

# Effects of Consumer Perception of CSR Activities and Technology Acceptance on Intention to Adopt Mobile Banking: Evidence in Vietnam

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## 1. Introduction

Mobile financial services provide convenience and promptness to customers along with cost savings, banks are interested in expanding their market through mobile services. In the last several years, retail banks in Viet Nam have introduced and diffused mobile banking systems throughout their operations to improve people's quality of life and to bring efficiency to banks. In fact, according to Zhou (2012a) mobile banking (m-banking) allows people to perform bank transactions anytime and anywhere. With m-banking, users are able to access account balances, pay bills, and transfer funds through mobile devices, instead of visiting banks or using internet banking based on computer (Gu et al., 2009). Mobile banking also benefits banks by promoting better efficiency and improved service quality. Data from 2015 shows that smart phone rate penetration in Viet Nam was 30% whereas m-banking transaction consisted of about 10% of total bank transactions in 2015 so these numbers are relatively modest compared with many countries and it has not achieved its full potential. In other words, despite the fact that m-banking beneficial to the customers, the adoption rate of m-banking in Vietnam is quite low and m-banking adoption is still in the early stage in comparison to other service provided by banks. Against this backdrop understanding the consumer intention toward m-banking will be very crucial for the marketing strategy of banking institutions.

Furthermore, despite its rapid growth and its good economic performance, nowadays the Vietnamese business community has been facing important issues for its sustainable development, especially societal and environmental ones. Recent scandals of Vedan company committed to serious pollution in Thi Vai River, Vietnamese customers has boycott Vedan's product. In the same case, Coca-Cola Vietnam was stayed away by consumers due to transferring price incidentally during a decade to avoid paying governmental tax. In other words, Vietnamese customers are willing to boycott any corporations if they violating Corporate Social Responsibilities. In the same vein, after Formosa- Taiwan steel factory leaks toxic waste into the sea that caused massive fish deaths along a 200-km (124-mile) stretch of coastline in April 2016 and numerous cases of health safety problems especially toxic ingredients found out in consumer goods have been raising a greater concern on corporate social responsibility (CSR) in Vietnam.

In addition, a report by Nielsen revealed that an astounding 73 percent of Vietnamese online consumers were willing to pay more for products and services provided by companies committed to positive social and environmental impact. That figure beat Europe's 40 percent, Latin America's 63, North America's 42, and even topped ASEAN's sustainable champion Singapore, which came in at 48 percent. Therefore, this research aims to investigate whether CSR initiatives (Economic, Social, environment dimensions) effect on behavioral intention to use m-banking through customer trust.

Research in mobile commerce has shown that trust is crucial for any business relationship (Palvia, 2009; Wang et al., 2015), especially in m-commerce, because it reduces uncertainty (Gu et al., 2009). In the same way, building users' initial trust is essential for mobile banking service providers (Zhou, 2012a).

Moreover, there are growing concerns about risk in online banking services across the world. During the last few years, internet-based attacks have increased tremendously and also highlighted the multiple cases of the theft or fraud, breaches of personal privacy and attacks by hackers (So and Sculli, 2002; Littler and Melanthiou, 2006).

Besides, there may be situations in which an individual want to use m-banking but is prevented by lack of money and since the recent researches have revealed that perceived cost was found to be affect consumer acceptance of M-banking in Australia, Iran and Taiwan (Wessels & Drennan, 2010; Hanafizadeh et al., 2014; Yu, 2012). Moreover, the Vietnamese customers seem to be sensitive to the price and price plays a vital role in buying decision making process. Hence, in this study the author adopt the TAM as the base model and adjust the model to reflect the characteristics of mobile banking in Vietnam context by adding trust, three dimension of CSR (Economic responsibility, social responsibility, environmental responsibility), perceived risk and perceived cost factors to enhance understanding of m-banking adoption intention of Vietnamese customers.

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This study differs from some past studies as follows. First, as Shaikh & Karjaluo, (2015) note, past studies have limited and mainly focused on SMS banking in developing countries and virtually no studies have addressed the use of m-banking applications via smart phones or tablets which is addressed in this study. Second, most of the past studies have studied the relationship of trust and intention to use m-banking but this study is one of the first study investigate the relationship of the CSR with m-banking intention adoption through trust. Third, many studies proved CSR has a vital role in creating customer trust in Hospitality or Food industry and this study examine the role of CSR in banking industry, particularly in m-banking, which has not yet researched before. This study may find out valuable applications for bank managers to support their planning strategies and marketing campaigns that help banks develop sustainably.

The outstanding growth of mobile sector worldwide has created a unique opportunity to provide social and financial services over the mobile network. With over four billion mobile phone subscriptions worldwide, mobile network has the ability to immediately offer m-banking to 61% of the world population (Kshetri & Acharya, 2012). According to the Vietnam 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 is still low among banks customers in Vietnam. Though many of such people argue that internet and other technology based transaction is not safe, not practical and would lead to fraud, a lot of people think it 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 study revealed that consumers do not consider m-banking to be 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). However, previous studies still have many limitations and have recommended further research in this field.

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, researcher argues that the results also have a “practical value” particularly for Vietnamese banks. A large number of customers using m-banking could justify the investments that banks have made in this technology, thus increasing the rates of return (Lee & Chung, 2009). The understanding of the factors that affect intention to use mobile banking services enables banks to target bottlenecks of this adoption and improve their services (Zhou et al., 2010).

## **2. Literature review and theoretical background**

### **2.1. Mobile banking**

M-banking has received a considerable attention in academic research and thus several conceptualization of m-banking currently exists. M-banking (m-banking) is defined as an application of m-commerce (Kim et al., 2009), an innovative method for accessing banking services (Xin Luo et al., 2010) that offers additional value for customers by providing “anytime, anywhere” access to banking service (Lee and Chung, 2009). Turban et al. (2006) conceptualized m-banking as any form of banking transaction that is carried out through a mobile device, such as a mobile phone or a personal digital assistant.

There was a multitude of theoretical foundations used in m-banking adoption empirical studies (see table 1). Following are examples of several theories and analytical models used as theoretical foundations in m-banking studies.

#### **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).

### **TAM**

The TAM derived from the Fishbein and Ajzen (1975) TRA, which is a more generalized theory (Lindsay et al., 2011). 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). First introduced in 1986 by Davis (1986), TAM has been proven to be a useful valid theoretical framework to predict users' behavior toward a new technology (Liu et al., 2009; Qi et al., 2009; Cheng et al., 2010). 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 (Jaradat & Twaissi, 2010; Lindsay et al., 2011; Liu et al., 2009; Singh et al., 2010; Sripalawat et al., 2011; Tobbin, 2012; Yung-Cheng et al., 2010) such as m-banking adoption. For example, Amin et al. (2012) used TAM as the base theoretical foundation to conduct a study on m-banking adoption in Malaysia. They retrieved and analyzed data from banks customers in Kota Kinabalu. After data analysis, Amin et al. (2012) concluded that perceived credibility, enjoyment and self-efficacy were related to m-banking adoption in Malaysia.

Because of the U.S. Federal Reserve Board of Governors (2012) report, the conciseness and validity of TAM to predict and to explain the user acceptance of information technology (Lindsay et al., 2011), the TAM was selected as the core theoretical foundation of this study. It has proven to be a robust, powerful and well-established model for predicting user acceptance (Shen et al., 2010). 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 theories and models, (a) TRA, (b) TAM, (c) motivational model, (d) TPB, (e) model combining TAM and TPB, (f) model of PC utilization, (g) IDT, and (h) the social cognitive theory. 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).

Following are few illustrations on the use of the UTAUT in m-banking adoption studies. Luo et al. (2010) used the UTAUT framework to examine the multi-dimensional trust and multifaceted risk in initial acceptance of emerging technologies at an Eastern U.S. University. The results showed that performance expectancy was the determinant factor of acceptance of new technologies. Luo et al. (2010) also found that perceived risk from multiple facets was a salient antecedent to new technology acceptance. Yu (2012) used the UTAUT as a theoretical base to investigate the factors that influenced people to adopt m-banking in Taiwan. After data statistical analysis, Yu found that social influence, perceived financial cost, performance expectancy, and perceived credibility constructs influenced m-banking adoption in Taiwan.

Chong (2013b) 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. The results showed that performance expectancy, effort expectancy, social influence and facilitating conditions were the predictor factors affecting m-commerce in China (Chong, 2013b).

