The Role of Trust Factors Toward Technological Innovation in Explaining the Effects of CSR Concerns on Mobile Banking Adoption:

A Comparative Study Between Vietnam and South Korea

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This study will help researchers, developers, and managers to understand the major determinants of customer acceptance of mobile banking that can help banks to improve the rate of mobile banking adoption in developing country context.

This study seeks to investigate the underlying factors of mobile banking in Vietnam and Korea. Thus, this study tries to analyze the underlying factors of the adoption of m-banking and the differences between developed country (Korea) and developing country (Vietnam) in terms of the adoption factors of mobile banking.

The results indicated that environmental responsibility affect behavioral intention stronger than social responsibility. Therefore, Vietnamese companies as well as banks should incorporate CSR initiatives in their integrated marketing communication strategy in particular branding strategy to attract more customers. The results of the hypotheses testing showed the differences between Vietnam and South Korea and technology infrastructure difference between the two countries were the driving forces behind these different results. Managerial implications and the limitations of the study were also discussed.

Keywords: Trust, Vietnam, Korea, Technology adoption, CSR, Mobile banking

While the use of branch based retail banking is still very popular, banks have other ways of providing customers with financial management services in Vietnam and one of them is mobile banking (m-banking). The use of m-banking can make basic financial services more accessible, minimizing time and distance to the nearest retail bank branches. The outstanding growth of the mobile sector worldwide has created a unique opportunity to provide social and financial services

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ISSN: 2384-3454 / 21 / $10.00

over the mobile network. According to the Vietnamese mobile market report, there is significant growth in the use of mobile phones, with over 90% of the population in Vietnam using them. However, with all the benefits of m-banking, the usage and adoption of m-banking are still low among bank customers in Vietnam. Though many people argue that the internet and other technology based transactions are not safe, not practical and would lead to fraud, a lot of people think it is safer, flexible in time and can be done anywhere and anytime (Chowdhury & Ahmad, 2011).

Hence, it is necessary to investigate the factors that lead customers to adopting or rejecting m-banking services. Although prior studies on m-banking adoption have provided background information on the adoption behavior with regard to m-banking, studies that focus on the risk perception and trust factors that influence consumers to adopt m-banking services are limited. Thus, understanding such factors will play a critical role in reducing the challenges associated with the use of m-banking. For example, risk and privacy issues have been identified as major contributing factors for the slow uptake of m-banking (Dupas et al., 2013). However, previous studies revealed that consumers do not consider m-banking prone to risk (Rammile & Nel, 2012). Risk and privacy are related to trust in the banking industry – which is especially important when banks are trying to increase their customer base and improve their services by introducing technological innovations (Dupas et al., 2013). Previous studies still have many limitations and have recommended further research in this field. Among these limitations is the restricted geographical spread of study areas, as most of the previous m-banking studies have been conducted in the United States, Canada, and other developed countries including Korea.

This study will help researchers, developers, and managers to understand the major determinants of customer acceptance of m-banking that can help banks to improve the rate of m-banking adoption in developing country context. Moreover, this study will try to investigate whether there are some differences of adoption factors. The study seeks to investigate the influencing factors of m-banking in Vietnam and Korea. Thus, this study tries to analyze what are the underlying factors of the adoption of m-banking and what are the differences between developed country (Korea) and developing country (Vietnam) in terms of the adoption factors.

Literature Review and Theoretical Background

Overview of banking sector in Vietnam

Vietnam is a development success story. Political and economic reforms (Đổi Mới) launched in 1986 have transformed the country from one of the poorest in the world, with per capita income around US $100, to lower middle income status within a quarter of a century with per capita income of around US$2,100 by the end of 2015.

Many of the banking reforms in Vietnam have been motivated by the country's entry into international trade and investment agreements, such as the US-Vietnam Bilateral Trade Agreement in 2001 and its accession to the World Trade Organisation (WTO) in 2007. The country has gradually deregulated to allow entry of foreign banks. This has led to an increase presence of foreign banks in Vietnam, which has helped to increase the competitiveness and strengths of the banks.

Current usage and customer behavior on mobile banking in Vietnam

Mobile banking came to Vietnamese market in 2010, 6 years after internet banking, and developed quickly. Currently, there are 32 banks in Vietnam offer mobile banking service for their customers. The demand of mobile banking in Vietnam is high and this group is highly adaptive and easy to accept new technology.

The security dilemma also raises a difficulty for most banks when they started offering mobile banking services since bank's customers concerns about risk in online banking services because most of the internet services are operating in an open environment, their applications and outcomes are vulnerable to security and privacy threats such as phishing activities, malwares, spywares, spoofing, and password-sniffing. Vietnamese people also prefer a simple way to access their bank accounts via mobile device but also want it to be secured in case of lost or stolen device. Most of mobile banking services available in Vietnam now are either lack of convenience, simplicity or security, which hinder the potential of mobile banking (Chang et al. 2016).

Theory of reasoned action (TRA)

The Fishbein and Ajzen (1975) TRA was the first widely accepted theory used in studies on adoption of information system technology. Introduced in 1975 by Fishbein and Ajzen, the TRA was primarily used in the social psychological setting

(Zhang et al, 2012). The theory's main assertion was that users would adopt computer related technologies only if they could perceive positive benefits from them (Fishbein & Ajzen, 1975). The theory also implied that two factors, namely, the attitude toward the behavior and the person's perception of social pressure included in the subjective norm guided behavioral intentions (Fishbein & Ajzen, 1975).

According to TRA, technology acceptance was done in sequence; first, beliefs lead to attitudes which in turn drove behavioral intentions, and finally to behavior (Dimitriadis & Kyrezis, 2010). An extension of TRA helped generate another theory used in technology adoption. An extended TRA helped create the theory of planned behavior (TPB) in which perceived behavioral control was added as a third determinant to the existing attitude toward behavior and subjective norm (Yousafzai et al., 2010). Generally, researchers analyzing user acceptance of new technological applications have used TPB to some extent, but overwhelmingly the TAM (Tsai et al., 2011).

