

**MODELLING CUSTOMERS' LOYALTY TOWARDS ADOPTING
ISLAMIC MOBILE BANKING SERVICES**

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Abstract

This study aims to find important factors of Malaysian Islamic banking customers' loyalty or continuance intention to use Islamic mobile banking services. A total number of 250 customers of has participated in this research. Based on findings, continuance intention of using Islamic mobile banking services was found to be depended on usability of mobile banking services, customer service provided by Islamic banks towards mobile banking services, customer satisfaction on mobile banking services and trust of customers towards mobile banking services. In addition, mediating effect of Islamic mobile banking services continuance adoption significantly influenced by customer satisfaction and trust. By understanding these continuance intention factors among the customers, it would help the industry player particularly Islamic banking to plan and strategize appropriate policies, and support necessary programmes on diversifying and promoting financial transaction using mobile banking services among their existing and potential customers.

Keywords: Islamic mobile banking continuance intention, loyalty, usability, customer service, customer satisfaction, trust

1. Introduction

According to Barnes et al. (2003), mobile banking is described as a channel to help customer to communicate with a bank via mobile device, namely, mobile phone or personal digital assistant (PDA). Such advancement using the mobile technology have enabled the banks client to performing the banking transaction anytime and anywhere as long as connected to the internet wisely. In another terms, the client no need to visit the bank branch or access it vie laptop in executing the transaction. The opportunity costs are becoming lesser, user friendly as well as convenient. Such rapid progression of mobile banking not only benefit to the customers but it has also put the bank under advantage position where the can offer different features of banking product that amazed the customer via mobile banking which subsequently minimizes the cost.

According to the projected statistics published by The Demand Institute (2017), cashless payment is expected to reach US\$10 trillion over the next decade, which reveals the importance of digital transaction including mobile banking services. Looking at the current digital environment, banking industry in many countries have invested heavily in the technologies and subsequently altered the structure the banking carry out their banking services and product dissemination (Earnst and Young, 2016).

Islamic banking is also not exceptional in adopting and serving the mobile banking services to their clients. Currently, the usage of Islamic mobile banking services in the UAE stands at 34 percent followed by 27 percent, 19 percent and 15 percent in Kuwait, Qatar and Saudi Arabia, respectively (World Islamic Banking Competitiveness Report, 2016). Indeed, there are few Gulf countries' Islamic banks have budgeted between US\$5 million and US\$20 million for digital initiatives (i.e. channels, customer journeys, automation, new technologies, etc.).

The advancement of digital banking has also impacted Malaysia, particularly in reshaping further the landscape of banking industries including Islamic banking. Furthermore, according to the statistics released by Central Bank of Malaysia, the subscriptions for the mobile banking services as overall (both conventional and Islamic banks) have seen steady increased since the launching of mobile banking services in Malaysia in year 2005 with registered subscribers reaching close to 9.12 million. Currently, Malaysia is considered as one of the advanced country in catalysing the markets of Islamic banking, after considering its existence more than 30 years.

Thus, it is very important for the Islamic banking to restore the growth and development parallel with its counterpart, given the challenging and intensified market. Moreover, Islamic banks are also required to fulfill for heightened customers' rapid changes in attitude as well as expectation as the customer opt digital as a modes of communication. In order to making sure the growth of Islamic banking parallel with conventional growth, the Islamic banking industry in Malaysia has shifted slowly to the different paradigm in offering services through digital technology including mobile banking services. At the moment, Islamic mobile banking services in Malaysia offered by few Islamic banks namely Bank Islam Malaysia Berhad, Bank Simpanan Nasional, CIMB Islamic Bank Berhad, Citibank Berhad, Hong Leong Islamic Bank Berhad, Malayan Banking Berhad, Al Rajhi Banking & Investment Corporation (Malaysia) Berhad, AmBank Islamic (M) Berhad, OCBC Bank (Malaysia) Berhad, Public Bank Berhad, RHB Bank Berhad, and Standard Chartered Saadiq Bank Malaysia Berhad.

