

# Factors Affecting The Level Of Trust In Mobile Banking: A Case Study Of Customer Perception Toward Commercial Mobile Banking Adoption In Bangkok, Thailand

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**Abstract**— The widespread use of smartphones in Thailand has led more consumers to conduct financial transactions and other banking activities on their mobile devices. However, consumer trust plays an important role in the development of long-term relationships in online environment between banks and its customers. Therefore, the purpose of this research was to identify the degree in which several influencing factors that affects trust of Thai consumers in mobile banking. A sample was selected from 336 cases were included as a sample by using purposive sampling method. The factors under this study include integrity, competence, benevolence, shared values, and security. Multiple Linear Regression was used for data analysis and quantitative method was applied in this research by conducting the questionnaire survey. The findings indicated that security is the most critical factor that affects customer trust in mobile banking followed by shared values and integrity respectively. However, competence and benevolence do not affect the level of Thai customers' trust in mobile banking with statistical significance at 0.05 level. Banks should provide service by highlight improving security in order to enhance trust of their customers and increase usage of mobile banking.

**Keywords**— Integrity, Competence, Benevolence, Shared values, Security

## I. INTRODUCTION

Recent developments in information technology has a positive effect on human lifestyles especially those improvements in the field of the service industry including banks. It has experienced significantly change the traditional ways of interaction in which banks operate their businesses and customers conduct their banking transaction [1]-[2]. Therefore, Banks continuously organized innovative banking services to satisfy customer expectations and demands by shifting the form of traditional banking branch transactions to electronic banking such as Automated Teller Machines (ATM), internet banking and more recently mobile banking [3]. Mobile banking is

considered to be the latest banking service with flexibility and mobility in completing financial transactions through mobile devices [4]. With a substantial growth in the numbers of mobile device users resulted in the increasing of sale volume in mobile devices such as smartphones and tablets in every year, it has led more consumers to conduct their transactions on mobile devices.

Mobile banking is a mobile payment and commerce application which allows customers to access financial service through smartphone to conduct a wide range of financial transactions and has direct access to their banking account [5]. These provided advantages to both banks and customers. Customers are offered more convenient service by providing them an opportunity to access banking facilities anywhere and anytime, whereas internet is available with faster and lower costs comparing to the use of traditional bank [6]. In other word, customers do not need to go to bank branches to conduct their everyday banking activities. In terms of banking, mobile banking has brought in improved service quality and service delivery within the banking sector with a decreases of the transaction cost [7].

In spite of the continuing increase in the number of mobile internet users and despite all the benefits of mobile banking, many customers are still unwilling to accept the services which provided sensitive information [1]. Therefore, it is more difficult for banks to gain consumer trust [8]. Trust is considered as one of the most significant factors which has a strong influence on a consumer's commitment to online providers [9]. A major obstacle in the widespread mobile banking acceptance is the lack of customer trust [10]. In mobile banking, the several types of activities are performed online in which customers can enter businesses relationship with a distant and impersonal nature of the online environment. Thus, personal interaction is vanished and they felt uncomfortable when they were asked about sensitive information. This will

lead to an experience of risk and implicit more uncertainty in mobile banking environment. These factors may be reduce customer trust and acceptance of mobile banking due to security and reliability reasons of the system [11]. In order to promote transactions online and enhance customer loyalty, the bank must develop a trustworthy relationship with them.

Many researchers agreed that building customers trust is particularly essential for banks that are providing mobile banking because this would improve the attitude of customers and their purchase intentions [12]-[13]. Consequently, banks should understand the dimensions of trust and apply it to develop more meaningful relationships with their customers. The main objectives of this study is to identify the degree in which several influencing factors that affects trust of Thai consumers in mobile banking.