**Table 1:** Summary of the previous empirical studies about M-banking

Literature	Country	Constructs used	Findings
Tang et al. (2004)	Taiwan	TAM	Computer self-efficacy influences perceived usefulness, ease of use, and credibility. Together, they impact behavioral intention
Suoranta & Mattila (2004)	Finland	Bass diffusion model and IDT	Experienced customers and occasional users were more informed by interpersonal communication. Age is a strong indicator of innovativeness. Wealthier respondents were less willing to adopt new mobile banking services
Laforet & Li (2005)	China	Attitude, motivation and behavior	Awareness, confidentiality, security, past experience with computer, and new technology are salient factors in adopting mobile banking
Luarn & Lin (2005)	Taiwan	Extended TAM	Usefulness, ease of use, self efficacy and financial cost were found to be significant antecedents of the behavioral intention to use mobile banking. A significant direct relationship exists between credibility and behavioral intention to use mobile banking. Self-efficacy has a significant influence on perceived ease of use, which in turn significantly influences both usefulness and credibility
Laukkanen (2007)	Finland	Mean-end theory	Perceived benefits, such as location free and efficiency, are main factors that encourage people to adopt mobile banking
Laukkanen & Pasanen (2008)	Finland	Innovation adoption categories	Only age and gender differentiate these two groups of customers, whereas education, income, occupation, and size of the household were found to be insignificant in differentiating the groups
Amin et al., (2007)	Malaysia	TAM	Perceived usefulness, ease of use, credibility, amount of information, and normative pressure significantly influence the adoption rate
Gu et al. (2009)	Korea	TAM, trust	Self-efficacy has the strongest antecedent of perceived ease of use, which directly and indirectly affects behavioral intention through perceived usefulness in mobile banking. Structural assurances are the strongest antecedent of trust, which could increase the behavioral intention of mobile banking
Yang (2009)	Taiwan	Rasch measurement model and item response theory	Mobile banking adoption is encouraged by the speed of transactions and reduction in service fees, and is inhibited by configuration safety and system fees
Riquelme & Rios (2010)	Singapore	TAM, TPB, and IDT	Usefulness, social norms, and risk affect the intentions to adopt mobile banking
Wessels & Drennan (2010)	Australia	TAM, IDT, and SST	Perceived usefulness, perceived risk, cost, and compatibility were found to affect consumer. Perceived usefulness, perceived risk, cost, and compatibility were found to affect consumer
Puschel et al., (2010)	Brazil	IDT and DTPB	Relative advantages, visibility, and compatibility significantly influence attitude, and attitudes, subjective norms, and perceived behavioral control significantly affect intention to
Koenig-Lewis et al., (2010)	Germany	TAM and IDT	Compatibility, perceived usefulness, and risk are significant indicators of the adoption of mobile banking. Trust and credibility are also crucial to reducing the overall perceived risk of mobile banking
Laukkanen & Kiviniemi (2010)	Finland	Theory of resistance to innovation	Information and guidance offered by a bank has the most significant effect on decreasing the usage barrier, followed by image, value, and risk barriers respectively. Information and guidance show no effect on the tradition barrier
Cheah et al. (2011)	Malaysia	TAM, TPB, and IDT	Personal innovativeness, perception of usefulness, ease of use, and relative advantage positively influence the intention to adopt mobile banking, whereas perceived risk negatively affects the intention to adopt mobile banking. Social norms did not affect the intention to adopt mobile banking
Daud et al., (2011)	Malaysia	TAM, perceived credibility, customer awareness, perceived risk	Perceived usefulness, perceived credibility, and customer awareness have significant effects on the intention to adopt mobile banking
Akturan & Tezcan (2012)	Turkey	TAM, perceived benefits and risks	Perceived usefulness, ease of use, social risk, and benefits positively influence attitude towards mobile banking, which leads to intention to use mobile banking
Yu (2012)	Taiwan	UTAUT	Social influence, perceived financial cost, performance expectancy, and perceived credibility affect intentions. Individual intentions and facilitating conditions influence actual behavior
Rammile & Nel., (2012)	South Africa	TAM and usage barriers	The value barrier and the tradition barrier have the strongest negative impact on perceived usefulness. The information barrier and the usage barrier have the strongest negative effect on ease of use
Chemingui & Ben Lallouna (2013)	Tunisia	IDT and theory of resistance to innovation	The tradition barrier negatively influences intention to use. Compatibility, Trialability, perceived enjoyment, and system quality positively influence intention to use mobile banking.
Witepanich et al., (2013)	Thailand	UTAUT	The most important factor influencing mobile banking adoption is trust
Balabanof (2014)	South Africa (RSA)	DTPB	Attitude, perceived behavioral control, and subjective norms have a significant influence on the intention to adopt
Hanafizadeh et al., (2014)	Iran	TAM, SST, trust, credibility, perceived risk, perceived cost	Perceived usefulness, ease of use, compatibility, trust, and credibility positively influence mobile bank adoption. In contrast, perceived risk, cost, and the need for interaction negatively affect mobile bank adoption
AlSoufi & Ali (2014)	Bahrain	Extended TAM	Perceived usefulness is affected by customer service and efficient transactions, whereas perceived ease of use is influenced by compatibility and self-efficacy. Moreover, perceived usefulness and ease of use directly and strongly influence the intention to use mobile banking

Talukder et al.,(2014)	Australia	Extended TAM	Perceived usefulness, ease of use, and social influence are most important determinants of the intention to use mobile banking services. Intention to use is also a precondition to adopting mobile banking
Bhatia Devi (2015)	Thailand	Extended UTAUT	Performance expectancy, effort expectancy, social influence, perceived credibility, and perceived convenience have a positive and significant on behavioral intentions. Behavioral intention also has a significant impact on the use of mobile banking

## 2.2 Corporate social responsibility (CSR)

### 2.2.1 CSR background

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 commitment by a company to improve the welfare of its community by implementing certain discretionary practices and increasing the availability of its resources (Kotler & Lee, 2005).

Throughout the past several decades, numerous aspects of CSR have been the subject of investigation in academic and business literature. Although the nature and scope of the CSR remains uncertain, scholars have tried to summarize and categorize various CSR activities (Maignan & Ferrell, 2001; Smith, 2003). One thing they all agree is that the purpose of business is to generate profits for shareholders, which is economic responsibility. In addition, following laws and legislations and keeping their business ethics seem to be a must-responsibility that society and the public automatically expect from business. It is noted that Carroll's (1998) four dimensions of CSR: economic, legal, ethical, and philanthropic responsibilities have been widely accepted among others and the four aspects of CSR are described in detail in the following part.

#### 2.2.1.1 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 (Friedman, 1970), 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)

#### 2.2.1.2 Legal and Ethical Responsibilities

Business ethics and legal responsibilities have been studied in management studies and these are considered as must-responsibility (Carroll, 2000; Spitzek, 2005). 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).

Maignan & Ferrell (2001) summarize some of the legal responsibilities including: accurate reporting of business performance, ensuring that products meet all legal standards, avoiding discrimination in hiring and compensation, and meeting all environmental regulations. Legal duties involve obeying the law and playing by the rules.

However, laws and legislation have flaws to ensure responsible actions. They only provide a moral minimum for business conduct; they are reactive (telling what ought not to be done) rather than proactive, (telling what ought to be done); and they are often followed involuntarily (Carroll, 2000; 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; Novak, 1996). Some of the examples of ethical responsibilities by Maignan & Ferrell (2001) are: implementing a code of conduct, organizing ethics training programs, incorporating integrity in the performance evaluation of employees, and providing full product information to customers. Today, virtually all members of the business system agree, at least in theory, that corporations are expected to keep at least their promises on legal and ethical responsibilities.

#### 2.2.1.3 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). Over the past half century, business has been judged not only by its economic and moral performances, but also by its social contributions (Carroll, 1998; Lantos, 2001; 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; O'Cassand Lim, 2001).

#### **2.2.1.4 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.

Global warming and pollution have generated a great deal of public concern regarding the environment, which leads many to support environmental protections (Choi et al., 2009).

This environmental aspect of CSR has perhaps gained the most attention from marketing managers, and firms have put a tremendous amount of effort toward communicating with customers about their environmental efforts. Consumer behaviors on green purchasing and attitudes toward environmentally friendly products have been studied in many marketing studies (Chan, 2001; Choi et al., 2009; Manaktola & Jauhari, 2007; Tanner & Kast, 2003; Tsai & Tsai, 2008).

