MOBILE BANKING ADOPTION: THE IMPACTS OF SOCIAL INFLUENCE, UBIQUITOUS FINANCE CONTROL AND PERCEIVED TRUST ON CUSTOMERS' LOYALTY

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ABSTRACT: *Retaining existing consumers is a challenging task for any business. The banks are facing difficulties in retaining the existing mobile banking users. Customers' loyalty is an important factor for usage continuation by the customers. This study develops and tests a model by incorporating Social Influence, Ubiquitous Finance Control (UFC), Perceived Trust with Mobile Banking Adoption and Customers' Satisfaction constructs to study customers' Loyalty. Data from 263 mobile banking users from Saudi Arabia was tested against the proposed model and structural equation modeling (SEM) technique was used. The results reveal that goodness-of-fit indices are comparable between measurement and structural models. Our findings indicate that mobile banking adoption and customers' satisfaction is influenced by Social Influence, Ubiquitous Finance Control (UFC) and Perceived Trust. Customers' loyalty is predicted by two antecedents' namely mobile banking adoption and customers' satisfaction. Mobile banking adoption also influences positively customers' satisfaction. Implications and recommendations based on our study have been concluded in the paper.*

Keywords: Mobile Banking; Ubiquitous Finance Control; Wireless Service Channel; Information Systems (IS); Customers' Loyalty.

1. INTRODUCTION

The proliferation of internet and hand held devices have revolutionized the businesses to serve their customers at their door steps. Mobile devices have become so popular and ubiquitous that financial institutions have spread their services to customers through wireless channels. Wireless communication technologies have created a new service channel for banking customers known as mobile banking (M-Banking). Organizations are working always to adopt different technologies to cope with customers' expectations, reduce expenditures and sustain their profitability [1] .

M-Banking means the ability to conduct financial transactions without temporal and spatial constraints [2]. M-Banking requires little or no infrastructure, consumers are still reluctant to adopt M-Banking [3]. M-Banking penetration is low worldwide. In US, it is 35%, in UK 28% while in China it is 62% [4] . Saudi Arabia is considered as the largest IT market in the Middle East [5] . The mobile phone penetration in Saudi Arabia is 74.9% of Saudi Arabian population [6] . Only 17% of smartphone users of Saudi Arabia use their smartphones for financial transactions (CITC, 2014). These statistics reveal that, still in many countries, M-Banking adoption and utilization is low.

An Information System (IS) success depends on its continued use rather than its first time use [7]. Implementation of an IS can be considered successful only if large number of users continue to use the IS after initial use. If customers are happy and satisfied with the service, will become repeat customers and will be loyal to the service.

Many studies have been conducted on M-Banking and these studies have identified the determinants of M-Banking adoption of [8, 9, 10, 11]. However, the study of extant literature reveals that very few have studied consumer's' M-Banking loyalty in terms of social factors along with users' perceptions of Ubiquitous Finance Control and Trust. To fill this gap, this study attempts to identify the factors affecting M-Banking adoption, customers' satisfaction and customers' loyalty.

2. LITERATURE REVIEW

Social Influence

Loyalty of customers to any product or service is influenced by social interactions of customers with their friends, relatives and co-workers. Social influence is an important construct which has been used in well-known technology adoption models like Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology acceptance model (TAM2), Unified Theory of Acceptance and Use of Technology (UTAUT) and UTAUT2 [12, 13, 14, 15, 16] . Many researchers have confirmed the positive effects of social influence on M-Banking adoption [3, 17, 18].

Ubiquitous Finance Control (UFC)

In case of banking, consumers want control and access to their finances anytime 24/7 and from everywhere. This feature is called ubiquitous finance control (UFC). Within the perceived benefits of m-banking, UFC is the most important. Researchers have studied perceived benefits like universal, value added, social and perceived enjoyment, mobility, self-efficacy, utilitarian and hedonic values [19]. Finance control factor has not been focused in previous research. To fill this gap, this research studies this important factor by examining its direct influence on M-Banking consumers' behaviour.