Technology Acceptance Model (TAM)

Adapted from the theory of reasoned action, TAM is a theoretical model used to explain users' acceptance of a new information technology (Gu et al., 2009). Davis (1989) used prior researches from various disciplines to hypothesize that, perceived usefulness and perceived ease of use constructs were fundamental in people's decisions to adopt information technology. After conducting a lab study involving 40 participants and two graphics systems, Davis concluded that both perceived usefulness and ease of use influenced the attitude of the user towards the new information technology (Davis, 1989).

However, usefulness was found significantly more strongly linked to usage than was ease of use. Davis (1989) concluded that perceived usefulness and ease of use were the predictors for technology adoption. Over the years, TAM has proven to be a powerful, valid, and parsimonious model for predicting user acceptance (Venkatesh & Davis, 2000). Existing literature showed that TAM was the predominant model used in predicting and explaining the Information system adoption (Sripalawat et al., 2011; Tobbin, 2012) such as m-banking adoption.

Zhang et al. (2012) conducted a meta-analysis study of previous empirical researches on m-commerce adoption. According to Zhang et al. (2012) findings, the theory of reason action, TAM, and the innovation diffusion theory (IDT) were the most prominent theories used on technology adoption studies.

Unified theory of acceptance and use of technology (UTAUT)

Venkatesh, Morris, Davis, and Davis (2003) created a unified model called the UTAUT based upon conceptual and empirical similarities across eight different models. The Venkatesh et al. (2003) UTAUT model integrated eight different theories and models including TAM. Venkatesh et al., (2003) created the UTAUT to assess the likelihood of success for new technology introductions. To have a better understanding of the drivers of technology acceptance, Venkatesh et al., (2003) used the UTAUT to proactively target populations less likely to adopt new systems. The UTAUT is a synthesis of eight different theories into one concise theoretical framework. The UTAUT consisting only of the major constructs affecting technology usage contributed significantly to information technology research (Lindsay et al., 2011).

Chong (2013) used the UTAUT as a theoretical foundation in his study on m-commerce adoption in China. Chong used the UTAUT model to examine the predictors of m-commerce among Chinese consumers. He extended the UTAUT original model by incorporating trust, perceived value, personal innovativeness, and perceived enjoyment constructs to make the model more comprehensive. Chong used online surveys to collect data from 140 Chinese users. After data analysis, the results showed that performance expectancy, effort expectancy, social influence and facilitating conditions constructs were determinant to m-commerce in China (Chong, 2013).

Corporate Social Responsibility (CSR)

The idea of CSR assumes that a company does not only have economic and legal obligations but also certain responsibilities toward society responsibilities that extend above and beyond these other obligations (McGuire, 1963). CSR involves companies incorporating and responding to all kinds of demands transcending economic, technical and legal requirements to achieve social as well as economic objectives (Davis, 1973).

CSR covers the economic, legal, ethical and discretionary expectations that society has of organizations at a given moment in time (Carroll, 1979). CSR is the notion that companies have an obligation toward societal constituencies other than shareholders, above and beyond any legal codes or union contracts (Jones, 1980). CSR is a mechanism in which companies assume the economic, legal, ethical and discretionary responsibilities that various stakeholders have imposed upon corporate activities (Maignan et al., 1999). CSR refers to corporate actions that are conducive to societal welfare, above and beyond the company's own interests or legal obligations (McWilliams & Siegel, 2001).

CSR domains

It is noted that Carroll's (1998) four dimensions of CSR: economic, legal, ethical, and philanthropic responsibilities have been widely accepted among others.

Economic Responsibility

Some scholars argue that companies do not need to promote socially responsible actions because their only responsibility is to be profitable for stockholders (Lantos 2001), which is an economic dimension of CSR. Novak (1996) defines economic responsibility as to be profitable for principals by delivering a good quality product at a fair price to customers. Novak more fully describes seven economic responsibilities: "(1) satisfying customers with goods and services of real value; (2) earning a fair return on the funds entrusted to the corporation by its investors; (3) creating new wealth, which can accrue to non-profit institutions which own shares of publicly-held companies and help lift the poor out of poverty as their wages rise; (4) creating new jobs; (5) defeating envy though generating upward mobility and giving people the sense that their economic conditions can improve; (6) promoting innovation; and (7) diversifying the economic interests of citizens so as to prevent the tyranny of the majority" (also summarized by Lantos, 2001)

Legal and Ethical Responsibilities

Business ethics and legal responsibilities have been studied in management studies and these are considered as must-responsibility (Carroll, 1998). These responsibilities are expected to be implemented all of the time, and only when companies breach one of these responsibilities, it becomes an issue. The result is often negative publicity. Although many scholars categorize legal and ethical responsibilities together in their discussions of CSR, legal and ethical responsibilities can be completely different (Lantos, 2001).

On the other hand, ethical duties overcome the limitations of legal responsibilities. They involve being moral, doing what is just and fair; respecting peoples' rights; and avoiding and preventing damage caused by others (Smith & Quelch, 1993). Although ethical responsibilities are not necessarily codified into law, they include those policies, institutions, or practices that are either expected (positive duties) or prohibited (negative duties) by members of society (Carroll, 2000). They derive their source of authority from religious beliefs, moral traditions, and human rights commitments (Lantos, 2001).

Philanthropic Responsibility

Carroll's (1998) philanthropic responsibility, also known as discretionary

responsibility, is the most controversial issue raised over the legitimacy of CSR. Philanthropy means "giving back" time and money in the forms of voluntary service, voluntary association, and voluntary giving. This reflects society's wish to see businesses participate actively in improving society beyond the minimum standards set by the economic, legal, and ethical responsibilities (Maignan & Ferrell, 2001). Philanthropic responsibility includes activities, such as providing work-family programs, reaching out to communities, and giving donations to charitable organizations (Maignan & Ferrell, 2000).

