# THE INFLUENCE OF SOCIAL MEDIA AND PERCEIVED LOGISTICS SERVICE QUALITY: THE APPLICATION OF EXPECTATION CONFIRMATION THEORY

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# ABSTRACT


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| **Title of Dissertation** | THE INFLUENCE OF SOCIAL MEDIA AND PERCEIVED LOGISTICS SERVICE QUALITY: THE APPLICATION OF EXPECTATION CONFIRMATION THEORY |
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The internet has changed the way business is conducted and the current online retail environment has presented new opportunities for both retailers and consumers. Regionally, Thailand was ranked number one in South East Asia in terms of online retail value. In addition, the popular channel for online information gathering is via social media and Thailand's usage rate of social media is higher than the average global number. With the above information, it makes Thailand an interesting place to further investigate both social media and the online shopping context. To complete an online shopping transaction, the physical product needs to be delivered to the customer as the final step. Therefore, logistics services have been found as an important factor affecting customer satisfaction in this business.

This research was conducted with the purpose to determine the relationships between the influence of social media and perceived logistics service quality on online purchase behavior and its consequences. The first objective is to determine whether communication via social media has a significant influence on online purchase behavior. In addition, the dimension of logistics service quality has been added, and the second objective to prove whether logistics has any influence on purchase behavior. Moreover, the third objective of this research is to determine the relationship between pre and post purchase behavior based on the mentioned variables.

To achieve the objectives of this research, a conceptual model has been developed based on the framework of Expectation Confirmation Theory (ECT) and the Theory of Planned Behavior (TPB). To prove the relationship between the variables in the conceptual model, quantitative research based on self-administered questionnaires was conducted. The variables in this research are categorized into three main groups. First, the

group of independent variables consists of peer communication of e-WOM via social media, click on social media advertisement, and perceived logistics service quality. The second group includes the variables based on the Theory of Planned Behavior, which include attitude towards online shopping, subjective norms, and perceived behavioral control. The third group is the group of dependent variables, which consists of online purchase behavior, satisfaction, and intention to repurchase. Questionnaires were distributed electronically and 375 sets were completely filled. However, only 345 of 375 sets of questionnaires passed the screening questions at a response rate of 92%. To verify the causal effect between each variable in the conceptual model, statistical analyses including reliability tests, factor analysis, correlation analysis, and multiple regression analysis, were employed.

The results from the empirical analysis show that 10 out of 11 hypotheses were supported. First, peer communication of e-WOM via social media has a positive effect on online purchase behavior via the main three variables of TPB. Next, click on social media advertisement has also shown a result in the same direction. However, perceived logistics service quality was found not to have a significant effect on online purchase behavior but was found to have significant effect on satisfaction. Finally, the intention to repurchase was significantly influenced by satisfaction.

The empirical results confirm the validity of both the Expectation Confirmation Theory and the Theory of Planned Behavior in the era of e-commerce and social media. For the implication of this research in e-commerce business, heavy attention should be paid to the usage of social media to influence consumers to buy online. Moreover, the quality of logistics service has been proven to be one of the factors that would make consumers satisfied in online retail business. Therefore, logistics strategy should be carefully planned. In order to extend the use of the results from this research, recommendations on policy were also made. First, the government should facilitate the expansion of both household and mobile broadband internet by easing the regulations to expedite the bidding process of the new technology. Next, to increase online payments, the government should both ease the regulations to establish new and safer forms of online payment platform but also apply stricter fines and penalties for financial crime.

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# CHAPTER 1
# INTRODUCTION

Chapter one is an introductory chapter which presents the overall picture of this study. It includes six main topics, beginning with the background of the study, which provides general information on the online shopping industry, the importance of logistics in online shopping, and the relationship between online shopping and social media, along with brief information on related theories. Next, the significance of the study explains the implications of the study for both academia and business. The statement of the problem is then presented, followed by the objective of this study. The chapter ends with the scope and limitations of the study.

