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Drivers of customer intention to use online banking: An empirical study in Vietnam

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Numerous Vietnamese banks have launched online banking services to offer improved service to existing customers and attract new ones. However, online banking new to most people in Vietnam, and rates of adoption of online banking. This study focuses on this issue and attempts to identify the determinants of customer intention to use online banking. A research framework based on the DeLone and McLean Information System Success (D and M IS) model for assessing website quality and the literature on brand credibility was developed to identify the factors that can affect customer intention to use online banking. This study uses customers of the financial industry in Vietnam as subjects and collects 164 valid questionnaires. Partial Least Squares (PLS) method is applied in the investigation. The analytical results indicate that brand credibility can affect customer intention to use online banking.

Key words: Online banking, brand credibility, website quality, intention to use.

INTRODUCTION

Vietnam banking industry

In emerging countries like Vietnam, the growth rate of the banking industry is typically GDP growth, which is approximately 15% and this industry is vital to the economy.

The statistical data indicates confidence that demand for banking services will be high in a country like Vietnam with a population exceeding 80 million. According to Bain and Company consulting firm's survey, only 2% of the 84 million citizens of have taken out a bank loan, only 5 million have a personal bank account, and since 2004 the number of credit card holders has jumped 300%, to 2 million. Clearly, the Vietnamese banking market is still remains in the initial phase of development with low GDP per capita (1,024 USD) and very low bank assets per capita, presenting numerous opportunities for bankers, particularly in online banking.

Online banking provides a very convenient and effective method of managing personal finances since it is easily accessible 24 hour a day and seven days a week.

Additionally, Internet banking enables real time information exchange. For corporate customers, sophisticated cash management packages offered via internet banking

Internet banking provides real time information, enabling timely fund management decisions. Simultaneously, banks can more easily retain existing customers as well as providing services to customers without constraints of time and place. The aggressive competition among banks operating in Vietnam will ultimately lead to a race to improve service in order to attract customers. This race will make the launch of online banking services inevitable. In fact, some banks in Vietnam are already providing on-line banking. However, online banking remains immature in Vietnam, and is negatively perceived and little utilized. This study thus examines the drivers of intention to use online banking among bank customers in Vietnam. Because customers only use online banking once they develop intentions to do so the question becomes one of identifying what motivates customers to intend to use online banking. This study examines this question.

Numerous studies have examined the banking industry. However, most of those papers focused on traditional banking services rather than online banking (Yavas and Benkenstein, 2001). Some other studies focused on positive aspects of online banking, such as benefits, trust and innovation. Simultaneously, no previous study has examined influences on customer intention to use online banking in Vietnam. Consequently, this study was examines the determinants of customer intention to use on-

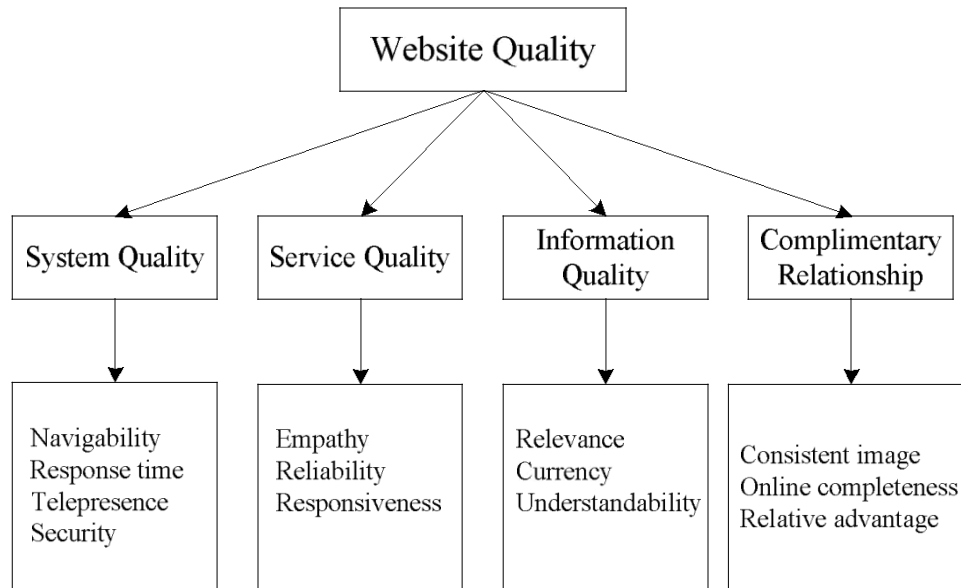


Figure 1. Website quality's factors.

line banking.