In marketing, philanthropic efforts by companies have been shown through cause-related marketing (CRM). Whether it is to help children around the world, homeless people in the community, or providing shelters for animals, philanthropy has been implemented in many different ways. By doing this, companies hope to create a positive image of the company, which may lead a customer to purchase a product from the company (Cornwell & Coote, 2005; Nan & Heo, 2007).

Environmental responsibility

Separate from the philanthropic definition of CSR, environmental responsibility has gained remarkable attention from governments, organizations, and the general public in recent years. Laws and legislations have been made and corporations have voluntarily participated in developing environmentally responsible ways to conduct their business.

Although Carroll's (1998, 2000) four-dimension of CSR has been widely accepted by many scholars, existing marketing literature seems to generally agree on at least three dimensions of CSR: economic, philanthropic (also called social or discretionary), and environmental (Málovics et al., 2008).

Effects of CSR on customers' behaviors

Much research suggests that CSR increases customer-company identification (CCID), repeat purchase, customer loyalty and trust (McDonald & Rundle-Thiele, 2008); however, others confirm that it is unlikely that consumers will blindly accept these CSR programs as sincere actions. They may or may not reward the firm (Barone et al., 2000; Sen & Bhattacharya, 2001), and in fact, some research suggests that consumers will punish organizations that are perceived as insincere in their social involvement (Becker-Olsen et al., 2006; Sen & Bhattacharya, 2001). Thus, companies must carefully review their CSR practices and when and how to use them for marketing communication purposes.

In recent decades, Vietnam has experienced changing in customer's behavior; "green consumption" is the primary trend of consumption around the world. Not

only do consumers desire using high quality products but also they crave for safe and friendly products which are produced by a highly reputable and responsible company. Several studies also indicated the concerning to individual environment (Chan, 1996) and awareness towards consumer environment affecting positively to purchasing intention of consumers.

Therefore, it can be concluded CSR is a relatively new matter in Vietnam. Nevertheless, recently, with the environmental disasters and the negative consequences on the society caused by enterprises, the social responsibility has become urgent. In Vietnam, the implementation of CSR is fully in conformity with targets of sustainable development strategy. In other words, Vietnam government, Vietnamese business owners and customers have been recognizing the importance of CSR now and activities of reactions of consumer in recent years have reflected that the term Corporate Social Responsibilities is an issue getting a lot of attention from communities. By all above picture of CSR in Vietnam, this study's purpose is investigating the relationship between CSR activities with three dimensions (Economic, social, environment) on consumer's intention to use m-banking.

Underlying Factors of Extended TAM

Perceived usefulness

Perceived usefulness is conceptualized as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis et al., 1989). This factor has been proved to play a vital role in the adoption of technology. From the study of Pagani (2004), an analysis of the ranking of preferred features of multimedia mobile services by the individuals has been undertaken. The results show that perceived usefulness ranks first among all the features. Thus, perceived usefulness is an important concept in explaining individual's behavior to use mobile commerce as well as in m-banking.

Perceived ease of use

Perceived ease of use means a user-friendly device. Davis et al., (1989) defined perceived ease of use as "The degree to which a person believes that using a particular system would be free of effort". According to Kim et al., (2007) perceived ease of use was defined as the overall user-friendliness of using mobile devices to access the Internet, neither to M-Internet. This is because M-Internet runs on limited resources compared to other systems, especially for users of mobile phone where screen size and manipulation difficulty demand mental and physical efforts.

Perceived cost

Cost means the monetary transaction costs when mobile phone users use mobile banking. Given that the cost of accessing m-banking is higher than that of accessing through wire-based internet, the subscription, service and communications costs which may influence the individual's intentions in using m-baking is suggested to be considered carefully. This concept can be also known as the perceived financial cost or resources and perceived fee. Also, it has been showed that perceived fee directly influences perceived value (Chang & Wildt, 1994). Depending on the provider, there are different rates, extra charges for advanced m-banking services. An appropriate and acceptable m-baking service charge is a key predictor of mobile users' satisfaction toward using m-banking.

Trust

There are so many different definitions of trust across research areas. This has made the concept confused. Trust is a very complex construct and it is multidimensional (Hoy & Tarter, 2004). Various definitions of trust depend on the different research areas. Doney and Cannon (1997) defined that trust is also the willingness to rely. Also, trust is a positive form of behavior to others (Whitener et al., 1998). Trust occurs when one party has confidence in an exchange partner's reliability and integrity (Morgan & Hunt, 1994).

Trust is the belief that the promise of another can be relied upon and that, in unforeseen circumstances, the other will act in a spirit of good will and in a benign fashion towards the trustor (Suh & Han, 2002). The most popular definition of trust is the following: Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intention or behavior of another under conditions of risk and interdependence (Rousseau et al., 1998).

Trust and online banking adoption

Many studies have proved the significant relationship between trust and electronic banking or any e-commerce adoption. Trust occurs when one party has confidence in an exchange partner's reliability and integrity, (Morgan & Hunt, 1994). Yousafzai (2003) concluded that trust in electronic banking and its infrastructure reduces customer's transaction-specific uncertainty and related risks associated with the possibility that a bank might behave opportunistically. When people trust others, they assume that those they trust will behave as they are expected to, reducing the complexity of the interaction.

The parties will thus be worried that their personal information and money will

be transferred to third party without their knowledge (Luarn & Lin, 2005). Customer attitudes towards Internet banking are driven by trust, which plays an important role in increasing usability within the internet banking environment. The issue of trust is more important in online as opposed to offline banking because transactions of this nature contain sensitive information and parties involved in the financial transaction are concerned about access to critical files and information transferred via the Internet (Suh & Han, 2002).