## 1.1 Background of the study

The internet has changed the way consumers acquire information about products. From the traditional way of information gathering via offline media or friends or family members, now users use the internet to search for product information (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004). As a result of internet usage growth, consumers have rapidly switched their shopping habits to online shopping. Global online sales statistics reveal that the value of global online shopping has dramatically increased every year, from 2.3 trillion U.S. Dollars in 2017 to an expected 4 trillion U.S. Dollars by 2021 (Statista, 2018e). Furthermore, the share of online retail reached 10% for the first time in 2017 and is expected to grow higher to reach 15% in 2021 (Statista, 2017b). In addition, the number of online shoppers is also expected to increase from 1.52 billion users in 2016 to 2.21 billion users in 2021 (eMarketer, 2017a).

In order to complete any online shopping transaction, each physical good needs to be delivered to the customers as the final step. Although the level of satisfaction of online shopping customers depends on several factors such as website design, product offering, product information (Evanschitzky, Iyer, Hesse, & Ahlert, 2004), trust, experience (O. Pappas, G. Pateli, N. Giannakos, & Chrissikopoulos, 2014), and website

response time (S. Kim & Stoel, 2004), the logistics service is also an important factor affecting customer satisfaction (Jay, John, & Harry, 2008; Mentzer & Williams, 2001). Thus, in order to deliver products to customers as effectively as possible, it an effective logistics system is required. Therefore, great attention needs to be paid to this final step and this activity should not be ignored.

As mentioned above, people now use the internet to obtain information about products instead of traditional offline methods. One important channel for information gathering is social media. Data shows that the number of social media users has been increasing every year and reached 2.46 billion users in 2017, which represents more than 70% of internet users worldwide. With the increase in the adoption of smart devices such as smartphones and tablets, consumers can easily access social network applications at any time and any place (Statista, 2018c). For example, Facebook has 2.07 billion active monthly users, which made it the market leader in terms of its reach (Facebook, 2018). Furthermore, social media has also allowed people to communicate, share information, share photos or videos, or even their whereabouts with others. As a result, the internet has been transformed from being an online information provider to an online information sharing medium among its users. They can share their thoughts with each other, interact between friends, or even expand the communication network to each other's mutual friends (Muralidharan & Men, 2015). Therefore, social media nowadays is a topic of interest for both academic and business research.

Data from the study shows that Thai online users are very active in terms of online shopping activity. Data from Global Web Index shows that 73% of internet users in Thailand made at least one online purchase in September 2017, which ranks as one of the top 10 in the world (Valentine, 2017). Moreover, considering the monetary value of B2C e-commerce in all ASEAN countries, Thailand was ranked number one in this region (ETDA, 2017). In addition, the online retail business in Thailand has experienced double digit growth since 2012 (ETDA, 2017; MarketLine, 2016). As a result, several foreign companies have decided to invest in Thailand in e-commerce-related businesses.

First, the Alibaba group, which has already invested in Thailand since it took over the leader of e-commerce websites, Lazada.co.th in 2016 (Bloomberg.com, 2016), announced that it will inject 320 million USD more in Thailand for the construction of a digital hub in the eastern economic corridor project of the government. Moreover, JD.com, the second biggest Chinese e-commerce business, has announced a partnership with Central Retail Group, one of the leading retail companies in Thailand. In order to support and facilitate the payment system of e-commerce, Kasikorn Bank formed a partnership with one of the leading Chinese companies, Tencent Holdings in 2016 (Reuters.com, 2018).

Apart from the online shopping activity, 86.9% of all Thai internet users are now using social media (ETDA, 2018), which ranks Thailand in the top 10 list of the whole Asia Pacific region (Statista, 2017d). The information presented above makes Thailand a very interesting place to study in both the social media and the online shopping contexts.

