 2012). Ding and Keh (2016) investigate the pros and cons of service standardization, (customization) from the consumer's perspective.

They have found that the advantages of service customization include greater perceived control and higher consumer satisfaction. The drawbacks of service customization include greater perceived risk. These findings

suggest that consumers' preference for standardized (vs customized) service depends on their consumption goal (Ding and Keh, 2016).

2.2. Uses of digital banking

Digital banking given the significant changes in the interest for financial services, the banks are reacting to the computerized test by utilizing distinctive methodologies and at different paces.

A digital wallet that facilitates fast, convenient, and secure commerce using a mobile electronic device (or non-mobile electronic device) and stores information associated with transactions.

The digital wallet can store information for use in transactions, including information associated with one or more financial accounts, user information, and shipping information.

To complete an online purchase, the digital wallet can interact with a merchant's website to obtain information regarding the purchase (Von Behren and Wall, 2017). According to Lipton et al., 2016 digital wallet digital wallet is essential for digital commerce and ecosystems built on value-added services. In addition, it optimizes transaction costs for customers and funding costs for banking operations.

Internet banking (or E-banking) means any user with a personal computer and a browser. Internet banking system means the bank has a centralized database that is web enabled (Khan, 2009).

2.3 Usefulness of Digital Banking

Understanding the customer loyalty and how they affect new digital banking service digitally. Main objective on the usefulness of digital banking is by observing the usage, how they interact with the services like these, its usefulness to them, and their satisfaction level. The data showed that expectations of accuracy, security, network speed, user friendliness, user involvement and convenience were the most important quality attributes underlying perceived usefulness (Mutahar et al., 2018).

A study on critical factors affecting consumer acceptance of online banking by Maditinos et al. (2013) suggested the important aspect of perceived usefulness, security risk and performance risk on the intention to use internet banking. On the contrary, the impact of perceived ease of use and quality of the internet relationship seemed to have only an indirect effect on internet banking adoption. Data analysis on factors influencing the choice of internet banking by Juwaheeret et al. (2012) revealed that perceived ease of use and perceived usefulness have a direct influence on the adoption of internet banking.

2.4 Ease of Use Digital Banking

Those who use digital banking service the specifically mobile banking application also appreciated the ease of use and also its simplicity, free of charge locus and the possibility to follow the money flow and control spending and saving. The data showed that mobile banking is a big part of consumers' daily activities because it is a valuable service to complete the activities because it is so fast, clear and easy to use and it actually affects everyday life and behavior (Komulainen et al., 2018). Most banks attempt to tailor the services and information on their websites in a way that meets customers' needs. In order to assess the level of customer satisfaction towards such websites, many

researchers have used classic theories or information systems acceptance models. Davis et al.(1989) postulate that perceived ease of use and usefulness factors influence customers’ behavior in using new technology; meanwhile, perceived usefulness, trust, and self-efficacy are predictors of customers’ use of digital banking service (as cited in Mbama and Ezepue, 2018).

2.5 Research Framework

The aim of this study is to determine the effect of digital service quality on customer satisfaction.

Figure 1 shows the conceptual framework developed for this study. This conceptual framework has been formulated based on the theories of existing literature and adapted the existing frameworks of past research works (Oliver, 1999; Rai and Srivasta, 2012; Akhter and Zaherr, 2014; Hamzah et al., 2015; Fasal et al., 2016; Aisyah 2018).

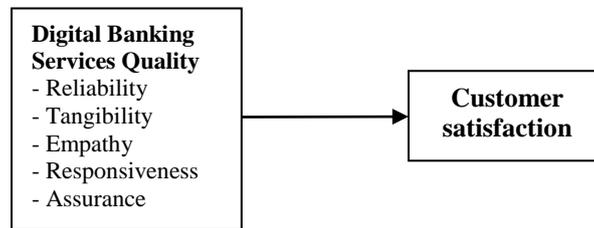


Figure 1: Conceptual framework

2.6 Hypotheses Development

The hypotheses are directly related to the theory of research which are determined by the literature review. A hypothesis is a statement about the relationship of two or more variables which suggests the answer of research objectives. These hypotheses are derived logically from previous findings or the predictions of specific theory.