## II. LITERATURE REVIEW

### A. Mobile banking in Thailand

The number of mobile banking users has been expanding each single year and in many countries in USA, Europe, and Asia [14], since the third and the fourth generations of wireless mobile communication technologies (3G and 4G) were implemented in many countries including Thailand. Thailand has successfully followed this trend worldwide in implementing self-service technology through the smartphone, even though Thailand is still a less developed country. There is an increasing trend of Thais who conduct banking transactions through the mobile channel. The Bank of Thailand's (BOT) statistics shows that the number of Thai users in mobile banking stood at 20,883,147 while the volume of transaction rate totaled of 584,983 thousand transactions at the end of 2016 and it is expected to rise continuously. In addition, there has been many commercial banking institutions that developed mobile banking in Thailand namely Kasikorn Bank (KBANK), Siam Commercial Bank (SCB), Krung Thai Bank (KTB), Bangkok Bank (BBL), Bank of Ayudhya (BAY), Thai Military Bank (TMB), Government Savings Bank (GSB), Thanachart Bank (TBANK). Mostly large banks are now offering mobile banking services, and applications for Android and iOS devices.

### B. Trust

If there is little to none on consumer trust that consistently are considered as a major obstacle in a more rapid development of online transactions or commercial relationships such as seller-buyer interactions [15]. This is due to the consumers perception, the greater uncertainty involved with their transaction. Therefore, trust is the main factor in influencing risk and uncertainty, associated to mobile banking. Trust is related to the belief about the character of the mobile banking service provider. In other words, trust in online environments is based on beliefs in the trustworthiness of a service providers. There are two parties of trust in online environment; namely the trustor and trustee. The trustor is typically a consumer who is using an mobile banking, and the trustee is the bank itself. However, there are arguments from customers that they needed

trust from mobile banking facility in order to continue using it [16].

Accordingly, trust is a multi-dimensional of belief based on the level of integrity, competence and benevolence related to trustworthiness of the bank offering. It is one of the main focus of several previous studies and it has seen as antecedents to overall trust [17]-[18].

### C. Integrity

The perception of trustor that the trustee will be honest, keep their word, fulfill their promise and be sincere. Moreover, open and honest communication with customers include providing timely and accurately information, maintaining commitment and act is ethically that contributes to the development of positive reputation for the service providers. Integrity positively influences trust toward electronic commerce [19]. Similarly, it integrity enhances customer confidence and trust in mobile banking when service provider provide clearly instruction [20]. Therefore, customers with high integrity are more likely to develop positive attitude and evaluate it favorably. Based on the above discussion, leading to the following hypothesis:

H<sub>1</sub>: Integrity has a positive effect on level of customer trust in mobile banking.

### D. Competence

Competence refers to the customer perception of service provider's knowledge and ability to provide consistent and desirable performance in fulfilling and satisfy the customer needs. In the view of mobile banking, competence is the belief of the expertise and experience of mobile banking service providers in maintaining and incorporating appropriate technological safeguards to protect customers from violations of financial loss and privacy. For example, Research [21] was found that competence reduces perceived risk and increase usage intentions. Therefore, competence reduces the customers' risk perceptions and increases their confidence in the mobile banking services. Based on the above discussion, leading to the following hypothesis:

H<sub>2</sub>: Competence has a positive effect on level of customer trust in mobile banking.

### E. Benevolence

Benevolence is the belief in the perception of service provider that interested in the customers' welfare beyond maximizing their profit. It is cleared when the banks show responsiveness and empathy for customer needs and concerns in any activities. There are decreasing in the perception of uncertainly and risk in buyer-seller relationship when benevolence promotes the ability of the mobile banking services [22]. Based on the above discussion, leading to the following hypothesis:

H<sub>3</sub>: Benevolence has a positive effect on level customer trust in mobile banking

### F. Shared values

Shared values refers to the customers' perception of mobile banking to be like them in behavior, policies and goals. It can facilitate interaction and communication between the bank and customers by share common beliefs on critical value which leading to mutual trust. Share value is one of the most significant factors for developing trust in the online retail context [23]. Based on the above discussion, leading to the following hypothesis:

H<sub>4</sub>: Shared values has a positive effect on level of customer trust in mobile banking.

### G. Security

Security is one of the most significant factors that concern users when they use the internet for transactions. In the online environment, perceived security refers to the belief that the activities in application is secure enough for transmitting sensitive customer information [24]. Thus, customers would expect a service with promised security. Based on the above discussion, leading to the following hypothesis:

H<sub>5</sub>: Security has a positive effect on level of customer trust in mobile banking.

