

Chapter 23

Empirical Research on the Influence Factors of E-commerce Adoption Among E-commerce Companies in Vietnam



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Abstract This research examines the technological, organizational, and environmental factors that affect e-commerce adoption in Vietnam generally as well as B2B, B2C, and P2P model particularly. The TOE framework is implemented in order to investigate the degree of impact of these e-commerce adoption factors. This is a qualitative research, which uses the interview method to collect data. There are five participants from four companies in the interviews. After collecting data, ‘template analysis’ is used to analyse the effects of e-commerce adoption factors. The finding suggests that the companies should focus on the relative advantage, compatibility, complexity, trialability, top management support, size of company, strategic orientation, competitive environment, supplier and buyer pressure, and government support. Furthermore, these factors will affect different e-commerce models in different degrees. This research does not only provide a comprehensive picture of the e-commerce adoption in Vietnam market but also a deep insight view of the entire market and different e-commerce models.

Keywords E-commerce adoption · Technology–organization–environment (TOE) framework · Business model

1 Introduction

1.1 General Knowledge About E-Commerce in Vietnam

Since the implementation of ‘Doi moi’ policies which transform the economy from centrally planned economy to a market economy in 1986, the Vietnamese government tried to find ways of reducing the dependency of its economy on foreign

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countries and developing domestic market to sustain economic growth (Le et al. 2012). It is a milestone of bringing businesses the freedom of trading and the diversification of various types of goods and business models. Hence, Vietnam market has various opportunities to open to worldwide market, especially in the globalization era.

In today's world of globalization, companies and Government of different nations interact and integrate with each other. It provides various expanding business opportunities for entrepreneurship all around the world. In recent years, globalization has been not driven by only financial market, international trade, and technological development but also soaring flows of data and information (McKinsey 2016). It means that in order to adapt with the trend of the market, entrepreneurship must transform digitally (Biggiero 2007). According to Hart (2010), there is a link between globalization and digitalization. In Vietnam, the digitization is not a new term. According to General Secretary Dao, digitization has an enormous potential in Vietnam market (Customnews 2018). However, only a limited number of enterprises have started to digitize their business. Besides, Kantar Worldpanel, a global expert in shoppers' behaviour, has researched that Vietnam is one of the world's fastest growing e-commerce countries (Vietnamnet 2017). In Vietnam, there are 35.4 million e-commerce users in Vietnam currently and it is forecasted to increase by 6.6 million in 2021 (Eshopworld 2018).

The digital gap between developing countries and the developed one is remaining which might create many challenges for enterprises in developing countries generally and Vietnam particularly in the process of going digitally and participated in the e-commerce market comparing with those in developed countries. First of all, companies in developing countries have been inhibited in quality, availability, and cost of accessing such infrastructure (Humphrey et al. 2003). Secondly, in developing countries, the e-commerce awareness is limited due to the low level of information and communication technology (Mollaa and Licker 2005). Moreover, the readiness of institutions in developing countries is lacking which is an essential factor for the trust of conducting business (Oxley and Yeung 2001). Last but not least, enterprises in developing countries are small, which means that they lack adequate resources to invest in IS and IT and absorb possible failure (Goode and Stevens 2000). As the benefit of e-commerce brings to the national economy, it is vital to research about Vietnam e-commerce to overcome these challenges.

This research aims to investigate the e-commerce adoption factors from the organizational point of view in technological, organizational, and environmental contexts in Vietnam. The focus will be on the practice of e-commerce companies in Vietnam.

1.2 Literature Review

1.2.1 E-commerce Literature Review

E-commerce has been a relative new concept, which was added to business vocabulary during the 1970s (Wigand and Rolf 1997). Hence, e-commerce comes up with

various definitions (Rahayu and Day 2016). However, most of them agree that it is the use of the Internet to process and conduct the business (Delone and McLean 2004). Electronic commerce refers to activities of trading goods and services through the Internet platform, or in other words, it includes all transactions referring to the transfer of the ownership of goods and services conducted through the computer-mediated network (Anjali 2014). Furthermore, Agliavini et al. (2001) define that any economics transaction on the online platform can be classified as e-commerce. It is argued that enterprises should be at the forefront in order to take the opportunities which are offered by the Internet and e-commerce market so that they can expand their business to the global market (Kaynak et al. 2005). Furthermore, e-commerce creates new channels for companies to exchange information with customers, suppliers, and so on, with its advancement of ICT and the development of social commerce (Hajli and Shanmugam 2014).

E-commerce brings various benefits to companies (Nanehkaran 2013; Hajli and Shanmugam 2014). Firstly, thanks to the development of e-commerce, company can conduct the selling activities at any time as all buying and selling are on the online platform (Nanehkaran 2013). Thus, enterprises can enhance their ordering capacity with deeper product selection (Adelaar et al. 2004). Secondly, it helps a company to reduce the cost as they spend lower cost while providing a better quality of service (Santarelli and D'Altri 2003). It is because e-commerce reduces market entry cost and distribution cost and increases the efficiency of marketing and promotion which helps to reach more customers (Kaynak et al. 2005; Santarelli and D'Altri 2003). Thirdly, they do not need to set up company physically, instead, the core operating system is on the Internet (Nanehkaran 2013). On the one hand, companies can be aware of the potential benefits as how it can improve the profit and increase market share. In order to participate in the e-commerce market, companies should upgrade their communication system in both intra-organizational and inter-organizational levels (Hajli and Shanmugam 2014). As adopting the e-commerce, enterprises should redesign the relationship with consumers and reengineer its business process (Daniel et al. 2002). On the other hand, large companies who have full access to updated technology including computers, Web browsers, and telecommunication links will take the competitive advantage of those in order to reduce the cost (Riquelme 2002).

1.2.2 E-commerce Adoption Researches in Developing Countries

Policy makers and researchers assent to others that e-commerce plays an important role in forming socio-economic progress in developing countries (Sahay and Avgerou 2002). However, there is a gap between developing and developed countries in terms of information technology, which might affect the adoptions of e-commerce in developing countries. The adoption process within enterprises and the potential of e-commerce are not fully understood (Drew 2003; Qureshi and York 2008). In the past, there have been various studies which investigated the factors influencing e-commerce adoptions, but they just mainly focus on developed

countries (Ahmad et al. 2014). Mollaa and Licker (2005) point out that the understanding of drivers affecting e-commerce adoption among businesses in developing countries is limited by the absence of rigorous research. Moreover, Teo and Ranganathan (2004) also argue that there is a lack of studies on e-commerce conducted in the Asia Pacific region. As 80% of the population in the world is living in developing countries which are rapidly adopting e-commerce to their businesses, it is essential to investigate the key factors of e-commerce adoption (Molla and Heeks 2007).