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 (Leigh & Murphy, 1988; Málovics et al., 2008).

### **2.2.2 Effects of CSR**

#### **2.2.2.1 Effects of CSR on customers' attitudes**

Recent research suggests that socially responsible organizational behavior can positively affect consumers' attitudes toward the organization (Brown & Dacin, 1997; Martin & Ruiz, 2007; Perez, 2008; Sen & Bhattacharya, 2003, 2004). The findings indicate that consumers' awareness of a company's CSR practices have a positive influence on customers' attitudes toward the company, including an organization's image, reputation, and evaluation of product attributes (Martin & Ruiz, 2007; Perez, 2008). The effect occurs both directly and indirectly through customer-company identification (Lichtenstein et al., 2004). For example, if a consumer purchased products from a company that had recently teamed up with an environmental organization, would others conclude that he/she sincerely cared about the environment? This issue is important because many consumers are interested in reflecting their self-images by using or purchasing certain products and brands (Yoon et al., 2006).

Customers can be triggered by a company's CSR initiatives to develop a positive attitude toward the company. However, that is not always the case. Becker-Olsen et al., (2006) investigated the role of perceived fit (e.g., similarity between its mission and CSR initiatives) and timing of a CSR initiative (reactive vs. proactive) on consumers' responses to CSR initiatives. The results show that a low-fit between cause and the company's CSR action negatively affects consumer's belief, attitudes, and intentions and even with the high-fit initiatives if a firm was perceived reactive rather than proactive, its CSR initiatives have a negative impact on consumers. Thus, the companies should find an appropriate CSR action that can be perceived by customers as a right fit between CSR and the company.

#### **2.2.2.2 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; Creyer & Ross, 1997; Ellen 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; Simmons & Becker-Olsen, 2006).

Thus, companies must carefully review their CSR practices and when and how to use them for marketing communication purposes.

Mohr and Webb's study (2005) performed an experiment to examine the influence of different prices and various CSR dimensions on consumers' response. They have manipulated two CSR domains (environment and philanthropy) and prices (higher and lower than average). The result found that both CSR domains have a positive impact on customers' purchase intention, and the environmental domain has a stronger impact on purchase intent than price does.

In summary, numerous studies have shown that CSR can have a positive impact on key stakeholder groups, such as employees, consumers, distributors, and stock holders (Sen & Bhattacharya, 2004; Sen et al., 2006). Academic research on consumer responses to companies' CSR actions reveals its company-favoring effects on cognitive and affective (e.g., beliefs, attitudes, identification as well as behavioral outcomes (e.g., patronage, loyalty) (Anisimova, 2007; Bhattacharya & Sen, 2003; Barone et al., 2000; Brown & Dacin, 1997; McDonald & Rundle-Thiele, 2008; Salmons et al., 2005) is still the most dominant criteria in consumers' purchasing decision (Boulstridge & Carrigan, 2000).

### **2.3 General background of 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. According to the statistical data of Smartlink card services joint stock Company, there are more than 3 million customers using mobile banking services. The number of transactions per month achieved approximately 14 to 15 million (Nguyen, 2014). With 22 percent of Vietnamese have bank accounts and more than 30 percent of Vietnamese owned at least one smartphone; the demand of mobile banking in Vietnam is high. The target of mobile banking is young customers whose age from 18 to 34 (Nguyen, 2014). This group is highly adaptive and easy to accept new technology. However, the current usage of mobile banking in Vietnam is below potential. According to a representative of Smartlink card services joint stock Company, the growth of mobile banking in Vietnam need more time to meet its demand because customers are still used to their familiar payment channels. The Vietnamese are unaware of modern payment services<sup>4</sup>. 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.

### **2.4 Picture of CSR activities in Viet Nam**

International economic integration occurred during the last decade has brought to Vietnamese businesses, especially the private sector that comprised mainly small and medium enterprises (SME), opportunities to expand their activities and to go global. Most importantly, it enables the private sector to grow and to contribute remarkably to the economic development of the country. While holding just 30% of total national assets, the Vietnamese private businesses contribute 40% to GDP, 30%-40% to export turnover and absorb 50% of the total workforce. Despite its rapid growth and its good economic performance, the Vietnamese business community has been facing nowadays important issues for its sustainable development, especially societal and environmental ones, including waste management, energy saving, systematic implementation of workplace safety standards, and taking care of the well-being of workers as well. Recent scandals of factories committed to serious pollution in ThiVai River and numerous cases of health safety problems especially tainted milk distribution, toxic ingredients found out in consumer goods,..., have been raising a greater concern on corporate social responsibility (CSR) in Vietnam. Along with these environmental and health issues, Vietnamese export-oriented companies have been also encountering problems of good citizenship when their foreign investors and buyers require them to take business practices based on respect for people, communities and the environment. For instance, the U.S.-Vietnam textiles agreement signed in May 2003 included an obligation for the Vietnamese authorities to encourage exporting companies to implement CSR codes in return for access to the U.S. market, Moreover, different from other countries, Vietnam's environment has been ravaged by a history of wars, aggressive industrial development and poor environmental regulation. Every year, 220,000 tons of industrial waste is dumped into the Mekong River, where fishermen reel in their living next to the beer and cement factories that are putting cancer rates through the roof.

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<sup>4</sup> <https://m.vietnambreakingnews.com/tag/sihanvina-bank/>

Poor mining practices and other industrial activity have polluted so much of the country's soil and water that access to safe drinking water is becoming a real problem. Ecologies sprayed with Agent Orange during the Vietnam War are still recovering, climate change has created typhoons devastating coastal communities, and floods are destroying countless farms along the Mekong River Delta.

Vietnam's factories have promoted CSR in more ways than demonstrating what happens if you don't respect it. Thanks to historically cheap labor and low standards for labor rights, Vietnam has long been attractive to Western countries looking for a place to outsource manufacturing operations. Many Vietnamese manufacturers produce goods for Western corporations. This means they are subject to the high CSR standards of fully developed economies overseas and in Europe.

This influence has bled into most of Vietnam's big businesses – and because Western buyers support the Vietnamese economy (and vice versa), outside funding is being provided to enhance the topic of CSR at the political level.

In 2004 Vietnam Government adopted the Strategic Orientation for Sustainable Development, which identifies 19 prioritized areas under the three pillars (economic, social and environmental) of corporate social responsibility. This better defined the government's responsibilities when it comes to CSR, and led to the development of Vietnam's "Green Growth" strategies for 2011 to 2020.

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. Environmental problems become social problems (Fierman, 1991). 1990s was called as "Earth decade" (Daniel & Rylander, 1993) or "Environmental decade" (McDougall, 1993). Several studies also indicated the concerning to individual environment (Chan, 1996; Donaton & Fitzgerald, 1992; Kerr, 1990; Ottman, 1993; Schlossberg, 1992; Wall, 1995) and awareness towards consumer environment (Ellen, Wiener & Cobb-Walgren, 1991; Kim and Choi, 2005; Verhoef, 2005) affecting positively to purchasing intention of consumers.

Though some companies still employ unfair labor standards, and many factories still dump waste into the water and pump greenhouse gases into the hazy sky, Vietnam is a country bent on improving CSR. This was the same story as 10 years ago, but the difference is that now, things are actually happening. Vietnam is starting to make good on its promises to develop sustainably, and to create businesses that will facilitate that process and create a better life for its citizens.

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. For example, the "The Corporate Social Responsibilities Award" is organized annually to appreciate corporations which perform well Corporate Social Responsibilities.

Besides, recently customers are willing to boycott corporations because of violating Corporate Social Responsibilities. For instance, Vedan's products and Coca-Cola Vietnam are stayed away by consumers due to polluting Thi Vai River and transferring price incidentally during a decade to avoid paying governmental tax, respectively. Hence, recently companies have realized the importance of CSR with a tool of marketing strategies to help companies build the image, trust and reputation to develop sustainably and gain advantages against the competitors. One of an example is Vietcombank (VCB), one of the biggest state-owned commercial bank in Vietnam. VCB is aware of corporate social responsibility so Vietcombank often pays attention to social welfare and charity activities that have large impact on the society such as "Nghia tinh Truong Son", "Noi vong tay lon", "Ngay vi nguoi ngheo"...; equipped ship CQ-01 for the Navy Forces, supported earthquake and tsunami victims in Japan. During the year, Vietcombank has spent over 100 billion VND for these social welfare programs especially in 2015 VCB spent more than 2566 billion to social welfare contribution, supporting community for the overall development of society. Hence, from 2012 to 2016 VCB was chosen the most favorable bank in Vietnam.