Research Hypotheses

One advantage of using TAM is that TAM has been widely examined and validated and is an extensively accepted model in different sorts of technologies related to user and organization acceptance and adoption such as Intranet (Horton et al., 2001), E-commerce (Pavlou, 2003), Internet Banking (Aldás-Manzano et al., 2009) that lead to their widespread acceptance.

Another advantage of TAM is that these models can easily be modified and/or extended by using other theories or constructs (Venkatesh & Davis, 2000). According to original TAM suggested by Davis (1989), two primary constructs were included namely, perceived usefulness and perceived ease of use. Building customer trust, however, is a costly and time-consuming exercise because trust relationships are formed in the course of long-term interactions between implicated parties (McKnight et al., 1998).

With the introduction of new innovative services, such as mobile banking, potential adopters have neither any prior experience to fall back on (Kim et al., 2008) nor any experience or knowledge-based trust. Therefore, a person's initial trust is expected to be based on certain perceptions and possibly irrational forces such as cognitive cues (Kim et al., 2008). Researchers (Luo et al., 2010) found that initial trust is significantly positively associated with mobile banking adoption intentions.

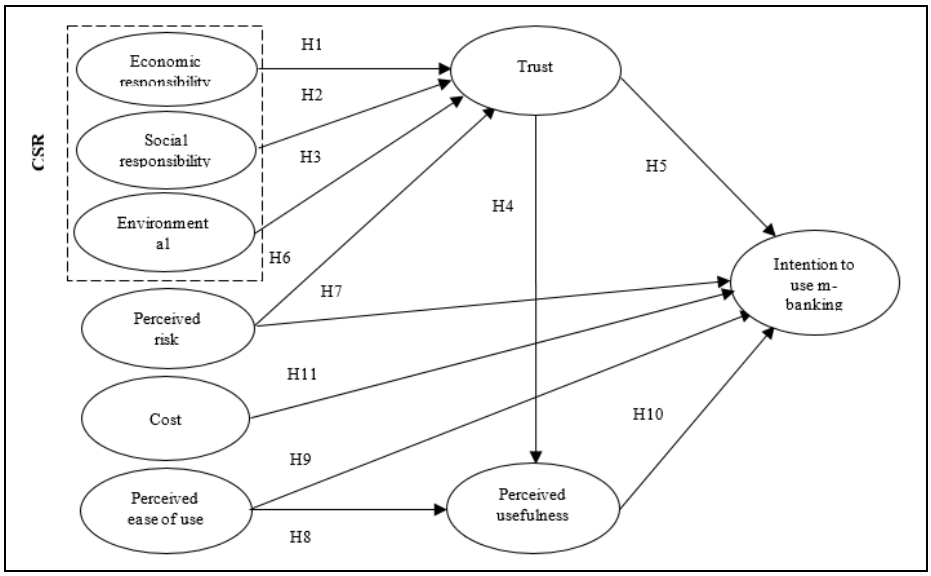
Therefore, it may be supposed not only TAM but also CSR can predict the behavioral intention to adopt m-banking in Vietnam so in this study TAM model and CSR initiatives are combined in research model. In addition, based on literature review, perceived risk and cost were also added.

Finally, a model indicating behavioral intention to use m-banking services was developed. The model consists of eight constructs that are posited to have an effect on behavioral intention to use m-banking services. These constructs include:

economic responsibility, social responsibility, environmental responsibility, perceived cost, perceived ease of use and perceived risk as independent variables. Trust and perceived usefulness were used as intervening variables, and intention to use m-banking as the dependent variable. In this study, the strength of the hypothesized relationships embedded in the theoretical model and the robustness of the model in predicting customers' behavioral intention to use m-banking services in Vietnam and Korea were tested. Based on the theoretical and empirical arguments stated above, the following hypotheses are proposed and the final research model is shown in the figure 1.

H1. Economic responsibility will positively influence on trust
H2. Social responsibility will positively influence on trust
H3. Environmental responsibility will positively influence on trust
H4: Trust will positively influence on the perceived usefulness.
H5: Trust will positively influence on the behavioral intention
H6: Perceived risk will negatively influence on trust
H7: Perceived risk will negatively influence on behavioral intention
H8: Perceived ease of use will positively influence on perceived usefulness
H9: Perceived ease of use will positively influence on behavioral intention
H10: Perceived usefulness will positively influence on behavioral intention
H11: Perceived cost will negatively influence on behavioral intention

Figure 1
Research Model



Research Methodology and Model Testing

Sample and data collection

In order to empirically test the hypotheses developed in the previous section, data were collected using a convenience sampling approach via an online self-administered survey and paper based questionnaire. Taking into account the absence of a credible and updated list including the Vietnamese banking customers or their contacts, as well as the banks preventing any information regarding their customers for privacy and security reasons, convenience sampling was found to be the more appropriate approach to be conducted to reach the banking customers in the present study (Castillo, 2009). Preliminary evidence showed that the scales were reliable and valid. The survey was promoted and hosted online by drive.google.com.

Data was collected in Vietnam and Korea. After gathering the answered questionnaires, they were checked thoroughly to assess the validity whether to be included in the study. Among the responded cases, sample size which is used for the final analysis of this research in Viet Nam and South Korea is 612 respondents and 267 respondents, respectively.

Reliability analysis

Reliability was done to test the degree to which the set of latent construct indicators are consistent in their measurements. The reliability of the variables was assessed by the Cronbach's Alpha and Item-total Correlation. The acceptable threshold for Cronbach's Alpha is 0.70, while constructs which are highly inter-correlated indicate that they are all measuring the same latent constructs. Reliability check shows that the resulting alpha values range from 0.816 to 0.930 which are above the acceptable threshold of 0.7. In addition, the item-total correlation test results are satisfactory.

