

# Factors Influencing Users' Acceptance in Internet Banking Success: Proposing a Unified Model

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**Abstract.** The highly accelerated growing of electronic banking such as Internet banking has already become one of the most prominent examples of electronic commerce success in Internet-based application. Many previous studies had noted that satisfaction, loyalty, commitment, and trust are very important elements in online banking success and consumer reluctance to make decisions to accept and to adopt e-commerce has annotated to the role of trust, security and privacy in commerce systems. This study is to propose an extendedly unified framework based on DeLone and McLean IS Success Model and Trust-Commitment Theory. The study provides a literary and a comprehensive framework as the result for the formation of consumers' usage decisions and relational building behaviors towards Internet-based banking services within several countries.

**Keywords**-E-commerce success; e-banking; internet banking; IS success model, trust-commitment theory, trust; user satisfaction; commitment, loyalty, IS use; user behaviors.

## 1. Introduction

The growth of electronic banking or e-banking implementations and uses are significantly increasing within more than a decade as one of the most significant trends [14], widely emerging following quick diffusion of the Internet. The Internet is getting increasingly popular as a new distribution channel for retail products and services [5], banking services [34], and cogent enhancement in e-commerce adoption [35]. Moreover, such tendency also cannot be separately considered from the success of implementing of reciprocally influenced factors and aspects such as beliefs, attitudes and behaviors [36] which were derived from understanding on previous theories: Theory of Reasoned Action and Technology Acceptance Model.

As one B2C classification of e-commerce [4], e-banking which can be categorized by Internet banking, phone banking, automatic teller machine (ATM) banking, and mobile banking [5], provides mutually beneficial services such as cost and time saving, quick response and services, and tends to be more continuously emerging and more widely accepted across many countries, particularly in developing countries due to its usefulness and easiness to utilize. Thus, Internet banking can play a crucial role to accommodate customers' needs on financial services and to facilitate both Information Technology-based financial products or services and conventional off-line systems.

There is still a few of studies that has deeply examined the empirical relationships among factors influencing Internet banking success determination, including the antecedently relational elements involved in organizational attributes [30] such as consumers' loyalty [1]. Moreover, there is still also a few of studies that investigate the association between security and privacy distinctively and trust in the context of online banking [2].

Previous studies have explored the critical variables addressing the e-commerce key success factors which are associated with Information Systems (IS) success such as system quality, information quality, service quality, consumer satisfaction, use, and net benefits [10]-[12],[23]. Furthermore, the e-commerce success is also related to trust [8], security and privacy [14], commitment [2], and loyalty [1] which has become important to the successful penetration in online commerce [22] and e-banking [3].

This study is to propose a unified framework for incorporating the relational formation of consumer's acceptance decision in Internet banking, which in turn, intention to reuse e-banking services based on loyalty within Bangladesh, Indonesia, Malaysia, and South Korea respectively to measure factors influencing Internet banking success in regard with technology use and acceptance.

Therefore, we attempt to derive an understanding and a more representative of the antecedent variables which involve elements needed to measure the usage within the context of Internet banking based on income classification [38]: low income, lower-middle income, upper-middle income, and high income, which is associated with sales in e-commerce as a percentage of Gross Domestic Product (GDP)[14].

## 2. Theoretical Background

### 2.1. Development of Internet Banking

Following the growth of electronic devices and Internet, e-banking use and adoption has been flourishingly developing with, notably the widespread of utilizing the World Wide Web. Such growth was also triggered off by the wide utilization of Electronic Fund Transfer (EFT) extension such as ATMs to mediate consumers' financial needs and credit cards usage as the most acceptable payment method through the Internet.

However, there are still an abundant number of the people who have bank accounts and actively access the Internet are still unwilling to use Internet banking and strongly tend to use non-Internet banking service such as ATMs [31], due to lack of trust [27], uncertainty, security, and privacy concern [5],[31],[2],[1], etc.