1.2.3 E-commerce in Vietnam

As stated in the previous part, Vietnam is a potential market for e-commerce to develop as it has several favourable conditions for e-commerce development. Firstly, Vietnam has a youthful population, which has the keenest users of mobile devices in the region (Reed 2018). According to Nielsen (2015), a market research company estimated that Vietnam is the third country having the highest online time among Asian countries, just behind Singapore and Philippines. They estimated that Vietnamese people spend about 24.7 h online per week. Specifically, according to Vietnam e-commerce and information technology agency [VEITA] report (2015), there were 32% Internet users who accessed Internet 5–7 h/day and 26% accessed 3–5 h/day. They also stated that there were 62% of Internet users shopping online (Nielsen 2015).

According to Mr. Anh, deputy director of Vietnam E-commerce and Information Technology Agency [Vecita] under the Ministry of Industry and Trade, Vietnam e-commerce market growth rate was 35% and was higher than Japan by 2.5 times (Vietnamnews 2016). It is believed to grow more significantly in the future because various telecommunications companies have invested heavily in the infrastructure system in order to boost the country's digital economy.

Although there are various types of e-commerce, e-commerce in Vietnam is categorized into three main types: B2C e-commerce, B2B (Luan 2015), and a new type of e-commerce P2P (Ecommerce iq n.d.). Firstly, B2C refers to business to customer, which uses the Internet as a retail market channel (Drigas and Leliopoulos 2013). Hence, based on the B2C marketplace, companies can sell goods and services directly to customers. Secondly, B2B marketplace refers to the business to business. On B2B marketplace, the transaction will be conducted among different enterprises in an online environment (Kumar and Raheja 2012). Both B2C and B2B e-commerce marketplaces follow traditional e-commerce when both buyers and sellers have to connect through an intermediary instead of directly (Ferreiral and Ferreira 2004).

Thirdly, P2P refers to peer-to-peer e-commerce. On P2P electronic e-commerce, peers or players can connect directly with other peers without any intermediaries (Ferreiral and Ferreira 2004). It means that both buyers and sellers have to advertise their demands by themselves on the platform in order to match with others. This

means that they also have to manage the risks of transactions without prior experience and knowledge about each other (Xiong and Liu 2003). Because of the lack of information and statistics, it is not determined which type of e-commerce is the key driver of e-commerce in Vietnam.

Vietnam is a fruitful market for e-commerce to develop, but it is still in the very early stage, which might have various challenges to players such as the high cash on delivery (COD) rates and lack of customer trust and logistic infrastructure (Van 2018). About the method of payment, according to a news article published by the Vietnamese news based on the comments made by an official from the Department of E-commerce and Information Technology, Vietnamese customers still prefer cash on delivery (Vietnamnews 2016).

The online payment methods which include e-wallets, card switching system, payment cards, Internet banking, mobile banking, and credit cards, according to the Vietnam E-commerce Report (2015), are accounted for a small part of total payment of e-commerce. The reason for the less preference of online payment was the lack of trust of customers on e-commerce market, said Mr. Phan from the Vietnam Competition Authority. Furthermore, while e-commerce market in Vietnam developed rapidly, the development of online payment was still at the infant stage, said Do Thang Hai—Deputy Minister of Industry and Trade (Vietnamnews 2016). Moreover, there is still a gap in the market for the high quality of logistics. It is because the logistic cost is high, which accounts for 18% of GDP in 2017, higher than other developed countries and higher than the world average of 14% (World Bank Country Director 2018). Additionally, there are various challenges to e-commerce players.

Vietnam has favourable conditions for e-commerce to develop. However, as stated above, there have been various barriers for enterprises to penetrate this market. Hence, it is extremely important to investigate e-commerce adoption in Vietnam in order to find the most significant factors which affect the implementation of e-commerce. Le and Filiatrault (2006) research stated that there are some factors that have an influence on the adoption of e-commerce in Vietnam depending on users or prospectors. They include the size of the enterprise, its resources and its strategic orientation, the employees' knowledge of e-commerce, the attitudes of managers towards innovation and their knowledge of the new technologies and of e-commerce, the intensity of the competition, the degree of support of the government, the national infrastructure, the perceived relative advantages, and the complexity and compatibility of e-commerce.

1.2.4 E-commerce Adoption Framework

With the review of related literature and by combining with the actual situation of e-commerce development in Vietnam, this research is mainly based on Technology–Organization–Environment (TOE) framework (Tornatzky and Fleischer 1990). This framework consists of Roger's diffusion of innovation because it focuses on both internal and external aspects of a company, also the technological aspect of key

drivers for new technology diffusion. Hossain and Quaddus (2011) present that the TOE framework is one of a few adoption frameworks, which approaches towards the socio-economic features. It recognizes the interplay of technology development, organizational condition, and organizational reconfiguration formed by industry environment. Moreover, this framework provides a comprehensive picture about adoption factors, user adoption process, and implementation; predicted challenges; post-adoption diffusion affected by technology; the development of organizational capacity in using technology (Wang et al. 2010; Salwani et al. 2009). There is a controversy about which is the most suitable size of the company to apply the TOE framework. On the one hand, some scholars confirm the usefulness of TOE model in constructing adoption predictors in large companies, which have the continuity of consumers and fewer complaints (Parker and Castlemen 2009; Awa et al. 2011). On the other hand, Kuan and Chau (2001) state that the TOE framework is very helpful in proposing a perception-based EDI adoption model in small companies.

The major snag with the TOE framework is that some of the constructs in the adoption predictors are assumed to apply more to large organizations, where clients are sure of continuity and less complaints, than to SMEs (Parker and Castlemen 2009; Awa et al. 2011).

The TOE framework classifies three characteristics of a company, which has impact on the process of adopting, implementing, and using technology innovation (Robertson 2005; Tornatzky and Fleischer 1990). The three characteristics are explained as follows (Robertson 2005; Tornatzky and Fleischer 1990):

Technological context: it will describe both new and existing technology in the firm. It considers the complexity, compatibility, advantage, ease of use, and so on, of technology related to the firm. For example, the number of computers in company and types of technology applied within the company will be taken into consideration as it determines the ability of company moving to e-commerce market and other technology initiatives.

Organizational context: the organizational context will refer to the measurement of an organization such as company scope, size, and managerial beliefs.

Environmental context: it refers to the way how a company operates its business in given external factors having an impact on the company such as government regulations and so on.