Descriptive statistics of respondents

The respondent demographics are summarized in table 1. Both in Vietnam and South Korea respondents are male which is slightly more than female. In South Korea almost 97% of respondent ages are from 20 to 30 years old whereas in Vietnam the respondent age is from 20-30 years old and 31-40 year olds account for 83%. The majority of respondent's education level is Undergraduate in both samples. In addition, like Vietnam, the percentage of the sample who are living in

big cities in South Korea is slightly higher than in small cities. Finally, most respondents have used m-banking for more than two years in both countries.

Table 1
Descriptive statistics of respondent's characteristic

Demographic profile		Vietnam		South Korea	
		Respondents (N=612)	Percentage (%)	Respondents (N=267)	Percentage (%)
Gender	Male	363	59.3	160	59.9
	Female	249	40.7	107	40.1
Age	<20	57	9.3	8	3.0
	20-30	296	48.4	259	97.0
	31-40	212	34.6	-	-
	41 - 50	29	4.7	-	-
	> 50	18	2.9	-	-
Education	High school	15	2.5	-	-
	College	45	7.4	72	27.0
	Undergraduate	367	60.0	166	62.2
	Graduate	185	30.2	29	10.9
Living area	Big city	317	51.8	157	58.8
	Small city	295	48.2	110	41.2
Usage duration	<1 year	115	18.8	29	10.9
	1-2 years	160	26.1	51	19.1
	>2 years	337	55.1	187	70

Hypotheses testing

Structural Equation Modeling (SEM) was used to test the hypotheses in South Korea and Vietnam. The SEM results indicated that the model had an acceptable fit in Vietnam that was better than in South Korea. In particularly, the indices of model with data collected in Viet Nam are $\chi 2$ (612) = 999.183, CMIN/df = 2.855, p = .000; GFI = 0.898; TLI = 0.944; CFI = 0.952; RMSEA = 0.055 while the indices for South Korea are $\chi 2$ (267) = 1055.350, CMIN/df = 2.833, p = .000; GFI = 0.790; TLI = 0.831; CFI = 0.848; RMSEA = 0.084.

All hypotheses were supported with the exception of H2 (Social responsibility has a positive and significant impact on trust), H3 (Environmental responsibility has a positive and significant impact on trust), H4 (Trust has a positive and significant impact on the perceived usefulness of m-banking services), H7 (Perceived risk has a negative and significant impact on behavioral intention to use of m-banking services), H10 (Perceived usefulness has a positive and significant impact on individual behavioral intention to use m-banking services), H11(Perceived cost has a negative and significant impact on the behavioral intention to use m-banking services). Economic responsibility was a significant

predictor of trust (H1). Empirical results also indicated that perceived risk has a negative relationship with trust (H6). Perceived ease of use was found to predict perceived usefulness (H8) and perceived ease of use has a positively significant impact on intention to use of m-banking services (H9). Finally trust was found to be a significant predictor of behavioral intention to use m-banking services (H5). Overall, the results suggest that trust and perceived ease of use are the most important predictors of behavioral intention to use m-banking services in the South Korean culture. Additionally, a reasonable amount of variance was explained for intention to use (51.5%).

Difference between Vietnam and South Korea

As expected, differences were observed between South Korea and Vietnam in regard to intention to use m-banking services. As shown in Table 2, five out of eleven links in the research model were different across the two cultures. While the effects of social responsibility and environmental responsibility on trust, trust on perceived usefulness, perceived risk on intention to use and perceived usefulness on intentions to use were significant for the Vietnam sample, those effects were not significant in the South Korea sample. These findings were attributed to information technological infrastructure, mobile commerce development, m-banking penetration level and environmental matters. Sims and Gegez (2004) found that the attitudes toward business ethics were different along some dimensions, also the difference in the impact of CSR on trust may be attributed to Vietnamese regulation on the environment protection was not be considered carefully in developing the national economy so Vietnam are facing many environment crises which are quite different from South Korea. They also recognized that technology infrastructure differences between South Korea and Vietnam were the driving forces behind their disparate views. Indeed, research has suggested that other factors, such as technological infrastructure and economy could help to explain differences in global research findings (Palvia, 1998).

Table 2
Comparison results of Vietnam versus South Korea

Hypotheses	Results	
	Vietnam	South Korea
H1:Economic responsibility→ Trust	Accept	Accept
H2: Social responsibility → Trust	**Accept**	**Reject**
H3: Environmental responsibility → Trust	**Accept**	**Reject**
H4: Trust → Perceived Usefulness.	**Accept**	**Reject**
H5: Trust → Intention To Use	Accept	Accept
H6: Perceived risk → Trust	Accept	Accept
H7: Perceived risk → Intention To Use	**Accept**	**Reject**
H8: Perceived ease of use → Perceived usefulness	Accept	Accept
H9: Perceived ease of use → Intention To Use	Accept	Accept
H10: Perceived usefulness → Intention To Use	**Accept**	**Reject**
H11:Perceived cost → Intention To Use	Reject	Reject

In South Korea, perceived usefulness has no significant relationship with consumer intention to adopt m-banking. This variable is derived from the TAM model. As stated by Jeyaraj et al. (2006), this variable is a good predictor of IT usage in past studies. However, although m-banking is a relatively new technology, South Korean consumers are no strangers to mobile phones, also they are familiar with m-commerce and m-banking. Therefore, South Korean consumers are quite comfortable interacting with devices and m-banking services. Additionally, these users also have a good understanding of what m-commerce and m-banking can offer, and thus will not be attracted to use m-banking based on the perceived usefulness or being given free trials.

A further difference between the two countries is the effect of environment responsibility on the customer's trust. The status of environment regulation and environment crisis in the two countries can be used to explain the notable differences. In Vietnam, there are many environmental problems due to fast development objectives such as waste management and energy saving. Recent scandals of factories committing serious pollution of the soil and water caused a bad impact on safe drinking water for the Vietnamese. In addition numerous cases of health safety problems especially tainted milk distribution; toxic ingredients were found in consumer goods have been raising a greater concern on corporate social responsibility in Vietnam. That is why in this research, environmental responsibility is one the most important factors that effects customer behavior through trust in the Vietnam sample but not in the South Korean one.