No.	Objectives	Hypotheses
1	To examine what are digital service quality factors that positively affects customer satisfaction in Malaysian commercial banking sector.	<p>H1a: Reliability has a positive influence on customer satisfaction in commercial banking sector.</p> <p>H1b: Tangibility has a positive influence on customer satisfaction in commercial banking sector.</p> <p>H1c: Empathy has a positive influence on customer satisfaction in commercial banking sector.</p> <p>H1d: Responsiveness has a positive influence on customer satisfaction in commercial banking sector.</p> <p>H1e: Assurance has a positive influence on customer satisfaction in commercial banking sector.</p>

2.6.1 Literature supporting the hypotheses

Oliver has developed a model in 1993 to explain the relationship between service quality and customer satisfaction. He states that service quality is developed by comparing performance perceptions and ideals related to dimensions of quality, satisfaction that contradicts with expectations and are predictive regarding both non quality dimensions and quality dimensions. Also, perceived service quality originates from satisfaction and disconfirmation (negation) of desires that are not related to satisfaction, except through the perceptions of service quality. Oliver's model also specifies that expectations do not affect the perceptions of performance. Oliver's model is later tested by Spreng and Mackoy (1996).

It is clear that quality of service is an important factor together with other elements (performance, expected and perceived service) that affect the level of customer satisfaction. It also influences the customer decisions regarding repurchase intentions or switching intentions towards the specific service provider. Therefore, a proposed model is developed by considering models by Spreng and Mackoy(1996) and McDougall and Levesque (2000) as well as Parasuraman et al. (1985) to explain the relationship between service quality and customer satisfaction that ultimately affect the repurchase intentions and results in higher revenue for the service firms.

2.6.1.1 Relationship of reliability with customer satisfaction (R, CS) (H1a)

Customer reliability can positively contribute towards this essential point of the banks (Hayes, 2008) as it is a powerful instrument for creating rehash deals from the customers (Chu, 2009). Moreover, these dependable customers can fill in as powerful components in the advertising instrument when they allude their bank to more individuals. Along these lines these current customers contribute towards expanding their individual bank's customer base and piece of the overall industry. The financial base of any bank is to a great extent subject to this marvel. It realizes customer dependability and impels a long-haul relationship between the two sides (Khan and Fasih, 2014).

H1a: Reliability has a positive influence on customer satisfaction in commercial banking sector.

2.6.1.2 Relationship of tangibility with customer satisfaction (T, CS) (H1b)

Services are a continuous process of on-going interactions between customers and service providers comprising a number of intangible activities provided as premium solutions to the problems of customers and including the physical and financial resources and any other useful elements of the system involved in providing these services (Grönroos, 2004; Ismail et al., 2006) Premium service quality is a key to gain a competitive advantage in services industry. The satisfaction level of customers is dependent on their perception of service quality and the trust in service provider.

H1b: Tangibility has a positive influence on customer satisfaction in commercial banking sector.

2.6.1.3 Relationship of empathy with customer satisfaction (E, CS) (H1c)

Wu (2011) additionally examined the relationship among electronic service quality and consumer satisfaction and found electronic service quality is emphatically identified with consumer satisfaction. With regards to hardware

e-retailers, Bogicevic (2017) and Demir et al. (2015) indicate that self-checkout service quality emphatically impacts faithfulness through the circuitous impact of consumer satisfaction. Meanwhile, Iqbal et al.(2017) mention that the positive and noteworthy relationship between intervention of consumer satisfaction is among the relationship of service quality and customer dependability.

H1c: Empathy has a positive influence on customer satisfaction in commercial banking sector.