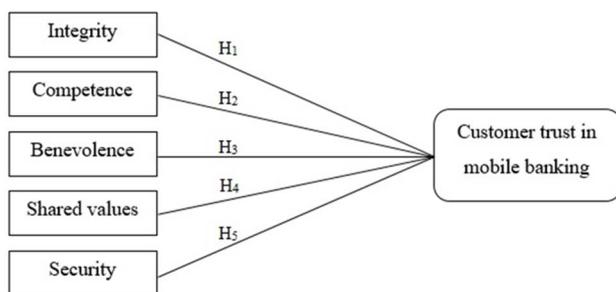


Fig. 1. Conceptual model

## III. METHODOLOGY

The questionnaire has been conducted online along with offline survey. It has been distributed among the actual bank users both male and female of banks in Bangkok such as Kasikorn Bank, Siam Commercial Bank, and Bangkok Bank. The target sample group is the customers who using mobile banking. Therefore, the researcher collected data by using purposive sampling method to recruit participants who met the specific characteristics of the research and quantitative method was applied in this research by conducting the questionnaire into two parts:

Part I: Demographic information includes gender, age, education level, occupation and income. The screening questions help to filter respondents which are target to this research with another three specific questions.

Part II: A total of 29 items were developed to capture the six variables which all are adopted from the relevant literature. Integrity consisted of 5 items from Roy and Shekhar (2010) [25]; competence consisted of 6 items from Sirdeshmukh et al.

(2002) [26]; benevolence consisted of 4 items from Ennew and Sekhon (2007) [27]; shared values consisted of 3 items from Ennew and Sekhon (2007) [27]; security consisted of 4 items from Joshi and Bansal (2015) [28]; and trust consisted of 7 items from Ennew and Sekhon (2007) [27]. Each question was measured by using a five-point Likert scale from "1" strongly disagree to "5" strongly agree.

## IV. DATA ANALYSIS

The first table gives information about the demographic information of the total 336 respondents. Looking first at gender, the large majority of respondents were female accounting for 67.0% while the age between 21-30 years was the highest percentage at 44.0%. Education level of Bachelor's Degree stood at 53.3% which showed the largest proportion and the most of respondents were salaried employee at 44.0%. For income, 48.2% of respondents had 15,001-30,000 Baht per month. In term of the frequency to use mobile banking, 41.1% of these respondents were monthly usage while 42.9% had 1-2 years experiences. The respondents prefer to use Kasikorn mobile banking the most at 43.8%.

TABLE I: DEMOGRAPHIC INFORMATION OF RESPONDENTS

	Frequency	%
<b>Gender</b>		
Male	111	33.0
Female	225	67.0
<b>Age</b>		
Under or equal to 20 years	16	4.8
21-30 years	148	44.0
31-40 years	129	38.4
41-50 years	34	10.1
51 years and above	9	2.7
<b>Education level</b>		
Lower than Bachelor's Degree	15	4.5
Bachelor's Degree	179	53.3
Master's Degree	134	39.9
Ph.D. Degree	8	2.4
<b>Occupation</b>		
Salaried employee	148	44.0
Self-employed/Business owner	75	22.3
Government/State enterprise officer	18	5.4
Student	91	27.1
Unemployed	4	1.2
<b>Income</b>		
Lower than or equal to 15,000 Baht	32	9.5
15,001-30,000 Baht	162	48.2
30,001-50,000 Baht	111	33.0
Higher than 50,001 Baht	31	9.2
<b>Usage Frequency</b>		
Daily	44	13.1
Weekly	109	32.4
Monthly	138	41.1
Not often	45	13.4
<b>Mobile banking experience</b>		
Below 1 years	54	16.1

1-2 years	144	42.9
3-4 years	100	29.8
Above 4 years	38	11.3
<b>Main mobile banking</b>		
Kasikorn Bank(KBANK)	147	43.8
Siam Commercial Bank (SCB)	76	22.6
Krung Thai Bank (KTB)	23	6.8
Bangkok Bank (BBL)	33	9.8
Bank of Ayudhya (BAY)	26	7.7
Thai Military Bank (TMB)	17	5.1
Government Savings Bank(GSB)	6	1.8
Thanachart Bank (TBANK)	8	2.4

Table II shows the details of the result of reliability test with Cronbach's Alpha for all factors. The Cronbach's  $\alpha$  is acceptable when the result of Alpha is equal or greater than 0.6. Therefore, all factors had values of 0.8 and above implying that factors had internal consistency and reliability to apply as the research instrument.