Also, since its operation in September 1996, VIB has constantly implemented different community-oriented activities (CSR) in many localities across the country, apart from banking operations. This is aimed to make contributions to people development and social life of the local people.

Over the past years, VIB has been actively involved in significant social programs, focusing on 3 areas: Education, Environment, and Enrichment. For instance, the bank has donated money to support victims of Can Tho Bridge collapse, construction of hospitals for poor people of Kien Giang province, the Operation



Smile Fund, people in the flooded areas in central provinces and so on. Specially, VIB has sponsored the Academy of Banking's "Future Bankers" program and the program "Glorify Vietnam", and Vietnamese talents nurturing program for poor primary school students with high achievements across the country, etc... In 2013, VIB was honored with the "The Excellence of Corporate Social Responsibility" award granted by the Ministry of Planning and Investment and the Economics & Forecast magazine.

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.

### **3. Hypotheses development and Research model**

#### **3.1. Why there is a integration between TAM and CSR?**

The literature showed that IT acceptance has been the subject of much research in the past two decades. Several theories have emerged that offer new insights into acceptance and use, at both the individual and organizational levels, including the theory of reasoned action (TRA) (Fishbein and Ajzen, 1975), the Technology Acceptance Model (TAM) by Davis (Davis, 1989), the extended technology of acceptance model (TAM2) (Venkatesh and Davis, 2000), the Theory of Planned Behavior (TPB) (Ajzen, 1991), the innovation diffusion theory (Rogers, 1995), and the Unified Technology Acceptance User Technology (UTAUT) by (Venkatesh, Morris, Davis, and Davis, 2003).

One of the most salient models is the Technology Acceptance Model (TAM), when it comes to investigating the factors that influence the adoption of information systems, which is proposed by Davis (Davis, 1989) and is mainly developed from Fishbein and Ajzen's existing Theory of Reasoned Action (TRA). In particular, previous literature indicated that TAM consistently accounts for 40% of variance in usage intention and behaviors (Venkatesh & Davis, 2000).

One advantage of 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 the World Wide Web (Lederer et al., 2000; Van der Heijden & Verhagen, 2004) Intranet (Horton et al., 2001), E-commerce (Olson & Boyer, 2003; 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.

Mathieson, (1991) argued that it is inappropriate to depend only on these two variables of PU and PEOU in examining individual's technology acceptance tendencies, even though TAM has been extensively validated.

Consistent with this view, TAM theory can be modified or extended using other theories or incorporating other constructs (Yen et al., 2010). Taking this point further, several previous studies suggested that there are other potential factors that might be incorporated within the TAM and which would influence users' adoption of m-banking such as perceived risk (Luo et al., 2010).

Chong et al., (2012) asserted that it is better to use TAM as a base model and extend by including additional constructs based on the research being conducted. For example, Koenig-Lewis et al., (2010) have extended the TAM by incorporating trust in order to investigate online banking adoption in Germany. Indeed, with the surge of e-commerce, more studies are being conducted on the conceptual structure and formation mechanisms of trust (Ba & Pavlou, 2002; Brown et al., 2004; Paul & McDaniel, 2004; Pavlou & Gefen, 2004). Activities in the network space are more anonymous and impersonal than those in the traditional off-line setting and therefore entail greater risk, uncertainty, and loss of control. Obviously, securing customer trust is critical for successful e-commerce (Lee & Turban, 2001).

Besides that 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). Trust of this type is based on prolonged and cumulative experience that gives clients a sense of familiarity, calculation and values (Coleman, 1990). Cumulative experience significantly influences the level of customer trust in a vendor's competence, predictability and goodwill (Siau & Shen, 2003). In addition, customer trust in a firm may affect his/her loyalty to its service and the choice of service continuation or repurchase (Jarvenpaa et al., 2000).

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; Kim et al., 2008) found that initial trust is significantly positively associated with mobile banking adoption intentions.

McKnight et al. (1998) insisted that initial trust is not based on prior experience or first-hand knowledge, it may be affected by firm characteristics as size, capability, integrity, role in the market-place, benevolence, reputation and brand that may affect a person's perception of a firm's services or products (McKnight et al., 2004). In addition, according to Lohse & Spiller (1998) a good reputation provides assurance of a firm's ability, integrity and goodwill, thus helping to increase trust even when consumers do not have first-hand knowledge of the service company. Similarly, Anderson & Weitz et al., (1989) show that a service provider's reputation critically affects people's confidence in the firm. Jarvenpaa & Tractinsky (1999) also indicated that the reputation of an internet shopping mall boosted consumers' confidence, which in turn positively influenced their attitude towards online service. In conclusion, people can shape their initial trust in mobile banking without registering for the service and using it for financial transactions. They may be more trusting initially if they see service banks as reputable enterprises because of their off-line roots.

Moreover, recent research suggests that socially responsible organizational behavior can positively affect consumers' attitudes toward the organization (Brown & Dacin, 1997; Martin & Ruiz, 2007; Perez, 2008; Sen & Bhattacharya, 2003, 2004). The findings indicate that consumers' awareness of a company's CSR practices have a positive influence on customers' attitudes toward the company, including an organization's image, reputation, and evaluation of product attributes (Martin & Ruiz, 2007; Perez, 2008).

Furthermore, recently Vietnamese are challenging with sustainable development, especially environmental issues such as waste management and energy saving. Along with these environmental problems, there are numerous cases of health safety issues especially tainted milk distribution; toxic ingredients found in consumer goods have been raising a greater concern on corporate social responsibility in Vietnam.

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 (Figure 1). 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 will be tested. The conceptual model is graphically presented in Figure 1.

## **3.2 Hypothesis development**

### **3.2.1 CSR initiatives**

Previous studies have used the concept of CSR in marketing and consumer behavior literature, with several scholars examining the influence of CSR initiatives and consumer responses on financial performance (Sen & Bhattacharya, 2001; Brown & Dacin, 1997). Several studies have attempted to investigate the effects of CSR on factors such as customer loyalty, trust, word of mouth, intentions, attitudes, satisfaction, and brand identification (Luo & Bhattacharya, 2006; Handelman & Arnold, 1999; Sen & Bhattacharya, 2001). From an economic perspective, the fundamental motivation for CSR is to maximize firm profitability for shareholders (Zenisek, 1979). However, some scholars indicated that corporations bear a responsibility to contribute to the betterment of society as a whole (Brown & Dacin, 1997; K. Davis, 1975; Drumwright, 1996; Handelman & Arnold, 1999), as well as to integrate environmental concerns in business operations (Dahlsrud, 2008; Homburg et al., 2005).

A firm's CSR activities engender its image of honesty, integrity, credibility and high responsiveness towards customer concerns (Sirdeshmukh et al., 2002). Maignan & Ferrell, (2000) argue that a firm's CSR activities can be a good source of customer trust and reduction of skepticism. For example, Swaen & Chumpitaz (2008) study cosmetics and sportswear customers and report that CSR perceptions positively impact on customer trust. These scholars argue that CSR perceptions and trust are significant variables in the cultivation of long-term affiliations between customers and firms. Moreover, Salmones et al., (2009) identify a direct relationship between a firm's ethical responsibility and customer trust in retail service markets. Similarly, Choi & La, (2013) state that a firm's ethical-legal responsibility positively affects customer trust in service contexts.