With the fact that both social media and online shopping has been on the rise, this study aims to study the relationship between social media usage and people's online shopping behavior; in particular, how each aspect of social media usage influences people's final decision to make online purchases. However, as mentioned in the previous section, there are other factors in addition to the influence of social media that play significant roles in the online shopping decision-making process, for example, the quality of the logistics service. Several studies on logistics have shown a clear relationship between logistics service quality and customer satisfaction in e-commerce business (Feng, Zheng, & Tan, 2007; Gil Saura, Servera Francés, Berenguer Contrí, & Fuentes Blasco, 2008; Jay et al., 2008; Y. Lin et al., 2014; Rao, Goldsby, Griffis, & Iyengar, 2011). Thus, it shows the importance of logistics in online shopping decision making. Rather than focusing only on the influence of social media and its relationship with consumer behavior in their e-commerce decision-making process, the influence of logistics has

also been included in this study.

Even though several previous studies have revealed the relationship between the influence of social media and consumer purchasing behavior, they lack one of the essential elements of online shopping, which is the logistics service which is necessary to complete each online shopping transaction. In addition, only a limited number of those studies has included the consumer's post purchase behavior, which is the level of satisfaction about their online shopping experience, which eventually leads to customer loyalty. Therefore, the purpose of this study is to determine the relationship between the pre-purchase and post-purchase behavior of consumers when they make online purchases. To be more specific, the pre-purchase behavior is based on the influence of social media and the perceived logistics service quality, which affects the expectations of consumers. Moreover, post-purchase behavior is based on their degree of satisfaction, which leads to the intention to repurchase online. To determine the relationship between these factors, the theoretical basis of this aspect of the study was based on the framework of the Expectation-Confirmation Theory of Oliver (1980), to investigate and predict consumers' post-purchase behavior based on their level of satisfaction and their expectations prior to use of the product or service (Richard L. Oliver, 1980). Furthermore, another theoretical basis of this study that was employed to determine the relationships between other constructs was based on the Theory of Planned Behavior, which has been proposed by Ajzen in 1985.

### 1.2 Significance of the Study

This study aims to explain the influence of the previously-mentioned constructs as well as to determine the managerial business implications for the e-commerce business sector. Even though a number of existing researches have studied the influence of social media on consumer behavior in an e-commerce context, studies that integrate social media usage and post purchase behavior are few in number. In addition, the integration of perceived logistics service quality in this study makes it more unique in terms of the decision-making process and purchasing behavior. Furthermore, how it

affects the satisfaction level and post purchase behavior is also an additional aspect of this study. As a result, this research is academically significant since it helps in confirming the theoretical framework of the Expectation Confirmation Theory to explain the relationships between the use of social media, perceived logistics service quality and expectations on online purchasing and the intention to repurchase as a form of post purchase behavior. In addition, the detailed investigation of each construct in regard to the influence of social media on online purchasing behavior is explained by the Theory of Planned Behavior, which has been widely-employed in academic research.

As mentioned in several studies, in order to encourage successful customer retention in online shopping, one main factor is the satisfaction of online purchase customers (Gwo-Guang & Hsiu-Fen, 2005; O. Pappas et al., 2014; Zhou, Dai, & Zhang, 2007). Thus, the factors that impact customer satisfaction are key factors in the success of this type of business (Garver & Gagnon, 2002; Schaupp & Bélanger, 2005). Therefore, this study will benefit the online shopping industry by identifying the social media-related factors that affect customers' buying behavior. In addition, to maintain the impressive growth in this segment, customer loyalty is also important. Hence, the significance of this research is also evident in the way online shopping businesses develop their marketing strategies through the use of social media and logistics strategy to facilitate their long term business success.

Many research papers have shown clear predictive indicators of behavioral intention to repurchase based on the level of satisfaction (C. Kim, Galliers, Shin, Ryoo, & Kim, 2012; Qureshi et al., 2009; Yi & La, 2004). Although the level of satisfaction of customers can derive from many factors, one construct that has been proposed in Expectation Confirmation Theory (ECT) is the expectations of customers before making purchases. The expectation can come from many sources, including the consumption of information through social media. From the aspect of media usage expense, social media has been identified as a cost-effective marketing method and usually incurs minimal cost for the marketing of any product or service (Edosomwan,

Prakasan, Kouame, Watson, & Seymour, 2011). Thus, this research also plays a significant financial role in the aspect of cost efficiency in media spending for the online shopping business sector. Moreover, another factor that could impact the satisfaction of online shoppers is logistics service quality, which will also be investigated in this study. Therefore, this research also benefits online business in terms of how logistics strategy should be planned in order to satisfy online customers.