2.6.1.4 Relationship of responsiveness with customer satisfaction (Re, CS) (H1d)

Satisfaction thinks about the degree to which a buyer radiates positive assessments to a service experience (Lin and Hsieh, 2006). Satisfaction is concerning about customer's circumstance of being successfully repayment in obtaining condition in return of certain cost (Al-Alak, 2009; Jeong et al., 2016). Satisfaction is seen satisfactory when the study is made between past purchasing and utilization rehearses with that of expected profit by a product or service mark in regards to its normal potential to satisfy customer's goals (Taylor, 2014; Cronin et al., 2000; Loudon and Della Bitta, 1993). As per the perspectives of Oliver (1997), satisfaction is viewed as the "customer's satisfying response". It is fundamentally an evaluation as for the qualities of product or service giving a charming level of utilization related understanding. As expressed by esteem percept theory, satisfaction is viewed as passionate reaction which is started through the procedure of intellectual assessment (Parker and Mathews, 2001). In any case, Swan and Combs (1976) were first to demonstrate that satisfaction is related by methods for performance satisfaction prospects. Alternately, disappointment emerges by then when performance identified with some product or service and remains under the desires.

H1d: Responsiveness has a positive influence on customer satisfaction in commercial banking sector.

2.6.1.5 Relationship of assurance with customer satisfaction (A, CS) (H1e)

Relationships between service quality and consumer satisfaction by utilizing retail banking. Study results demonstrate that service quality is at the base of consumer satisfaction and is connected to such conduct results as practical quality, customization, suggesting and exchanging. Notwithstanding, extraordinary parts of service quality and diverse shopper attributes appear to be related with various results. For example, the outcomes propose that unmistakable components of service quality and are all more intently connected with positive responsibility. Then again, "convenience" parts of service conveyance are firmly identified with consumer satisfaction, and grumbling and exchanging practices. Ramifications of these outcomes incite more prominent consumer satisfaction to achieve larger amounts of great results as well as to mitigate negative results are discussed (Yavas et al, 2004).

H1e: Assurance has a positive influence on customer satisfaction in commercial banking sector.

3. METHODOLOGY OF RESEARCH

3.1 Population and sample of the Study

Population is the target audience that a researcher intends to conduct a study (Creswell, 2003). In the context of this study, the target population of this study comprises the entire local commercial banks' customers that use digital

services in Malaysia. Target population refers to the group of participants with the specific attributes specified for a research investigation based on interest and relevance (Salkind, 2011; Personal, 2016).

According to the official records from Malaysian authorities from central bank of Malaysia, the five of the most prominent commercial banks are Maybank, Hong Leong Bank, CIMB Bank, RHB Bank and Muamalat. There are 201,000 customers spread among five major banks in Malaysia from where the sample of this study is to be drawn. This target population data is presented on Table 1.

Table 1: Distribution of Study's Population

No.	Banks	N	%
1	Maybank	60,000	29.85%
2	Hong Leong Bank	50,000	24.88%
3	CIMB Bank	40,000	19.90%
4	RHB Bank	45,000	22.4%
5	Muamalat	6,000	3.0%
Total		201,000	100%

In this table, N= population size

This study intends to employ Stratified random sampling procedure to select the required sample for the study. Since the entire population is varying and therefore the need to divide them into different sub-groups (Banks) to ensure fairness in the distribution of sample.

Stratified Random Sampling Procedure used to select the sample based on the contribution of each Bank to the study's population (Proportionate). This is to ensure fair representation of all the Banks because all the banks customers are receiving the same digital banking in different platforms.

Thus the questionnaire was used in this study contained four sections, section A, Section B, section C and Section E. Section A refers information regarding the respondent profile. These are age, race, level of education, bank and type services and etc. Section B, C, D and E used likert scale numerical values from 1 strongly disagree to 5 strongly agree focusing on factors digital banking services quality and customer satisfaction and loyalty. The variable in this study was adopted and developed from previous research constructs.

Additionally, the poll intended for this study thought about the accompanying issues: The motivation to choose the beneath referenced things was as per the prerequisite of the subject of this investigation.

Cronbach's alpha was used as a reliability coefficient that shows how well the items in a set were positively correlated to one another (Cronbach, 1951).