Perceived Trust

In the context of M-Banking, "trust is the customers' willingness to perform on-line banking transactions, expecting that the bank will fulfill its obligations, irrespective of their ability to monitor or control banks' actions" [20] . Many researchers have argued that trust is an important factor influencing adoption of technology. The significant impacts of trust on behavioral intention were confirmed in a study made in Pakistan on M-Banking [21] . Another study was made on M-Banking utilization in Malaysia which also confirmed significant influence of trust on utilization and satisfaction [22] . Many other studies have also confirmed

that trust is an important factor influencing adoption and continuation of M-Banking [19, 23, 24, 25].

Customer Satisfaction

In the context of financial services and use of information systems, satisfaction plays an important role. The importance of satisfaction has been covered extensively in the literature. Studying the continuance of IS, Bhattacherjee [7] has presented Expectation Confirmation Model (ECM) in which satisfaction is an important antecedent of IS continuance [7] . Satisfaction was found to have significant role in M-Banking transaction in a study made in Malaysia [22] . According to a study made on the users' perceptions about M-Banking and continuous usage in Finland, significance of satisfaction was confirmed [26]. High level of customers' satisfaction will lead to more purchases of services or products and it will enhance loyalty of customers to the service provider.

Customer Loyalty

The willingness of a customer to use the same product or service again and again is termed as customer's loyalty [27]. The customer's specific desire of continuing an affiliation with supplier and provider is termed as loyalty [28] . Brand loyalty needs precedence in the service sector, therefore, the service providers should accommodate customers' expectations and keep them satisfied and contented [29, 30]. Thus, with regards to the banking sector, the banks should provide such service which fulfills the perceived expectations of the customers, ensure good facilitating conditions and maintain trust of the customers so that they will remain contented with the service and in turn they will be loyal to the service provider.

3. CONCEPTUAL FRAMEWORK AND HYPOTHESES

This study aims to identify the Impacts of Social Influence, Ubiquitous Finance Control and Perceived Trust on Consumers' M-Banking Loyalty. Our model combines variables Social influence (SI), Ubiquitous Finance Control (UFC), Perceived Trust, M-Banking Adoption and Satisfaction to see the effects of these constructs on customers' loyalty.

Social Influence (SI)

Venkatesh [15] defines social influence as the degree to which an individual perceives that the use of new technology by him/her is considered important by others or he/she conforms with others' expectations. People meet socially and they take influence from the value given to m-banking given by peers or family members. It may influence the individual trend towards m-banking. Many researchers have confirmed the positive impacts of social influence on individual intention to use M-Banking [31, 32] . Consumers of mobile commerce, are not only technology users but they are part of social network also [32]. Therefore, we hypothesize,

H1. Social influence is positively related to M-Banking adoption.

H2. Social influence is positively related to customer's satisfaction.

Ubiquitous Finance Control (UFC)

Financial Control is another important predictor in the context of consumers' expectations from M-Banking. In this study, UFC is the extent to which a consumer perceives to track, manage and report its financial resources and transactions. The consumer expects a full access to his/her finances all the times and from everywhere. If the users' expectations are fulfilled, he will be more eager to adopt the service. Keeping in view this fact, this study will examine the influence of Ubiquitous Finance Control on user's adoption of M-Banking. Hence

H3. UFC is positively related to M-Banking adoption.

H4. UFC is positively related to customer's satisfaction.

Perceived Trust (PT)

Due to many uncertainties in case of e-commerce, the role of trust becomes more important [33]. Trust plays a role of a catalyst for exchange of relationships between the customer and the service provider [34]. If there is no trust between the customer and M-Banking terminals, there is no adoption [35] . Researchers have studied the relationships between trust and adoption or usage intention and positive impacts of trust have been confirmed on adoption [22, 36, 37]. Trust and satisfaction both are required for adoption of a specific technology. If a consumer will not be satisfied after adoption, he may switch to other product/service. Therefore, trust influences positively customer's satisfaction also. Thus, the following hypotheses are proposed:

H5. PT is positively related to M-Banking adoption.