Interestingly, this research found that trust and perceived ease of use play a significant role in m-banking adoption intention by both South Korean and Vietnamese consumers. The result shows both South Korean and Vietnamese users

generally need trust in transactions that lack physical contact. In the case of South Koreans, this result is quite consistent with suggestions by Hofstede (1994) that South Korean consumers are less likely to take risks; since according to Hofstede (1994) the uncertainty avoidance score is 85 in comparison with the uncertainty avoidance score of Vietnam which is 30. In the case of Vietnam, it is implied that even though Vietnamese are likely to take more risks than South Koreans, but due to the risks that still exist in the Vietnamese banking security system, besides banking related to money so customers are very sensitive to security, without trust anybody can not adopt m-banking services. That is why according to the theory of Hofstede, the uncertainty avoidance score of South Korean and Vietnam is quite opposite but the results showed that trust plays vital role in m-banking intention to use in both countries.

Conclusions and Implications

The results indicated that environmental responsibility affect behavioral intention stronger than social responsibility. This can be attributed to the fact that during the past few years, Vietnamese consumers have been facing serious food safety and health problems due to environmental crises. Therefore, Vietnamese companies as well as banks should incorporate CSR initiatives in their integrated marketing communication strategy in particular branding strategy to attract more customers.

The statistical results highly proved trust as a key factor predicting behavioral intention with a regression weight of 0.346. In other words, Vietnamese customers seem to be more motivated to adopt m-banking if they perceive as it safe in their daily life. This could be attributed to the fact that there are many growing concerns about risk in online banking services. Theoretically, these results are parallel with prior studies of m-banking that have been tested and approved trust as crucial factors in determining customers' intention. For example, Hanafizadeh et al., (2014) conducted a study on m-banking adoption in Iran. Their results showed that trust was one of the most influential constructs of m-banking satisfaction in Iran.

In sum, this study is considered valuable to the Vietnamese banking sector as it provides unique and significant managerial and practical contributions because it has focused on the customers' perceptions factors as the major important factors influencing intention to adopt m-banking services. This study proposed a model which extended TAM along with risk and cost perceptions, CSR activities and trust

to explain and predict customers' behavioral intention to use m-banking. A more comprehensive investigation was added to the current research model by incorporating the three dimensions of CSR along with trust to explore the role of CSR in creating customer trust in an m-banking context. The proposed model was found to adequately fit the data as well as being able to account for 67.4% of variance in behavioral intention so the findings of the current study demonstrate that the proposed model has good explanatory power and approves its robustness in predicting consumers' behavioral intention to adopt m-banking. In addition, most of the causal paths proposed were found to be statistically significant.

Similar to prior literature, TAM was not fully supported and there was a lack of support for the effect of ease of use on intention to use (Agarwal & Prasad, 1997). Nevertheless, a relationship between ease of use and usefulness was evidenced in this study which showed a significant path. In addition, the relationship between perceived cost and intention to use m-banking was found insignificant, which is consistent with the finding in Vietnam. Additionally, this study established trust and perceived ease of use as two important antecedents of behavioral intention to use m-banking which were able to account for a substantial amount of variance (51.5%) in behavioral intention. Empirical results indicated that perceived risk was not an antecedent of the adoption intention of m-banking. Furthermore, it is interesting that this study did not find social responsibility and environment responsibility directly influence trust; in contrast the empirical results have supported the significant relationship between economic responsibility and consumer trust with a regression weight of 0.274.

Limitation and future research

While this study has been conducted in Vietnam and Korea, future researches could worthily employ investigations in other developed and developing countries in order to be able to generalize the findings. This is because the intention to use m-banking is highly varied across countries with different adoption levels and perceptions.

On account of the fact that different factors have different effects on different cultures, every culture should adopt different strategies in dealing with them. Eastern societies are more socially oriented than their counterparts in the west which highlights the importance of social factors. Consequently, subjective norms, perceived image, absorptive capacity, individual mobility, and personal innovativeness need to receive more attention in eastern cultures than in western ones. Further studies are needed to study the effect of culture on m-banking services. Since the study samples are predominantly undergraduate students both

in Vietnam and South Korea, it is important to increase the sample size into various respondents. Also, the small sample size of Korean data should be considered in the future research.

(Received June 6, 2021; Revised June 22, 2021; Accepted June 22, 2021)

References

Agarwal, R., & Prasad, J. (1997). The role of innovation characteristics and perceived voluntariness in the acceptance of information technologies. Decision Sciences, 28(3), 557–582.

Aldás-Manzano, J., Lassala-Navarré, C., Ruiz-Mafé, C., & Sanz-Blas, S. (2009). The role of consumer innovativeness and perceived risk in online banking usage. International Journal of Bank Marketing, 27(1), 53–75. http://doi.org/10.1108/02652320910928245

Barone, M. J., Miyazaki, A. D., & Taylor, K. A. (2000). The influence of cause-related marketing on consumer choice: does one good turn deserve another? Journal of the Academy of Marketing Science, 28(2), 248–262.

Becker-Olsen, K. L., Cudmore, B. A., & Hill, R. P. (2006). The impact of perceived corporate social responsibility on consumer behavior. Journal of Business Research, 59(1), 46–53. http://doi.org/10.1016/j.jbusres.2005.01.001

Carroll, A. B. (1979). A three-dimensional conceptual model of corporate performance. Academy of Management Review, 4(4), 497–505.

Chan, J. (1996). Changing police culture. The British Journal of Criminology, 36(1), 109–134.

Chang, D., Han, S., and Han, S. (2016). Three Rising Issues to Consider for Success in Asia: Implications for Future Research, Business, and Career. Academy of Asian Business Review, 2(2), 1-12.