Before going for the actual data collection, a preliminary reliability study was carried out to determine whether the questionnaire reliable and appropriate. In the preliminary survey questionnaire was distributed to 19 customers

from of the customers of the following banks (RHB, CIMP, Maybank, Hong Loang and Muamalat). The data collected through survey were entered into SPSS manually to check the Cronbach Alpha of each factor.

Table 2 summarizes the pilot study factor development of all the items. The pilot study suggested that the reliability analysis is satisfied for the variables as the cronbach alpha value was significant to the threshold value of 0.947 and total value 0.959.

Table 2: Reliability Coefficient Value

No			Items	Cronbach's Alpha (P)
B	Digital banking service	DBS	29	.959
1	Digital banking service (Reliability)	R	7	.934
2	Digital banking service (Tangibles)	T	6	.844
3	Digital banking service (Empathy)	E	7	.904
4	Digital banking service (Responsiveness)	Re	4	.851
5	Digital banking service (Assurance)	A	5	.851
D	Customer Satisfaction	CS	14	.947

Data analysis enables the researcher to organize and bring meaning to large amounts of data collected in a study (Struwig and Stead, 2001). It is an organized synthesis of data to address the study's objectives. To analyse the data collected in this study the descriptive and inferential statistical methods will be used. Frequency and percentage will be used to describe the demographic characteristics of the respondents. Measurement model and structural Model. The measurement model and structural model are formed by hypothesizing the model to be tested by CFA techniques. The statistical program SmartPLS 3.0 software will be utilized.

According to Byrne (2010) and Hair et al., (2010) SEM is the best statistical technique to use when investigating simultaneous effects of multiple exogenous and endogenous variables. Further SEM is widely acknowledged as a confirmatory analytical tool where it estimates the vigor of hypothesized relationships of constructs in the proposed cause and effect mode (Hair et al., 2010). There are many reasons for using SEM as a statistical technique. First, SEM is more suitable for confirmation of a research model based on existing theory than it is for exploring a new model. With the confirmatory approach, SEM researchers can verify if a proposed model is valid (Hair et al., 2010). Second, SEM is known as an extremely powerful substitute to factor analysis, path analysis, multiple regression, and analysis of covariance because nonlinearities, correlated independents, measurement error, correlated error

terms, multiple exogenous and endogenous variables, each with multiple observed variables, are reflected in the SEM (Byrne, 2010). Third, SEM allows researchers to compare the proposed model with an alternative model which results in the possibility of testing a better model for the proposed hypotheses (Penke & Deary, 2010). The reason behind this popularity is that SEM as a confirmatory tool to enriches the researchers with enough information to effectively assess and modify' theoretical models, when necessary (Browne, 1984; Jöreskog, 1978). In context of consumer behaviour SEM is preferred over other tools.

4. DATA ANALYSIS

A total number of 450 questionnaires were distributed in Johor Bahru banks name May Bank, CIMB Bank, RHB Bank, Muamalat Bank and Hong Leong Bank, 23 were returned back without any participation whereas 17 were returned incomplete information which was considered as not useable. 26 questionnaires were not returned with a response rate of 94%. Total 384 questionnaires were used for the final analysis with the rate of used response 84%. Based on Table 4 the statistical analysis for the current research is associated with 384 respondents from customers of bank branches.

Table 3: Response rate for the survey questionnaire

No	Description	Results
1.	Questionnaires distributed	450
2.	Blank questionnaire returned	23
3.	Returned and useable	384
4.	Returned and not useable	17
5.	Not returned	26
6.	Response rate	94
7.	Rate of useable response	84.33%

The analysis of the demographic details of the user involved in the survey is given. From the given analysis, it is clearly viewed that most of us are using the digital banking for their day to day transaction. Here a total of 384 surveys are taken and it is proved that all those 384 users are involved in the digital banking transactions. Out of 384 an overall of 196 males and 188 females are involved in the survey. They all fall under the age group of 75 users are between 18-25 years, 156 users are between 26-35 years, 128 users are between 36-45 years, 15 users are between 46-55 years, 10 users above 55 years. 226 of them are Malay people, 75 of them are Chinese people, 53 of them are Indians and 30 are from the other states. These all users have an educational level of the following; 106 have a qualification of secondary education, 165 completed are doing their degree diploma course, 98 are master/ PHD graduates are going to be graduated in these fields and the remaining 15 have different qualification levels except the above mentioned levels. These are the basic and personal demographic details of the users involved in the survey.