LITERATURE REVIEW

Website quality

This study uses factors to assess website quality, as shown in Figure 1. These factors are derived from the DeLone and McLean information system model, including system quality, service quality, and information quality. The remaining factor, complimentary relationship, was adapted from WebQual by Zeithaml et al. (2002) to better evaluate website quality in the banking industry. The relevant literature is discussed in detail below. According to Delone and McLean (2003), quality comprises three main dimensions: "information quality," "systems quality," and "service quality." Due to its advantages and popularity, this study uses the D and M IS Model combined with the complimentary relationship factor to determine how website quality the influence of website quality on brand credibility. This study defines website quality as including the following factors: information quality, system quality, service quality and complimentary relationship (Zeithaml et al., 2002).

System quality can be measured using navigability, response time, personalization, telepresence, and security. Navigability denotes increased user control over navigation, and helps users reach target web pages without experiencing so much and minimizes the disorientation users feel in navigating to a web page. Rapid response is important for increasing system quality since online users are unwilling to wait more than a few seconds for a response. Furthermore, personalization systems can provide online customers with an individua-

lized interface, effective one-to-one information, and customized service. Finally, telepresence the sense of reality associated with a virtual environment created by a computer/communication medium.

Service quality refers to the overall support delivered by internet retailers. Service quality is critical in e-business since customers transact with unseen retailers. While its gap assessment process suffers some issues, SERVQUAL has been successfully adopted to measure information system service quality (Landrum and Prybutok, 2004). SERVQUAL consists of comprises reliability, responsiveness, empathy, assurance, and tangibility. Reliability, responsiveness, and empathy can be used to measure e-business service quality. Furthermore, reliability refers to the ability to perform the promised service dependably and accurately, responsiveness refers to the willingness to help online customers and provide prompt service, and empathy refers to the caring and attention online retailers provide their customers.

In the online banking website context, information quality refers to the delivery of relevant, updated, and easy-to-understand information to significantly influence the attitude, satisfaction, and purchase/use behavior of online customers. Previous studies have demonstrated the significant effects of information relevance, currency and understandability in terms of increasing information quality. Information relevance includes relevant depth and scope, and completeness of information. Currency updated of information, while understandability includes ease of understanding and clearness of information.

Complimentary relationship includes three factors: consistent image, online completeness, and relative advantage (Watson et al., 2000; Moore and Benbasat,

1991). Consistent image increases when customers feel the website and other media present a consistent image of the company project. The second trait of complimentary relationship is online completeness, which Seybold (1998) defines as permitting all or most necessary transactions to be completed online, for example transferring money, depositing money, paying bills, etc. This is essential to the success of online banking websites.

Brand credibility

Brand credibility is a new concept and differs from brand reputation and brand image. The concept of brand credibility is based on the early research of Hovland et al. (1953) on the credibility of the communicator, and was adapted to the context of the brand by Erdem and Swait (2004). Based on these studies, brand credibility comprises two main dimensions: trustworthiness (for example: the belief that the firm is willing to deliver on its promises) and expertise (for example: the belief that the firm is capable of delivering on its promises). That is, to be perceived as credible a brand must be perceived as willing and able to deliver on promises. Notably, trustworthiness differs from trust and can be described as a characteristic of an entity (for example: person or brand).

A fundamental theme in this conceptualization concerns communicator motivation that is whose interests the communicator seeks to serve. Brand credibility is a key element in the customer-based brand equity pyramid of Keller (2001), representing one aspect of consumer response to the brand. Thus, as a brand signals its product positioning more credibly, consumer perceived risk reduces, as do the information gathering and processing costs consumers must incur during decision making (Srinivasan and Ratchford, 1991). In this study, the brand with the role of offensive tool (increase intention) is the main focus. Online banking is new concept in Vietnam, and thus bankers should prioritize strategy to use.

Customer satisfaction

During the past two decades, customer satisfaction has been very strategically important for numerous companies. Successful businesses must satisfy customers while simultaneously making a profit. According to Cardozo (1965), customer satisfaction with a product leads to repeat purchase behavior, acceptance of other products in the same product line, and favorable word-of-mouth publicity. Tse and Wilton (1998) explained customer satisfaction as customer response to the evaluation of the perceived discrepancy between expectations (or some norm of performance) and actual performance. Overall or cumulative customer satisfaction are overall assessments based on total purchase and consumption experience of a customer with a good or service over time as perceived following its consumption (Spreng et al., 1996). Therefore,

good product and service quality are necessary for a company to satisfy its customers. The e-commerce success model proposed by Molla and Licker (2001) was based on the Delone and Mclean information system success model. The system item and information quality components in the Delone and Mclean model are regularly replaced by e-commerce system and content quality. Additionally, user satisfaction is replaced by customer e-commerce satisfaction, and a further two factors, namely trust and service, are added to capture the transactional and customer support components of e-commerce systems and customer e-commerce satisfaction. In this study, satisfaction refers to customer satisfaction with online banking services provided by the banks.