Chang, T.-Z., & Wildt, A. R. (1994). Price, product information, and purchase intention: An empirical study. Journal of the Academy of Marketing Science, 22(1), 16–27. http://doi.org/10.1177/0092070394221002

Chong, A. Y. L. (2013). Predicting m-commerce adoption determinants: A neural network approach. Expert Systems with Applications, 40(2), 523–530. http://doi.org/ 10.1016/j.eswa.2012.07.068

Chowdhury, M. S., & Ahmad, N. (2011). Factors affecting consumer participation in online shopping in Malaysia: The Case of University Students. European Journal of Business and Economics, 5, 49–53. http://doi.org/10.12955/ejbe.v5i0.171

Cornwell, T. B., & Coote, L. V. (2005). Corporate sponsorship of a cause: The role of identification in purchase intent. Journal of Business Research, 58(3), 268–276.

Cruz, P., Neto, L. B. F., Muñoz-Gallego, P., & Laukkanen, T. (2010). Mobile banking rollout in emerging markets: Evidence from Brazil. The International Journal of Bank Marketing, 28(5), 342–371. http://doi.org/10.1108/02652321011064881

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340. http://doi.org/10.2307/249008

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. Journal of Management Information Systems, 19(4), 9–30. http://doi.org/10.1080/07421222.2003.11045748

Diacon, S. R., & Ennew, C. T. (1996). Ethical issues in insurance marketing in the UK. European Journal of Marketing, 30(5), 67–80. http://doi.org/10.1108/03090569610118786

Dimitriadis, S., & Kyrezis, N. (2010). Linking trust to use intention for technology-enabled bank channels: The role of trusting intentions. Psychology & Marketing, 27(8), 799–820. http://doi.org/10.1002/mar.20358

Doney, P. M., & Cannon, J. P. (1997). An examination of the nature of trust in buyer-seller relationships, 61(2), 35–51. http://doi.org/10.1177/002224299706100203

Dupas, S., Keats, A., & Robinson, P. G. (2013). Challenges in banking the rural poor. Challenges in Banking the Rural Poor, 117. http://doi.org/10.7208/chicago/9780226315867.003.0002

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley. http://doi.org/10.1017/CBO9781107415324.004

Gu, J. C., Lee, S. C., & Suh, Y. H. (2009). Determinants of behavioral intention to mobile banking. Expert Systems with Applications, 36(9), 11605–11616.

Hanafizadeh, P., Behboudi, M., Abedini Koshksaray, A., & Jalilvand Shirkhani Tabar, M. (2014). Mobile-banking adoption by Iranian bank clients. Telematics and Informatics, 31(1), 62–78. http://doi.org/10.1016/j.tele.2012.11.001

Hofstede, G., Hofstede, G. J., & Minkov, M. (2005). Cultures and organizations: Software of the mind (Vol. 2). New York: Mcgraw-Hill.

Horton, R. P., Buck, T., Waterson, P. E., & Clegg, C. W. (2001). Explaining intranet use with the technology acceptance model. Journal of Information Technology, 16(4), 237–248. http://doi.org/10.1080/02683960110102407

Jarvenpaa, S. L., Tractinsky, N., & Vitale, M. (2000). Consumer trust in an Internet store. Information Technology and Management, 1(1), 45–71.

Jeyaraj, A., Rottman, J. W., & Lacity, M. C. (2006). A review of the predictors, linkages, and biases in IT innovation adoption research. Journal of Information Technology, 21(1), 1–23. http://doi.org/10.1057/palgrave.jit.2000056

Jones, T. M. (1980). Corporate social responsibility revisited, redefined. California Management Review, 22(3), 59–67. http://doi.org/10.2307/41164877

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. Decision Support Systems, 44(2), 544–564. http://doi.org/10.1016/j.dss.2007.07.001

Kim, H. W., Chan, H. C., & Gupta, S. (2007). Value-based adoption of mobile Internet: An empirical investigation. Decision Support System, 43(1), 111–126. http://doi.org/ 10.1016/j.dss.2005.05.009

Koenig-Lewis, N., Palmer, A., & Moll, A. (2010). Predicting young consumers' take up of mobile banking services. Marketing Intelligence and Planning, 28(5), 410–432. http://doi.org/10.1108/02652321011064917

Kshetri, N., & Acharya, S. (2012). Mobile payments in emerging markets. IT Professional, 14(4), 9–13. http://doi.org/10.1109/MITP.2012.82

Lantos, G. P. (2001). The boundaries of strategic corporate social responsibility. Journal of consumer marketing, 18(7), 595–632. http://doi.org/10.1108/07363760110410281

Lee, K. C., & Chung, N. (2009). Understanding factors affecting trust in and satisfaction with mobile banking in Korea: A modified DeLone and McLean's model perspective. Interacting with Computers, 21(5–6), 385–392. http://doi.org/10.1016/j.intcom.2009.06.004

Luarn, P., & Lin, H.-H. (2005). Toward an understanding of the behavioral intention to use mobile banking. Computers in Human Behavior, 21(6), 873–891. http://doi.org/10.1016/j.chb.2004.03.003

Luo, X., Li, H., Zhang, J., & Shim, J. P. (2010). Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services. Decision Support Systems, 49(2), 222–234. http://doi.org/10.1016/j.dss.2010.02.008

Maignan, I., & Ferrell, O. C. (2000). Measuring corporate citizenship in two countries: The case of the United States and France. Journal of Business Ethics, 23(3), 283–297. http://doi.org/10.1023/A:1006262325211

Maignan, I., & Ferrell, O. C. (2001). Antecedents and benefits of corporate citizenship: An investigation of French businesses. Journal of Business Research, 51(1), 37–51. http://doi.org/10.1016/S0148-2963(99)00042-9

