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An Analysis of Behavioral Intention to use Thai Internet Banking with Quality Management and Trust

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Abstract

This research explores the effects of quality management and trust towards behavioural intention of Thai consumers to use internet banking. It specifically investigates whether the quality management dimensions of information quality, system quality and service quality affect the level of trust of Thai consumers towards internet banking, and whether this trust correspondingly affect their intention to use the system. This study has been conducted in Thailand and focused on the users of internet banking system of various banks in the country. A total of 400 respondents were selected using simple random sampling. Multiple regression and correlations analysis were carried out to determine the effect between all of the independent variables and the dependent variable. The results showed that the system quality and service quality positively affect trust but

information quality showed negative effect.

Keywords: Internet banking; Quality management; Trust; Behavioral intention to use internet banking

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INTRODUCTION

In recent years, internet has become an important platform for organizations to offer new ways to reach out to their valued clientele [1]. Such is the case of internet banking, which now becomes a more favoured alternative for banks to extend their services to their consumers. Internet banking has shown immense benefits for both banks and customers as it facilitates higher cost savings, greater control over service delivery, waiting time reduction, and 24-hour convenient banking hours [2]. For financial institutions, the use of internet banking has become beneficial since it can standardize service delivery, reduce labour and service costs, expand delivery options and reach consumers who are inaccessible through other channels [3]. In so doing, customers benefit from it since it can provide ease of use in terms of such services as balance inquiry, financial transactions statement printing, funds transfer, and bill payment [4]. Internet banking is achieved by investing in the development of transactional services using internet technology.

Internet banking in Thailand

Internet in Thailand was introduced in 1991 through academic and research application while internet banking service was first used in 1999 by Siam Commercial Bank (SCB). The Asian recession in 1997 and the failing of Thai Baht brought the Bank of Thailand (BOT) to intervene in Thai financial market by forcing companies and several Thai banks to merge with foreign-owned banks [5]. The increase of bank's capital and technological advancement used by foreign banks helped in the improvement and encouragement of Thai banks to focus on the automated processing and transaction, which paved way for the greater efficiency in delivering their services. This situation led to the aggressive competition in the banking market and as a consequence, most commercial banks in Thailand have launched their own websites to offer internet banking services. This then marked the beginning of the use of internet as a new distribution channel among banks in Thailand. This move was anchored on the belief that the future of banking service lies on internet banking. Being aware of the importance of electronic transactions in the future economic development of the country, commercial banks have been allowed since 2000 to provide

transaction online similar to the services offered in traditional banking service [6]. But the adoption of internet banking by potential customers and its acceptance by current customers remain an important issue that deserves serious investigation specifically within the Thai context. The internet banking situation in Thailand is still at its early stage and there is only a small number of internet banking users up to this day. This is despite the fact that banks or internet banking providers have continuously invested and developed their internet banking services. There are 12 commercial banking institutions in Thailand, which offer Internet banking services namely (1) Bangkok Bank, (2) Krung Thai Bank, (3) Siam Commercial Bank, (4) Kasikorn Bank, (5) Bank of Ayudhya, (6) Thai Military Bank, (7) Government savings Bank, (8) Thanachart Bank, (9) Standard Chartered Bank, (10) CIMB Thai, (11) UOB, and (12) Lhbank (Bank of Thailand, 2558). In Thailand, the number of accounts using internet banking stands at 8,943,950 in 2014, but only 15,886 customers accessed through their transaction services [5]. There has been a considerable expansion of internet users in nearly every country and the actual internet banking usage is also rising. The number of financial transactions carried out over the internet still remains low and the rate of internet banking adoption is slower than originally estimated as evidenced in several countries. At the same time, internet banking acceptance depends on bank service quality, trust of service and satisfaction. Factor analysis results indicate that security, user friendly, queue management, accessibility, time factor and fund transfer are the major factors.