Customer intention

This study defined customer intention to use online banking based on the concept of Ajzen (1991), which identified customer intention as the interest of individuals in using the system offered for future banking transactions. Numerous researches have attempted identify the behavioral factors that influence individual decisions to purchase online. Each using a framework to study the matter has identified elements to measure intention to use. The most popular theories are: Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and Technology Acceptance Model (TAM). These theories showed intention to be a good predictor of behavior. According to stages of change research, intention occurs along a continuum where a person initially has no intention to act, then contemplates the value of acting, and finally prepares to act. Following these three phases, the individual may take action; and possibly move on to the maintenance phase, in which the action becomes an established habit (Prochaska and Norcross, 2001).

In this study, intention to use online banking service represents the strength of consumer intentions to use or re-use transactional banking services offered via the internet by their banks.

RESEARCH MODEL AND HYPOTHESES

Research model

Figure 2 shows the research model.

Hypotheses

System quality and brand credibility: System quality indicates system performance in delivering information, and is a critical success factor influencing technology use and user satisfaction (DeLone and McLean, 1992). In the e-business context, website system quality is known to significantly affect online customer satisfaction (Palmer, 2002) and online purchase behavior (Agarwal and

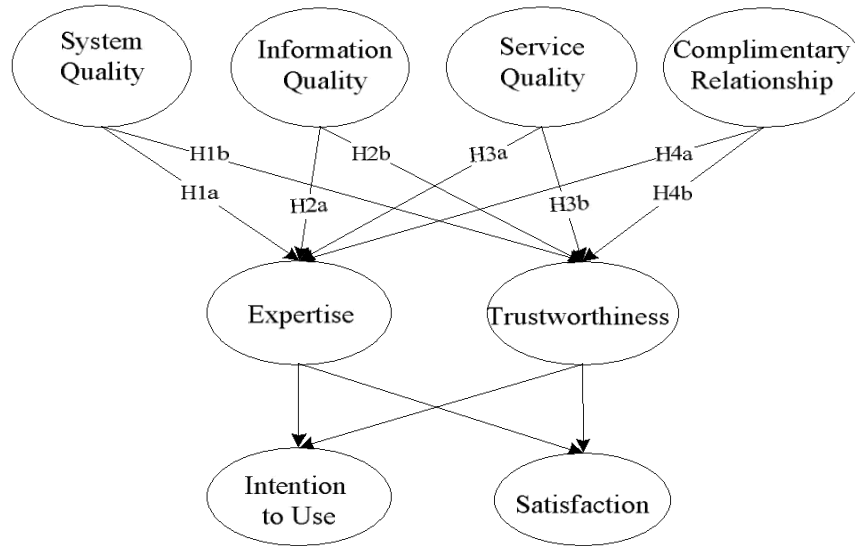


Figure 2. The research model.

Venkatesh, 2002). Customers dissatisfied with websites characterized by poor navigation, slowness, dullness, poor security, and no personalized services are likely to go elsewhere even if the information provided is high quality (McKinney et al., 2002). Klein (2003) found that customers are inclined to use their real world experiences as a standard when assessing online experiences. These four system quality factors enhance the perceived expertise associated with the bank brand. Finally, security represents one of the most significant obstacles to e-business. Online consumers will not disclose their personal and financial information until they are convinced a website is secure. Thus websites should implement multiple features (such as, encryption, third party affiliations and security statements) to assure the security of online shopping (Kim et al., 2002). A secured website also increases bank trustworthiness. From this perspective, this study anticipates that system quality directly affects brand credibility.

H₁: System quality positively affects brand (a) expertise and (b) trustworthiness of online banking service providers.

Information quality and brand credibility: Website information quality depends on delivering relevant, updated, and easy-to-understand information to significantly influence the attitude, satisfaction, and purchase/use of online customers (Feindt et al., 2002). Information quality can be measured using information relevance (Eighmey and McCord, 1998), currency (McKinney et al., 2002), and understandability (Nielsen, 2000). Information relevance includes the relevant depth, scope, and completeness of information that can affect bank expertise. Currency includes updating the information, and may affect trustworthiness. Furthermore, the understandability and

clarity of information, which may affect expertise and trustworthiness. This study thus hypothesizes a link between information quality and brand credibility.

