

Customer Retention of Using Mobile Banking a Case Study of One of the Largest Bank in Thailand

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Abstract—This research is focused more on the customer retention of using mobile banking service in Thailand i.e. a case study of one of the largest bank in Thailand. The study has combined personality dimensions of Technology Readiness Index and cognitive dimensions of Technology Acceptance Model with antecedents such as consumer satisfaction and loyalty to provide robust framework of mobile banking adoption process. Also the study examines the influencing factors that determine the customer loyalty for ABC mobile banking application. The Inferential Analysis was done to test the validation of the technology readiness and acceptance model (TRAM) constructs and their interrelationship among each other. The finding reveals that TRAM variables have a significant influence on use of ABC Bank Mobile application in Bangkok. The study concludes with a discussion on practical implications of the research across similar service providers within the industry.

Index Terms—Mobile Banking, Technology Readiness Index (TRI), Technology Acceptance Model (TAM), External Factors, Customer Satisfaction, Reuse Intention

I. INTRODUCTION

Mobile banking is defined as providing customers with the support and efficiency to bank from anywhere and anytime using a mobile device and a mobile service i.e. Text messaging (SMS) or via the use of banking application citation. Mobile banking removes space and time constants for banking activities for example, checking account balance, transferring money from one account to another etc. According to Mary, R. [1], Mobile banking was first introduced in the late 1990s in New York by the four major banks i.e. City Bank, Chase Manhattan Bank, Chemical Bank and Manufacturer Bank. In Thailand, despite of many people inclined towards the traditional banking system i.e. teller transaction, the mobile penetration is rising rapidly and now going digital is norm for almost every banking institution [2]. Most of the banks

have their own application for smart phones through which the customers can easily do the online banking transaction anytime and anywhere. The penetration of Mobile Banking in Thailand is around 43% [3]. According to Master Card's Mobile Shopping Survey [4], it was found that 61.1% of Thai consumer use mobile phone to purchase goods and services and the figure shows that Thailand ranked fourth among fourteen Asia-Pacific market surveyed by Master Card. Research revealed that 397 million baht worth of value of transaction is done via mobile banking in Thailand as of June 2016. [5].

This research is focused more on the finding out the major factor affecting the customer intention for using mobile banking application and the determinants of customer loyalty for mobile banking application. Due to confidentiality, purposed company information in this research cannot be disclosed. Therefore, researcher names it as ABC Bank.

II. LITERATURE REVIEW

For many years, scholars have been investigating the factors which could influence the acceptance of new technologies. Among frameworks that have been developed, based on past studies, includes the Technology Acceptance Model, TAM [5, 6], Theory of Reasoned Action, TRA [7]. In the Theory of Reasoned Action, behavioral intention (BI) is placed as the only direct antecedent of actual behavior (AB). Also, it is assumed that BI can accurately predict AB if three boundary conditions that Fishbein and Ajzen [7] propose can be hold. These three conditions are: (1) the degree to which the measure of intention and the behavioral criterion correspond with respect to their levels of specificity of action, target, context, and timeframe, (2) the stability of intentions between time of measurement and performance of the behavior, and (3) the degree to which carrying out the intention is under the volitional control of the individual. According to the TRA, before performing a behavior, a person might deliberate about his or her action. Ajzen and Fishbein [8] also mention that a person will consider various variables and aspects of his or her action before choosing to perform or not perform a particular behavior. Therefore, Ajzen and

Fishbein [8] assume that most actions of social relevance are under volitional control and this theory puts a person's intention to perform or not perform a behavior as the immediate determinant of action. An integration of the two models, the technology readiness and acceptance model (TRAM), first presented by Lin et al. [9], TRAM represents the latest contribution to merge general personality dimensions of TRI with system specific dimensions of TAM. Thus, explaining how personality dimensions can influence the way people interact with, experience, and use new technology. Furthermore, TAM has been the prominent model for studying and predicting users' acceptance of technology. It involves two important beliefs or factors which are perceived usefulness (PU) and perceived ease of use (PEOU). Firstly, perceived usefulness (PU) refers to the degree to which a prospective user believes that using a certain system will benefit his or her job performance. It derives from the definition of the word "useful" as "capable of being used advantageously". In a company, employees are rewarded for good performance with raises, promotions, bonuses, and others [10, 11]. It can be explained that the system with high perceived usefulness is the one that a user believes it has a positive use-performance relationship. However, perceived ease of use (PEOU) is the degree to which a prospective user believes that he or she will be able to use a certain system effortlessly. It is related to the definition of the word "ease" which is "freedom from difficulty or great effort". As people have limited effort, they have to allocate it to perform different activities; therefore, they do not want to spend much effort to use a system or technology. For this reason, the system which is easy to use is more likely to be accepted by users than the complicated ones.