There has been a massive study on the use of the TOE framework, in which we can see that the factors belonging to technology, organization, and environment are used to research the IT adoption. In terms of technological context, relative advantage and complexity, compatibility, and IT infrastructure, technology readiness is mostly used to investigate technology within the company. In fact, relative advantage, compatibility, complexity, trialability, and observability are innovation factors of technology in innovation diffusion influencing the innovation adoption framework (Rogres 1995). From the findings of these studies, compatibility, technology readiness, and relative advantage have a positive relationship with e-commerce adoption (Lertwongsatien and Wongpinunwatana 2003; Zhu et al. 2003; Low et al. 2011; Ming and Woan 2008; Alshamaila et al. 2013). In terms of organizational context, top management support, firm size, and prior experience are key drivers for

innovation adoption (Lertwongsatien and Wongpinunwatana 2003; Zhu et al. 2003; Low et al. 2011; Ming and Woan 2008; Alshamaila et al. 2013). Last but not least, competitiveness and market scope are the common environmental factors and have great effect on the prediction of the innovative adoption (Lertwongsatien and Wongpinunwatana 2003; Zhu et al. 2003; Low et al. 2011; Ming and Woan 2008; Alshamaila et al. 2013).

There have been numerous studies about e-commerce adoption (Poorangi et al. 2013; Mohammed et al. 2013; Ghobakhloo et al. 2011; Grandon and Pearson 2004a, b; Chong and Pervan 2007; Luqman 2011; Saffu et al. 2012; Premkumar and Roberts 1999; Elmazi et al. 2011; Huy and Filiatrault 2006; Cohen and Kallirroi 2006; Jeon et al. 2006). By reviewing the literature review, it can be seen that although many studies do not follow the TOE framework, their factors investigated are all classified into three main categories: technology, organization, and environment.

Besides those factors, some barrier factors of the entire market such as cash on delivery (COD), customer trust, and the investment from foreign corporation factor which is mentioned in the previous part are examined as the important parts affecting e-commerce adoption in Vietnam. It is because they are the feature of Vietnam e-commerce market which can drive the development trend of the entire market. These factors and their effects will be determined throughout the interviews.

1.2.5 Gap Analysis

Although e-commerce adoption is an interesting topic, which attracts many researchers, there is still a gap in the literature. Firstly, e-commerce adoption has been investigated in many developed countries. Additionally, scholars have argued that research findings of one country might not be suitable for other countries (Dewan and Kraemer 2000). It means that the findings of e-commerce in developed countries might not be applicable in developing countries. Hence, there is a lack of empirical research about e-commerce market in developing countries. Secondly, it is undeniable that although there are many challenges for e-commerce companies in the market in developing countries, for instance, in Vietnam, it is still a fruitful market to exploit. However, there is only one academic research about e-commerce adoption in Vietnam market by Le and Filiatrault (2006). Hence, it is essential to investigate the e-commerce adoption in Vietnam. Thirdly, most of the research about e-commerce adoption use a quantitative method (Gefen and Straub 2000; Lertwongsatien and Wongpinunwatana 2003; Grandon and Pearson 2004a, b; Mollaa and Licker 2005; Seyal and Rahman 2003; Le and Filiatrault 2006), which has the purpose of finding the factors which have the most significant effect on the e-commerce adoption in the whole picture. However, this research aims to find the e-commerce adoption factors from the organizational perspective of e-commerce companies in Vietnam. Hence, qualitative methods, interview for more specific, will be employed in order to utilize the information in the interviews. Last but not least, there is no research which investigates the different successful adoption factors

among different types of e-commerce: B2B, B2C, and P2P. Hence, it is essential to examine and compare successful factors among these e-commerce categories.

In order to achieve the aim of this research, this study focuses on answering the following questions:

What are the significant Technological, Environmental, and Organizational factors that can lead to a successful e-commerce adoption among e-commerce companies from organizational point of view?

What are the Technological, Environmental, and Organizational differences among successful factors among three types of e-commerce: B2B, B2C, P2P

What are the other general factors that affect managers of enterprises in Vietnam in adopting e-commerce?

2 Research Method

The research interest focuses on e-commerce adoption in the context of technology, organization, and environment in Vietnam. An important goal of this research is to provide an understanding of e-commerce adoption factors in Vietnam. The main focus of this research is e-commerce companies in Vietnam. In order to seek the answers, the strategy of this research is based on data collection and hypothesis development. Thus, the data will be tested and analysed to find the result. Hence, the positivism is the suitable philosophy for this research. Additionally, deduction approach is employed in this research as the TOE framework is used to analyse the impacts of e-commerce factors. Furthermore, this research is designed as qualitative data as it focuses on the manager's deep insight view of each e-commerce category. Moreover, the sample in this research is supposed to be purposive because of the possibility of fully assessing to managers of each e-commerce company. Hence, the experiment strategy is employed. Moreover, in the framework of this research, it only investigates the opinion of managers in e-commerce company at the time of conducting the interview; it should be a cross-sectional research.

The literature has found many methodologies used in order to investigate the adoption in developing countries. In general, both qualitative and quantitative methods are used to examine the factors in e-commerce adoption. Specifically, the quantitative method includes a structured questionnaire and close-ended question, which can be very difficult to explore the e-commerce adoption and innovation as well (Bryman and Bell 2015). It is because e-commerce in Vietnam is still in the infant stage, and every development or activities of e-commerce are assumed to be innovative changes. It is important to use an in-depth approach to get more detail in this emerging market environment. Hence, this research will use qualitative data. The emphasis of this strategy is more on words rather than quantifiable data (Bryman and Bell 2015). This approach is considered to be more relevant as it allows in-depth exploration and examination of firm innovation. Additionally, the qualitative method, especially interview, which involves open-ended question can investigate the innovation in e-commerce adoption aspect more deeply (Silverman 2016). Moreover, due to the time limitation, conducting the interview will be quicker

than approaching a large number of enterprises by questionnaire. It is because the nature of companies in Vietnam is not open to talk about their resources and business as they are scared of losing their competitive advantage.