Given the scenario that many of Islamic banks offer Islamic mobile banking services and large number of subscribers, the continuance of usage post-registration and trial remains to be a challenge. To increase and maintain the mobile banking transaction among the subscribers, the trust, satisfaction and client loyalty are becoming the main concerns by the authors. Indeed, various

supporting literature have shown the importance of these variable in making sure the client to use further the product offered by businesses. Among the literature on satisfaction are (Krepapa et al. 2003; Ndubisi and Chan, 2005) and loyalty (Andreassen and Lindestad, 1998; and Hallowell, 1996). To keep the continuous use of mobile banking services, it is very important for the Islamic banks to consider those factors that influencing the clients' continuance use of Islamic mobile banking services.

This study claims two major contributions, firstly it is expected to enhance the existing literatures on mobile banking, specifically Islamic banking. As highlighted earlier, not many research done in Malaysia particularly on loyalty towards using Islamic mobile banking services. This would be breakthrough research in identifying the factor that are influencing the customers' loyalty in using Islamic mobile banking services. The second contribution is the practical implication where the Islamic bank can design better policy to further accelerate the usage of Islamic mobile banking services among their client. By identifying the factors, this perhaps can allow Islamic bank to invest more idea on those significant factor that influencing the loyalty of the customers, and subsequently lead to good business to the Islamic bank as the customer nowadays looking for simplicity and convenience factors when use mobile application.

2. Literature review

2.1 Loyalty

The word loyalty indicates a state of condition where a customer intended to stick to a particular brand or organization for a longer period of time (Edvardsson et al., 2000). It is a kind of intrinsic commitment by the customers who purchase their preferred products or services on continuous basis despite the attractive advertisements or other competitors' actions (Oliver, 1999). It makes a psychological link where customers develop feeling and general connection to the organizations, products and services (Hallowell, 1996).

There is no doubt that loyalty is an important asset and considered as one of the key factors for achieving success and sustainability of the company or organization (Flavi_an et al., 2006; Keating et al., 2003). Many empirical studies supported the view that the loyalty always generates positive outcomes to an organization, for instance, only 5 percent decrease in defection yields gains in profitability between 20 to 85 per cent (Reichheld and Sasser, 1990) both in offline business and in some e-commerce sectors such as online selling of books, groceries and consumer electronics (Reichheld and Schefter, 2000).

The attitudinal loyalty emphasizes on the cognitive aspect of loyalty. It creates a strong attitude among the customers to stick to their preferred purchases. The customers under attitudinally loyalty are much committed to a particular brand or company where they like to purchase goods and services repeatedly influencing by a strong internal disposition (Day, 1961). The customer's psychological attachments and attitudinal advocacy to the organization are mostly prevalent under attitudinal loyalty (Rauyrueen and Miller, 2007). Besides, this type of loyalty also includes customers' positive word of mouth intentions and most importantly their recommendations or encouragements to others to use the products and services (Zeithaml et al.,

1996). This paper mainly emphasizes on attitudinal loyalty since it is mostly appropriate to capture the customers' intentions to stick to a particular brand or organization (Auh et al., 2007).

2.2 Satisfaction

The term satisfaction can be well-understood by the definition of Oliver (1997) "the consumer's fulfilment response, the degree to which the level of fulfilment is pleasant or unpleasant" (p. 28).

There are two types of satisfaction mentioned in the existing literature i.e., overall satisfaction that originates from overall experience and attribute satisfaction that measures the performance of individual attributes (Oliver, 1993).

Satisfaction is an emotional or sentimental state of customers that originated from a global assessment or evaluation of all the features which enable them to make the relationship with the institutions/organizations/service providers instead of being a transaction-specific phenomenon (Anderson et al., 1994; Bayus, 1992; Homburg and Annette Giering, 2001). The present paper adopts the psychological aspects of satisfaction which is most appropriate in the context of customers' satisfaction on mobile banking.

2.3 Usability

The word usability indicates the ease of use and learnability of a man-made tool or device, such as a computer system. In this paper, usability is applied to measure the customers' capacity of using mobile phone technology for banking transaction. The usability can be presented by several factors, such as simplicity and easiness in learning to manage the system, easiness of memorizing the main functions, level of efficiency in using the system, degree of error avoidance and satisfaction of the customers in managing the device (Nielsen and Hackos, 1993). There is an inverse relationship between levels of usability and levels of difficulty in managing the functions

of a device (Davis, 1989). That is why usability becomes a key factor for measuring the customers' intentions to use a system or device (Davis, 1989; Flavi_an et al., 2006; Teo, 2006).