A. Research Objectives

The followings are the objective of the research study;

1. To investigate the factor which influence customer intention to use ABC Bank Mobile Application in Thailand using integrated Technology Readiness Index (TRI) and Technology Acceptance Model (TAM) along with behavioral responses such as satisfaction and loyalty.
2. To examine the influencing factor that determines the customer loyalty for mobile banking application.

III. METHOD

Non-probability sampling; precisely web-based, self-selected online surveys is used for the survey. In self-selected online survey, questionnaire links are sent to target population and respondents have choice regarding their inclusion as sample for the study [12]. To ensure the survey was participated by target group, firstly people are introduced about the research with

short description in the questionnaire. In addition, they are instructed to proceed with questionnaires only if they have used ABC mobile banking services. The researcher chooses Bangkok to collect the total sample size of 410. The research hypothesis for this study is derived from the study of literature review and the conceptual framework. The explanation of factors and derived hypothesis are as follows:

A Explanation of the terms

Perceived usefulness is defined as the degree of probability to which it is believed that by using particular mechanism in work helps to increase the efficiency and job performance [13].

Perceived ease of use is defined as the gradation to which it is believed that using a particular mechanism helps to make the task free from effort [13].

Attitude towards behavior is explained in a way that, people perception and their reaction towards favoring for the particular behavior [8].

Intention is explained as the people enthusiasm and determination to utilize their potential to move towards the aim [13].

TAM stands for Technology Accepted Model; TAM model explains that the use of technology is determined by the willingness towards the specific performance [5, 6].

TRA stand for Theory of Reasoned Action; TRA model explains that the performances of social significance are under desire control and are thus expected from the intention [6,8].

External factors in this research is defined as influence of friends and family, Siam commercial bank staffs encouragement to use the banking application, technology savvy (efficiency of using technology), advertisement influence and web security factors which affects the customers intention to use mobile banking application.

1) External Factor and Perceived Usefulness

H1: External factor has a positive influence on perceived usefulness of ABC Mobile Application.

2) External Factor and Perceived Ease of Use

H2: External factor has positive influence on perceived ease of use of ABC Mobile Application.

3) Perceived Usefulness and Attitude towards ABC Bank mobile Application

H3: Perceived usefulness has a positive influence on attitude towards ABC Mobile Application.

4) Perceived Ease of Use and Attitude towards ABC Bank mobile Application

H4: Perceived ease of use has a positive influence on attitude towards ABC Mobile Application.

5) Perceived Usefulness and Intention to use ABC Bank mobile Application

H5: Perceived usefulness has a positive influence on intention to use ABC Mobile Application.

6) Perceived Ease of Use and Intention to use ABC Bank mobile Application

H6: Perceived ease of use has a positive influence on intention to use ABC Mobile Application.

7) *Attitude towards ABC Bank mobile Application and Intention to use*

H7: Attitude towards ABC Mobile Application has a positive influence on the intention to use it.

8) *Intention to use and Reuse/loyalty*

H8: Intention to use ABC Mobile Application has

a positive influence on customer reuse intention of ABC Mobile Application.

B. Framework

The conceptual framework of this research appears below.