Maignan, I., Ferrell, O. C., & Hult, G. T. M. (1999). Corporate citizenship: Cultural antecedents and business benefits. Journal of the Academy of Marketing Science, 27(4), 455–469. http://doi.org/10.1177/0092070399274005

Málovics, G., Csigéné, N. N., & Kraus, S. (2008). The role of corporate social responsibility in strong sustainability. The Journal of Socio-Economics, 37(3), 907–918. http://doi.org/10.1016/j.socec.2006.12.061

Mathieson, K., Peacock, E., & Chin, W. W. (2001). Extending the technology acceptance model: The influence of perceived user resources. Database for Advances in Information Systems, 32(3), 86–112. http://doi.org/10.1145/506724.506730

McDonald, L. M., & Rundle‐Thiele, S. (2008). Corporate social responsibility and bank customer satisfaction. International Journal of Bank Marketing, 26(3), 170–182. http://doi.org/10.1108/02652320810864643

McGuire, J. W. (1963). Business and Society. McGraw-Hill. New York, NY.

McKnight, D. H., Cummings, L. L., & Chervany, N. L. (1998). Initial trust formation in new organizational relationships. Academy of Management Review, 23(3), 473–490. http://doi.org/10.5465/AMR.1998.926622

McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. Academy of Management Review, 26(1), 117–127.

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. Journal of Marketing, 58(3), 20–38. http://doi.org/10.1177/002224299405800302

Mukherjee, A., & Nath, P. (2003). A model of trust in online relationship banking. International Journal of Bank Marketing, 21(1), 5–15.

Nan, X., & Heo, K. (2007). Consumer responses to corporate social responsibility (CSR) initiatives: Examining the role of brand-cause fit in cause-related marketing. Journal of Advertising, 36(2), 63–74.

Novak, W. J. (1996). The people's welfare: Law and regulation in nineteenth-century America. Univ of North Carolina Press.

Pagani, M. (2004). Determinants of adoption of third generation mobile multimedia services. Journal of Interactive Marketing, 18(3), 46–59. http://doi.org/10.1002/dir.20011

Palvia, P. C. (1998). Research issues in global information technology management. Information Resources Management Journal, 11(2), 27–36. http://doi.org/10.4018/irmj.1998040103

Palvia, P. (2009). The role of trust in e-commerce relational exchange: A unified model. Information and Management, 46(4), 213–220. http://doi.org/10.1016/j.im.2009.02.003

Pavlou, P. A. (2001). Integrating trust in electronic commerce with the technology acceptance model: Model development and validation. In Seventh Americas Conference on Information Systems (pp. 816–822).

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. International Journal of Electronic Commerce, 7(3), 69–103. http://doi.org/10.1.1.86.7139

Rammile, N., & Nel, J. (2012). Understanding resistance to cell phone banking adoption through the application of the technology acceptance model (TAM). African Journal of Business Management, 6(1), 86–97. http://doi.org/10.5897/AJBM11.635

Rexha, N., Kingshott, R. P. J., & Aw, A. S. S. (2003). The impact of the relational plan on adoption of electronic banking. Journal of Service Marketing, 17(1), 53–67. http://doi.org/10.1108/08876040310461273

Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. Academy of Management Review, 23(3), 393–404. http://doi.org/10.5465/AMR.1998.926617

Sen, S., & Bhattacharya, C. B. (2001). Does doing good always lead to doing better? Consumer reactions to corporate social responsibility. Journal of Marketing Research, 38(2), 225–243. http://doi.org/10.1509/jmkr.38.2.225.18838

Sims, R. L., & Gegez, A. E. (2004). Attitudes towards business ethics: A five nation comparative study. Journal of Business Ethics, 50(3), 253–265.

Smith, N. C., & Quelch, J. A. (1993). Ethical issues in researching and targeting consumers. Ethics in Marketing, 145–195.

Sripalawat, J., Thongmak, M., & Ngramyarn, A. (2011). M-banking in metropolitan Bangkok and a comparison with other countries. Journal of Computer Information Systems, 51(3), 67–76.

Suh, B., & Han, I. (2002). Effect of trust on customer acceptance of Internet banking. Electronic Commerce Research and Applications, 1(3–4), 247–263. http://doi.org/10.1016/S1567-4223(02)00017-0

Tobbin, P. (2012). The adoption of'transformational mobile banking'by the Unbanked: An exploratory field study. Communications & Strategies, 86, 103–120.

Tsai, J. Y., Egelman, S., Cranor, L., & Acquisti, A. (2011). The effect of online privacy information on purchasing behavior: An experimental study. Information Systems Research, 22(2), 254–268.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology

acceptance model: Four longitudinal field studies. Management Science, 46(2), 186–204. http://doi.org/10.1287/mnsc.46.2.186.11926

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425–478. http://doi.org/10.2307/30036540

Whitener, E. M., Brodt, S. E., Korsgaard, M. A., & Werner, J. M. (1998). Managers as initiators of trust: An exchange relationship framework for understanding managerial trustworthy behavior. Academy of Management Review, 23(3), 513–530.

Yousafzai, S. Y., Foxall, G. R., & Pallister, J. G. (2010). Explaining internet banking behavior: Theory of reasoned action, theory of planned behavior, or technology acceptance model? Journal of Applied Social Psychology, 40(5), 1172–1202. http://doi.org/10.1111/j.1559-1816.2010.00615.x

Yousafzai, S. Y., Pallister, J. G., & Foxall, G. R. (2003). A proposed model of e-trust for electronic banking. Technovation, 23(11), 847–860. http://doi.org/10.1016/S0166-4972(03)00130-5

Zhang, L., Zhu, J., & Liu, Q. (2012). A meta-analysis of mobile commerce adoption and the moderating effect of culture. Computers in Human Behavior, 28(5), 1902–1911. http://doi.org/10.1016/j.chb.2012.05.008

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. Computers in Human Behavior, 26(4), 760–767. http://doi.org/10.1016/j.chb.2010.01.013