TABLE II: RELIABILITY TEST WITH CRONBACH'S ALPHA

Variables	Cronbach's Alpha	No. of items
Integrity	0.861	5
Competence	0.891	6
Benevolence	0.830	4
Shared values	0.838	3
Security	0.879	4
Trust in mobile banking	0.926	7

Table III illustrates data regarding to the Multiple Linear Regression Analysis evaluating the prediction of the level of trust in mobile banking as the dependent variable while the predictors are integrity, competence, benevolence, shared values and security. According to the table, the result shows  $R^2 = 0.724$  or 72.4% of the dependent variable can be explained by five independent variables at 50% or 0.05 significant levels.

TABLE III: FACTORS AFFECTING THE LEVEL OF TRUST IN MOBILE BANKING

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.386	.115		3.354	.001
Integrity	.146	.044	.156	3.308	.001
Competence	.049	.050	.053	.986	.325
Benevolence	.036	.051	.038	.703	.483
Shared values	.179	.035	.205	5.150	.000
Security	.475	.039	.525	12.262	.000
R <sup>2</sup> = 0.724 SEE = .36929 F = 172.807*					

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.433	.112		3.880	.000
Integrity	.189	.037	.201	5.150	.000
Shared values	.196	.033	.224	5.887	.000
Security	.491	.037	.543	13.349	.000

a. Dependent Variable: Trust

From the table IV, the result showed that the strongest significant variable with a positive affect to level of trust in mobile banking is security ( $\beta = 0.543$ ,  $p < 0.05$ ). Following this, the next strongest significant variables are share value ( $\beta = 0.224$ ,  $p < 0.05$ ) and integrity ( $\beta = 0.201$ ,  $p < 0.05$ ) respectively. Therefore,  $H_1$ ,  $H_4$  and  $H_5$  are supported. Nevertheless, competence ( $\beta = 0.053$ ,  $p > 0.05$ ) and benevolence ( $\beta = 0.038$ ,  $p > 0.05$ ) are not significant. Consequently,  $H_2$  and  $H_3$  are not supported.

TABLE IV: RESULT OF HYPOTHESES TESTING

Hypotheses	$\beta$	Sig.	Results
H <sub>1</sub> : Integrity → Trust in mobile banking	.201	.000	Supported
H <sub>2</sub> : Competence → Trust in mobile banking	.053	.325	Do not supported
H <sub>3</sub> : Benevolence → Trust in mobile banking	.038	.483	Do not supported
H <sub>4</sub> : Shared values → Trust in mobile banking	.224	.000	Supported
H <sub>5</sub> : Security → Trust in mobile banking	.543	.000	Supported

Note: p value of <0.05 was considered to be statistically significant.

V. DISCUSSION

This study provides empirical evidence for the role of trust in mobile banking. The results show that security, shared values and integrity are key determinants of trust in mobile banking. In contrast, the results of competence and benevolence are not significant to the level of trust in mobile banking.

Security played the most important role of Thai customer trust in mobile banking. The security and risk associated are the main issues for Thai customer. This due to a perception of security threats that can be made either through data transaction attacks such as virus attacks or through unauthorized access from hackers into the account in mobile banking system. Similarity with previous study [29] pointed out that the users perceptions and concerns of security in electronic systems was first addressed and suggested that consumer perceptions of unsatisfactory security on the internet still exist even though the

network of banking engage security enforcement mechanisms [30].

Shared values is also significant determinant of Thai customer trust in mobile banking. Shared value leads to increase about commitment with customer by enhances them the feeling of association which provides the same results as in the previous study [31]. Therefore, in order to build a trust-based long-term relationship mobile banking service provider should create positive culture in the relationship

Integrity is less significant determinant of Thai customer trust in mobile banking that open as well as honest communication with customers and a demonstrated consistency in behavior can increase the perception of integrity in mobile banking.