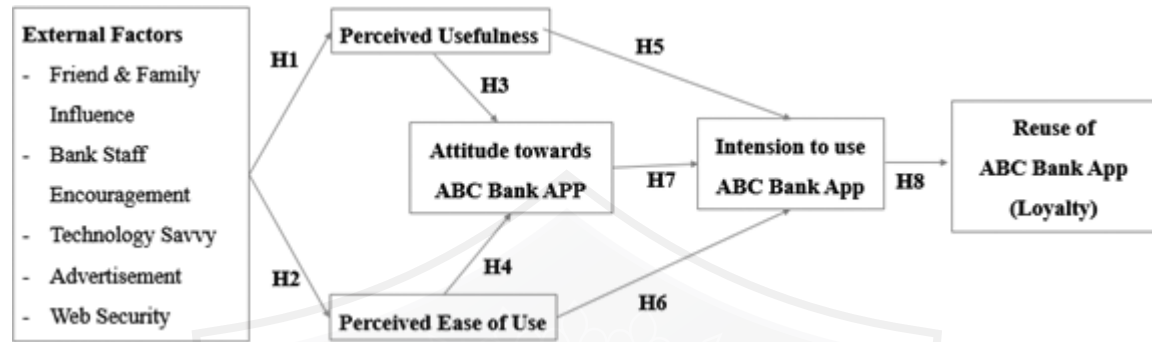


Fig. 1. Conceptual framework

C. Research Methodology

A simple descriptive analysis of quantitative data and a content analysis/logical analysis of qualitative data is applied in this research work. The questionnaires are analyzed using Microsoft Excel and Statistical packages. In the data analysis part of this study, the individual information was gathered and investigated with descriptive measurement. The dependability test led to assess the things of every variable. Different relapses were utilized to look at the hypothesized speculation. For this research, there were 450 questionnaires, out of which 40 questionnaire were rejected due to respondents' in-complete answer. The researcher collected 410 quality questionnaire out of 450 distributed to the sample group. The paper questionnaires were distributed by the researchers at the department store and universities nearby the ATM machines and Branches of ABC Bank. However, electronic questionnaires were distributed online via Google Form and sent to the respondents via email, line and other social mediums. Consequently, the respondents of electronic questionnaires were truly the internet users since they received and answered the research questionnaire online with no data loss.

IV. RESULTS OF THE STUDY

TABLE I
DENIGRAPHIC PROFILE OF RESPONDENTS

Characteristics Detail	No. of Respondents	Percentage
Gender		
Male	133	32%
Female	277	68%
Total	410	100%
Age		
< or equal to 20 years old	10	2%
21-30 years old	132	33%
31-40 years old	214	53%
41-50 years old	47	11%
> 50 years old	7	1%
Total	410	100%
Education		
Below Bachelor Degree	22	5%
Bachelor Degree	262	64%
Above Bachelor Degree	126	31%
Total	410	100%
Occupation		
Student	25	6%
Self Employed/Business	74	18%
Private Employee	276	67%
Government Officer	33	8%
House Wife	2	1%
Total	410	100%
Income (THB)		
Below 15,000	25	6%
15,001 – 30,000	130	32%
30,001 – 50,000	177	43%
50,000 & above	78	19%
Total	410	100%

Various statistical tools are used to analyze the data and test the hypothesis of the study. Descriptive statistical tools are used to present the demographic characteristics in terms of frequency and percentage and statistical tools like multiple regression, standard deviation and correlation analysis are used to analyze the other variables in the questionnaire survey. The summary on analysis of respondent demographic is shown in Table I.

The date interpretation result shows that the most dominating factor to influence the decision of adopting mobile banking is social influence i.e. from friends and families. Out of 410 respondents, 259 respondents i.e. 63.2% of the respondent believed that they started using ABC mobile banking application because their friends and families also use it. In addition, 341 respondents which comprises of 83.2% believes that if bank provides free internet service for those using ABC mobile banking application then they are more engaged to use the their mobile banking application. Furthermore, 279 respondents out of 410 respondents i.e. 68% of the respondents mostly use ABC mobile bank application because of its amount transfer features. Similarly, 53.2% of the respondents i.e. 218 respondents mostly uses ABC mobile banking application to pay bills and utilities.

TABLE II
MEAN VALUE OF FACTORS TOWARDS ABS MOBILE BANKING APPLICATION

Factors	Mean Value	Standard Deviation	Mean Interpretation
External Factors	4.01	0.852	High Level
Perceived Usefulness	4.52	0.594	Very High Level
Perceived Ease of Use	3.99	0.703	High Level
Attitude	4.06	0.706	High Level
Behavior Intention	4.06	0.700	High Level
Loyalty	3.88	0.732	High Level

From the Table II it is clearly noticeable that the factor, perceived usefulness has a very high level of agreement as its mean value is 4.52 and the standard deviation is 0.594 whereas others factors like external factors has mean value of 4.01, perceived ease of use with mean value of 3.99, attitude and behavior intention with mean value of 4.06 and loyalty with mean value of 3.88 has high level of agreement. Therefore, it is considered that the all factors tested has at least high level of impact towards ABC Mobile Banking application.