In this research, factors that influence the behavioural intention to use internet banking among individuals and groups under mandatory and voluntary contexts are being investigated. The Theory of Reasoned Action (TRA) is a widely validated intention model that has been proven to be successful in predicting and explaining behaviour across a wide variety of domains. TRA is concerned with the determinants of consciously intended behaviours composed of attitudinal, social influence, and intention variables to predict behaviour [7]. This helps guide banks to improve and develop service quality of internet banking system to promote a positive image and boost consumer confidence in choosing internet banking. It is important to increase the number of users accomplishing financial transactions, and reduce their service costs as well as apply various kinds of marketing strategies which satisfy customers' needs.

RESEARCH QUESTIONS

1. How quality management affect Thai customers' trust in internet banking usage?
2. How dimensions of quality management affect dimensions of trust?
3. Is there any influence of trust on behavioral intention to use internet banking in Thailand?

OBJECTIVES OF THE RESEARCH

In this study, the five main objectives are:

1. To study the effect of quality management (information quality, system quality and service quality) on the 'ability' aspect of trust.
2. To study the effect of quality management (information quality, system quality and service quality) on the 'benevolence' aspect of trust.
3. To study the effect of quality management (information quality, system quality and service quality) on the 'integrity' aspect of trust.
4. To study the effect of quality management on trust.
5. To study a relationship between trust and behavioural intention to use internet banking.

LITERATURE REVIEW

Service quality

Parasuraman defined service quality as the result of the comparison that customers make between their expectations about a service and their perception of the way the service has been performed [8,9]. SERVQUAL is a multi-item scale which is developed to assess customer perceptions of service. The author argues that SERVQUAL must be reliably assessed and measured in order to improve service quality. SERVQUAL is an important model to identify the gaps between customer expectations of the service and their perceptions of the actual performance of the service.

The initial ten dimensions that cover SERVQUAL was later reduced to five by using factor analysis [9]. A 22-item survey instrument to measure service quality was developed based on these five dimensions, which are composed of tangibles (having the appearance of facilities, equipment, materials, and personnel), reliability (having the performance of the service in a dependable and accurate manner), responsiveness (providing prompt response to consumers' requests), assurance (having the required knowledge for responding to consumers' requests), and empathy (having consumers' best interests at heart). Clow et al. [10] concluded that if consumers believe an online service provider is responsive to their particular requests, reassuring, and emphatic in caring for them as individuals, the trust of online service would be increased. Ahn et al. [11] stated that higher levels of service quality assist consumers in resolving their problems more promptly; this makes online banking easier to use. The higher service quality also helps consumers use online banking more effectively, which makes online banking more useful for consumers. Moreover, higher level of service quality is expected to generate an impression of competency and benevolence for the online service provider, which would improve consumers' trust in the online service provider [12].

System quality

System quality depends on the users' needs as defined during the system's analysis and development. It is an important factor in user satisfaction of a web technology alongside its appearance, technical adequacy, delay, navigation, security, and privacy [11]. Dalleart and Kahn [13] reported that consumers were able to separate the evaluation of waiting experiences from the evaluation of the website. However, they also demonstrated that when there is uncertainty about the waiting (as with the majority of downloads), the negative feeling generated by the waiting experience were carried over to the evaluation of the website. Ease of navigation relates to the level of time and effort required to accomplish specific tasks [14]. Speed of system is important since it enables users to attain their goals without too much waiting [15]. High level of system quality may provide users more convenience, privacy, and faster responses.

System quality refers to the performance of information system in terms of reliability, convenience, ease of use, functionality, and other system metrics [16]. The technical aspect of the provider's online system is defined as the extent to which the online system possesses the attributes of reliability, accessibility, speed, flexibility, aesthetics, and navigation [17].

Information quality

Information quality focuses on the content of the provider's online system and represents the extent to which the online content possesses the attributes of accuracy, timeliness, completeness, relevance, and consistency [18].

During their direct interaction with the online system, consumers process its content and information to make decisions. A higher quality of information would make the online system more useful for decisionmaking [11]. Furthermore, the high quality of the online system information (e.g., accuracy of transaction records) would create an impression of competency and integrity of the online provider, which would result in consumers' trust to them [18].

Information quality is a measure of the value that information provides to the user. "Quality" is often perceived as subjective and the quality of information can then vary among users of the information. Nevertheless, a high degree of quality increases its objectivity or at least the inter-subjectivity of the concept. Accuracy can be seen as just one element of information quality but, depending upon how it is defined, it can also be seen as encompassing many other dimensions of quality [11].