However, competence and benevolence are the two variables that are not significant to the level of trust in mobile banking. One possible reason could be that the benevolence is considerably intangible and customers may perceive its value based on their subjective view. Another reason is that the increasing perception of security threat and, in consequence, benevolence is not well articulated in the mobile banking context.

Even though customer are not worried about competence in mobile banking but they are more confident that the bank able to solve problems. Thus, they prefer to deal with traditional bank branch when the problems arise. Although the branches are not direct responsible for implement the mobile banking. This is an important for bank branch to provide consistent and desirable performance in fulfilling and satisfy the customer needs.

## VI. CONCLUSIONS AND RECOMMENDATIONS

Based on the major findings, it was recommended that bank should highlight improving initial trust in order to enhance their customers and usage of mobile banking. The results indicate that security, share value and integrity are the main factors affecting trust, with security continues to be the first concern for Thai consumers. To further enhance security and build consumer adoption in mobile banking, banks might consider more improvement on the security aspects of mobile processes and more implementing of tools such as geolocation or biometrics. This will lead to increases consumer confidence in using digital and mobile banking transactions. Moreover, banks should strengthen share common beliefs with customers such as ethical values, which is an important element of shared value in banking. Therefore, in order to build trust, ethics and honesty are the main aspects for good business morality especially banking service.

## REFERENCES

- [1] S. A. Al-Somali, R. Gholami, and B. Clegg, "An investigation into the acceptance of online banking in Saudi Arabia," *Technovation*, vol. 29, no. 2, pp. 130–141, 2009.
- [2] C. Sayar and S. Wolfe, "Internet banking market performance: Turkey versus the UK," *International Journal of Bank Marketing*, vol. 25, no. 3, pp. 122–141, 2007.
- [3] T. Laukkanen and P. Cruz, "Comparing Consumer Resistance to Mobile Banking in Finland and Portugal," *Communications in Computer and Information Science e-Business and Telecommunications*, pp. 89–98, 2009.
- [4] N. Koenig-Lewis, A. Palmer, and A. Moll, "Predicting young consumers take up of mobile banking services," *International Journal of Bank Marketing*, vol. 28, no. 5, pp. 410–432, 2010.
- [5] M. Suoranta, "Adoption of mobile banking in Finland" *Studies in Business and Management*, vol. 28, 2003
- [6] J. D. Farquhar and T. Panther, "The more, the merrier? An exploratory study into managing channels in UK financial services," *The International Review of Retail, Distribution and Consumer Research*, vol. 17, no. 1, pp. 43–62, 2007.
- [7] J. Dawes and J. Rowley, "Enhancing the customer experience: contributions from information technology," *Management Decision*, vol. 36, no. 5, pp. 350–357, 1998.
- [8] M. L. Meuter, M. J. Bitner, A. L. Ostrom, and S. W. Brown, "Choosing Among Alternative Service Delivery Modes: An Investigation of Customer Trial of Self-Service Technologies," *Journal of Marketing*, vol. 69, no. 2, pp. 61–83, 2005.
- [9] A. Floh and H. Treiblmaier, "What Keeps the E-Banking Customer Loyal? A Multigroup Analysis of the Moderating Role of Consumer Characteristics on E-Loyalty in the Financial Service Industry.," SSRN Electronic Journal, 2006.
- [10] S. Yousafzai, J. Pallister, and G. Foxall, "Multi-dimensional role of trust in Internet banking adoption," *The Service Industries Journal*, vol. 29, no. 5, pp. 591–605, 2009.
- [11] A. A. Adesina, and C. K. Ayo, "An empirical Investigation of the Level of Users' acceptance of E-Banking in Nigeria" *Journal of Internet Banking and Commerce*, vol. 15, no. 1, pp. 1-13, 2010.
- [12] Gefen, Karahanna, and Straub, "Trust and TAM in Online Shopping: An Integrated Model," *MIS Quarterly*, vol. 27, no. 1, p. 51, 2003.
- [13] K. Hassanein and M. Head, "Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping," *International Journal of Human-Computer Studies*, vol. 65, no. 8, pp. 689–708, 2007.
- [14] T. Laukkanen, "Internet vs mobile banking: comparing customer value perceptions," *Business Process Management Journal*, vol. 13, no. 6, pp. 788–797, 2007.
- [15] A. E. Schlosser, T. B. White, and S. M. Lloyd, "Converting Web Site Visitors into Buyers: How Web Site Investment Increases Consumer Trusting Beliefs and Online Purchase Intentions," *Journal of Marketing*, vol. 70, no. 2, pp. 133–148, 2006.
- [16] S. Grabner-Kräuter and R. Faullant, "Consumer acceptance of internet banking: the influence of internet trust," *International Journal of Bank Marketing*, vol. 26, no. 7, pp. 483–504, Oct. 2008.
- [17] C. Wing, and N. Angie, "A study of trust in e-shopping before and after first-hand experience is gained" *The Journal of Computer Information Systems*, vol. 46, no. 4, pp. 125-130, 2006
- [18] P. Papadopoulou, P. Kanellis, and D. Martakos, "Designing Electronic Commerce Environments on Trust Building Principles" *Systemes d'Information et Management*, vol. 8, no. 3, pp. 55-74, 2003
- [19] B. Suh and I. Han, "Effect of trust on customer acceptance of Internet banking," *Electronic Commerce Research and Applications*, vol. 1, no. 3-4, pp. 247–263, 2002.
- [20] K. B. Yap, D. H. Wong, C. Loh, and R. Bak, "Offline and online banking – where to draw the line when building trust in e-banking?," *International Journal of Bank Marketing*, vol. 28, no. 1, pp. 27–46, Feb. 2010.
- [21] A. L. Zhao, N. Koenig-Lewis, S. Hanmer-Lloyd, and P. Ward, "Adoption of internet banking services in China: is it all about trust?," *International Journal of Bank Marketing*, vol. 28, no. 1, pp. 7–26, Feb. 2010.
- [22] S. Ba and P. A. Pavlou, "Evidence of the Effect of Trust Building Technology in Electronic Markets: Price Premiums and Buyer Behavior," *MIS Quarterly*, vol. 26, no. 3, p. 243, 2002.
- [23] A. Mukherjee, and P. Nath, "Role of electronic trust in online retailing" *European Journal of Marketing*, vol. 41, no. 9/10, pp. 1173-1202, 2017
- [24] W. D. Salisbury, R. A. Pearson, A. W. Pearson, and D. W. Miller, "Perceived security and World Wide Web purchase intention," *Industrial Management & Data Systems*, vol. 101, no. 4, pp. 165–177, 2001.