H6. PT is positively related to customers' satisfaction.

M-Banking Adoption, Customer Satisfaction (CS) and Customer Loyalty (CL)

Customer satisfaction is reflected in the shape of attitude [38] . An attitude is a construct before decision [39] while satisfaction is a construct after decision and experience [38] . The degree of a customer's positive feeling about the service provider is manifested by the customer's satisfaction [40]. Higher satisfaction of the customer has positive effects on customer loyalty [41] . The use of mobile services by satisfied customers will be more than those who are not satisfied and satisfied customers may more likely to continue the use of service and recommend it to others [42] . Significant effects of online shopping satisfaction on online shopping continuance were confirmed in a study made on online shopping continuance in the context of Saudi Arabia [43]. Positive relationships among utilization, satisfaction and loyalty were confirmed in a study made in Malaysia in the context of M-Banking [22] . Hence,

H7. M-Banking adoption is positively related to customers' satisfaction.

H8. Customers' satisfaction is positively related to customers' loyalty.

H9. M-Banking adoption is positively related to customers' loyalty.

4. CONCEPTUAL MODEL

Conceptual model of the study is depicted in figure 1.

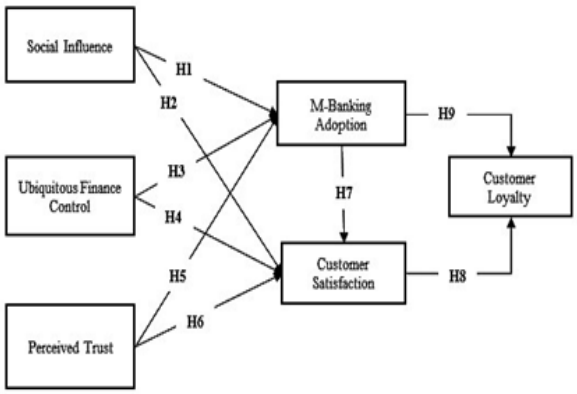

Figure 1: Conceptual Model

5. METHODOLOGY

Research Instrument Development

We developed a questionnaire to conduct the survey. It contained two parts. Questions about demographic information were added to the first part while the second part was composed of 34 questions measuring the 6 constructs of the proposed model. To measure the items of the questionnaire, a five-point Likert Scale was used. Items of the instrument have been adopted from prior research. As we have tested one new construct (UFC) for which items were developed and verified by expert researchers in the relevant field. Research instrument is given in Appendix-A.

Data Collection and Sample

To achieve our research objectives, we conducted a survey. Structural Equation Modeling (SEM) was used to test our hypotheses. Purposive sampling technique was adopted to collect sample with appropriate characteristics i.e. individuals having M-Banking usage experience. As a rule of thumb, a sample of 15 cases per predictor is an appropriate sample size in a standard ordinary least squares multiple regression analysis [44] . According to [45], the minimum sample size for SEM is 200. We sent the questionnaire online to 1200 respondents which included university faculty, staff members and students. 308 filled questionnaires were returned. Sixteen cases were deleted after initial analysis for missing data. In remaining 292 cases, 29 cases were discarded for not having M-Banking usage experience. For model testing, remaining 263 cases were used. Details of demographic information are listed in Table-1.

6. RESULTS

To test our model, we followed a two-steps approach as recommended by [46]. To test the measurement model, Confirmatory Factor Analysis (CFA) was conducted. Then we assessed the structural model by using structural equation modeling (SEM).