In addition, in recent decades customers have 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 concerning to individual environment (Chan, 1996; Wall, 1995) and awareness

towards consumer environment (Kim & Choi, 2005; Verhoef, 2005) affecting positively to purchasing intention of consumers. In addition, many scandals related on environmental issues such as Formosa, Vedan cause the boycott behavior of Vietnamese to those companies. Therefore, based on the theoretical and empirical arguments stated above, the following hypotheses are proposed:

*H1: Economic responsibility has a positive impact on trust*

*H2: Social responsibility has a positive impact on trust*

*H3: Environmental responsibility has a positive impact on trust*

### **3.2.2 Trust**

Mobile banking is an exchange situation without the physical presence of branch and personal interactions. Therefore, trust is a crucial element for decision making (Zhou, 2011; Grabner-Krauter & Kaluscha, 2003). While consumers initially trust their e-vendors and have an idea that adopting online service is beneficial to job performance or life style, they will eventually believe that on-line services are useful (Gefen et al. 2003). In particular, Gefen et al., (2003) investigated the role of trust in an on-line shopping setting explicitly indicated that trust is an antecedent of perceived usefulness. Trust also has a direct influence on a consumer's behavioral intention to use the service (Wu & Chen 2005). Trust is one of the determinants of perceived usefulness especially in an on-line environment (Vlachos et al., 2009). Pavlou, (2003) also found that trust has a positive effect on perceived usefulness in an e-commerce setting.

*H4: Trust has a positive impact on the perceived usefulness of m- banking services.*

*H5: Trust has a positive impact on the behavioral intention to use m-banking services*

### **3.2.3 Perceived risk**

Due to the high degree of uncertainty and perceived risk in e-commerce operations, trust becomes an important factor for people to obtain confidence on an exchange partner. Customers need to trust in m-banking to use it. Viruses and Trojan horses may exist in mobile terminals too; so, these problems increase users' concern about payment security, and decrease their trust in m-banking, which, in turn, can affect their usage intention and behavior (Zhou, 2012a). In the relationship between customers and m-banking terminals, if trust is not present, there is no adoption and no use of this technology (Zhou, 2012b).

Indeed, risk perception is one of the main barriers to m-banking adoption in Brazil (Cruz et al., 2010), the most important in China (Laforet & Li, 2005; Faqih & Jaradat, 2015) and has a significant relationship with users' attitudes and intention to use m-banking in Iran (Mohammadi, 2015). This construct also has significant relationship with internet banking adoption (Yiu et al., 2007) and with customer's lack of interest in online commercial transactions (Liao et al., 2011). The perception of risk is a significant factor affecting trust (Al-Gahtani, 2011) and affecting mobile banking adoption (Al-Jabri & Sohail, 2012 and Ha, et al., 2012). As risk perception can generate a negative effect on trust, the researcher included this variable in the model.

A closer look at the relevant studies leads the author to observe that perceived risk is one of the most important obstacles hindering the customers' willingness to adopt m-banking (Akturan & Tezcan, 2012; Hanafizadeh et al., 2014). Accordingly, this study assumes the following hypothesis:

*H6: Perceived risk has a negative impact on trust*

*H7: Perceived risk has a negative impact on behavioral intention to use of m-banking services*

### **3.2.4 Perceived ease of use**

Perceived ease of use is conceptualized as an individual's assessment of the mental effort involved in using the new technology (Davis, 1989). Various other studies (Davis, 1986, 1989) also pointed that perceived ease of use can influence perceived usefulness because other thing being equal the easier the technology is to use the more useful it can be. In the context of internet banking, research shows that perceived ease of use has a positive and significant effect on perceived usefulness (Wang et al., 2003). According to Akturan & Tezcan (2012); Wang et al., (2006) perceived ease of use has a positive relationship with intention to adopt m-banking. The researchers concluded that if customers perceive mobile banking to be easy to learn and use, adoption of the service follows. Thus, the following hypotheses are developed:

*H8: Perceived ease of use has a positive impact on perceived usefulness to use m-banking services.*

*H9: Perceived ease of use has a positive impact on behavioral intention to use m-banking services.*

### **3.2.5 Perceived usefulness**

Davis (1989) defined perceived usefulness as the extent to which individuals believe that using the new technology will enhance their task performance. In the context of user acceptance of m-banking services, perceived usefulness could be because of transactions like online request for cheque/demand draft, sending monthly e-statements, online payments, etc. that improves performance, saves time and increase effectiveness of service or some or several add-on benefits such as bill payments, mobile recharge, etc. These benefits are also expected to be further enhancing over a period of time through technological advancement or breakthrough.

Extensive research provided ample evidence of the significant positive effect of perceived usefulness on the development of the initial willingness to use mobile banking (Aboelmaged & Gebba, 2013; Wang et al., 2006; Luarn & Lin, 2005). Luarn & Lin (2005) stated that the ultimate reason that people employ mobile service systems is that they find the systems useful for their banking transactions. Therefore, the following hypothesis is proposed:

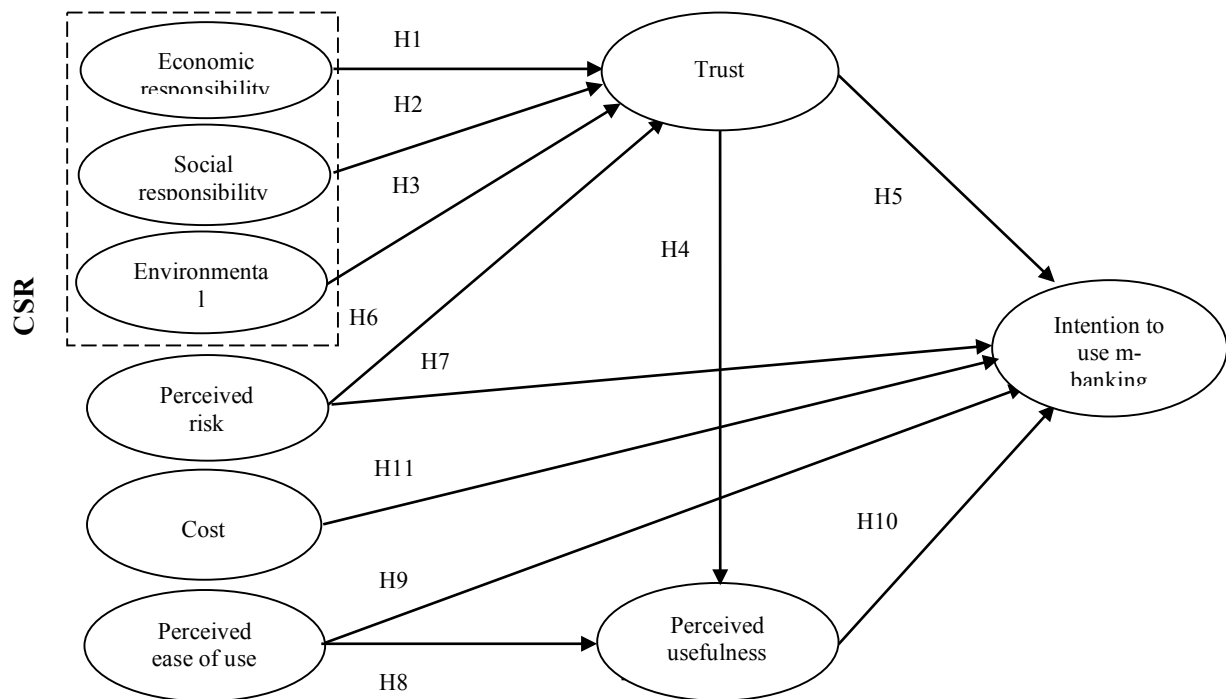
*H10: Perceived usefulness has a positive impact on individual behavioral intention to use m-banking services.*

### 3.2.6 Perceived cost

Perceived financial cost is defined as the extent to which a person believes that he or she has the financial resources needed to use a system (Wang et al., 2006) because purchasing, using, and maintaining a system costs money. Perceived financial cost has been found to have a significant negative influence on the behavioral intention to use mobile banking (Wessels & Drennan, 2010; Wang et al., 2006; Luarn & Lin, 2005).

*H11: Perceived cost has a negative impact on the behavioral intention to use m-banking services*

Based on hypothesis development processing mentioned above, research model is illustrated as follows:



**Figure 1: Conceptual model**

## 4. Measurement and methodology

A typical seven-point Likert scale was used to measure the constructs presented in the proposed model (scores were ranged from 1= "strongly agree" to 7= "strongly disagree" with "neutral" score = 4). The conceptualization and development of the questionnaire was based on the existing literature, resulted in total of 31 items. All items are shown in Table 4. The questionnaire instrument was developed based on the constructs of economic responsibility, social responsibility, environmental responsibility, trust, perceived risk, perceived usefulness, perceived ease of use, perceived cost, and intention to use m-banking. Perceived risk was adapted from Featherman & Pavlou, 2003 and added one more item. Intention to use m-banking (three items) and perceived ease of use (three items) and perceived usefulness (four items) were adopted from Cheng et al., 2006 ; Nasri & Charfeddine, 2012. Three dimensions of CSR including 9 items were adapted from Zhu et al., 2013; Park & Lee, 2009 and were modified. Perceived cost including three items was adapted from Kim et al., 2007. In this study, the measures of trust including six items were based on studies in marketing area which examined the relationship between trust and various constructs and trust is the overall trust about the bank, so trust measurement was adapted from Wei et al., 2009 and Suh & Han, 2002 and then modified appropriately.