There is a trade-off between accuracy and other dimensions, aspects or elements of the information determining its suitability for any given tasks. Wang and Strong [19] proposed a list of dimensions or elements used in assessing

information quality which is listed below:

1. Intrinsic information quality: Accuracy, Objectivity, Believability, Reputation.
2. Contextual information quality: Relevancy, Value-Added, Timeliness.
3. Completeness, Amount of information.
4. Representational information quality: Interpretability, Format, Coherence.
5. Compatibility.
6. Accessibility information quality: Accessibility, Access security.

Trust

Trust can be defined at the collective or group level as ‘the belief that a group

- (a) It makes good- faith efforts to behave in accordance with any commitments;
- (b) It is honest in whatever negotiations preceded such commitments; and
- (c) It does not take excessive advantage of another even when the opportunity is available [20].

There are many definitions of trust across research areas. In the context of internet banking services, trust is defined as the assured confidence a consumer has in the internet banking service provider’s ability to provide reliable services through internet. In this study, trust is operationalized as consumers’ confident belief in internet banking service provided by his or her bank.

Trust as a perception of competence has three characteristics: ability, benevolence, and integrity [21,22]. Ability or also known as competence means that a person securely believes that the other party has the ability or power to do what needs to be done. In the case of the internet relationship, the consumer believes that the vendor can provide the goods and services in a proper and convenient way. Benevolence means that a person securely believes that the other person cares about another and is motivated to act in another person’s interest. A benevolent internet vendor is not perceived to act opportunistically. Finally, Integrity means that a person securely believes the other person makes good faith agreements, tells the truth, and fulfills promises. This reflects the belief that the internet vendor fulfills his or her promises such as to deliver goods or services on the designated time and circumstance, or to keep private information secure.

Hypotheses

The hypotheses tested in this research are:

H1: Quality management (information quality, system quality and service quality) has an effect on the ‘ability’ aspect of trust.

H2: Quality management (information quality, system quality and service quality) has an effect on the ‘benevolence’ aspect of trust.

H3: Quality management (information quality, system quality and service quality) has an effect on the ‘integrity’ aspect of trust.

H4: Quality management has an effect on trust.
 H5: There is a positive relationship between trust and behavioral intention to use.
 The model of this study is shown in Figure 1.

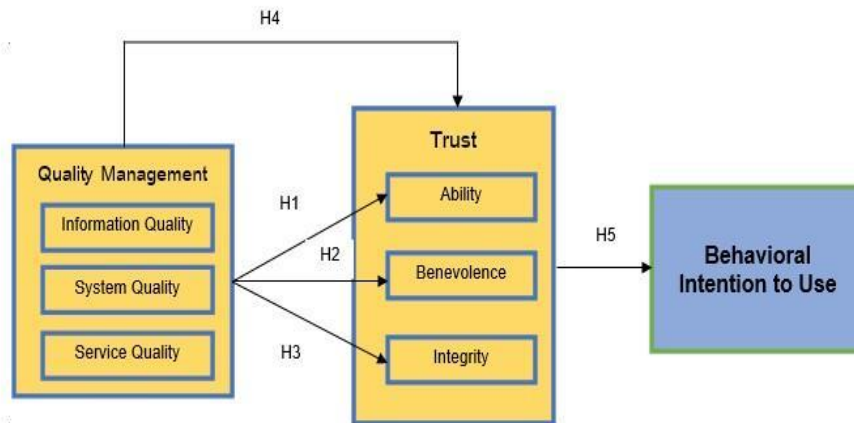


Figure 1: Research model

RESEARCH METHODOLOGY

Sample design and data collection

This study reports on the analysis of primary data which have been collected from a sample of 400 respondents, who had internet banking experience in Thailand. The number of respondent was calculated by using the formula of Yamane. The samples were identified randomly and drawn from both public and private banks in different parts of Thailand. The questionnaire was pretested among 30 trial respondents. The collected data was analyzed by using multiple regression and correlation analysis to study interrelationship among variables.