H₂: Website information quality is positively related to brand (a) expertise and (b) trustworthiness of online banking service provider.

Service quality and credibility: Service quality is more important in e-business because online customers transact with unseen retailers. Service quality consists of reliability, responsiveness, empathy, assurance, and tangibility. Reliability, responsiveness, and empathy can be used to measure e-business service quality. Reliability refers to the ability to perform the promised service reliably and accurately, and thus can influence bank trustworthiness. Meanwhile, responsiveness refers to bank willingness to help online customers and provide prompt service; and empathy represents the caring and attention an online retailer provides to customers. These two can provide customers with a positive impression of bank expertise. Meanwhile, tangibility, appearance of physical facilities, equipment, personnel, and communication materials, was not included since it was more suited to physical than online stores. Just as Devaraj, Fan, and Kohli (2002) demonstrated, assurance is closely correlated with empathy, and thus is excluded from this study. From those arguments, this study anticipates that service quality directly affects brand credibility.

H₃: Service quality is positively related to brand (a) expertise and (b) banking service provider trustworthiness.

Service quality and credibility: Besides the three website quality factors discussed above, this study integrates

the complimentary relationship to evaluate Website Quality. It comprises Consistent Image, Online Completeness, and Relative Advantage, which are key e-business success factors. Companies involved in e-business spend millions of dollars on advertising to increase awareness of their online presence since website awareness is directly related to brand loyalty and network effects (Adamic and Huberman, 2000). To achieve awareness the bank brand must have a consistent image, which means the website must not create dissonance/ disagreement for the user by an image that is incompatible with that which the firm projects through other media (Watson et al., 2000; Seybold, 1998). Consistent image increases are achieved when customers feel the website and other media present the same image of the company, fostering a belief that the bank will deliver on their promises. Brand trustworthiness is enhanced when customers believe a bank will deliver on its promises. The second trait of complimentary relationship is online completeness, which is defined by Seybold (1998) as allowing the online completion of all or most necessary transactions, for example: transferring money, depositing money, paying bills, etc. This is a key factor to the success of online banking websites. Unless banking transactions can be performed via the website, good performance in other areas becomes meaningless. Therefore, this should have the effect on brand expertise. Moreover, according to Moore and Benbasat (1991), relative advantage means the website should be equivalent to or exceed other means of interacting with the company. Based on the above traits, this study anticipates that complimentary relationship directly affects brand credibility.

H₄: Complimentary relationship is positively related to brand (a) expertise and (b) trustworthiness for online banking service providers.

Brand credibility and customer satisfaction: As argued above, according to Rust et al. (2000), the brand can fulfill an important role in offensive marketing actions because it fulfills signaling functions for consumers. Harris and Goode (2004) found evidence that trust in a service provider influenced satisfaction with that provider.

Similarly, business or service provider expertise, comprising aspects such as technical knowledge or e-commerce, sharp knowledge and high competence and proof of expertise in a specific industry, has been found to increase customer satisfaction (Franco, 1990; Wray et al., 1994). Accordingly, this study hypothesizes the following.

H₅: Brand credibility subcomponents: (a) expertise and (b) trustworthiness positively affect satisfaction.

Numerous studies of trustworthiness and online shopping agree that trustworthiness promotes both intention to purchase online services and actual purchase behavior. This study approaches trustworthiness as a subcomponent of

brand credibility rather than website or firm credibility. Similarly, for second subcomponent of brand credibility, expertise, studies have concluded that lack of trust in expertise will ultimately lead to reduced purchase/use intention. According to Joiner et al. (2002), when a customer sees a financial adviser as having low expertise they will be less likely to purchase advice from that adviser. In another situation, website credibility, which comprises of expertise, is also proved to influence customer intention to use a website (Cugelman et al., 2008). Another study found that sportswoman expertise scores influence consumer intention to purchase products endorsed by that athlete (James and Ryan, 2000).

Accordingly, this study hypothesizes the following.

H₆: Subcomponents of brand credibility: (a) expertise and (b) trustworthiness positively affect customer intention to use online banking.

RESEARCH METHODOLOGY

Questionnaire and sampling

This study used a questionnaire survey. One part of the questionnaire consulted the related literature and made revisions to fit this study, while the other part reorganized previous studies by the current author. For the pilot test, this study selected 30 respondents from customers of bank in Vietnam. Following the test, this study was identified as having appropriate content validity. Because this study examines online banking, the research comprises customers of the financial industry in Vietnam. The sample customers have knowledge of banking services and all have personal bank accounts. 200 questionnaires were sent out to financial industry customers with personal bank accounts. Customers were selected randomly. Participation in the questionnaire was voluntary. Moreover, the collected information was kept confidential to avoid any associated privacy concerns.