2.1 Sample Selection

Purposive sampling, which is a non-probability and the selected criteria are based on the goals of the research, is employed (Bryman and Bell 2015). The criteria of choosing interviewees are the managers of e-commerce websites in Vietnam who have knowledge about e-commerce and understand all resources of their company. As stated above, according to EcommerceIQ Asia, the e-commerce in Vietnam is divided into three main types: B2B, B2C, and P2P. The sample is chosen from the list of top e-commerce websites provided by Ecommerce iq (n.d.) and the list of top e-commerce websites provided by Iprice (2018). The characteristic of the companies in the list is that almost all of them have a large number of employees. It is because that there are some websites which are owned by Vietnamese big corporations such as VCCorp and FPT or belong to foreign corporations, namely Alibaba or Telenor International Telecommunication Group. Additionally, some of the companies go from offline to online and remain their business on both two channels; meanwhile, others just do their business totally online. Hence, their total employees are accounted for both staff working online and offline. There is a minority of companies in the list that has less than 10 employees. Currently, most e-commerce companies tend to expand their scope to others' model. It means that, they do not operate their business in only B2B, B2C, and C2C. In the framework of this study, two companies which are doing business in both B2B and B2C and two P2P companies will be chosen to conduct the interviews (Table 23.1).

By analysing the literature, it can be seen that scholars have used several variables to investigate the e-commerce adoption. There are still many conflicts about the results among them. In the framework of this research, the author will select variables which have been identified to be significant factors in previous researches. Firstly, the technological factors included are Relative advantage, compatibility, complexity, and trialability. Secondly, organizational factors included are top management support, Size of company, and Strategic orientation of the enterprise. Thirdly, environmental factors included are Competitive environment pressure,

Table 23.1 List of companies interviewed

Company	Type	Capital source	Offline channel	Interviewee
Company 1	B2B + B2C	Vietnam	Yes	Com1-B2C Com1-B2B
Company 2	B2B+B2C	China	No	Com2
Company 3	P2P	Norway	No	Com3
Company 4	P2P	Singapore	No	Com4

buyers/suppliers pressure, and government support. Additionally, other variables will be determined during the interview process.

2.2 Interview Process

A semi-structure interview will be carried out to discover the topic. During the interview, researchers can flexibly ask different questions based on how the interviewees respond.

The structure of the interview is as follows:

Interviewees describe the changes of Vietnam e-commerce market in recent years in Vietnam and their companies’ position regarding the development of Vietnamese e-commerce market in the future.

Interviewees describe their understandings about e-commerce adoption of their companies in the context of Vietnamese e-commerce.

The Technological, Environmental, and Organizational factors that affect managers of enterprises.

The significant Technological, Environmental, and Organizational factors that can lead to a successful e-commerce adoption in Vietnam and among e-commerce companies.

Once the data were transcribed, a process called ‘the Template analysis’ (King 2012) is deployed to analyse based on the TOE framework.

3 Result and Discussion

3.1 Technological, Organizational, and Environmental Factors Affecting E-commerce Adoption

Generally, the results are quite consistent with previous studies that each specific factor in three categories—technology, organization, and environment—has an

Table 23.2 TOE factors of different kinds of e-commerce companies

Technological factors					Organizational factors			Environmental factors		
Company	Relative advantage	Compatibility	Complexity	Triability	Top management support	Size	Strategic orientation	Competitive environment pressure	Buyers/Suppliers pressure	Government support
Com1-B2B	No effect	No effect	No effect	No effect	M	M	M	H	L	L
Com2-B2B	No effect	No effect	No effect	No effect	M	M	M	M	L	H
Com1-B2C	M	H	H	L	M	H	M	H	L	L
Com2-B2C	M	H	H	L	M	M	H	M	L	H
Com3-P2P	M	H	H	L	H	L	M	H	L	L
Com4-P2P	L	H	H	L	M	L	H	H	L	L

effect on e-commerce companies (Poorangi et al. 2013; Ghobakhloo et al. 2011; Grandon and Pearson 2004a, b; Chong and Pervan 2007; Luqman 2011; Saffu et al. 2012; Mirchandani and Motwani 2001; Huy and Filiatrault 2006; Cohen and Kallirroi 2006). However, the impact level of each factor varies depending on different kinds of business models. Table 23.2 illustrates the level of effect on different kinds of e-commerce companies.

3.1.1 Technological Factors

From Table 23.2, it is clear to see that the technological factors do not have any impact on e-commerce adoption of the B2B model, which is totally different with the results of previous studies. In fact, technological factors are investigated as the insignificant factors on the B2B model in previous studies (Lip-Sam and Hock-Eam 2011; Cindy et al. 2005; Sila 2013). According to the results found in Chap. 5, in Vietnam, there is no ecosystem for the B2B model; due to the Vietnamese consumer habits, they will contact the wholesalers directly. Thus, e-commerce companies usually find their B2B customers and vendors through their network.

Unlike the results found for the B2B model, the results of B2C are quite similar with previous studies (Tom and Ngai 2006; AlGhamdi et al. 2013; Dubelaar et al. 2005; Ardura and Artola 2010). It shows that technological factors have a strong impact on e-commerce adoption. It is explained by all interviewees that their online market platform is the only place for them to approach customers and execute all transactions. Hence, technological support is an essential part to contribute to the success of the online platform. Relative advantage was determined to be the most important technological factor among others, according to the previous studies (Tom and Ngai 2006). However, it was found in this research that the effect of relative advantage is ranked behind the compatibility and complexity in Vietnam market. It is because Vietnam e-commerce companies want to provide a user-friendly system design for every consumer even those who are not familiar with using computers. The trialability is ranked as the low impact factor as all B2C companies mainly focus on the ease of use in their system. Hence, they have not tried too much effort for applying innovation to their business model.

P2P model is also affected by the compatibility and complexity most and trialability least, based on the results discussed in the previous chapter. Because they have the same purpose as the B2C model as they want to provide a user-friendly system for everyone. Especially, their target users can be everyone who want to sell and buy on online marketplace. However, there is a different effect of relative advantage on the two P2P model companies. The reason is that on the one hand, company 4 is a new player in the market. Their strategy is to attract the traffics to their website by supporting shipping fee, taking no commission from vendors and providing the most convenient system to users. On the other hand, company 3 is in a mature stage as they already have their market share and a certain amount of traffic. In recent years, they began upon focusing on applying innovative filters on their

website. Hence, the effect of relative advantage factor depends on the stage of development of that company and its strategy.