Casalo et al., (2008) shows the role of usability in affecting customers' satisfaction and loyalty in online banking context. They found that perceived usability has positive relationship with customer satisfaction and institutional preference for future dealings.

2.4 Customer service

Customer service or care is probably one of the most crucial tasks of an organization. It is the task of serving the customers' need with a professional and helpful attitude before, during and after their problems or requirements are resolved.

In case of mobile banking, customer services are mostly provided by highly sophisticated technology-based communication channels such as calls centers (Dean, 2004; Rafaeli et al., 2008). Service providers used to face a moment of truth for each of the customer (Bitner et al., 2000) which may result in customers' satisfaction or dissatisfaction. This is a kind of communication channel between customer and service providers without any face to face interaction where customers' (dis)satisfaction solely rely on the frontline employees' response to their complaints (Bitner, 1992). Any misinformation or inadequate information affect negatively on the service provider's image and customer satisfaction (Burgers et al., 2000).

2.5 Trust

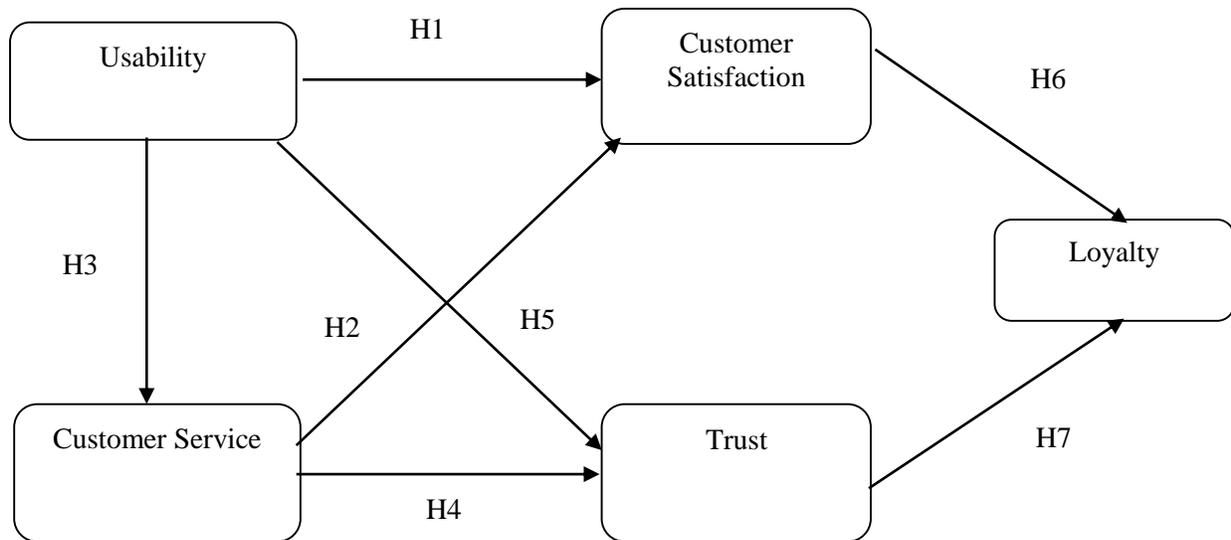
Trust is the willingness to depend on someone or something with confidence (Moormann et al. 1992). In online transaction, trust is considered a vial key to attracting and retaining clients through reducing perceived risks arises from the transaction (Verhagen and Tan 2006). The empirical study supports that there is a significant relationship between trust in the e-channel and the adoption of online banking (Kim and Prabhakar, 2000). Similarly, many other studies also observe the

importance of trust in measuring the clients’ online purchase behavior (der Heijden et al., 2003; Jarvenpaa et al., 2000). According to Bryant and Colledge (2002) “trust is an important consideration in the development and fostering of e-commerce relationships in the context of the knowledge-based economy”.

3. Hypotheses formulation

Studying the effect of loyalty is widely used in marketing research. Most of the previous works have been conducted on loyalty as the state of customers’ continuance purchasing of a specific services or products (Homburg and Annette Giering, 2001). In the current study, loyalty is considered as the dependent variable whereas some others such as one exogenous variable (usability) and three mediating variables (customer service, customer satisfaction, trust). These relationships are outlined in figure 1.