- [25] S. K. Roy and V. Shekhar, "Dimensional hierarchy of trustworthiness of financial service providers," *International Journal of Bank Marketing*, vol. 28, no. 1, pp. 47–64, Feb. 2010.
- [26] D. Sirdeshmukh, J. Singh, and B. Sabol, "Consumer Trust, Value, and Loyalty in Relational Exchanges," *Journal of Marketing*, vol. 66, no. 1, pp. 15–37, 2002.
- [27] C. Ennew, and H. Sekhon, "Measuring trust in financial services: the trust index" *Consumer Policy Review*, vol. 17, no. 2, pp. 62-68, 2007
- [28] V. Joshi, and A. Bansal, "Perception of internet banking users towards internet banking adoption" *Anvesha*, vol. 8, no. 1, pp. 20-33, 2015
- [29] C. Chen, W. Goodhue, and L. Mahoney, "GaAs/AlGaAs dynamic random access memory cell," *Electronics Letters*, vol. 27, no. 15, p. 1330, 1991.
- [30] A. D. Miyazaki and A. Fernandez, "Consumer Perceptions of Privacy and Security Risks for Online Shopping," *Journal of Consumer Affairs*, vol. 35, no. 1, pp. 27–44, 2001.
- [31] C. Padmavathy, M. Balaji, and V. Sivakumar, "Measuring effectiveness of customer relationship management in Indian retail banks," *International Journal of Bank Marketing*, vol. 30, no. 4, pp. 246–266, Aug. 2012.