3.1.2 Organizational Factors

The effect of firm size is a controversy in previous studies. There are some studies that show that firm size plays an important role in B2B adoption (Sila 2013; Thatcher et al. 2002), while others state that it is insignificant (Cindy et al. 2005; Lip-Sam and Hock-Eam 2011). The results of this research interestingly show that firm size is not strongly significant or insignificant. Instead, it just has a medium effect on the B2B model. Top management factor also does not have a strong impact on this model as found in the result of previous studies (Sila 2013; Lip-Sam and Hock-Eam 2011; Thatcher et al. 2002). However, it was found to have a medium effect on the B2B model based on the result found in Chap. 5. It is explained by the interviewees that because B2B business mainly uses company network, the support of manager just has a certain impact on the adoption. The strategic orientation which is not mentioned much in previous studies about B2B model adoption also shows to have a medium impact on this model adoption with the same reason as top management support. To sum up, this model is mainly based on the network and sales are not usually disclosed publicly. Hence, it is hard to identify which factor should be focused more to adopt B2B model in Vietnam.

Additionally, like model B2B, top manager just has a medium level of effect. This factor is not also a consideration factor for the B2C model in previous studies. In fact, this model is affected by customer factor rather than top manager factor because if there are demands, the e-commerce companies will try to satisfy those demands (Com1, B2C). All interviewees agree that top management support does not affect much the development of the B2C model. The firm size is not also considered as an important factor in previous studies, but it plays an essential role in model B2C of company 1. As company 1 has its own logistic department, they can control the orders from the time of order placement to the time of arrival. Hence, they need a huge number of staff, especially in logistic department to operate their business. On the other hand, model B2C of company 2 outsources their logistics; hence, the firm size does not affect their business significantly as company 1. Hence, it just has a medium effect on the B2C model of company 2. The importance of strategic orientation stated in previous studies on the B2C model (Dubelaar et al. 2005) is also true for the B2C model in Vietnam. It has medium and high impact on company 1 and 2, respectively. To sum up, all organization factors have a degree of impact on the B2C model in Vietnam.

The result shows the low effect by firm size on the P2P model. It is because their main responsibility is to provide a marketplace for users to trade, which does not need a huge human resource. In fact, these P2P companies just have less than 200 staff throughout Vietnam. Furthermore, company 3 is affected strongly by top management support and medium by strategic orientation, which is opposite to company 4. The reason is that company 4 is a new player in Vietnam e-commerce

market; they are still in the process of identifying their market positioning and long-term development. Hence, the strategic orientation will drive the direction of e-commerce adoption in entire market. Top management effect is also important but not as important as strategic orientation. Company 3, on the other hand, is in mature stage. They have already defined their market positioning and target customers. Thus, their strategic orientation does not strongly affect their e-commerce adoption. Instead, they need the support from managers to create the space for creation and research on employee’s own way. Hence, they can provide users more innovative and convenience products. It can be said that the effect of top management support and strategic orientation depend on the stage of development of the company.

3.1.3 Environmental Factors

It is interesting that the environmental effect does not depend on the type of business model, instead the company itself. Competitive environment pressure is the only factor that has a significant effect on all companies that participated in the interviews as it makes the market more vibrant. It had been investigated as an important factor in adopting e-commerce in previous studies (Huy and Filiatrault 2006; Cohen and Kallirroi 2006) (Table 23.3). Additionally, previous studies also suggest that buyers’ and suppliers’ pressure affect e-commerce adoption (Ghobakhloo et al. 2011; Al-Hudhaif and Alkubeyyer 2011; Saffu et al. 2012; Huy and Filiatrault 2006). However, this factor just has a low effect on e-commerce companies in Vietnam. It is explained that the e-commerce website is an effective sales channel of all vendors, so they are very cooperative with e-commerce companies to make several attractive deals for consumers. Furthermore, the government support factor only has effect on company 2 which has top managers from Western countries whose working style is different from Asian working style. It can lead to difficulty when they work with the Vietnamese government. The effect of government support factor on companies 1, 3, and 4 is low, which is opposite to the result of Al-Weshah and Al-Zubi (2012) and

Table 23.3 Environmental effect grouped by company

Company	Environmental factors		
	Competitive environment pressure	Buyers/Suppliers pressure	Government support
Com1-B2B	H	L	L
Com1-B2C	H	L	L
Com2-B2B	M	L	H
Com2-B2C	M	L	H
Com3-P2P	H	L	L
Com4-P2P	H	L	L

Ifinedo (2011). They explain that the government just provides the policies and guideline for e-commerce market. Sometimes, these policies and guidelines limit their ability of releasing 'hot deal' to consumers.

3.2 Other Factors Affecting E-commerce Adoption in Vietnam Market

Besides the above factors, there are some other feature factors of Vietnam e-commerce market, which strongly drive the development of entire market. The importance of these factors is emphasized by all interviewees. Firstly, as stated in literature review part, the total time spent online by Vietnamese people is very high. It changes the shopping habit and the demand of customer on e-commerce market which are the fundamental factors motivating the development of e-commerce in early stage. They do not only drive the way of e-commerce operation but also the products offered on online marketplace.

Secondly, as also mentioned in literature review, the habit of using bank card is the challenge of adopting e-commerce. Hence, e-commerce companies have to provide cash on delivery service (COD), which requires a huge resource. This is also a typical characteristic of e-commerce market in developing countries like Vietnam. It is because the banking system has not been developed (Com3). Every transaction made by banking card cost an extra fee which discourages the online payment. Furthermore, online banking system has not gained the trust from Vietnamese consumers yet (Com2). Thus, they prefer COD more than other type of payment.

Thirdly, there has been a huge investment from foreign companies to e-commerce market in Vietnam. Hence, the invested company can take advantage of the latest technology and have more chances to develop (Com2). Moreover, they can support their users' business such as free shipping fee, free advertising fee, and commission fee. (Com4).

Fourth, the new model P2P has been emerged, which drives e-commerce market into different way from the past. In the past, the suppliers on online market must have business licences. However, on P2P marketplace, everyone can be a vendor. It might make the e-commerce more exciting and vibrant but also more complicated in the quality assurance of goods. Hence, P2P companies have to implement many policies, guidelines, and also innovative filters to match the demands and supplies on their website and also reduce the number of bad vendors (Com3, Com4). There are some other supportive factors which contribute to the process of adopting e-commerce such as personality of CEO, employees' knowledge of e-commerce which creates the appropriate spirit, effect, and efficient working styles.

3.3 The Contribution of This Study

This study has both academic and practical contribution. Firstly, this research is the second research investigating the Vietnam e-commerce market. Unlike the previous study which just gives the relationship between the market and adoption factors, this study uses a method to give deep insight view about the entire market and its adopting factors by using a qualitative research method. Furthermore, it also examines how these factors affect different kinds of e-commerce models in Vietnam. It is the motivation for further studies to examine the adoption factors of each e-commerce model in depth. Secondly, this study provides both general and particular views about the market for managers in e-commerce companies in Vietnam. Based on the result of this study, managers will know which are the e-commerce adoption factors in Vietnam market and which are the successful adoption factors for their business model. They can have some adjustments in their company's short-term and long-term plans in order to make the company's success.