The analysis of the usage of banks and the digital banking services, duration of using the digital banking services for their life time and the frequency of use of digital banking service is given as follows. Out of 384 surveys, 114 uses Maybank, 87 of them uses RHB bank, 97 of them are using Hong Leong bank, 74 of them are using CIMB bank and 12 of them uses Muamalat bank. The types of services used in the banking are individual banking, business banking, digital banking and also for loan purposes. Here out of all 384, 279 of them are using Digital Banking. The types of digital banking services available are tax alerts, Electronic statements, “need help” service, online mobile and tablet banking, checking accounts, Treasury services (payroll services, deposit service), Discover cent, the quick money transfer tool, Mobile check deposit (Online pay), Debit and credit cards. From the above, the services like electronics statements (106) and the account checking services (105) are the often used services on digital banking from the customers and the treasury services like payroll services and deposit services are the minimum used services (23) from the digital banking customers.

Many of them like 166 customers are using the digital banking services for more than 5 years. 120 of them are using it for around 3years to 5 years, 76 users are using it for a period of 1 to 3 years and 22 are using it for less than 1 year. From this analysis we came to know that most of the customers using the digital banking are continued to be using it for a long time. A frequency of using the digital banking services for once every month is by 22 customers, 159 customers using the digital banking for twice every month, 44 are using it for 3 times in every month, 15 are using it 4 times in every month and 144 out of 384 are using it for more than 4 times a month and none of them are not using the digital services for a single month. Thus the digital banking services are mostly used by all of the banking customers at least for a single purpose in a month.

Table 4: Duration of Using Digital Banking

No	How Long Digital Banking Service Have Been Used	Respondents
1	< 1 year	22
2	1 year to 3 years	76
3	3 years to 5 years	120
4	Above 5 years	166

Table 5: Frequency of Use of Digital Banking

No	Frequency of Use of Digital Banking Services	Respondents
1	Once every month	22
2	Twice every month	159
3	3 times every month	44

4	4 times every month	15
5	More than 4 times a month	144
6	Never	0

From the above analysis it is proved that the most of the bank customers are using the digital services. In this survey, out of 384, almost all are using digital banking service rather than offline banking. Once they used these services, they are continuing it for a long time. About 51% of males and 48% females are using the digital banking services. So approximately gender is not a much focused attribute for using these services and the people within the age group of 26 to 45 are using it more than the other age group people. And none of them above the age group of 55 are using the digital banking. It might due to the lack of awareness about online banking. The most used services in the banking is the digital banking services when compared to the individual banking, business banking and for loan payments. They are all using the digital banking for the purpose of online mobile and tablet banking and for checking the accounts.

Almost many of them are using the digital banking services for a long time once they have tried these services and continuing it for more than 5 years. They are all using those services for at least once in every month and mostly they are using it for more than 4 times a month for their banking needs.

Assurance, Reliability, Responsiveness and Tangibility have a positive influence on customer loyalty in commercial banking sector.

To test the above hypotheses, the result of the SEM structural model as shown in Table 7 showed that assurance, reliability, responsiveness and tangibility has a positive influence on customer loyalty in commercial banking sector. Consequently, the results revealed that the hypothesis was supported. Thus, there is positive and significant effects of relationships between digital banking service quality and customer loyalty in commercial banking sector in Malaysia.

4.1 Hypotheses Testing (Direct Relationship)

To test the study's formulated hypotheses, a structural model result is used to obtain the path coefficients or beta (β), corresponding t-values, P-values and the effect sizes (R^2) and interprets the results as recommended by Hair et al.(2017) and Ringle et al. (2015).