Table 1. Demographic Information of the Sample

Item	Characteristics	Percentage (%)
Gender	Male	77.2
	Female	22.8
Age Group	Below 20 years	17.9
	21 to 30 years	40.3
	31 to 40 years	18.3
	41 to 50 years	15.2
	Over 50 years	8.4
Qualification	High School	10.3
	Undergraduate	39.2
	Graduate	30.8
	Other	19.8

Measurement Model

We used SPSS 22.0 for descriptive analysis and AMOS 21 to conduct CFA to test our measurement model. Validity of the measurement model was tested in terms of reliability and convergent/discriminant validity. (Cronbach alpha>0.7) and composite reliability (rho>0.7) were used to test the reliability of the measurement model. These values are listed in table-2 meeting the minimum criteria.

Table 2. Descriptive Statistics, Reliability and Convergent Validity

Constructs	Items	Means	Standard Deviations	Factor Loading	Cronbach's Alpha	CR	AVE
Social Influence	SI1	4.01	.796	.690	.810	0.810	0.517
	SI2	3.98	.824	.786			
	SI3	3.97	.798	.678			
	SI4	3.95	.797	.672			
Ubiquitous	UFC1	3.99	.961	.746	.843	0.843	0.573
Finance Control	UFC2	3.97	.934	.761			
	UFC3	4.00	.921	.781			
	UFC4	4.03	.954	.737			
Perceived Trust	PT1	3.64	.905	.687	.796	0.799	0.570
	PT2	3.59	.814	.807			
M-Banking Adoption	PT3	3.67	.862	.691			
	ADOPT1	3.92	.750	.758	.833	0.833	0.624
	ADOPT2	3.87	.740	.662			
Customer Satisfaction	ADOPT3	4.06	.742	.748			
	CS1	3.76	.856	.709	.820	0.820	0.533
	CS2	3.73	.843	.720			
	CS3	3.70	.808	.686			
Customer Loyalty	CS4	3.60	.915	.761			
	CL1	3.76	.985	.717	.748	0.749	0.599
	CL3	3.73	.970	.741			

For convergent validity of measures, the two most common indices are Composite Reliability (CR) and Average Variance Extracted (AVE) [47]. Values of CR >=0.70 are deemed acceptable while value of AVE >=0.50 are considered acceptable [48]. Convergent validity is established if AVE for each construct is greater than 0.5. Discriminant validity is established if the AVE of each construct is greater than the shared variance. Square roots of the AVE values and inter-construct correlations are listed in table-3.

Table 3. Discriminant Validity

	Cus_Satisfaction	**UFC**	**S_Influence**	**Per_Trust**	**MB_Adoption**	**Cus_Loyalty**
Cus_Satisfaction	**0.730**					
UFC	0.006	**0.757**				
S_Influence	0.376	0.077	**0.719**			
Per_Trust	0.566	0.144	0.197	**0.755**		
MB_Adoption	0.545	0.280	0.257	0.654	**0.790**	
Cus_Loyalty	0.540	-0.008	0.365	0.457	0.618	**0.774**

Square roots of the AVE values are higher than their shared variances which represent good discriminant validity. We assessed our measurement model to test whether it is able to explain the observed data. For this purpose, seven different indices were evaluated. All these model fit indices were found within the recommended level which are listed in Table-4.

Table 4. Fit Indices for Measurement and Structural Models

Fit Indices	**Recommended Value**	**Measurement Model**	**Structural Model**
χ^2		175.939	186.069
df		155	158
χ^2/df	<3	1.135	1.178
RMSEA	<0.08	0.023	0.026
GFI	>0.9	0.939	0.935
AGFI	>0.9	0.917	0.914
NFI	>0.9	0.921	0.917
CFI	>0.9	0.990	0.986
TLI	>0.9	0.987	0.984

Structural Model

Goodness-of-fit indices for the structural model are listed in table-4. These values are in accordance with the measurement model. The model fit indices provide evidence of fitness between the hypothesized model and the observed data. A summary of hypothesis testing is given in Table-5 and the path analysis of structural equation modeling is shown in figure-2. The explained variances of Mb-Adoption, Customer Satisfaction and Customer Loyalty are 47%, 45% and 44% respectively. MB-Adoption and Customer Satisfaction both are jointly predicted by Social Influence, UFC and Perceived Trust. Thus our hypotheses H1, H2, H3, H4, H5 and H6 are supported. The significance between adoption-satisfaction, satisfaction-loyalty and adoption-loyalty were also confirmed and thus hypotheses H7, H8 and H9 are supported.