As mentioned above, this research focuses on the factors that influence online purchase customers. Consequently, it provides benefits to the online business sector. Moreover, this research focuses on the online shopping behavior of Thailand's consumers. As a policy of the government of Thailand, a new plan has been initiated called Thailand 4.0. It can be briefly explained as a new economic model through which Thailand can take advantage of creativity, new technology and innovation (Jones & Pimdee, 2017). As a result, this research, which partially involves the study of the relationship between social media and online shopping, would also make a significant contribution to the policy of the government in regard to the Thailand 4.0 economic model.

To conclude the section on the significance of this study, it will provide benefits to the business world as it will identify the determinants of customer loyalty, which could result from the level of satisfaction as a result of the experience of consumers after they actually make purchases. In addition, in order to predict consumer purchasing behavior, the study of the influence of social media and perceived logistics service quality can help businesses to develop marketing tools, would also provide benefits to the marketing segment of this industry. Furthermore, in regard to the Thailand 4.0 policy of the Thai government, another benefit of this study is in providing information related to the use of new technology; i.e. online shopping and social media. On the other hand, from an academic point of view, this study would extend the use of Expectation Confirmation Theory and the Theory of Planned Behavior in the context of e-commerce, logistics, and social media.

### 1.3 Statement of the Problem

Since technology is a part of everybody's daily life, making products available to be purchased online is the key to survive in this highly competitive environment. It is widely-accepted that the widespread use of mobile phone technology has reduced barriers in terms of reachability (Kuoppamäki, Taipale, & Wilska, 2017), and online shopping websites have also benefited from this popularity. In some research, it has been found that users nowadays prefer to shop online rather than use traditional forms of shopping (Shaikh & Daddikar, 2017). However, since almost every product is now available online, it is a not an easy task to gain a competitive advantage in the online shopping business. To be successful, or even to survive, in this highly competitive business, it has been shown in previous researches that customer loyalty is a long-term key success factor (Zheng, Lee, & Cheung, 2017). Moreover, the nature of the online shopping industry is quite unique in terms of customer behavior since the switching cost of customers is close to zero as switching to another supplier is just a click away (Zheng et al., 2017). Therefore, to win customer loyalty in this business is not an easy job.

As mentioned in the Expectation Confirmation Theory (ECT), to study the post-purchase behavior, the researcher needs to investigate customers' satisfaction level and their expectations prior to their purchase decision making (Richard L. Oliver, 1980). Therefore, this study aims to investigate the antecedents of customer intention to repurchase using the influence of social media as a determinant of customer expectations. Another important factor that affects loyalty and satisfaction and has been revealed in previous research is the quality of the logistics service. It has been found that logistics service quality affects both customer loyalty directly and indirectly via the level of satisfaction (Yu-Kai, Yi-Wei, & Shi-Wei, 2009). Even though there are quite a number of researches that studied the relationship between social media influence and online shopping behavior, a very limited amount of research has studied the big picture that links the influence of social media and perceived logistics service quality on expectations, the level of satisfaction after actual purchase, and post purchase behavior. Furthermore, detailed study of each construct of social media influence and its

relationship with consumer behavior via the use of the Theory of Planned Behavior will also be added into this study.

### 1.4 The objectives of the study

This study, as a quantitative research, has two main objectives. The first objective is from the marketing perspective, which is to study the influence of social media on the purchasing behavior of consumers and also its effect after making a purchase. With the rise of social media, it is worth dividing the influence of social media into its components and study effects of these components on purchasing behavior individually using the framework from the Theory of Planned Behavior (TPB). The second objective of this research is from the supply chain management perspective. In order to complete any online shopping transaction for physical product, a logistics service is needed since they actually deliver the products to the customers. This study would also like to include the construct of perceived logistics service quality in the empirical study and measure its effect on purchasing behavior, along with the post-purchase effect using the framework from Expectation Confirmation Theory (ECT).