The digital banking service quality is based on Reliability, tangibility, empathy, responsiveness, and assurance. The structural model assessment in PLS-SEM reveals the evaluation of the hypothesized relationships. Emphasis is placed on the bootstrap procedure because it produces the relevant statistics for estimating the statistical significance of the path coefficients (Hair et al., 2013). The bootstrapping procedure involves a resampling process, from the original sample with replacement (Chin, 2001; Ramayah et al., 2016).

4.1.1 Hypotheses (1a): Reliability has a positive influence on customer satisfaction in commercial banking sector

To address the above hypothesis, the result of the SEM structural model as shown in Figure 2 and 3 indicated that reliability has a positive influence on customer satisfaction in commercial banking sector ($\beta=0.212$, $t=2.548$, $p < 0.05$). This result supported the earlier stated hypothesis. With this finding it can be deduce that reliability has a positive influence on customer satisfaction in commercial banking sector.

4.1.2 Hypotheses (1b): Tangibility has a positive influence on customer satisfaction in commercial banking sector

To test the above hypothesis, the result of the SEM structural model as shown in Figure 2 and 3 showed that tangibility has a positive influence on customer satisfaction in commercial banking sector ($\beta=0.796$, $t=5.568$; $p > 0.05$). Thus, tangibility has a positive and significant influence on customer satisfaction in commercial banking sector.

4.1.3 Hypotheses (1c): Empathy has a positive influence on customer satisfaction in commercial banking sector

To test the above hypothesis, the result of the SEM structural model as shown in Figure 2 and 3 showed that empathy has a positive influence on customer satisfaction in commercial banking sector ($\beta=0.47$, $t=5.633$; $p < 0.05$). Thus, empathy has significant influence on customer satisfaction in commercial banking sector.

4.1.4 Hypotheses (1d): Responsiveness has a positive influence on customer satisfaction in commercial banking sector

To test the above hypothesis, the result of the SEM structural model as shown in Figure 2 and 3 showed that responsiveness has a negative influence on customer satisfaction in commercial banking sector ($\beta=-0.183$, $t=1.41$; $p > 0.05$). Thus, responsiveness has an insignificant influence on customer satisfaction in commercial banking sector.

4.1.5 Hypotheses (1e): Assurance has a positive influence on customer satisfaction in commercial banking sector

To test the above hypothesis, the result of the SEM structural model as shown in Figure 2 and 3 showed that assurance has a positive influence on customer satisfaction in commercial banking sector ($\beta=0.433$, $t=4.005$; $p < 0.05$). Thus, assurance has a positive and significant influence on customer satisfaction in commercial banking sector. Thus, the result supported the earlier stated hypothesis.

Table 6: Structural estimates (Direct Effect/Relationship)

No	Path	Beta (β)	T-Value	P-Value	Decision
H1a	Reliability -> Satisfaction	0.212	2.548	0.022	Supported
H1b	Tangibility -> Satisfaction	0.796	5.568	0.000	Supported
H1c	Empathy -> Satisfaction	-0.47	5.633	0.000	Supported
H1d	Responsiveness-> Satisfaction	-0.18	1.414	0.157	Not Supported
H1e	Assurance -> Satisfaction	0.43	4.00	0.00	Supported

Notes: Critical t-values. *1.96 ($P < 0.05$).

5. SUMMARY OF FINDINGS

This research paper investigated the relationship between digital banking service quality and customer Satisfaction in Malaysian Banks. This study was conducted in Malaysian banking sector using a cross-sectional survey design.

In this research study, descriptive analysis (frequency and percentages) was used to describe the demographic information of the respondents. The demographic information of the respondent presented comprised of gender, age, highest educational qualification, experiences, and position of responsibility commercial banks customers in Malaysia.

The summary distribution of the respondents shows that, the distribution of the respondents based on digital banking utilization, gender age, race and highest educational qualifications, the data revealed that all the different groups of respondents based on demographic information were fairly represented.