All items were measured using seven-point Likert-type, scales, with anchors of 1 (strongly disagree) and 7 (strongly agree). After removing unqualified research subjects and invalid questionnaires, for example those that were incomplete or that displayed excessive internal similarity in responses, this study had 164 valid questionnaires for a return rate of 87%. Regarding gender, "females" comprised the majority of the sample (61.6%). Regarding age range, the majority of subjects belonged to the 23 - 26 years old and the 26 years old and over age groups (43.9 and 46.3%).

Most respondents had at least 6 years experience in using the Internet (72.6%). All the respondents had permanent jobs either in private firms or in the public sector. Regarding Online Shopping experience, most subjects had experience of shopping online. Subjects thus had experience of using Internet retailing services, and hence a basic knowledge of online services, and by extension the online banking that is the concern of this study.

Method and procedure

As this research planned to find out the causal relationship of structural model, the structural equation modeling (SEM) approach will be used. The model used Partial Least Square (PLS) method to estimate. Therefore, the forecasting ability of the structural model is examined using composite reliability, discriminate validity and explanatory of the model (R^2). Because PLS does not have default data distribution, there is no need to examine whether the data

Table 1. Correlations between constructs.

	SYS	INF	SER	COM	TRU	EXP	SAS	INT
System Quality (SYS)	0.79							
Information Quality (INF)	0.75	0.80						
Service Quality (SER)	0.63	0.77	0.79					
Complimentary Relationship (COM)	0.73	0.74	0.79	0.76				
Trustworthiness (TRU)	0.63	0.78	0.78	0.75	0.87			
Expertise (EXP)	0.63	0.59	0.67	0.71	0.69	0.87		
Satisfaction (SAS)	0.65	0.66	0.79	0.74	0.80	0.74	0.82	
Intention (INT)	0.57	0.67	0.63	0.67	0.66	0.56	0.64	0.84
AVE	0.62	0.63	0.61	0.58	0.65	0.76	0.68	0.72
Cronbach's α	0.79	0.90	0.84	0.80	0.72	0.84	0.84	0.86
Composite Reliability	0.87	0.92	0.89	0.88	0.84	0.90	0.89	0.91

Note: Diagonal elements are square roots of the average variance extracted (AVE).

conforms to the normal distribution hypotheses. Similarly, it also does not provide estimation of path coefficient of trust's interval and statistics' significant examination. To estimate the significance of the path coefficient, Bollen and Stine (1992) suggested the Boot-Strap method in estimating the significance of path coefficient. Therefore, this study used BootStrap method to test the significance of the model's coefficient. In addition, in this study, the Statistical Package for Social Science version 15.0 (SPSS) is used to analyze the demographic data

Survey development

The questionnaire items for the website quality construct were adopted from the questionnaires of Ahn et al. (2007) with overlapping, unnecessary and redundant questions being removed. The questionnaire for the brand credibility and satisfaction construct is adopted from the questionnaire of Sweeney and Swait (2008). For the usage intention construct, the questionnaire is adopted from the research of Pavlou (2003).

DATA ANALYSIS

Measurement model result

This study used internal consistency reliability (Cronbach's α) to examine scale reliability. In this study, all of the Cronbach's α demonstrated a value significantly exceeding 0.7. The composite reliabilities of the remaining constructs are all 0.84 or above, suggesting high consistency. Under the composite reliability (CR) of the latent variables (Table 1), all model values lie between 0.84 and 0.92. These values exceed the suggested value of 0.7 (Hair et al., 1998), suggesting that all seven constructs have high reliability and internal consistency.

The average variance extracted (AVE) values of constructs listed in Table 2 are between 0.62 and 0.81. Thus, the model exhibits good convergent validity (Fornell and Larcker, 1981). Table 1 lists the discriminant validity of all of the study constructs. The average variance extracted root mean square of all constructs exceeded the correlation coefficients among constructs;

therefore, the constructs in the model have sufficient discriminant validity (Fornell and Larcker, 1981). Similarly, the correlated forecasting and explanation variables were integrated into the model to avoid errors associated with deleting the wrong principal component that cannot be induced by traditional principal component analysis. By combining principle component analysis and path analysis, errors in identifying the most appropriate regression coefficient assemble of the forecasting and explanation variables are avoided.