### 1.5 The Scope of the Study

E-commerce is divided into five main categories; Business to Consumer (B2C), Business to Business (B2B), Consumer to Consumer (C2C), Business to Administration (B2A), and Consumer to Administration (C2A) (Delfmann, Albers, & Gehring, 2002). In this research, the main focus is the study of the behavior of internet users in Thailand through their online purchasing behavior when purchasing from commercial sellers. According to the study of Applegate, Holsapple, Kalakota, Radermacher, and Whinston (1996), this type of online purchase behavior is categorized as the Business to Consumer type of e-commerce (B2C). In addition to the information already mentioned in the previous section, this research study is mainly focused on the online purchasing behavior of internet users, loyalty, and the influence of social media and logistics. Therefore, other aspects of the internet, service, and marketing such as internet security, network automation, and trust are not included in this study. Furthermore, the geographic scope is limited to online purchase customers

in Thailand.

# CHAPTER 2
# LITERATURE REVIEW

Chapter two begins with a presentation of the overall online retail situation, followed by the definition of e-commerce. A detailed analysis of online shopping in Thailand is then discussed, along with the related policy of the Thai government. After that, the details of Thailand's internet user profiles, e-commerce data, and online retail market data are discussed. The topic of logistics, its definition, and its relationship with online shopping, along with related models are then presented. Social media and its relationship with online shopping is then reviewed. Moreover, the related theories, Expectation Confirmation Theory and the Theory of Planned Behavior, along with related literatures, are discussed later in this chapter. The chapter ends with the conceptual foundation, the relationships between variables and hypothesis development, along with the conceptual model.

## 2.1 Overall Online Retail Situation

Retail shopping activity has changed dramatically since the emergence of the internet. The current business environment of online retailing has presented both threats to traditional retail business and opportunities for consumers in the way goods are bought and sold (Avinandan & Prithwiraj, 2007). The latest figures show that by 2022, 25% of traditional shopping malls in the United States will be affected by the growth of online stores and will eventually be forced out of business. This process has already started; by the end of 2017, more than 8,600 traditional shopping malls in the United States alone had closed. Moreover, in 2017, amazon.com alone has a 5% market share of the retail market in the United States (Carr, 2017). Additionally, amazon.com has also predicted that its sales will have a faster growth rate than Walmart, which is one of the biggest and most successful retail stores in the United States (IBM, 2012). From the information above, it is clear that online shopping has played and will continue to play, a very important role in this new era.

When considering a global perspective of world-wide internet transactions, it can be seen that online shopping is also an important element of internet transactions globally.

The statistics show that in 2016, approximately 1.61 billion people purchased at least one thing online. As a result, the value of global online retail transactions reached 1.9 trillion U.S. Dollars in 2016. Furthermore, global online retail sales is expected to reach 4.06 trillion U.S. Dollars by 2020 (Statista, 2017e). Therefore, online shopping is now considered one of the most important retail shopping activities. From a macro perspective, online shopping activity can be analyzed regionally. Data shows that in 2016, online shopping in the Asia Pacific region accounted for 12.1% of the total retail value of the whole region, while for North America it was 8.1% (Statista, 2017c).

Based on the information presented above, it is worth taking a closer look at Thailand and Asia in more detail. In 2017, Thailand was listed in the top 10 list of countries with the highest percentage of internet users who shop online at least once a month. China was ranked number one as 83% of internet users made online purchases at least once in 2017, it was ranked at number ten where 74% of internet users made online purchases in 2017 (Valentine, 2017). This statistic shows that the majority of internet users in Thailand consider online shopping as a regular activity. Moreover, data shows that in 2016, the overall value of e-commerce of the nation have reached 2.26 trillion Baht (ETDA, 2017) or 79.87 billion USD (BOT, 2018a), while the overall Gross Domestic Product (GDP) of Thailand in 2016 was 9.823 trillion Baht (BOT, 2018b) or 306.45 billion USD (BOT, 2018a). From the macroeconomic data that has been mentioned earlier, e-commerce was accounted for 26.1% of total GDP. As a result, this makes Thailand a very interesting place to study on this online shopping industry. However, to understand more about online shopping industry, the explanation on e-commerce should be discussed first.