This study uses primary data collected from the questionnaire survey in selected provinces in southern of Vietnam to test the hypotheses. The questionnaire was survey by two ways paper based and online method. In total, 612 samples were gathered and eligible for data analysis (235 samples supported via the docs.google.com; 377 samples collected via paper-based method). In order to test the hypotheses, structural

equation modeling (SEM) was employed using the computer software program AMOS with maximum likelihood (ML) method of estimation.

## 5. Results

### 5.1 Demographic results

Table 2 summarizes the demographic characteristics of the respondents. As a whole, this sample consisted of generally young, well-educated Vietnamese consumers with a high level of income. These characteristics are representative of Vietnamese m-banking users with a young age as well as higher education and income levels compared to the general population.

**Table 2:** Demographic results

Demographic profile		Viet Nam	
		Respondents (N=612)	Percentage (%)
Gender	Male	363	59.3
	Female	249	40.7
Age	<20	57	9.3
	20-30	296	48.4
	31-40	212	34.6
	41 - 50	29	4.7
	> 50	18	2.9
Education	High school	15	2.5
	College	45	7.4
	Undergraduate	367	60.0
	Graduate	185	30.2
Living area	Big city	317	51.8
	Small city	295	48.2
Usage duration	<1 year	115	18.8
	1-2 years	160	26.1
	>2 years	337	55.1

### 5.2 Frequencies

Multiple response analysis was also done to evaluate the respondent's answers in the m-banking activities they frequently use. As shown in table 7, the top three m-banking activities are most frequently used by the respondents is the Transfer money (83.3%), followed by Account information inquiry (66.9%) and Pay bills (40.2%), respectively.

**Table 3:** Top three activities for using M-banking (Multiple responses)

Mostly m-banking activities	Percent
1. Transfer money	83.3%
2. Account information inquiry	66.9%
3. Pay bills	40.2%

### 5.3 Reliability and validity 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. The resulting alpha values range from 0.816 to 0.930 which above the acceptable threshold of 0.7. Also, the item-total correlation test results are satisfactory.

A confirmatory factor analysis was conducted to test the measurement model. This assesses what the construct or scale is, in fact, measuring. To construct validity, two checks have to be performed: the convergent validity and discriminant validity. All the model-fit indices exceeded their respective common acceptance levels suggested by previous research, thus demonstrating that the measurement model exhibited a good fit with the data collected in Viet Nam  $\chi^2_{(612)} = 874.934$ , CMIN/df= 2.566, p = .000; GFI = 0.911; TLI = 0.953; CFI = 0.960; RMSEA = 0.051.

**Table 4:** Composite reliability, AVE and correlation of constructs' values

VIETNAM	CR	AVE	1	2	3	4	5	6	7	8	9
1.RISK	0.903	0.756	<b>0.869</b>								
2.TRUST	0.901	0.695	-0.802	<b>0.834</b>							
3.SOCIAL	0.838	0.635	-0.444	0.412	<b>0.797</b>						
4.ENVIRONMENT	0.900	0.751	-0.418	0.385	0.713	<b>0.866</b>					
5.USEFULNESS	0.915	0.729	-0.404	0.540	0.277	0.253	<b>0.854</b>				
6.COST	0.931	0.819	-0.387	0.502	0.356	0.287	0.524	<b>0.905</b>			
7.ECONOMIC	0.817	0.598	-0.410	0.487	0.658	0.474	0.490	0.439	<b>0.773</b>		
8.EASY OF USE	0.852	0.659	-0.492	0.641	0.211	0.236	0.701	0.493	0.387	<b>0.812</b>	
9.INTENTION	0.887	0.723	-0.668	0.741	0.368	0.374	0.647	0.452	0.538	0.677	<b>0.850</b>

Note: Diagonal elements are the square root of AVE. Off-diagonal elements are the correlations among constructs.

Values for composite reliability are recommended to exceed **0.70** (Chin, Marcolin, & Newsted, 2003) and AVE values should be greater than the generally-recognized cut-off value of **0.50** (Fornell & Larcker, 1981). Table 4 shows that all composite reliability and AVE values of Viet Nam meet the recommended threshold values. Therefore, it is an evidence for convergent validity. In addition, the square root of AVE for each construct is greater than the correlations between the constructs and all other constructs, indicating that these constructs have discriminant validity.

#### 5.4 Structural results: Hypothesis testing

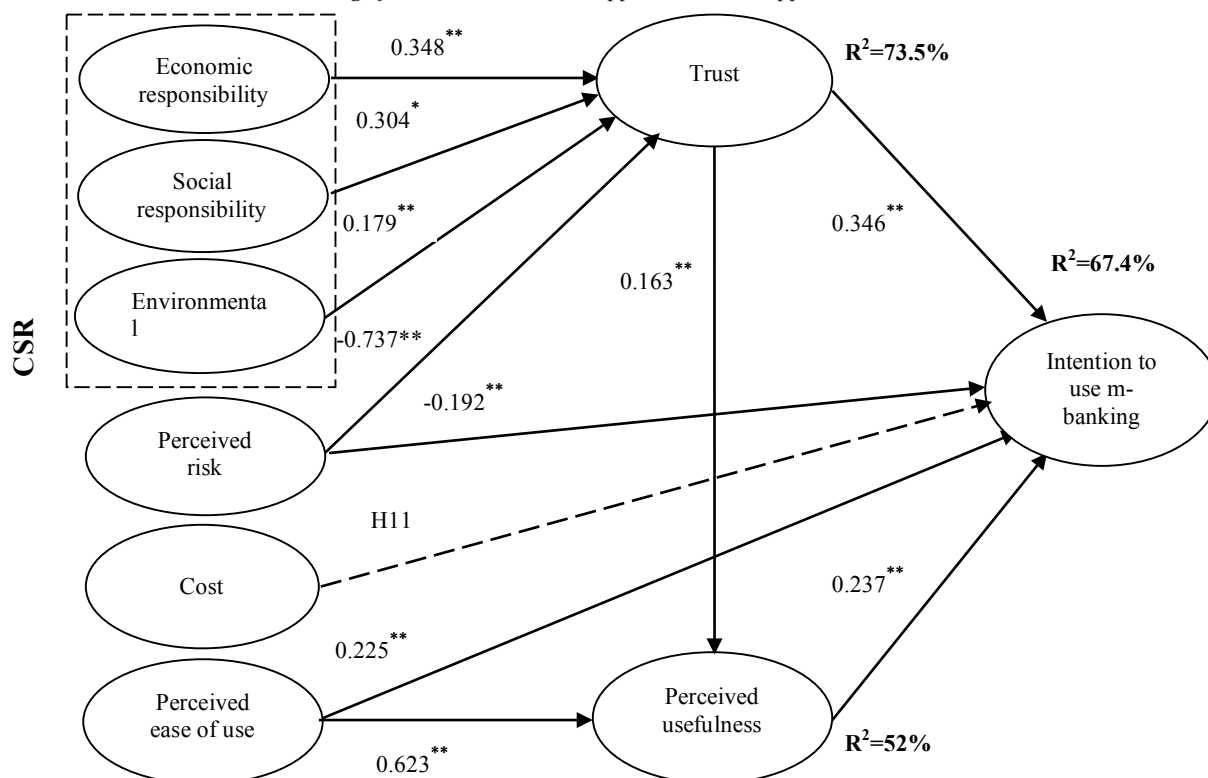
SEM was used to test the hypotheses in Viet Nam. The SEM results indicated that the model had an acceptable fit in Viet Nam. In particular, the indices of model with data collected in Viet Nam are  $\chi^2_{(612)} = 999.183$ , CMIN/df = 2.855,  $p = .000$ ; GFI = 0.898; TLI = 0.944; CFI = 0.952; RMSEA = 0.055.