Furthermore, Harman's one factor tests (Harman, 1967), which is assessed by factoring all indicators in the study is performed to test for Common Method Variance (CMV). The basic assumption of this technique is that if substantial common method variance is present, either (a) a single factor will emerge from the factor analysis or (b) one general factor will account for most of the covariance among the measures (Podsakoff, 2003). Common method variance is a type of spurious internal consistency which occurs when the apparent correlation among indicators or even constructs results from their common source. For instance, if the data source is self-reports, the correlation may result from the propensity of subjects to provide similar answers to multiple items even in the absence of any true construct correlation. The Harman one factor analysis extracted eight factors, accounting for 79% of variance. Each factor accounted for between 6.5 and 16.6% of the variance.

This result indicates that one general factor did not account for the majority of the variance. Therefore, these results indicate that common method variance is unlikely to seriously threaten validity.

Structural model results

The data analysis shows that the R^2 values yielded acceptable results. The R^2 values for expertise, trustworthiness, satisfaction, and Intention were very strong, demonstrating that website quality explains 74% of the

Table 2. Results of the structural model.

Path between	Result	t-statistic	Hypothesis
SYS- TRU	Not Supported	-1.34	H _{1b}
INF -TRU	Supported	8.33	H _{2b}
SER - TRU	Supported	4.44	H _{3b}
COM -TRU	Supported	2.55	H _{4b}
SYS - EXP	Supported	2.36	H _{1a}
INF - EXP	Not Supported	-1.09	H _{2a}
SER - EXP	Supported	2.39	H _{3a}
COM -EXP	Supported	3.20	H _{4a}
TRU - INT	Supported	4.98	H _{6b}
EXP - SAS	Supported	4.87	H _{5a}
TRU - SAS	Supported	8.08	H _{5b}
EXP - INT	Supported	1.99	H _{6a}

SYS -System Quality, EXP – Expertise, SAS – Satisfaction, INF - Information Quality, SER -Service Quality, TRU – Trustworthiness, INT – Intention, COM - Complimentary Relationship

of the variance in trustworthiness. similarly, website quality explains 55% of the variance in expertise. Trustworthiness and Expertise explain 70% of the variance in satisfaction, while intention explains 46% of the variance. The significance of the path coefficients was determined using t value calculated using the bootstrap technique. All the paths except that between system quality and expertise (H₁) and information quality and trustworthiness (H₆), are significant and supported by the data. Furthermore, all the supported paths are significant at the 0.01 level or higher.

DISCUSSION

The analytical results obtained by this study of what drives customer intention to use online banking are inspiring. Except for H_{1b} and H_{2a}, all the hypotheses are verified and support the structural model. All the items in the measurement model display high internal consistency and reliability. Moreover, the predictive power and significance of the structural model is confirmed.

Hypothesis H_{1a} that system quality positively influences expertise was supported. This result demonstrates the importance of system quality in building brand credibility in online banking services. Additionally, the collected data indicates that customers highly value rapid response and transaction processing in relation to bank provided online banking services. Simultaneously, hypothesis H_{1b}, that system quality positively influences trustworthiness, was not supported. This finding indicates that system quality does not positively affect the trustworthiness of online banking brand credibility, a result that can be explained by the poor internet speed and quality in Vietnam. Vietnamese internet providers and government should cooperate to make improvements in this area.

Hypothesis H_{2a} that Information system positively affects expertise, was not supported, a result that can be explained by the unique characteristics of Vietnamese and the Internet infrastructure in Vietnam. In developing countries such as Vietnam, Internet speeds and level of IS development are very low compared to developed countries, such as America, Japan, or Taiwan. Therefore, people do not necessarily expect high information quality to be associated with expertise. Simultaneously, hypothesis H_{2b} was strongly supported, demonstrating that high information quality leads to high trustworthiness. In assessing information quality, website ability to provide accurate and timely information received the highest score.

Hypothesis H_{3a}, that service quality influences expertise, was supported. This result is consistent with earlier pro-posals by De Chernatony and Segal-Horn (2001) arguing that quality of service delivery can influence brand value and quality, including expertise. The customer view brand expertise as higher when website service quality is high. Similarly, hypothesis H_{3b} was supported. This result demonstrates that service quality is crucial to achieving high brand credibility. From the data analysis, when evaluating the service quality of an online banking website customers assign high marks to the ability to anticipate and respond promptly to their needs and requests. Customers also hope that a high service quality website will provide follow-up service.

Hypothesis H_{4a} was supported, demonstrating the importance of complimentary relationships in building brand credibility expertise in relation to online banking services. Similarly, hypothesis H_{4b}, that complimentary relationship will significantly and positively affect trustworthiness, was strongly supported. This result demonstrates that brand credibility of a bank increases when the complementary relationship of an online banking website is high. Trust-

worthiness thus depends on complimentary relationship quality. The data from the survey of complimentary relationships indicate that customers think a website with high complimentary relationship indicates a company that who keep considers the best interests of customers and offers an easy means for customers to complete their banking business.