Based on the data analysis and interpretation, the major significant findings are: Reliability, Tangibility, Responsiveness, and assurance have a positive influence on customer loyalty in commercial banking sector. However, Empathy has positive but insignificant relationship with the customer loyalty in commercial banking sector in Malaysia.

The summary distribution of the respondents shows that, the distribution of the respondents based on digital banking utilization, gender age, race and highest educational qualifications, the data revealed that all the different groups of respondents based on demographic information were fairly represented.

6. DISCUSSION OF FINDINGS

The results of this research were obtained using survey instruments and analysed as presented in the methodology of this study. The findings were described based on the statistical information generated from the analysis. The results as presented are discussed in this section in relation to the findings of other relevant studies, expert opinions, and other validated assertions: The main objective of this study is to determine what are the digital service quality factors that positively affect customer satisfaction in Malaysian banking sector. In attempt to address the research objective, one corresponding question and five hypotheses were raised and tested as presented in the proceeding chapter. The results revealed that, reliability, tangibility, empathy and assurance have a positive influence on customer satisfaction in commercial banking sector. However, responsiveness has insignificant relationship with the customer satisfaction in commercial banking sector in Malaysia.

This study is consistent with many other related studies. Wu (2011) additionally examined the relationship among electronic service quality and consumer satisfaction and found that electronic service quality is identified with consumer satisfaction. With regards to hardware e-retailers (Bogicevic., 2017), Demir et al. (2015) indicate that self-checkout service quality emphatically impacts faithfulness through the circuitous impact of consumer satisfaction (Iqbal et al., 2017). The positive and noteworthy relationship is between intervention of consumer satisfaction among the relationship of service quality and customer dependability. Similarly, Komulainen et al., (2018) found that mobile banking is a big part of consumers' daily activities. As it is a valuable service to complete the activities, the mobile banking app was employed because it is so fast, clear and easy to use; andm it actually

affects everyday life and behavior. In another development a study revealed that expectations of accuracy, security, network speed, user friendliness, user involvement and convenience were the most important quality attributes underlying perceived usefulness which signifies customer satisfaction (Mutahar et al., 2018).

This study led credence to the conclusion of Chu (2009) who suggested that reliable customers can fill in as powerful components in the advertising instrument when they allude their bank to more individuals. Along these lines, these current customers contribute towards expanding their individual bank's customer base and piece of the overall industry. The financial base of any bank is to a great extent subject to this marvel. It realizes customer reliability and impels a long-haul relationship between the two sides (Khan and Fasih, 2014).

A study carried out by Al-Hawary and Al-Smeran (2017) from Jordan analyzed the impact of electronic service quality on the dimension of satisfaction of Islamic banks customers. Electronic service quality was estimated by unwavering quality, usability, adequacy, website composition, security, and responsiveness. Factual investigation found that customers' satisfaction is exceedingly impacted by the convenience, web composition, security, and responsiveness of e-services.

Ayyash (2017) considered the components that impact consumer satisfaction of e-banking customers in Palestine, explicitly components of data nature of e-banking (for example data exactness, satisfaction, opportuneness, and pertinence) and how they influence customer satisfaction. As a component of overview results, a positive relationship was found between consumer satisfaction and the four elements of e-banking data quality. Finally, Sakhaei, et al. (2014) investigated the relationship between the satisfaction of Internet banking customers in Iran and the nature of the utilized services. The literature audit distinguished six service quality measurements, which they are, unwavering quality, productivity, responsiveness, satisfaction, and security/protection and web composition. Among the outcomes, the exploration indicated significant relationships between each of the six measurements and consumer satisfaction. Specifically, unwavering quality was found to have the most noteworthy effect on consumer satisfaction while web architecture had the least effect (Maraqa et al, 2018).

7. IMPLICATIONS IN MALAYSIAN CONTEXT

The findings of this research study have highlighted some important implications that are specific to the Malaysian context. Customers are serving more flexibly and the preferred method in for when transactions are easily performed with another bank or another provider rather than the Malaysian banks. The banks in Malaysia have been businesses for integrating the mobile banking, internet banking and automated digital banking to satisfy the client's needs. The results show that the objective of the digital banking service quality is varied according to the customer satisfaction. However, the service quality impacts the customer satisfaction individually in Malaysia.