Figure 1: Research Framework



The relationship between customer service and customer satisfaction in online banking is observed in many studies (Ganguli and Roy, 2011; Ho and Lin, 2010; Sadeghi and Farokhian, 2011). In this

paper, customer service and usability are considered to form a structural model that emphasizes both cumulative and transaction-specific experiences.

On the other hand, service quality and usability are measured by the apparent transaction quality on a cognitive basis and overall customer satisfaction indicates to the increasing experience based on an affective component. Given this, the present study hypothesizes that customer service and usability positively affect perceived overall satisfaction (H1, H2):

H1. Usability has a significant (positive) influence on customer satisfaction in the Islamic mobile banking services.

H2. Customer service has a significant (positive) influence on customer satisfaction in the Islamic mobile banking services.

Good interface design and usability motivate customers to feel positive on the customer service. If customers receive necessary information related to usage of the application, they more likely to have positive impression on the services. The usability has been observed to be an antecedent of customer service (Floh and Treiblmaier, 2006). Thus, the present paper proposes that usability quality is an antecedent of customer service (H3):

H3. Usability has a significant (positive) influence on customer service in the Islamic mobile banking services.

There is a lack of studies conducted in observing the relationship between service and trust, however, a few empirical studies are found that confirm the influence of usability and service on trust in mobile related applications. A study on the adoption of mobile banking of four state owned banks in China shows significant impact of usability and service on trust (Zhou, 2012).

Another study on the mobile commerce service provider in Taiwan finds that usability and customer service have an indirect impact on trust (Yeh and Li, 2009). The present paper hypothesizes the positive effect of perceived usability and customer service on trust (H4, H5):

H4. Customer service has a significant (positive) influence on customer trust in the Islamic mobile banking services.

H5. Usability has a significant (positive) influence on customer trust in the Islamic mobile banking services.

A number of studies confirm that higher degree of customer satisfactions generates higher degree of customer loyalty (Anderson and Sullivan, 1993; Hallowell, 1996; Yoon and Kim, 2000). Customer satisfaction becomes a robust predictor of loyalty particularly in the case of new information and communication technologies (Methlie and Nysveen, 1999).

A few studies show that customer loyalty is affected by trust and customer satisfaction in mobile commerce transaction (Bitner 1992, Rust et al. 1995, Lin and Wang, 2006). The present paper hypothesizes a positive impact of customer satisfaction on customer loyalty (H6):

H6. Customer satisfaction has a significant (positive) influence on customer loyalty in the Islamic mobile banking services.

As mentioned earlier, lowering perceived risks and keeping trust in online transactions are very vital to attract and retain customers (Lee and Chung, 2009; Luo et al., 2010; Verhagen et al., 2006). Following this evidence, the present paper proposes a positive effect of trust on loyalty (H7).

H7. Customer trust has a significant (positive) influence on customer loyalty in the Islamic mobile banking services.

4. Research Methods

4.1 Measurement instruments

The constructs and items used in this study are adapted from various existing literature and modified to suit the objective of the study. The scale items are based on a five-point Likert-scale ranging from strongly disagree (1) to strongly agree (5). In terms of items development, they are adapted from Flavian et al.(2006), Casalo et al. (2008), Kirakowski et al. (1992), Rafaeli et al. (2008), Mukherjerr and Nath (2003, and Thakur (2014). Final instruments had 18 self-reported items that related to five research constructs. Customer service consists of (4-item), loyalty consists of (3-item), customer satisfaction consists of (4-item), trust consists of (4-item), and usability consists of (3-item).

Table 1: Summary of Hypotheses

Hypothesis	Relationship
H1	Usability → Customer Satisfaction
H2	Customer Service → Customer Satisfaction
H3	Usability → Customer Service
H4	Customer Service → Trust
H5	Usability → Trust
H6	Customer Satisfaction → Loyalty
H7	Trust → Loyalty

4.2 Data collection procedure and sample

Data are collected from the existing customers of Islamic banking and finance services in the Klang Valley (Selangor and Kuala Lumpur), who had used Islamic mobile banking at least once. A total of 300 surveys are sent to the existing customers. A total of 275 questionnaires are returned, of

these, 25 are excluded as respondents had no experience on making transaction using Islamic mobile banking, and leaving only a total of 250 valid questionnaire to be used for the data analysis.