In Viet Nam, Table 5 presents the unstandardized structural paths; and Figure 3 presents the significant structural relationship among the research variables and the standardized path coefficients with their respective significance levels. Only 1 of 11 hypotheses proposed is found insignificant (H11). In addition, the figure 3 shows the model explained substantial variance in both perceived usefulness ( $R^2=52\%$ ), Trust ( $R^2=73.5\%$ ) and intention to use ( $R^2=67.4\%$ )

**Table 5:** Unstandardized structural paths

Hypothesis	Vietnam				
	R.E	S.E	t value	P	Result
H1: Economic responsibility → Trust	.371	.057	6.570	.000	S**
H2: Social responsibility → Trust	.321	.092	3.477	.000	S**
H3: Environmental responsibility → Trust	.164	.062	2.639	.008	S**
H4: Trust → Perceived Usefulness.	.135	.034	3.925	.000	S**
H5: Trust → Intention To Use	.339	.062	5.461	.000	S**
<b>H6: Perceived risk → Trust</b>	-.688	.039	-17.616	.000	S**
H7: Perceived risk → Intention To Use	-.176	.056	-3.126	.002	S**
H8: Perceived ease of use → Perceived usefulness	.585	.045	13.047	.000	S**
H9: Perceived ease of use → Intention To Use	.249	.059	4.238	.000	S**
H10: Perceived usefulness → Intention To Use	.280	.055	5.058	.000	S**
H11: Perceived cost → Intention To Use	-.019	.028	-.666	.505	NS

Note: \*\*: significant at  $P < 0.01$ ; S: Support; NS: Not support; P: P-value



$\chi^2_{(612)} = 999.183$ , CMIN/df = 2.855,  $p = .000$ ; GFI = 0.898; TLI = 0.944; CFI = 0.952; RMSEA = 0.055

**Figure 2:** Results of testing Hypotheses of Viet Nam

#### 5.5 Mediation analysis

Investigating the mediating role of trust in the relationship between the bank's CSR activities and its intention to use m-banking is also one of the key objective for the study. In order to ascertain significant

mediation effects, four conditions need to be met: (1) the three CSR initiatives should have a significant impact on trust; (2) the trust should significantly affect intention to use m-banking, (3) the predictor variables should significantly affect the dependent variable, and (4) the impact of the predictor variables on the dependent variable should not be statistically significant or be reduced after accounting for the effect of the mediator variable (trust) (Andrews, Netemeyer, Burton, Moberg, & Christiansen, 2004).

The first two conditions were tested by estimating Model 3 (the fully mediated model) in Table 6 which specifies that the two categories of CSR initiatives can influence intention to use m-banking indirectly through trust. Model 3 showed an acceptable fit ( $\chi^2 = 310.59$ ,  $df = 96$ ; CFI = 0.967; TLI = 0.958; GFI = 0.940, RMSEA = 0.060). Two (economic and environment responsibility) of the three predictor variables showed a significant impact on trust (except social responsibility), and trust had a significant effect on intention to use m-banking. Therefore, the first two conditions were met. The third condition was tested using Model 2 (the simple direct model). Since Model 2 is saturated, it showed a perfect fit to the data. The model estimation results in Table 18 show that all three categories of CSR initiatives had a significant effect on intention to use m-banking. Therefore, the third condition was satisfied. As shown in Table 6, the magnitudes of the predictor variables' path coefficients in Model 1 are smaller than those in Model 2 and all of the predictor variables in Model 2 were statistically significant.

Beside, in Model 1 all three predictor variables had a significant path coefficient but their path coefficients are smaller than those in model 2. These results satisfy the fourth condition. Hence, all four conditions were satisfied, and this ascertains the presence of significant mediating effects of trust.

A further point of interest was whether the mediation was of the “full” or “partial” kind. In order for full mediation to exist, two additional conditions had to be met: (1) the fit of Model 1 should not be better than that of Model 3, and (2) all the path coefficients of the predictor variables to the dependent variable should be statistically insignificant in Model 1 (Andrews et al., 2004). The estimated  $\chi^2$  statistics for Model 1 and Model 3 were 275.165 ( $df = 93$ ) and 310.59 ( $df = 96$ ), respectively. The  $\chi^2$  difference value of 35.425 for three degrees of freedom was significant ( $p = 0.00$ ). This suggests that Model 1 fits the data significantly better than Model 3. In addition, all three path coefficients of the predictor variables in Model 1 were significant.

Therefore, the trust partially mediated the effects of the CSR activities on intention to use m-banking.

**Table 6:** Results of Model testing

Fit estimate	$\chi^2$	df	$\chi^2$ diff	CFI	GFI	TLI	RMSEA
Model 1	275.165	93		0.972	0.947	0.963	0.057
Model 2	saturated						
Model 3	310.59	96	35.425	0.967	0.940	0.958	0.060

	Model 1 proposed model	Model 2 simple direct model	Model 3 fully mediated model
Economic ---> intention	0.312***	0.561***	
Social --->intention	0.256***	0.271**	
environment --->intention	0.187**	0.330***	
Economic --->trust	0.394***		0.434***
Social --->trust	0.017		0.055
environment --->trust	0.222**		0.245***
trust --->intention	0.628***		0.758***

\*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

## 6. Conclusions and implications

### 6.1 Conclusions

This study was conducted with the intention of providing further understanding regarding the main factors that could shape the clients' intention to use of m-banking in Vietnam. Therefore, to achieve this aim, a model comprising factors taken from TAM along with perceived risk, perceived cost, trust and three dimensions of corporate social responsibility was proposed. The statistical results supported the predictive power of the conceptual model in explaining adequate variance in behavioral intention (BI). Specifically, all values of  $R^2$  (BI (67.4 per cent), PU (52 per cent), Trust (73.5 per cent) were observed within an acceptable level of 30 per cent as suggested by Kline (2011). In addition, such values of  $R^2$  in the current study are fairly close to those accounted for by other IS and m-banking studies that have been formulated using TAM (Akturan & Tezcan, 2012; Venkatesh & Davis, 2000). This, in turn, provided further evidence supporting the conceptual model proposed in the current study to explain the Vietnamese customers' intention to use m-banking services.

The structural results indicated that behavioral intention to use m-banking is significantly determined, supported and validated by the concepts of CSR through trust. Among the subjective factors of CSR,

economic responsibility is found as a more significant determinant of customer trust than environmental and social responsibility. These findings could be explained by the nature of Bank service market. The bank industry is one of the most competitive and economic activities of banks including new job creation, value contributions and investments to the society are the main responsibility of Vietnam Banks. Besides, the results indicated that environmental responsibility affect to behavioral intention stronger than social responsibility. This can be attributed that during the past few years, Vietnamese consumers have been facing serious food safety, and health problems due to environment crisis. Therefore, banks should incorporate CSR initiatives in their integrated marketing communication strategy in particular branding strategy so as to attract more customers.

The statistical results highly proved Trust as a key factor predicting BI with a regression weight of 0.346. In other words, Vietnamese customers seem to be more motivated to adopt m-banking if they trust they trust banks. This could be attributed to in m-banking there are growing many concerns about risk in online banking services because it is operated in an open environment, their applications and outcomes are vulnerable to security and threats such as theft, fraud breaches of personal privacy and attacks by hackers. Theoretically, these results are parallel with prior studies of m-banking that have tested and approved trust as a crucial factor in determining the customers' intention. For example, Hanafizadeh et al., (2014a) conduct a study on m-banking adoption in Iran. Lee and Chung (2009) used the DeLone and McLean 2003 model in their investigation on m-banking adoption and indicated that trust, system quality and information quality were important factors to m-banking adoption in South Korea.

The empirical results have also showed that there is a relationship between perceived usefulness and adoption intention of m-banking with a regression weight of 0.237. Hence, it can be implied that Vietnamese customers will use m-banking if they perceive it as more effective, productive and a useful technology. This may be explained that m-banking is considered as a convenient way that helps customers access a wide range of high quality financial services anytime and anywhere. These findings consistent with previous study of m-banking that tested the relationship between perceived usefulness and customer's intention to use m-banking (Akturan & Tezcan, 2012; Hanafizadeh et al., 2014; Luarn & Lin, 2005).