**2.2 Definition of e-commerce**

Online retail transactions are considered as a part of e-commerce. Therefore, a detailed description of e-commerce is necessary in this section. As mentioned in the previous chapter, the internet has changed the way people communicate with each other and has also created new platforms where people do business, exchange business information, and conduct commercial activities, which are considered as parts of e-commerce

(Thatcher, Foster, & Zhu, 2006). Furthermore, e-commerce has been defined as the sharing of information and doing business transaction using the network of information technology (Eastin, 2002). Moreover, Delfmann et al. (2002) defined e-commerce as business transactions via electronic networks that include the automatic processing of data. Therefore, this research defines e-commerce as process of doing business transactions, either selling or buying or both, via the networking of computers, which is the internet.

A number of methods have been employed to classify or group the relationships between each party in e-commerce business. This study follows the classification system of Delfmann et al. (2002) since it deals directly with e-commerce and logistics, which relates to the current research. According to Delfmann et al. (2002), there are three main players in e-commerce business, businesses, consumers, and administration or government. Therefore, there are five main categories of e-commerce, which are Business to Business (B2B), Business to Consumer (B2C), Consumer to Consumer (C2C), Business to Administration (B2A), and Consumer to Administration (C2A). A detailed explanation of each category of e-commerce is presented as follows.

2.2.1 Business to Business e-commerce (B2B e-commerce)

First, when both the sellers and the buyers are business organizations, it is called Business to Business or the B2B type of e-commerce (Afuah & Tucci, 2001). Even though the definition of B2B e-commerce has been widely understood, a study by Thatcher et al. (2006) offered a more detail definition of B2B e-commerce as the process of organizing information and technology to support the supply chain of businesses, ranging from suppliers to customers. However, the more traditional form of B2B tends to focus more on the usage of electronic data interchange or EDI, which indicates that the communication between the sellers and buyers is done electronically. However, with the latest technology that has emerged in the world of information technology, B2B e-commerce has moved beyond just a web page from which business customers can order products from suppliers. It involves the exchange of data that results in a customer relationship via the use of data sharing and cooperation between

the suppliers and customers (Peppers & Rogers, 2001). In addition, some business organizations provide limited access to their enterprise resource planning system to their customers. This allows customers and suppliers to have access to the same set of databases and help customers to see the required data directly from the suppliers' server. As a result, B2B e-commerce not only facilitates shortened lead times, but it also increases productivity, reduces communication errors, reduces cost, and decreases the number of employees needed (Zeng, Wen, & Yen, 2003).

2.2.2 Business to Consumer e-commerce (B2C e-commerce)

In contrast the previous section, if the sellers are business organizations and the buyers are end users or individual consumers, it is called Business to Consumer or the B2C type of e-commerce (Applegate et al., 1996). Unlike the B2B type of e-commerce, B2C e-commerce mostly involves the elements of profit making for the sellers (Zeng et al., 2003). In this type of e-commerce, all the transactions including service and product offering, financial transactions, and product descriptions, that had previously been performed by in-store staffs, have been replaced by electronic channels (Bidgoli, 2002). An example of this type of e-commerce in Thailand is lazada.co.th or weloveshopping.com. Apart from the most popular online retail websites, B2C can also include e-commerce business in the service sector such as travel-based service, banking, and insurance company websites (Acampora, Alghazzawi, Hagras, & Vitiello, 2016).

2.2.3 Consumer to Consumer e-commerce (C2C e-commerce)

This type of e-commerce can also be called Peer-to-Peer (P2P) e-commerce (Acampora et al., 2016). It involves two consumers between which business transactions are conducted as all the information is communicated between these two consumers. However, most of the time these transactions are conducted through a third party website which provides a transaction service or acts as a middleman for the financial transaction. An example of this type of web service is an auction website where the website acts as a platform where the auction takes place . Only a flat service fee is charged by the website owner who is not a party to the transaction (Duffy & Dale, 2002;

Nemat, 2011).