4 Conclusion

In conclusion, regarding the research question of this research to find the technological, organizational, and technological factors affecting e-commerce adoption in Vietnam, the results and discussion suggest that companies should focus on the following factors based on the type of business model implementation: the relative advantage, compatibility, complexity trialability, top management support, size of company, strategic orientation, competitive environment, supplier and buyer pressure, and government support.

Depending on the type of model, these factors will have different levels of impact on the company. There are some differences among successful factors among the three business models in Vietnam. Firstly, the technological factors do not have any impact on the B2B model because e-commerce companies in Vietnam will use their network to approach their vendors and consumers in the B2B model. On the other hand, technological factors have a strong impact on both B2C and P2P models. Compatibility and complexity were found to have the most significant effect on these models, followed by relative advantage. Additionally, trialability has the lowest effect on all models. Secondly, organizational factors are very important in which top management support and strategic orientation are ranked having a medium-to-high effect on each model. Besides, company size level effect will depend on how the company operates the business and offers logistic services to consumers. Thirdly, it is interesting that the environmental factors do not affect e-commerce companies by their model, instead the effect is on the company itself. The competitive environment pressure factor has the most impact on e-commerce companies. In contrast, buyers' and suppliers' pressure has the lowest effect. Additionally, the government support was found to have a low impact on the company which has top managers

from Asian countries. However, it was found that this factor has a high impact on companies which have top managers from Western countries.

Additionally, the P2P model should create more policies, guidelines, attractive events, and innovative filters in order to balance their demands and supplies on their website and reduce bad vendors. Furthermore, the B2C model should be based on their strategy in order to define the appropriate factors which should be focused on. Last but not least, there are also some other supportive factors which should be focused on such as the CEO personality and employees' knowledge of e-commerce.

5 Outlook For Future Research

The first limitation of this research is the concerning about the comparative analysis of opinion from interviewees with different background in e-commerce sector. Hence, the result from interviewees with different backgrounds will be biased towards their background. It opens the opportunities for further research which investigate one specific area of e-commerce sector, involving the interviewees in the same background. It can provide in-depth insight on specific areas in e-commerce sector. However, due to the limitation of network to e-commerce company to invite interviewees and the limitation of literature of e-commerce adoption factor in Vietnam, this research significantly provides a general view about e-commerce adoption factors and the impact level of these factors on different kinds of e-commerce models.

Further study on this new phenomenon and its conditions for successful implementation is encouraged.

Regardless of the limitations highlighted and areas for future research identified, this research conducted here represents an important step in researching this topic in a developing economy context. As such, it offers new insights into an area of growing interest to research globally.

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References

- Adelaar, T., Bouwman, H., & Steinfield, C. (2004). Enhancing customer value through click-and-mortar e-commerce: Implications for geographical market reach and customer type. *Telematics and Informatics*, 21(2), 167–182.
- Agliavini, M., Ravarini, A., & Antonelli, A. (2001). An evaluation model for electronic commerce activities within SMEs. *Information Technology and Management*, 2(2), 211–230.
- Ahmad, S. Z., Bakar, A. R. A., Faziharudean, T. M., & Zaki, K. A. M. (2014). An empirical study of factors affecting E-commerce adoption among small- and medium-sized enterprises in a

- developing country: Evidence from Malaysia. *Information Technology for Development*, 21(4), 555–572.
- AlGhamdi, R., Nguyen, A., & Jones, V. (2013). A study of influential factors in the adoption and diffusion of B2C E-commerce. *International Journal of Advanced Computer Science and Applications*, 4(1), 89–94.
- Al-Hudhaif, S. A., & Alkubeyyer, A. (2011). E-commerce adoption factors in Saudi Arabia. *International Journal of Business and Management*, 6(9), 122–135.
- Alshamaila, Y., Papagiannidis, S., & Li, F. (2013). Cloud computing adoption by SMEs in the north east of England: A multi-perspective framework. *Journal of Enterprise Information Management*, 26(3), 250–275.
- Al-Weshah, G. A., & Al-Zubi, K. (2012). E-business enablers and barriers: Empirical study of SMEs in Jordanian communication sector. *Global Journal of Business Research*, 6(3), 1–15.
- Anjali, G. (2014). E-commerce: role of E-commerce in today's business. *International Journal of Computing and Corporate Research*, 4(1)
- Ardura, R. I., & Artola, M. A. (2010). Toward a longitudinal model of e-commerce: Environmental, technological, and organizational drivers of B2C adoption. *The Information Society*, 26(3), 209–227.
- Awa, H., Eze, S., Urieto, J., & Inyang, B. (2011). Upper echelon theory: A major determinant of information technology (IT) adoption by SMEs in Nigeria. *Journal of Systems and Information Technology*, 13(2), 144–162.
- Biggiaro, L. (2007). Industrial and knowledge relocation strategies under the challenges of globalization and digitalization: The move of small and medium enterprises among territorial systems. *Entrepreneurship and Regional Development*, 18(6), 443–471.
- Bryman, A., & Bell, E. (2015). Analysing qualitative data. In *Business research methods* (pp. 406–407). Oxford University Press.
- Chong, S., & Pervan, G. (2007). Factors influencing the extent of deployment of electronic commerce for small and medium sized enterprises. *Journal of Electronic Commerce in Organizations*, 5(1), 1–29.
- Cindy, C., Karthik, I., & Richard, G. (2005). Predicting the level of B2B e-commerce in industrial organizations. *Industrial Marketing Management*, 34(3), 221–234.
- Cohen, S., & Kallirroi, G. (2006). E-commerce investments from an SME perspective: Costs, benefits and processes. *Electronic Journal of Information Systems Evaluation*, 9(2), 45–56.
- Daniel, E., Wilson, H., & Myers, A. (2002). Adoption of E-commerce by SMEs in the UK. Adoption of e-commerce by SMEs in the UK. *International Small Business Journal*, 20(3), 253–270.
- Delone, W. H., & McLean, E. R. (2004). Measuring e-commerce success: applying the DeLone & McLean information systems success model. *International Journal of Electronic Commerce*, 9(1), 31–47.
- Dewan, S., & Kraemer, K. L. (2000). Information technology and productivity: Preliminary evidence from country-level data. *Management Science*, 46(4), 548–562.
- Digital globalization: the new era of global flows. (2016). Retrieved from McKinsey&Company website <https://www.mckinsey.com/~media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Digital%20globalization%20The%20new%20era%20of%20global%20flows/MGI-Digital-globalization-Executive-summary.ashx>
- Drew, S. (2003). Strategic uses of e-commerce by SMEs in the East of England. *European Management Journal*, 21(1), 79–88.
- Drigas, A., & Leliopoulos, P. (2013). Business to consumer (B2C) E-commerce decade evolution. *International Journal of Knowledge Society Research*, 4(4), 1–10.
- Dubelaar, C., Sohal, A., & Savic, V. (2005). Benefits, impediments and critical success factors in B2C E-business adoption. *Technovation*, 25(11), 1251–1262.
- Ecommerce iq. (n.d.). Retrieved July 22, 2018, from <https://ecommerceiq.asia/top-ecommerce-sites-vietnam/>