Respondents' characteristics are summarised in Table 2.

Table 2: Descriptive statistics of Respondents' characteristics

		Sample Percentage
Gender	Male	54.4
	Female	45.6
Age Group	20-30	46.4
	31-40	25.2
	41-50	16.4
	Above 50	12
Occupational	Public	26
	Private	36
	Self employed	12
	Housewife	6.4
	Retired	4
	Student	15.6

5. Data Analysis and Results

The Islamic mobile banking factors were tested by using Partial Least Squares (PLS) regression. According to Thakur (2014), PLS is considered as a technique of Structural Equation Modelling, where reliability and validity of the theoretical constructs are accessed in addition to estimate the relationships among the constructs simultaneously. Indeed, the usage of PLS is widely applicable in information science research, as this analysis enables researchers to examine parameters of measurement models and structural path coefficients (Bock et al., 2005).

In addition, Chin et al. (2003) highlighted that PLS has its own advantages. Among the advantages are minimal restriction on measurement scales, sample size, and residual distributions. Furthermore, since the current study is exploratory-based and consist of many constructs and items, PLS is also appeared to be an appropriate technique compared to covariance-based SEM (Hair et al. 2011). This study used software of SmartPLS Version 2.0 M3 for data analysis.

5.1 Assessment of measurement model

The convergent validity was examined at the initial stage. It includes items' loading, average variance extracted (AVE) and composite reliability (CR). The initial results showed that items' loading are exceeding 0.5 for all items as suggested by Hair et al. (2009). Later, for AVE threshold or requirement, Hair et al. (2009) suggested that AVE should exceed 0.5. In the current study, AVE for all constructs were in the range of 0.68 and 0.82. Furthermore, CR for all constructs were ranged from 0.898 to 0.932 and they are exceeded threshold value of 0.7 as recommended by Hair et al. (2009). Table 2 shows the results of measurement model.

Table 3: The Results of Measurement Model

Variables	Items	Factor Loading	AVE	CR
Customer Service	CS1	0.829	0.699	0.903
	CS2	0.837		
	CS3	0.843		
	CS4	0.835		
Loyalty	L1	0.919	0.821	0.932
	L2	0.913		
	L3	0.886		
Customer Satisfaction	SAT1	0.861	0.748	0.922
	SAT2	0.889		

	SAT3	0.865		
	SAT 4	0.845		
Trust	T1	0.828	0.687	0.898
	T2	0.843		
	T3	0.857		
	T4	0.785		
Usability	U1	0.887	0.779	0.914
	U2	0.898		
	U3	0.863		

After convergent validity have examined, the following validity namely convergent validity was performed. Fornell & Larcker (1981) mentioned that discriminant validity was assessed by examining the correlations between the measures of potentially overlapping constructs. If the square root of AVE (in bold) are greater than the diagonal elements in their corresponding row and column, then discriminant validity is achieved. Based on the results (see Table 4), it shows that the required discriminant validity has been achieved. Thus, the measurement model has fulfilled adequate convergent and discriminant validities.

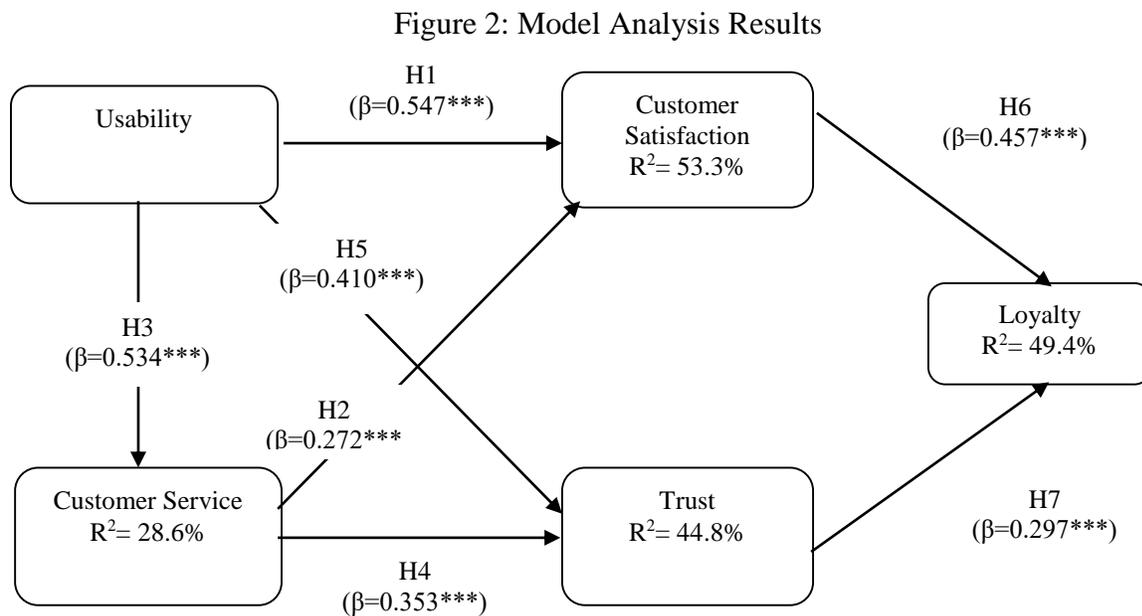
Table 4: The Results of Discriminant Validity Analysis