Nevertheless, there is a lack of empirical investigation on measuring Internet banking success, especially with a highlight on cross-country consideration across relational variables such as trust, security, privacy, commitment, and consumers' loyalty and satisfaction.

Implementation of Internet banking in Bangladesh, Indonesia, Malaysia, and South Korea is surely different, with South Korea as the leading country in utilizing such application due to its telecommunication infrastructure acceleration such as high internet use growth [3] and well-developed broadband connection across the country.

The phenomenon is also supported by higher income factor which is highly related to sales in e-commerce [14] as individual with better income is expected to need more financial intermediary services like Internet banking in order to comply with his/her transaction needs. The following Table I shortly describes the demographic description including fixed broadband subscription from year 2008 to 2011 among the countries respectively [17],[37],[32]-[33],[7],[15],[39].

TABLE I. DEMOGRAPHIC DESCRIPTIONS AMONG THE COUNTRIES 2008-2011

	Broadband (x1000)	IB Users (x1000)	IB Banks (unit)	GDP (US\$)
Bangladesh	60.0	N/A	7	691.95
Indonesia	1,900.3	749.0	21	3,464.81
Malaysia	2,078.5	2,746.0	23	8,624.24
South Korea	17,649.5	15,655.2	30	22,961.25

### 2.2. Concept of IS/E-commerce Success

The important role of trust, security and privacy, consumer satisfaction, loyalty for incorporating a successful e-business and e-commerce implementation, particularly in Internet banking, have already been observed and investigated empirically by preceding studies. Those factors have also been receiving wide

attention in the e-business and e-commerce discipline where the relationships in influencing IS success as well in the Internet banking context, usually as part of e-commerce application.

Delone and McLean [10] postulated 6 interdependent dimensions [26] which will significantly affect IS success: system quality, information quality, usage, user satisfaction, individual impact, and organizational impact. Then, they modified the preceding variables with net benefits and detail direction of information use [11].

IS success model was developed based on three divergent levels: the technical, semantic, and effectiveness levels [10]-[12]. The technical level refers to system quality dimensions: e.g., (ease of use, functionality, reliability, and data quality; the semantic level designates information quality: e.g., accuracy, timeliness, relevance, consistency, and completeness. The effectiveness level intends to service quality: e.g., tangibility, responsiveness, assurance, and empathy [11]-[12],[26].

IS success becomes one of the contentious issues in IS research [23]. Moreover, there are fundamentally some criticisms on the principal structure of the updated IS/e-commerce success models grounded on DeLone and McLean model with the 'usage' construct, multi-dimensions [11] and its incongruences in the context of IS adoption [36]. Three classified elements of ascertained e-commerce success model are still strongly associated with previous theories revealed by Theory of Reasoned Action (TRA) [13] and Technology Acceptance Model (TAM) [9]: beliefs, attitudes and behaviors [36]. As an extension of TRA, TAM modifies attitude measures in TRA with the two measures of technology acceptance: perceived usefulness and perceived ease of use.

However, TAM considers more on deserved net benefits from future IS usage; whereas the DeLone and McLean IS/e-commerce success model focalizes on net actualized benefits related to IS usage. Accordingly, the term of intention to reuse was dealt with a more adjacent scope of the concept of e-commerce systems success than the other success dimensions. It is also conceptually close to loyalty dimension [36].

### **2.3. Trust-Commitment Relationships**

The concepts of trust and commitment play an important role in successfully developing and maintaining mutual relationship among the involved parties. Commitment and trust variables are considered as key constructs pertaining through relational exchange and the reciprocal relationship between them, which maintaining relationship succession by aligning with conversion partners for long-term benefits in particular [24]-[25]. In other words, trust derives impact on relationship and commitment reveals a critical completion of trust in reciprocal exchange relationships [24].

Furthermore, such relationship is also interceding variables of five influential antecedents: termination costs, benefits, shared values, communication, opportunistic behavior, and five consequence results: acquiescence, propensity to leave, cooperation, functional conflict, and uncertainty in making decision [25] to successfully elicit expected results which can directly encourage to collectively collaborated and acceptably accommodative behaviors to relationship success.