- Elmazi, I., Vukaj, H., Gega, E., & Elmazi, L. (2011). Information technology and its effects in SME. The case of Albania. *International Journal of Management Cases*, 13(4), 291–298.
- Eshopworld. (2018). *42 million online shoppers in Vietnam by 2021*. Retrieved July 22, 2018, from <https://www.eshopworld.com/blog-articles/vietnam-ecommerce-insights/>
- Ferreiral, R. D., & Ferreira, P. J. J. (2004). Building an E-marketplace on a peer-to-peer infrastructure. *International Journal of Computer Integrated Manufacturing (IJCIM)*, 17(3), 254–264.
- Gefen, D., & Straub, D. (2000). The relative importance of perceived ease of use in IS adoption: A study of E-commerce adoption. *Journal of the Association for Information Systems*, 1, 8.
- Ghobakhloo, M., Arias-Aranda, D., & Benitez-Amado, J. (2011). Adoption of e-commerce applications in SMEs. *Industrial Management & Data Systems*, 111(8), 1238–1269.
- Goode, S., & Stevens, K. (2000). An analysis of the business characteristics of adopters and non-adopters of WWW. *Technology Information and Management*, 1(1), 129–154.
- Grandon, E., & Pearson, J. M. (2004a). E-commerce adoption: Perceptions of managers/owners of small and medium sized firms in Chile. *Communications of the Association for Information Systems*, 13, 8.
- Grandon, E. E., & Pearson, J. M. (2004b). Electronic commerce adoption: An empirical study of small and medium US business. *Information and Management*, 42, 197–216.
- Growing a digital economy in Vietnam. (2018). Retrieved from Customs News website <https://customsnews.vn/growing-a-digital-economy-in-vietnam-4233.html>
- Hajli, S. J., & Shanmugam, M. (2014). A practical model for e-commerce adoption in Iran. *Journal of Enterprise Information Management*, 27(6), 719–730.
- Hart, J. (2010). Globalization and digitalization. *Transformacje*, 2010, 227–237.
- Hossain, M., & Quaddus, M. (2011). The adoption and continued usage intention of RFID: An integrated framework. *Information Technology & People*, 24(3), 236–256.
- Humphrey, J., Mansell, R., Pare, D., Schmitz, H (2003). *The reality of E-commerce with developing countries*. Media@LSE
- Huy, L.V., Filiatrault (2006). The Adoption of E-commerce in SMEs in Vietnam: A Study of Users and Prospectors. PACIS 2006 Proceedings. <https://aisel.aisnet.org/pacis2006/74>
- Ifinedo, P. (2011). An empirical analysis of factors influencing Internet/e-business technologies adoption by SMEs in Canada. *International Journal of Information Technology and Decision Making*, 10(4), 731–766.
- Iprice. (2018). Mapping Vietnam's Leading E-commerce Players. Retrieved from <https://iprice.vn/insights/mapofecommerce/en/>
- Jeon, B. N., Han, K. S., & Lee, M. J. (2006). Determining factors for the adoption of e-business: The case of SMEs in Korea. *Applied Economics*, 38(16), 1905–1916.
- Kaynak, E., Tatoglu, E., & Kula, V. (2005). An analysis of the factors affecting the adoption of electronic commerce by. *SMEs: Evidence from an Emerging Market International Market Review*, 22(6), 623–640.
- King, N. (2012). *Doing template analysis. Qualitative organizational research* (pp. 118–134). Sage.
- Kuan, K., & Chau, P. (2001). A perception-based model for EDI adoption in small businesses using technology-organization-environment framework. *Information & Management*, 38(8), 507–521.
- Kumar, V., Raheja, G. (2012). Business to Business (B2B) and Business to Consumer management (B2C). *International Journal of Computers & Technology*, 3(3).
- Le, V. H., & Filiatrault, P. (2006). The adoption of E-commerce in SMEs in Vietnam - A study of users and prospectors, in *The Tenth Pacific Asia Conference on Information Systems (PACIS 2006)*.
- Le, V. H., Rowe, F., Truex, D., & Huynh, Q. M. (2012). An empirical study of determinants of e-commerce adoption in SMEs in Vietnam: An economy in transition. *Journal of Global Information Management (JGIM)*, 20(3), 32.
- Lertwongsatien, C., & Wongpinunwatana, N. (2003). E-commerce adoption in Thailand: An empirical study of small and medium enterprises (SMEs). *Journal of Global Information Technology Management*, 6(3), 67–83.