Table 5. Summary of Hypotheses Testing

Hypotheses	**Standardised Path Coefficients**	**T-Value**	**P-Value**	**Hypotheses Testing**
H1. Social Influence → MB.Adoption	0.138	2.129	0.033*	Supported
H2. Social Influence → Cust.Satisfaction	0.251	3.606	***	Supported
H3. Ubiquitous Fin. Control → MB.Adoption	0.17	2.715	0.007**	Supported
H4. Ubiquitous Fin. Control → Cust. Satisfaction	-0.15	-2.299	0.021*	Supported
H5. P. Trust → MB.Adoption	0.60	7.605	***	Supported
H6. P. Trust → Cust.Satisfaction	0.35	3.547	***	Supported
H7. MB.Adoption → Cust. Satisfaction	0.289	2.895	0.004**	Supported
H8. Cust. Satisfaction → Cust. Loyalty	0.319	3.571	***	Supported
H9. MB.Adoption → Cust. Loyalty	0.435	4.779	***	Supported

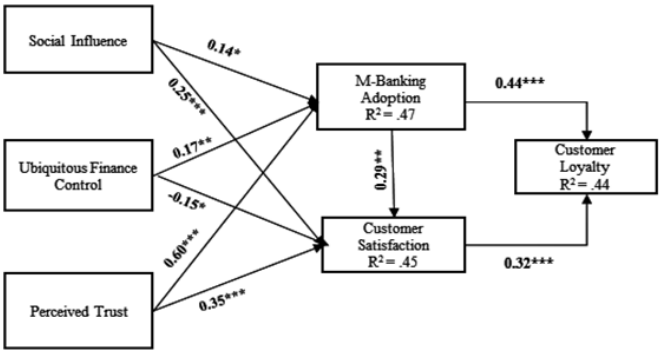

Figure 2. Hypotheses Testing Results
Note: * p < 0.05; ** p < 0.01; *** p < 0.001; N.S.. not significant.

7. DISCUSSION

This study concentrates on the impacts of Social Influence, Ubiquitous Finance Control and Perceived Trust on Consumers' M-Banking Loyalty. Our results validate the proposed model of this study. Positive effects of Social influence, UFC and trust on M-Banking adoption and customers' satisfaction which in turn predict customers' loyalty. In case of M-Banking, customers are part of a social network and their perceptions regarding adoption and long term usage are affected by their social interactions. When the customers' relatives and friends use good word of mouth about a product or service, they are attracted towards the product or service. After using the service, if they find it up to the mark, it increases their satisfaction level and makes them loyal to product/service.

UFC has also significant effects on M-Banking adoption and customers' satisfaction have been confirmed. In case of financial matters, the consumers need global access to their funds 24/7 and they wish more control over their accounts. The bankers should ensure M-Banking service running all the times and the customers should be given full options like physical banking. It will lead to more adoption trends of M-Banking.

Perceived trust has also significant effects on both adoption and satisfaction. The impacts of trust have been confirmed by previous researches [23, 49, 50]. Our results show that M-Banking adoption and customer satisfaction are two important predictors of consumer's loyalty which confirms the results of [22] . It shows that adoption and satisfaction are two important factors that affect customer's loyalty. The impacts of adoption on satisfaction show the user's post-adoption satisfaction. It means post-adoption satisfaction of customers is necessary to keep them loyal to the service. The banking sector should make every effort to keep their existing users more satisfied so that they could have good word-of-mouth about them.