Reliability and validity analysis of the instrument

In order to further test the internal consistency of the scales, the reliability of the constructs was measured using Cronbach's alpha. All the values were above 0.70 which is the common threshold values recommended in the literature by Hair et al. [23]. High correlations suggest that the scale is measuring its intended concept [24]. As a result of these refinements and purification, the reliability test conducted on 42 items present in the questionnaire yielded a Cronbach's alpha of 0.862 which is essentially higher than the recommended minimum figure of 0.7 thus, it can be concluded that there is a high level of reliability or internal constituency of the instrument.

RESULTS AND INTERPRETATION OF DATA ANALYSIS

The basic assumptions of the parametric statistical tests such as regression should be carefully considered. The analysis of residuals provides the best information about regression model errors used to examine the regression analysis and multi-collinearity assumptions. The assumptions of regression are as follows:

- (1) the data need to be distributed in the 'normal' form to reveal standardized errors in which all P values are above 0.05; and
- (2) Data do not show the problem of multi-collinearity, which was tested by considering VIF values (Variance Inflation Factor). The problem on multi-collinearity could be disregarded if the VIF is equal to or greater than 10 [25]. In testing the hypotheses, multiple regressions were employed to analyze the data.

Hypotheses testing

Table 1 shows the result of hypothesis 1. The results show that H1 is not supported.

	Unstandardized Coefficients		T	Sig	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	.103	.130	.792	.042		
Service Quality	.709	.052	14.005	.000	.404	
System Quality	.259	.047	5.521	.000	.404	
Information Quality	.790	0.46	1.725	.085	.426	

Dependent: Ability
 R=0.826, R2=0.683, Adjusted R2 =0.681

Not all dimensions of quality management (information quality, system quality and service quality) have corresponding effects on the 'ability' aspect of trust. Only service quality and system quality have effects on trust, while information quality has no effect.

The regression equation is as follows:
 Ability = 0.103 + 0.729 service quality + 0.259 system quality (1)
 The adjusted R–square attained is equivalent to 0.681, which implies that 68.1%

of the 'ability' aspect of trust is influenced by service quality and system quality. While the rest (31.9%) of the influence arises from other factors other than service quality, system quality and information quality.

Table 2 shows the result of hypothesis 2. The results show that H2 is supported. This means that all dimensions of quality management (information quality, system quality and service quality) have corresponding effects on the 'benevolence' aspect of trust with system quality and service quality having positive effect, while information system having negative effect.

Table 2: Result of H2 hypothesis testing

	Unstandardized Coefficients		T	Sig	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	.191	.171	1.121	.026		
Service Quality	.760	.067	11.333	.000	.377	2.655
System Quality	.296	.065	4.532	.000	.321	3.112
Information Quality	-.130	0.57	-2.267	.024	.426	2.347

Dependent: Benevolence
 R=0.752, R2=0.566, Adjusted R2 =0.563

The regression equation is as follows:

$$\text{Benevolence} = 0.191 + 0.760 \text{ service quality} + 0.296 \text{ system quality} - 0.130 \text{ information quality. (2)}$$

The adjusted R–square attained is equivalent to 0.563, which implies that 56.3% of the 'benevolence' aspect of trust is influenced by service quality and system quality. While the rest (43.7%) of the influence arises from other factors other than service quality, system quality and information quality. However, it shows that information quality has a negative effect on benevolence. But if there is a slight change regarding the value of information quality, this change will also affect the level of benevolence in the opposite direction.

Table 3 shows the result of hypothesis 3. The results show that H3 is supported. This means that all dimensions of quality management (information quality,

system quality and service quality) have effects on integrity with system quality and service quality having positive effects while information quality having negative effect.

Table 3: Result of H3 hypothesis testing

	Unstandardized Coefficients		T	Sig	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	.197	.163	1.209	.023		
Service Quality	.650	.064	10.135	.000	.377	2.655
System Quality	.420	.063	6.715	.000	.321	3.112
Information Quality	-.123	.055	-2.251	.025	.426	2.347

Dependent: Integrity

R=0.773, R2=0.598, Adjusted R2 =0.595

The regression equation is as follow:

Integrity =0.197 + 0.650 service quality + 0.420 system quality - 0.123 information quality (H3).