TABLE III
SUMMARY OF TESTING HYPOTHESES

N.	Hypothesis Path	β	t-value	p-value	R ²	Result
H _{1a}	External Factor (Friends & Family Influence) → Perceived Usefulness	0.022	0.391	0.696		No
H _{1b}	External Factor (Bank Staff Encouragement) → Perceived Usefulness	0.038	0.53	0.596		No
H _{1c}	External Factor (Technology Savvy) Perceived Usefulness →	0.148*	1.998	0.046	0.156	Yes
H _{1d}	External Factor (Advertisement) Perceived Usefulness →	0.172*	2.888	0.004		Yes
H _{1e}	External Factor (Web Security) Perceived Usefulness →	0.113	1.921	0.055		No
H _{2a}	External Factor (Friends & Family Influence) Perceived Ease of Use →	-0.012	-0.223	0.824		No
H _{2b}	External Factor (Bank Staff Encouragement) → Perceived Ease of Use	0.106	1.446	0.149		No
H _{2c}	External Factor (Technology Savvy) → Perceived Ease of Use	0.102	1.367	0.172	0.133	No
H _{2d}	External Factor (Advertisement) → Perceived Ease of Use	0.07	1.168	0.243		No
H _{2e}	External Factor (Web Security) → Perceived Ease of Use	0.179*	2.997	0.003		Yes
H ₃	Perceived Usefulness Attitude →	0.221**	4.934	0.000	0.287	Yes
H ₄	Perceived Ease of Use Attitude →	0.414**	9.228	0.000		Yes
H ₅	Perceived Usefulness Intention →	0.241**	5.326	0.000		Yes
H ₆	Perceived Ease of Use Intention →	0.243**	5.021	0.000	0.317	Yes
H ₇	Attitude Intention →	0.239**	4.932	0.000		Yes
H ₈	Intention Loyalty →	0.618**	15.882	0.000	0.382	Yes

*significant at 0.05, **significant at 0.01

Based on the finding of Table III, the results show that external factor influence on perceived usefulness of ABC Bank mobile application, only the two factors of external variable has the p-value less than 0.05 i.e. technology savvy with p-value of 0.046 and advertisement with p-value of 0.04. This means that only these two external factors i.e. technologically savvy and advertisement factor has more influence on perceived usefulness of ABC Bank mobile application. The result of regression analysis of external factor influence on perceived ease of use of ABC Bank application, the result shows that only one factors of external variable has the p-value less than 0.05 i.e. web security with p-value of 0.03. This means from all the other external factor only web security factor has more influence on perceived ease of use for ABC Bank mobile application. That regression test value for perceived usefulness is 4.934 and perceived ease of use is 9.228 and p-value for both factors is 0.00 i.e. less than level of significance 0.05. This means perceived usefulness and perceived ease of use has positive influence on consumer attitude towards the use of ABC Bank Mobile application. Also, the result shows that regression test value for perceived usefulness is 5.326, perceived ease of use is 5.021 and consumer attitude is 4.923. The p-value for all of them is 0.00 i.e. less than level of significance 0.05. This means perceived usefulness and perceived ease of use and consumer attitude has positive influence on consumer intention to use ABC Bank Mobile application. And finally, the result shows that regression test value for intention is 15.882 and p-value is 0.00 i.e. less than level of significance 0.05. This means Intention to use ABC Bank application has positive influence on consumer loyalty (reuse intention). The result of R Square had indicated that the variation of External Factors towards Perceived Usefulness is 0.156 which mean 15.6% of variation in Perceived Usefulness was influenced by External Factors. The other 84.4% remain uninfluenced. The variation of External Factor towards Perceived Ease of Use is 0.133 which mean 13.3% of Perceived Ease of Use was influenced by External Factors. The other 86.70% remain uninfluenced. The variation of Perceived Usefulness and Perceived Ease of Use towards Consumer Attitude is 0.287 which mean 28.7% of variation in Consumer Attitude was influenced by Perceived Usefulness and Perceived Ease of Use. The other 71.30% remain uninfluenced. The variation of Consumer Intention towards Loyalty (reuse intention) is 0.383 which mean 38.3% of variation in Loyalty (reuse intention) was influenced by Consumer Intention. The other 61.70% remain uninfluenced.

V. IMPLICATION AND CONCLUSION

The research result shows that the major influencing factors which affect the customer loyalty for using mobile telecommunication service are external

factors like, friends and family influences, bank staff encouragement to use the mobile banking, technology savvy, media influence like advertisements and sense of web security. The other factors like, convenience, flexible and hassle free banking transaction and easiness to use the ABC Bank mobile application. All of these factors have a direct impact on the customer loyalty and the intention for using ABC Bank mobile application for a longer period of time. Also, the result shows that consumer reuse intention i.e. loyalty has a significant relationship with behavioral intention for service retention. The more the consumer is satisfied, the more reluctant they are in terms of ABC Bank mobile service switching behavior.

The research suggest that the number of ABC Bank Mobile users and compared to their current bank users is very small in number, so the bank should focus more on endorsing their services and sell on the value to attract more customers to adopt its mobile banking application. Awareness on the use of mobile banking service is essential in the initial stages of adaptation so one of the precaution that should be taken by ABC Bank is through advertisement and promotion.

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