8. THEORETICAL AND PRACTICAL IMPLICATIONS

In studying customers' loyalty towards any product/service, prior research has focused more on quality feature while our study focuses on the social significance and consumers' perception about ubiquitous finance control and trust leading to adoption and satisfaction. This research contributes to literature by working on a two stage-model and identifying the factors affecting adoption and satisfaction which in turn influences loyalty. Our study shows the positive impacts of adoption on satisfaction. This is the post adoption satisfaction which is felt by the users after initial usage. Another important finding is about the new construct namely ubiquitous finance control which has significant impacts on adoption of M-Banking. Model tested in this study provides a good explanatory power to explain consumer's' M-Banking loyalty. Future research may use this model to study customers' loyalty in the context of other online services.

Implications to practice are also important. Our model provides a good base to M-Banking service providers in understanding of customers' loyalty. The banking industry can plan strategies to promote M-Banking service through advertising and other awarding schemes in the society so that people from every field of life are attracted and they will in turn promote it through social interactions. The banking industry should ensure continuity of their service without any delay so that consumers have access to their service all the times. Moreover, M-Banking should be equipped with all those features which are available through internet banking and physical banking. They can build such strategies through which they can improve customers' trust and post adoption satisfaction which can ensure their loyalty and usage continuation of the service. Retaining their customers will help them in bringing more profits to their banks.

9. LIMITATIONS AND FUTURE RESEARCH

This research has tried to identify M-Banking loyalty factors by testing a model containing constructs namely Social Influence, UFC, Perceived Trust, M-Banking adoption, customer satisfaction and customer loyalty. There are certain limitations of this research which needs further exploration. Model of this research explains 44% of the variance in customers' loyalty which indicates the possibility of other factors that needs researchers' attention. Future research may focus on identifying other factors that have influence on customers' loyalty. Researchers can extend this model by testing the effects of moderators like age, gender etc.

Prior research has studied factors like quality, price etc. which influence customers' loyalty. Future studies can test the impacts of these factors by incorporating with our model. Keeping in view dynamic nature of consumers' behaviours, researchers may conduct longitudinal studies to evaluate consumers' behaviours at different times that may lead the researchers to more accurate results. Finally, future research may test the model in other settings and cultures to study M-Banking customers' loyalty.

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APPENDIX-A QUESTIONNAIRE ITEMS

Social Influence (SI) [51]
SI1: My friends and family value the use of mobile banking.
SI2: The people that influence me use mobile banking.
SI3: I find mobile banking trendy.
SI4: The use of mobile banking gives me professional status.

Ubiquitous Financial Control (UFC) (New scale)
UFC1: I have control over my finances independent of place
UFC2: I have control over my finances independent of time
UFC3: I have control over my finances while travelling
UFC4: It is always possible for me to transact with m-Banking and have access to my account

Perceived Trust [52]
PT1: I would trust my bank to offer secure mobile banking.
PT2: I would trust my mobile phone manufacturer to provide a mobile phone which is appropriate for conducting mobile banking.
PT3: I would trust my telecommunication operator to provide secure data connections to conduct mobile banking.

mBanking Adoption [53]
mBA1: I often use mobile banking to manage my account.
mBA2: I often use mobile banking to transfer and remit money.
mBA3: I often use mobile banking to make payments.

Customer Satisfaction [53]
Sat1: I was very satisfied with my overall m-banking experience
Sat2: I was very pleased with my overall m-banking experience
Sat3: I was very contented with my overall m-banking experience
Sat4: I was absolutely delighted with my overall m-banking experience

Customer Loyalty [22]
Loy1: I often tell positive things about my bank to other people
Loy2: I recommend my family, friends and relatives to do banking with my bank
Loy3: I recommend my bank to someone who seeks finance advice
Loy4: I shall continue to do more banking with my bank