Hypothesis H_{5a} was strongly supported, suggesting that when expertise of brand credibility is high, satisfaction with online banking service increases. Similarly, hypothesis H_{6a}, that expertise positively affects intention to use online banking service, was supported. These results demonstrate that customers highly value bank ability not to overstate its service and to remain at the forefront of using the latest technology. Additionally, hypothesis H_{5b} was strongly supported, providing an encouraging suggestion that trustworthiness leads to satisfaction. In certain conditions, brands with high trustworthiness are more likely than other brands to be able to satisfy customers. Simultaneously, hypothesis H_{6b} was supported, an expected and inspiring result. The intention to use the online banking service is based on brand trustworthiness. This finding also fully and effectively provides the services claimed.

CONCLUSION

Online banking service and customer intention are receiving new research area, but is attracting increasing attention, and further study is still needed to better understand the influences on customer intention). Exactly how website quality can affect the brand credibility and how brand credibility can influence customer intention must be understood. Results of this study support the theory of D and M IS System regarding customer intentions. Customer intentions are affected by information system quality, information quality, and service quality, which in this study comprise the website. This study once again confirms the positive effect of brand credibility on customer satisfaction (Sweeney and Swait, 2008). Furthermore, the study demonstrated the inspiring result that brand credibility also positively affects customer intention to use. Incorporating complimentary relationship into the website quality model, this study provides a new model for measuring website quality in online banking. The factor reliability and validity are high and satisfactory. Furthermore, the structural model is confirmed and most of the hypotheses are proven.

LIMITATION

Any research has its limitation; this study is not an exception. The first limitation of the study is the research should collect more data from other industries other than finance to have more extensive and deeper view of the relationship between constructs. Future research should diversify the respondent more through a large scale sur-

vey in term of industries and even countries. Second, the research should find out whether the website quality can indirectly affect the customer intention and satisfaction or not. Because the findings demonstrated that website quality has positive effect on brand credibility and brand credibility on its turn can positively affect intention and satisfaction of customer. Future research should try to find out the role of brand credibility will play as moderator or mediator in the model. Furthermore, this study is that this study is a cross sectional study which takes place at a single point in time then the result will limit to its time of research.

REFERENCES

- Adamic L A, Huberman B A (2000). The nature of markets in the World Wide Web. *Q. J. Electronic Commerce* 1(1): 5-12.
- Agarwal R, Venkatesh V (2002). Assessing a firm's web presence: a heuristic evaluation procedure for the measurement of usability. *Info. Syst. Res.* 13(2): 168-186.
- Ahn T, Ryu S, Han I (2007). The impact of web quality and playfulness on user acceptance of online retailing. *Info. Manage.* 44: 263-275.
- Ajzen I (1991). The theory of planned behavior. *Organ. Behav. Hum. Decision Processes* 50(2): 179-211.
- Bollen KA, Stine R (1992). Bootstrapping goodness of fit measures in structural equation models. *Sociol. Methods Res.* 21(2): 205-229.
- Cardozo RM (1965). An Experimental Study of Consumer Effort, Expectation and Satisfaction. *J. Mark. Res.* 2(8): 244-249.
- Cugelman B, Thelwall M, Dawes P (2008). Website credibility, active trust and behavioural intent. *PERSUASIVE 2008, LNCS 5033: 47-57.*
- De Chernatony L, Susan Segal-Horn (2001). Building on services' characteristics to develop successful services brands. *J. Mark. Manage.* 17(7/8): 645-669.
- DeLone WH, McLean ER (2003). The DeLone and McLean model of information systems success: A Ten-Year Update. *J. Manage. Info. Sys.* 19(4): 9-30.
- DeLone WH, McLean ER (1992). Information systems success: the quest for the dependent variable. *Info. Syst. Res.* 3(1): 60-95.
- Devaraj S, Fan M, Kohli R (2002). Antecedents of B2C channel satisfaction and preference: validating e-commerce metrics. *Info. Syst. Res.* 13(3): 316-333.
- Eighthme J, McCord L (1998). Adding value in the information age: uses and gratifications of sites on the World Wide Web. *J. Bus. Res.* 41(3): 187-194.
- Erdem T, Swait J (2004). Brand credibility, brand consideration and choice. *J. Consumer Res.* 31(1): 191-198.
- Feindt S, Jeffcoat J, Chappell C (2002). Identifying success factors for rapid growth in SME e-commerce. *Small Bus. Econ.* 19(1): 51-62.
- Fornell C, Larcker DF (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error, *J. Mark. Res.* 18(1): 39-50.
- Franco JJ (1990). Customer satisfaction: the partnership imperative. *Train. Dev. J.* 44 (7): 80-82.
- Harman H (1967). "Modern Factor Analysis", Chicago: Chicago University Press.
- Hair JF, Anderson RE, Tatham RL, Black WC (1998). *Multivariate Data Analysis: International Edition*, 5th ed., New Jersey: Prentice-Hall.
- Harris LC, Goode MMH (2004). The four levels of loyalty and the pivotal role of trust: a study of online service dynamics. *J. Retail.* 80(2): 139-158.
- Hovland CI, Janis IL, Kelley HH (1953). *Communication and persuasion*. Yale University Press, New Haven.
- James K, Ryan MM (2000). *Attitudes toward female sports stars as endorsers*. Edith Cowan University.
- Joiner TA, Leveson L, Langfield-Smith K (2002). Technical language, advice understandability, and perceptions of expertise and trustworthiness: the case of the financial planner. *Austr. J. Manage.* 27(1): 25-41.