The adjusted R–square attained is equivalent to 0.595, which implies that 59.5 % of the ‘integrity’ aspect of trust is influenced by service quality and system quality while the rest (41.5%) of the influence arises from other factors other than service quality system quality and information quality. However, it shows that information quality has a negative effect on integrity. But if there is a slight change regarding the value of information quality, this change will also affect the level of integrity in the opposite direction.

Table 4 shows the result of hypothesis 4. It shows that H4 is not supported. Not all dimensions of quality management (service quality, system quality and information quality) have effects on trust.

Table 4: Result of H4 hypothesis testing

Dependent: Trust
 R=0.848, R2=0.719, Adjusted R2 =0.717

Only system quality and service quality have effects on trust while information quality has no effect at 0.05 statistically significant level.

The multiple regression equation of the effect that service quality and system quality have upon trust can be written as:

$$\text{Trust} = 0.077 + 0.687 \text{ service quality} + 0.284 \text{ system quality} \quad (4)$$

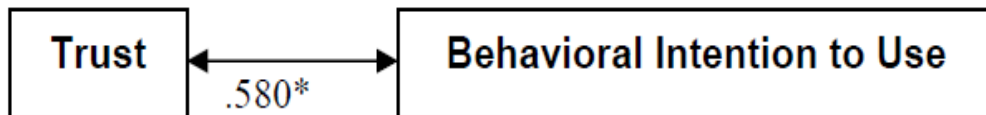
The adjusted R–square attained is equivalent to 0.717, which implies that 71.7% of trust is influenced by service quality and system quality while the rest (28.3%) of the influence arises from other factors other than service quality, system quality and information quality.

Correlation

In order to assess possible correlation between variables, Pearson coefficient of correlation was calculated. The result of hypothesis 5 shows that the correlations among the constructs of trust and behavioural intention to use internet banking

	Unstandardized Coefficients		T	Sig	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	.077	.117	.654	.014		
Service Quality	.678	.047	14.623	.000	.404	2.473
System Quality	.284	.042	6.706	.000	.404	2.473
Information Quality	-.055	0.41	-1.332	.184	.426	2.347

are significant ($p < 0.05$) (2-tailed) with P value of 0.580. Thus, it can be concluded that the overall correlations towards trust lies on the positive value, which implies that there is a positive correlations in the same direction as the other factors (Figure 2).



note: * $p < .005$

Figure 2: Direct effect of trust on Behavioral Intention to Use

CONCLUSION

This research was conducted to find out the effects of different dimensions of quality management on trust, and the corresponding effect of trust towards Thai consumers' behavioural intention to use internet banking.

The study found that quality management has a direct influence on trust but has varying effects on its three characteristics, which are the ability, benevolence and integrity. In case of its ability aspect, this study found that only the quality management dimensions of system quality and service quality has positive effect on trust. This is because attaining a complete and perfect information quality does not necessarily mean that it enhances the satisfaction of the users towards internet banking. As Lee and Chung [26] asserted the service quality and system quality has a positive effect on trust in mobile phone banking in Korea.

In case of the benevolence and integrity aspects of trust, this study found that system quality and service quality have a positive effect on trust, while information system has a negative effect. This finding however, is not supported in the study of Lee and Chung [26] who reported that information quality has a positive effect on trust. The dissimilarity might have been caused by the fact that information system in internet banking in Thailand is flooded with details, and respondents find it too tasking to fill-in those details. This is aside from the fact that respondents may also feel uncomfortable disclosing some information which they consider as too personal. In this regard, it is then important to consider the demographic profile of the population where the research is to be conducted. It is assumed that since this study employed all Thai respondents who may have various levels of orientation and knowledge in terms of internet banking, the results may have shown variation in their levels of behavioural intention to use internet banking. Hence, in order to improve the level of trust among clients, it is recommended that banks should develop a more efficient way in bringing about quality information to their clients by revising the banks' fundamental infrastructure regarding their information system [27].

Finally, a significant relationship was found between trust and behavioural intention to use internet banking, which concurs with the findings of Yap et al. [28] that customers who are willing to trust have the behavioural intention to use internet banking with less apprehension about its security and reliability. This means that customers who get used with the service will to continue to use the system in the future.

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