There are fundamentally different perspectives on trust, and a debate in explaining the concept of trust [16]. Consequently, trust is not yet well defined and precisely concluded due to its complexity [21]. Many different views on trust and its definitions also still present the disorganized arguments, including its antecedents and outcomes, and the construct of trust itself [20]. Nonetheless, Mayer et al.'s definition of trust [20] has become widely admitted as an acceptable depiction in the context of IS and e-business/e-commerce domain [29].

## **3. Research Model and Hypothesis**

### **3.1. Proposed Model**

This study posits on the basis of the DeLone and Mc Lean IS success model and Trust-Commitment theory that the consumers' decisions to continuously use Internet banking services are determined mainly by three dimensions – user satisfaction, trust, and commitment which finally direct such perceptions to build loyalty.

Due to the fact that the relationship between trust and risk still derives confusing issue in the context of e-commerce [6], this study assumedly develops hypothesis without the involvement of perceived risk, though risk is considered as an influential condition for trust to emerge [20].

The proposed model draws on some perceived variables as the relationally interdependent constructs with loyalty as an independent variable to exhibit relational influence of the measured dimensions in acceptance decision in utilizing Internet banking services as further shown on Figure 1.

### 3.2. Research Hypotheses

Perceived site quality is hypothesized as a combination of two dimensions of web quality [8],[18],[22] – system quality and information quality [19],[36] as trust building factors based on process-based buyer-seller-relationship [18],[8], whereas service quality is an important variable of website success [19]. All quality dimensions exhibit either satisfied or dissatisfied perceptions through experience [11],[36]. Moreover, both website quality and service quality directly behave influential on trusting belief [22]. Thus, we have hypothesis that:

*H1: Perceived site quality of Internet banking positively influences his/her satisfaction.*

*H2: Perceived site quality of Internet banking positively influences his/her trust.*

*H3: Perceived service quality of Internet banking positively influences his/her satisfaction.*

*H4: Perceived service quality of Internet banking positively influences his/her trust.*

Security and privacy concerns have been considered as the important factors in e-commerce and Internet banking success [14],[2] and commitment [2]. Hence, previous study also concerned that security and privacy constructs should be separated in order to recognize more influential surrogate on trust [35]. In regard with Trust-Commitment dimensions, shared value represents the degree to which the bank and the customers share general beliefs on critical considerations – security and privacy [26]. Therefore, we posit that:

*H5: Perceived security on Internet banking positively affects user trust.*

*H6: Perceived security positively influences his/her commitment to use Internet banking services.*

*H7: Perceived privacy on Internet banking services positively affects user trust.*

*H8: Perceived privacy positively influences his/her commitment to use Internet banking services.*

User satisfaction has always been predicted as a required condition for the success of organizations adhered to profitability enhancement, larger market share, and growth [23]. Moreover, satisfaction is still perceived as the most applied success measure building, but not used solely [11] and has a significant influence on trust [2]. This condition leads us to a hypothesis that:

*H9: User satisfaction of Internet banking services positively influences trust.*

*H10: User satisfaction positively influences the use of Internet banking.*

The important function of trust in dealing with e-business and e-commerce transactions successfully, including in Internet banking, has already been observed and investigated by previous studies. Trust has also been receiving critical consideration in the e-business and e-commerce areas where Trust has a vital influence on consumer activities and e-commerce success [8], and will clearly comprise commitment for long-term relationship [25][24][2], and intends loyalty [1][18]. Accordingly, we posit that:

*H11: User trust positively affects his/her commitment to use of Internet banking services.*

*H12: User trust positively affects the use of Internet banking.*

Morgan and Hunt [25] defined acquiescence as “the degree to which a partner accepts or adheres to another's specific requests or policies, and we posit that relationship commitment positively influences acquiescence, whereas trust influences acquiescence only through relationship commitment. Conceptually, acquiescence parallels the performance outcome of compliance”. Drawing on the definition, we conceptualize it as a kind of loyalty which is formed through trust-commitment relationship. Previous studies also have examined that commitment leads to loyalty [28] as a form of advanced extend based on retention [19]. Accordingly, because we hypothesize consumers’ loyalty as an outcome and independent variable, the hypotheses can be presumed here:

*H13: The use of Internet banking services derives positive impacts on commitment.*

*H14: User commitment positively affects the loyalty to reuse Internet banking services.*

*H15: The use of Internet banking services derives positive impacts on the loyalty to reuse.*

## **4. Methodology**

To support our proposed model and hypotheses, this study will utilize a form of questionnaire with a seven-point Likert's scale and will be conducted to collect the data for measuring the hypothesized variables of the research model. The constructs from preceding studies were adjusted for complying with the context of Internet banking. The variables of perceived site quality, service quality, user satisfaction, and usage were adapted from updated DeLone and McLean IS Success model [11] and as well Trust-Commitment Theory as for perceived security, perceived privacy, trust, commitment, loyalty constructs [25].

Currently, the data was still being gathered on measured countries which participation in the study was voluntary and directed to bank customers who already have used Internet banking services.

The collected data will be evaluated and validated through statistical analysis and measurement using Structural Equation Modeling (SEM) for investigating and examining causal relationships among hypothesized variables using LISREL 8.8.

## **5. Expected Results**

We aim to conduct the required evaluations and related examinations to accomplish the operationalization of the constructs and to scrutinize the clarity and the practicality of our model and hypotheses. Therefore, it would appear beneficial to further investigate operationalization concerns associated with based on cross-cultural overview, including to extend the extant model with further research theories to provide broader validity and more reliability.

Despite with favorable service convergence across banking industries, it may hopefully derive a significant insight for financial industries particularly banking sector in respectively related countries. This study expectedly provides a useful contribution especially to the Information Systems (IS) domain by revealing more empirically representative validation on the proposed theoretical research based on the promising cross-country Internet banking field.

## **6. Conclusions**

Based on the description that has been conducted, this study conveys the mechanisms incorporated notably with the use DeLone and McLean IS success model still engenders complex and debatable position on its measurement viability, due to the dimensionality of used constructs in assessing the technological system use.

This study affirms the results of previous studies and renders an extension of measured variables, and the results revealed some findings that need to be further investigated in future studies.

## **7. Limitations and Future Cosiderations**

Some limitations are essential in this study. First, the primary investigation of this research was limited to observing bank customers' perceptions with respect to Internet banking only; even though they might have used other e-banking services such as mobile banking, ATM, and phone banking to consummate their financial transaction demands. Therefore, the designation of this study could not be generalized to clarify such situations.

Second, this study mainly focused on measuring the usage of Internet banking services based on which factors explained the trust-commitment-loyalty building in Asian countries only that might not precisely concede every perspectives of the loyalty development process in the electronic banking area, particularly in different countries in other regional areas.

## **8. Acknowledgement**

We are grateful to Hwansoo Lee and Aida Fitriyani for giving constructive ideas which have been used in the finalization of this article.

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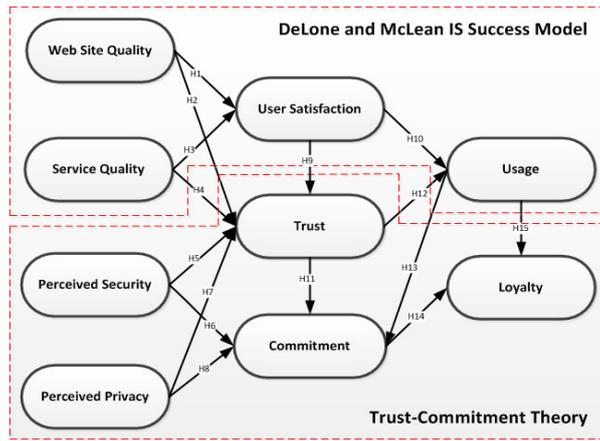


Figure 1. Proposed Unified Framework with IS Success Model and Trust-Commitment Theory