	Customer Service	Loyalty	Customer Satisfaction	Trust	Usability
Customer Service	0.836				
Loyalty	0.431	0.906			
Customer Satisfaction	0.565	0.673	0.865		
Trust	0.573	0.630	0.730	0.829	
Usability	0.534	0.483	0.693	0.599	0.883

5.2 Assessment of structural model

After fulfilled the reliability and validity of items and constructs, the structural model is accessed. SmartPLS is used to assess the structural model.

The R^2 is used as a main evaluation for the goodness of the structural model. According to Hair et al. (2011), R^2 measures the coefficient of determination and the level of significance of the path coefficients (beta values). According to Chin (1998), the value of R^2 's dependent variables denote the the predictiveness of the theoretical model, while the relationship (strength) among the independent and dependent variables represented by standardized path coefficients. In order to estimate the significance of path in the structural model, there is a need to conduct bootstrapping resampling procedure. This study performed bootstrapping resampling procedure by using 500 samples. The results are shown in Figure 2 below.



The R^2 value for the current research is 49.4 percent. It is suggesting that 49.4% of the variance in Islamic mobile banking continuance intention can be explained by the theoretical

model. In addition, 53.3 per cent of the variance for customer satisfaction towards Islamic m-banking is accounted for by the model. Also, 44.8 per cent of trust of using Islamic mobile banking and 28.6 per cent of customer service provided by Islamic mobile banking is explained by usability of Islamic mobile banking.

Later, the path coefficients of the structural model have been calculated to assess the statistical significance of the path coefficients. Table 3 reveals that usability ($\beta = 0.547$, $p < 0.01$) and customer service ($\beta = 0.272$, $p < 0.01$) are significantly related to customer satisfaction. Further to this, it is found that usability is significantly related to customer service ($\beta = 0.534$, $p < 0.01$). Meanwhile, customer service ($\beta = 0.353$, $p < 0.01$) and usability ($\beta = 0.411$, $p < 0.01$) are significantly related to trust. On the other hand, customer satisfaction ($\beta = 0.457$, $p < 0.01$) and trust ($\beta = 0.297$, $p < 0.01$) are significantly related to loyalty or continuance intention to use Islamic mobile banking services. Therefore, the statistical results are supporting H1, H2, H3, H4, H5, H6 and H7. Table 5 shows the summarisation of hypothesis results.

In addition, this paper also tested several mediation effects. According to Barron and Kenney (1986) "*mediation is a situation when the predictor initially has a significant influence on the mediator, later the mediator has a significant effect on the criterion variable or dependent variable and finally the predictor has a significant influence on the criterion variable or dependent variable in the absence of the mediators' influence*". In order to test the mediations suggested in H1-H6, the current study bootstrapped the indirect effect of usability on loyalty. It is found that the test was significant with Sobel test statistics = 6.203, p-value <0.01. Further, to test the mediations suggested in H2-H6, the current study bootstrapped the indirect effect of customer service on loyalty. In this case also, it is found that the test was significant with Sobel test statistics = 5.1611, p-value <0.01. Having these results, this study found that satisfaction plays mediating

role between usability and loyalty as well as customer service and loyalty. In addition, this study further tested other proposed mediating relationships (H5-H7 and H4-H7). Based on Sobel test for these relationships, the results shows that both mediating relationships are significant (H5 - H7, Sobel test statistics = 3.994, p-value <0.01 and H4-H7, Sobel test statistics = 4.585, p-value <0.01). These results establish that trust plays mediating role between usability and loyalty as well as customer service and loyalty.