In addition, the empirical results have also supported the significant relationship between perceived ease of use and behavioral intention with a weight of 0.225. This, in turn, means that respondents were more likely to have a higher intention to adopt m-banking if they perceived that the use of such technology was not difficult and required less effort. Given the particular nature of m-banking, a certain level of knowledge and skill is required to properly use such system. In fact, using m-banking requires customers to perform all tasks alone without any assistance from banking staff which, in turn, perceived ease of use could play a vital role in determining the customers' intention to use m-banking. Such results of perceived ease of use extracted in the current study are in line with existing literature in the IS area (Venkatesh et al., 2003) and in m-banking (Thakur & Ramesh , 2015; Gu et al., 2009; Hanafizadeh et al., 2014; Luarn & Lin, 2005). Perceived ease of use was also found to be a key predictor of perceived usefulness with a weight of 0.623. In other words, if the customers perceive that using m-banking needs less effort and is not difficult, they will perceive to use such a system more advantageously and be more useful in their daily life (Davis et al., 1989). By the same token, several studies in the area of m-banking have supported the instrumental influence of perceived ease of use as a contributing factor of behavioral intention via perceived usefulness (Gu et al., 2009; Luarn & Lin, 2005). Furthermore, perceived usefulness showed higher effect on intention to use m-banking in comparison with ease of use and this underlines seriousness of perceived usefulness in Vietnamese' m-banking usage. It sounds better to say that for the managers of the bank to improve users' attitudes, they need to pay more attention to improving system's usefulness while investing on its ease of use.

Surprisingly, this study discovered that perceived costs is not associated with the adoption level of mobile banking, whereas the findings of previous studies about m-banking adoption intention in Australia, Iran and Taiwan (Wessels & Drennan, 2010; Hanafizadeh et al.,2014; Luarn & Lin, 2005) have revealed that perceived cost was found to be affect consumer acceptance of m-banking. This contradiction could be explained by the fact that Vietnamese customers just have to pay 3.300 VND fee when they transfer money instead of 22.000 VND if they make that transaction at the bank.

Finally, this study empirically proved that perceived risk was a significant negative factor determining the behavioral intention to adopt m-banking with a regression weight of -0.192. Accordingly, it could be concluded that Vietnamese customers are less likely to be encouraged to adopt m-banking with a higher degree of expectation of suffering a loss as a result of using such a system. This relationship could return to the particular and sensitive nature of the banking industry in general as well as online banking technology which is universally characterized by a high uncertainty, intangibility, heterogeneity, and vagueness along with the absence of human interaction (Akturan & Tezcan, 2012). This could be attributed to the increase in



the number of electronic financial crimes in Vietnam recently. The result is consistent with previous findings such as Koenig-Lewis et al., (2010) found that there is strong relationship between the perceived risk on the German customers' acceptance of m-banking. In addition, the results also confirm the findings of Hanafizadeh et al., (2014b) that perceived risk negatively affect mobile banking adopt in Iran.

## **6.2 Implications**

The results give some important implication for developers, manager to formulating strategies. Firstly, perceived ease of browsing, identifying information and performing transactions should facilitate favorable and persuasive informative about new products and must demonstrate usefulness for consumers. Secondly, banks should attempt to enhance consumers' perceptions of the beneficial features and nature of m-banking. Marketing activities should focus on the tangible and immediate benefits of using m-banking services including quicker financial transaction speed, broader varieties of financial services, and enhanced financial transparency. Besides, expanding the range of financial services provided by the m-banking and maintaining the permanency of their performance efficiently and effectively, 24/7 will support the role of perceived usefulness (Zhou et al., 2010).

Moreover, a simple and friendly design of m-banking services will not only enhance the perceived ease of use in using such a channel but also will contribute to the role of perceived usefulness (Jaruwachirathanakul & Fink, 2005). Further, an effective, personal, and practical training program that will educate customers on how they can efficiently use m-banking could be more helpful to override any complexity and confusion related to the use of this system. Such a program could also enhance the individuals' self-efficacy which, in turn, contributes to their perception towards such systems as more useful and easier than less banking channels (Compeau & Higgins, 1995).

Concurrently, security risks related to the new innovation should be strongly minimized. Thus, banks should search for risk-reducing strategies that might contribute in arousing high confidence in prospecting customers. Taking this point further, it is suggested to focus on the prevention of intrusion, fraud and identity theft through the development of trust-building mechanisms to attract customers. Such mechanisms include designing a secure mechanism such as a system equipped with unique attributes and highly secure passwords, fingerprints, voice patterns and facial characteristics for users to enhance their confidence, instructing consumers about how safeguard their private information to prevent any misuse in virtual transactions. Other strategies that could be more useful in mitigating PR include a money-back guarantee policy in the case of mistakes and false transactional data entry, providing them with circulatory passwords and ability to change passwords to enhance security in personal financial transactions and providing the system with tracing codes in consumers' transactions for them to be able to track problems if they occurred seem to help this perception.

Trust was also identified as a factor that positively affected intention to use m-banking. However, in mobile banking context, building customer trust is very challenging. So how can m-banking service provider gain customer trust? The current findings suggest that besides using mechanism including long term service, statement of guarantee for every transaction and digital receipts and enhancing security controls when designing and updating banking apps, CSR initiatives can help to build customer trust and the findings also suggest that customer trust serves as a mediator in the relationship between CSR and intention to use m-banking service. This partial mediation effect of customer trust indicates that consumers' positive perceptions of CSR lead to customer trust and that customer trust, in turn, influences intention to use m-banking. Hence, in order to gain customer trust, doing CSR activities is a critical intermediate step for any banks. Therefore, managers should recognize the influence of CSR on gaining trust of customer to make them adopt m-banking services. Specially in Vietnam, a country with many environment crisis such as Formosa crisis and ThiVai River crisis, any banks focus on environment matter and economic matter it would get a lot of attention of customer and they can build the reputation and image so that they can build the customer trust which in turn improve the percentage of people to use bank service such as m-banking which has many risks.

In sum, bank managers often face tough choices in allocating company resources and in prioritizing strategic initiatives. This study's findings that CSR contributes to increase intention to use m-banking suggest that managers can obtain substantial benefits by integrating CSR initiatives with other strategies.

## **6.3 Theoretical and practical contribution**

The current study contributes to theory within the areas of m-banking and consumer adoption behavior. From a theoretical perspective, the results of the study provide new information related to consumer intention to adopt m-banking that has not been previously examined, to a large extent, in the existing related literature. Thus, the study adds to and expands our knowledge of the most important factors influencing consumer attitude and behavioral intention towards adopting m-banking services. In doing so, the current research has applied proven theory and constructs in traditional banking, online banking and m-banking

research, and has extended and validated the theoretical relationships between the focal constructs in the research model. In addition, the study makes a strong contribution to the current m-banking literature by extending TAM to include perceived risk, perceived cost, trust and three dimensions CSR that previous TAM studies in the context of m-banking did not include; as a consequence, they may have omitted crucial factors that influence consumer adoption of m-banking service. The results of the present study suggest that perceptions of CSR have a positive impact on customer trust in mobile banking service. Therefore, the findings of the present research are particularly noteworthy because this is the first research that proves the link between perceived CSR activities and customer trust in the context of mobile banking services.

The value of research in the area of marketing lies in its ability to be applied in practice. In this sense, the value of this research is that it expands our understanding of m-banking by identifying and synthesizing the most important factors influencing customer adoption of m-banking services in Vietnam. The practical implications of these findings are that adding to the understanding of m-banking from a consumer's behavior perspective and, therefore, act as a valuable base for banks.

Specifically, the findings highlight that particular factors (perceived ease of use, perceived usefulness, perceived risk, trust as well as CSR initiatives) will determine customer behavioral intention to adopt m-banking services.

### **6.6 Limitation and future research**

The current study is restricted by some limitations and can be reported as follow. First there are other factors that have been ignored and therefore should be measured by future researches such as self-efficacy, resistance change and technology readiness. Secondly, this study concentrated on the customers' intention adoption; yet, customer satisfaction, word-of-mouth, and customer loyalty as a consequence of using m-banking will be valuable directions to be examined in future researches. Thirdly, as the current research is applying the survey-based method, it could be argued that this method is prone to the inherent limitation of measurement errors. However, the measurement errors were reduced, as indicated by the study's good reliability and validity results. Finally, the current study used cross-sectional survey to examine customers' adoption of m-banking. Thus, future research is needed to replicate and validate the findings using a longitudinal research which would allow for further examination of m-banking adoption at multiple points of time.

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