8. LIMITATION OF FINDINGS

The study investigated the relationship between digital banking service quality and loyalty in Malaysia. The study was successfully implemented with sound result that has important implication for policy making, theory and practices. However, study of this nature could have been successfully conducted without any challenges which may

affect the generalization of the study's findings. In the process of conducting this study certain limitations are highlighted below:

- 1) First, this study was conducted with a sample of only 384 participants that involved the customers using digital banking services in Johor alone, the sample can be considered moderately adequate looking at the nature of banking sector and the users in Malaysia. Thus, the findings of this study might be generalised to the entire bank customers in Malaysia.
- 2) The duration of this study is very limited and that leads to only the utilization of only one tool (questionnaires) for the data collections. It was burdensome as the customers have a tight schedule and the researcher had very limited time leading to more simple methodology obtained to collect data to generate the research findings.
- 3) Besides that, this study concentrates on major commercial banks and only one state in Malaysia, Johor Bharu, which is also only one location in the country (Malaysia), this make the result penalization of the result almost unrealistic.
- 4) Lastly, the quantitative technique employed that survey questionnaire was incapable to disclose how respondents respond during answering the questionnaire irrespective of the respondents were influenced by environment. It was also incapable of identifying whether participant fully understands the questions.

9. RECOMMENDATIONS TO THE ORGANIZATION

- 1) The tool used for measuring digital quality services, customer satisfaction and loyalty used in this study is a reliable and valid instrument. The researcher suggests that banks in Malaysia can adapt this model to enhance its digital quality services to enhance customer satisfaction and improve banks services delivery and performances.
- 2) That bank should provide them with superior services as compared to other services. The customers are the only resources to recommend the digital banking service provided by the current bank to others.
- 3) The customers should continue the usage of the digital banking service of their current bank and consider them to be loyal to their current bank digital banking services.
- 4) The regulatory bodies responsible for regulating financial regulations in Malaysia (i.e Bank Negara) should provide standard guidelines and encourage all banks in the country to properly implement an improved digital services quality and these should be a pointer to core areas of quality services delivery of the banking industry in the country.
- 5) This study also recommends that tertiary institutions managers be enlightened on the importance of digital quality services of banks to improve performance and enhance the level of services delivery, and expand marketing portfolio for attainment of leadership position in the banking industry.

10. RECOMMENDATIONS FOR FURTHER RESEARCH

Due to the highlighted shortcomings, time, and resources at the disposal of the researcher, other area that could have been considered and investigated were unavoidably ignored. It is therefore recommended that further studies should:

- 1) Consider implementing similar studies in other banks within Malaysia such as in other major cities to ascertain the efficacy of digital quality services among the bank customers in the country.
- 2) Larger samples should be involved in future studies to obtain more reliable, accurate and dependable results that can be generalizable to all banks and customers in Malaysia.
- 3) The study should also be replicated in other financial sector i.e insurance and an effort should be made to compare the application of digital quality services, customer satisfaction and loyalty in different organizations and level.
- 4) Lastly, future studies should consider utilization of more rigorous methodology that may involve qualitative exploration and quantitative survey to get the in-depth perspective of the respondents (banks customers).

11. CONCLUSION

The present study examined the relationship between digital banking service quality and loyalty in Malaysia. The study was based on the quantitative questionnaire survey the presented to the bank's customers; for example, Maybank, CIMB Bank, Muamalat Bank, RHB Bank, and Hong Leong Bank. The objective of the study is to analyse the impact of digital banking services on customer loyalty of different Malaysian Banks that offer the digital banking services. This study fills the gap in the literature survey since it leads to the digital banking issue completely without making avoidance in Malaysia. Finally, contributions of the study, and several other directions were analysed. Findings from the studies are expected to improve the existing knowledge on the practices of digital banking and its usage by the customers.

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