Table 5: The Results of Structural Model

Hypothesis	Relationship	Beta	SE	t-Value	Decision
H1	Usability → Customer Satisfaction	0.547	0.052	10.597	Supported
H2	Customer Service → Customer Satisfaction	0.272	0.058	4.671	Supported
H3	Usability → Customer Service	0.534	0.053	9.992	Supported
H4	Customer Service → Trust	0.353	0.056	6.314	Supported
H5	Usability → Trust	0.411	0.055	7.535	Supported
H6	Customer Satisfaction → Loyalty	0.457	0.077	5.905	Supported
H7	Trust → Loyalty	0.297	0.084	3.528	Supported

6. Discussion, Implications and Conclusions

The objective of this study is to investigate the potential predictors that influencing the existing customers' loyalty or continuance intention in using Islamic mobile banking services. The results confirmed that the hypotheses are found to be significant and meaningful to explain the relationship between the variables used in this study. The relationship between the usability of mobile banking among the Islamic banks' customers and satisfaction and, the result found to be significant. This result indicated that Islamic banks have to focus and enhance on the mobile-banking interface which has an important and vital to influence the customer satisfaction. This study found that the most important item for usability is about the customers' concern particularly on their first experience of using the mobile banking service and the ease of using the mobile banking service will influence the satisfaction of the customers.

Second, the relationship between customer service offered by the Islamic banks and customer satisfaction is examined and, it is found to be significant. This result is indicated that the service providers should invest in constant training and knowledge to the customer service agent for them to provide satisfactory customer service. Among the tested items, we finds that the most important item for customer satisfaction is about the customer service is able to assist effectively the customer during problematic situation face by customer.

Third, the relationship between the usability of the Islamic mobile banking and the customer services offer by the Islamic banks is tested. This relationship implies that both effective usability of the mobile banking and customer service will influence the Islamic banking customer satisfaction.

Fourth, this study examines the relationship between the customer service offers by Islamic bank and the trust of the customers of Islamic banks. This result implies that the trust of the Islamic

banks customer is depends on the satisfaction of customers during or after engaging with the customer services provided by Islamic banks. Thus, Islamic bank has to ensure that the customers are able to receive a worth and reliable information from the customer service department. Any mislead information or negative experience faced by customers will lead to the lack of trust among them.

Next, the relationship between usability of Islamic mobile banking and the trust of the customers is tested. It indicates that the trust of the customer is determined based on the experience of the customer in using the Islamic mobile banking service. The more ease of use of the mobile banking will enhance the trust of the customers to maintain with the respective Islamic bank.

The following relationship between the satisfaction of the Islamic bank's customer and the loyalty of the customers to maintain Islamic mobile banking service is tested and the result is found to be significant. The loyalty of the Islamic bank customers can be achieved if Islamic bank is able to offer usability or ease of use of mobile banking service and also satisfy the customer through effective customer service.

Last, this study examines the relationship between the trust of customers of Islamic bank and their loyalty toward using Islamic mobile banking service. This result implies that Islamic bank will able to maintain their customers in using their mobile banking services when the customers have trust on the services provided, and finally lead to customers' loyalty on using mobile banking services.

7. Limitation and Future research

This study contributes in identifying the factors of loyalty or continuance intention to use Islamic mobile banking service. However, there are some limitations of the current study. The sample size

and area of study becomes the obvious limitations. Thus, there is a need for cautious in the interpretation of the results and conclusion cannot be as generalized.

In addition, as the respondents of this study are existing customers who have used Islamic mobile banking services at least once, relying on the perception of one key informant, might imply cognitive biases.

Besides, the use of current factors might limit the ability to explore other potentially important determinant of the customers' continuance intention on using Islamic mobile banking services. Thus, future research can be conducted by incorporating new factors and provide new insights for Islamic mobile banking services continuance intention determinants. A test on potential a moderator should be carried-out for further Islamic mobile banking service continuance intention determinants study.

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