- Lip-Sam, T., & Hock-Eam, L. (2011). Estimating the determinants of B2B ecommerce adoption among small & medium enterprises. *International Journal of Business and Society*, 12(1), 15–13.
- Low, C., Chen, Y., & Wu, M. (2011). Understanding the determinants of cloud computing adoption. *Industrial Management & Data Systems*, 111(7), 1006–1023.
- Luan, D.N. (2015). *Tổng quan về thương mại điện tử ở Việt Nam*. Retrieved from <http://tapchitaichinh.vn/nghien-cuu-trao-doi/trao-doi-binh-luan/tong-quan-vethuong-mai-dien-tu-o-viet-nam-68104.html>
- Luqman, A. (2011). E-business adoption amongst SMEs: A structural equation modeling approach. *Journal of Internet Banking and Commerce*, 16(2), 99–112.
- Ming, J. P., & Woan, Y. J. (2008). Determinants of the adoption of enterprise resource planning within the technology-organization-environment framework: Taiwan's communications industry. *Journal of Computer Information Systems*, 48(3), 94–102.
- Mirchandani, A. A., & Motwani, J. (2001). Understanding small business electronic commerce adoption: An empirical analysis. *The Journal of Computer Information Systems*, 70–73.
- Mohammed, A. J., Almsafir, K. M., & Alnaser, S. M. A. (2013). The factors that affects e-commerce adoption in small and medium enterprise: A review. *Australian Journal of Basic and Applied Sciences*, 7(10), 406–412.
- Molla, A., & Heeks, R. (2007). Exploring e-commerce benefits for businesses in a developing country. *The Information Society*, 23(2), 95–108.
- Mollaa, A., & Licker, S. P. (2005). eCommerce adoption in developing countries: A model and instrument. *Information & Management*, 42(6), 877–899.
- Nanehkaran, Y. A. (2013). An Introduction to electronic commerce. *International Journal of Scientific & Technology Research*, 2, 4.
- Nielsen. (2015). *Cross-Platform Insights 2015*. Retrieved from <http://www.nielsen.com/content/dam/niensenglobal/hk/docs/hksyndicated/cross-platform-insights-15-16.pdf>
- Oxley, J., & Yeung, B. (2001). E-commerce readiness: Institutional environment and international competitiveness. *Journal of International Business*, 32(4), 705–724.
- Parker, C., & Castlemen, T. (2009). Small firm e-business adoption: A critical analysis of theory. *Journal of Enterprise Information Management*, 22(1/2), 167–182.
- Poorangi, M. M., Khin, W. S. E., Nikoonejad, S., & Kardevani, A. (2013). E-commerce adoption in Malaysian small and medium enterprises practitioner firms: A revisit on Rogers' model. *Annals of the Brazilian Academy of Sciences*, 85(4), 1593–1604.
- Premkumar, G., & Roberts, M. (1999). Adoption of new information technologies in rural small businesses. *The International Journal of Management Science*, 27, 467–484.
- Qureshi, S., York, A.S. (2008). *Information Technology Adoption by Small Businesses in Minority and Ethnic Communities*. Hawaii International Conference on System Sciences, Proceedings of the 41st Annual
- Rahayu, R., & Day, J. (2016). E-commerce adoption by SMEs in developing countries: Evidence from Indonesia. *Eurasian Business Review*, 7(1), 25–41.
- Reed, J. (2018). Vietnam's emerging consumers embrace ecommerce. Retrieved from <https://www.ft.com/content/e8f5ca78-43b5-11e8-93cf-67ac3a6482fd>
- Riquelme, H. (2002). Commercial internet adoption in China: Comparing the experience of small, medium and large businesses. *Internet Research*, 12(3), 276–286.
- Robertson. R.A. (2005). *A Framework of Critical Drivers in Successful Business-to-Business E-Commerce*. Southeast Conference 2005 Proceedings
- Rogres, E. M. (1995). *Diffusion of innovation* (4th ed.). A Division of Simon & Schuster Inc..
- Saffu, K., Walker, J. H., & Mazurek, M. (2012). Perceived strategic value and e-commerce adoption among SMEs in Slovakia. *Journal of Internet Commerce*, 11(1), 1–23.
- Sahay, S., & Avgerou, C. (2002). Introducing the special issue on information and communication technologies in developing countries. *The Information Society*, 18(2), 73–76.

- Salwani, M., Marthandan, G., Norzaidi, M., & Chong, S. (2009). E-commerce usage and business performance in the Malaysian tourism sector: Empirical analysis. *Information Management & Computer Security*, 17(2), 166–185.
- Santarelli, E., & D’Altri, S. (2003). The diffusion of E-commerce among SMEs: Theoretical implications and empirical evidence. *Small Business Economics*, 21(3), 273–283.
- Seyal, A. H., & Rahman, M. N. A. (2003). A preliminary investigation of E-commerce adoption in small & medium enterprises in Brunei. *Journal of Global Information Technology Management*, 6(2), 6–26.
- Sila, I. (2013). Factors affecting the adoption of B2B e-commerce technologies. *Electronic Commerce Research*, 13(2), 199–236.
- Silverman, D. (2016). *Qualitative research* (4th ed.). SAGE.
- Teo, T. S. H., & Ranganathan, C. (2004). Adopters and non-adopters of business-to-business electronic commerce in Singapore. *Information & Management*, 42, 89–102.
- Thatcher, M. B. S., Foster, W., & Zhua, L. (2002). B2B e-commerce adoption decisions in Taiwan: The interaction of cultural and other institutional factors. *Electronic Commerce Research and Applications*, 5(2), 92–104.
- Tom, L. M., & Ngai, W. T. E. (2006). Predicting the organisational adoption of B2C e-commerce: An empirical study. *Industrial Management & Data Systems*, 106(8), 1133–1147.
- Tornatzky, L., & Fleischer, M. (1990). *The process of technology innovation*. Lexington Books.
- Van, T. (2018). Vietnamese e-commerce market a tough nut to crack. Retrieved from <http://www.vir.com.vn/vietnamese-e-commerce-market-a-tough-nut-to-crack-56791.html>
- Vietnam E-commerce Report. (2015). Retrieved from <http://www.vecita.gov.vn/anpham/260/Vietnam-E-commerce-Report-2015/en>
- Vietnamnet. (2017). Lazada, kỳ tích 5 năm ‘mở cửa’ thương mại điện tử Việt. Retrieved July 22, 2018., from <http://vietnamnet.vn/vn/kinh-doanh/thi-truong/lazada-ky-tich-5-nam-mo-cua-thuong-mai-dien-tu-viet-362531.html>
- Vietnamnews. (2016). *E-commerce needs consumers to trust*. Retrieved July 22, 2018, from <http://vietnamnews.vn/economy/296636/e-commerce-needs-consumers-to-trust.html#b5qzCob05DyqVw5t.97>
- Wang, Y., Wang, Y., & Yang, Y. (2010). Understanding the determinants of RFID adoption in the manufacturing industry. *Technological Forecasting and Social Change*, 77(5), 803–815.
- Wigand, & Rolf, T. (1997). Electronic commerce: Definition, theory, and context. *The Information Society*, 13(1), 1–16.
- World Bank Country Director Remarks at Vietnam Logistics Forum 2017. Retrieved July 22, 2018., from <http://www.worldbank.org/en/news/speech/2017/12/15/world-bank-country-director-remarks-at-vietnam-logistics-forum-2017>
- Xiong, L., & Liu, L. (2003). A reputation-based trust model for peer-to-peer e-commerce communities. *Proceedings of the 4th ACM Conference on Electronic Commerce*, 2003, 228–229.
- Zhu, K., Kraemer, K., & Xu, S. (2003). Electronic business adoption by European firms: A cross-country assessment of the facilitators and inhibitors. *European Journal of Information Systems*, 12(4), 251–268.