- Keller KL (2001). Building customer-based brand equity, *marketing management* 10(2): 15-19.
- Kim J, Lee J, Han K, Lee M (2002). Business as buildings: metrics for the architectural quality of internet businesses. *Info. Syst. Res.* 13(3): 239- 254.
- Klein LR (2003). Creating virtual product experiences: the role of telepresence. *J. Interactive Mark.* 17(1): 41-55.
- Landrum H, Prybutok V R (2004). A service quality and success model for the information service industry. *Eur. J. Oper. Res.* 156(3): 628-642.
- Likert R (1932). A technique for the measurement of attitudes. New York: *Archives of Psychology.* 140: 1-55.
- McKinney V, Yoon K, Zahedi F M (2002). The measurement of web customer satisfaction: an expectation and disconfirmation approach. *Info. Syst. Res.* 13(3): 296– 315.
- Molla A, Licker PS (2001). E-commerce system success: an attempt to extent and respecify the Delone and Mclean Model of IS Success. *J. Electron. Commerce Res.* 2(4): 131-141.
- Moore G, Benbasat I (1991). Development of an instrument to measure perceptions of adopting an information technology innovation. *Info. Syst. Res.* (2): 192-222.
- Nielsen J (2000). *Designing web usability*, New Riders, Indianapolis, IN.
- Oliver RL (1997). *Satisfaction: a behavioral perspective on the consumer*. New York, NY: McGraw-Hill.
- Palmer JW (2002). Web site usability, design, and performance metrics, *Info. Syst. Res.* 13: 151– 167.
- Pavlou PA (2003). Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. *Int. J. Electron. Commerce* 7(3): 101-134.
- Podsakoff N (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88(5): 879-903.
- Prochaska J, Norcross J (2001). Stages of Change. *Psychotherapy.* 38(4): 443-448.
- Rust RT, Zeithaml V A, Lemon KN (2000). *Driving customer equity: how customer lifetime value is reshaping corporate strategy*. The Free Press, New York.
- Seybold P (1998). How to succeed in E-business. *Computerworld* 32(45): 85-86.
- Srinivasan N, Ratchford BT (1991). An empirical test of a model of external search for automobiles. *J. Consumer Res.* 18(2): 233–242.
- Spreng RA, Scott BM, Richard WO (1996). A re-examination of the determinants of consumer satisfaction. *J. Mark.* 60(3): 15-32.
- Sweeney J, Swait J (2008). The effects of brand credibility on customer loyalty. *J. Retail. Consumer Serv.* 15(3): 179-193.
- Tse D, Wilton P (1998). Models of consumer satisfaction formation: an extension. *J. Mark. Res.* 25(2): 204-212.
- Watson RT, Zinkhan G M, Pitt LF (2000). Integrated internet marketing communications of the ACM 43(6): 97-102.
- Wray B, Palmer A, Bejou D (1994). Using neural network analysis to evaluate buyer-seller relationships. *Eur. J. Mark.* 28 (10): 32–38.
- Yavas U, Benkenstein M (2001). An assessment of SERVQUAL in Germany. *J. Int. Sell. Sales Mange.* 7 (1): 15–23.
- Zeithaml V, Parasuraman A, Malhotra A (2002). Service quality delivery through web sites: A Critical Review of Extant Knowledge. *J. Acad. Mark. Sci.* 30(4): 362-375.