2.2.4 Business to Administration e-commerce (B2A e-commerce)

This type of e-commerce is sometimes called Business to Government or B2G e-commerce. It can also be classified as a type of B2B because the way transactions are conducted between two parties is similar to B2B e-commerce. However, the difference is that the buyer is a public sector government agency at the local or national level. Moreover, the platform for e-commerce in this sector is usually a reverse auction system where businesses bid in government purchase projects (Nemat, 2011). In Thailand, this platform is called e-auction. However, as of 2017, the value of B2A or B2G e-commerce in Thailand dramatically decreased because the government suspended the e-auction system for all agencies (ETDA, 2017).

2.2.5 Consumer to Administration e-commerce (C2A e-commerce)

This type of e-commerce involves transactions between individual citizens and government agencies via the internet. Similar to the B2A type of e-commerce, the government agencies involved in this type of e-commerce range from local to national levels (Nemat, 2011). An example of a C2A transaction is the filing of personal income tax via the online system of the revenue department.

**2.3 Online Shopping in Thailand**

From the information presented above, Thailand is one of the top 10 countries where internet users purchase online at least once a month (Valentine, 2017). It makes Thailand an interesting place for further investigation. One aspect that will continue setting the direction for the behavior of internet users in the country is the policy of the government in this new era, which is called Thailand 4.0 (Techsauce, 2017).

2.3.1Thailand 4.0, the policy of the Government of Thailand

Thailand 4.0 is a nationwide policy that was set by the government under Prime Minister Gen. Prayut Chan-O-Cha in 2017. It involves every key aspect of nationwide development to prepare the country to cope with the rapid change in the global

environment in the 21st century. In order to understand this policy, the development of the policy from the Thailand 1.0 model to the Thailand 4.0 model should be discussed.

For the first model called Thailand 1.0, the government and the resources of the country were focused on the agricultural sector. In the next model, or Thailand 2.0, the focus of the government shifted towards light industry. During this period, this model helped to transform the country from low-income to medium-income status. Next, for Thailand 3.0, which is the current model, the country and the policy of the government changed to focus on heavy manufacturing industries with the goal of boosting economic growth. However, in the current period of the Thailand 3.0 model, the country has also faced many problems ranging from being stuck in the medium income trap to imbalanced development.

With the problems that have occurred during the current period, the government of Thailand has initiated the model of Thailand 4.0 with the purpose of restructuring the whole country's economy, which will drive the country to become an innovation-based economy. In addition, with the aim of this policy to significantly change the country's economic structure, this policy has been categorized into three main elements. First is transforming the country into a knowledge-based economy. This element is driven by the allocation of resources and budget to research and development in science and innovation. The second element is to focus on the development of an "inclusive society" in which the government aims to use the results of the first element to build the prosperity of the nation. The third element aims to set the goal of sustainable growth for the nation where, the government aims to focus on the development of national policy that is considered to be environmentally-friendly. In addition, the Thailand 4.0 policy also aims to change the way business is conducted from more traditional ways to a "Smart" way, for example, the transformation of traditional enterprises into smart enterprises and even regular farming techniques into smart farming (PRD, 2017).

In order to achieve the goals that have been set in the Thailand 4.0 framework, with the

purpose to transform traditional business into smart business in this era, the government plans to allocate a part of the budget to construct broadband internet infrastructure to cover all rural areas across Thailand. Broadband internet coverage would help facilitate the promotion and development of e-commerce channels throughout the country, even in rural areas, which will allow people in those areas to conduct e-commerce business for local products (Export.gov, 2017).

From the government's policy of Thailand 4.0 mentioned above, especially the allocation of budget to support the expansion of broadband internet infrastructure to increase the coverage in the country, it can be expected that Thai people's accessibility to the internet would be increased tremendously. According to the country's internet user behavior statistics in 2016, online shopping has been listed as one of the top five online activities (ETDA, 2018). With the expansion of the infrastructure of broadband internet, which will eventually result in increasing the number of internet users in Thailand, it could be expected that e-commerce transactions for the entire country will increase.

2.3.2 Thailand's internet users

As mentioned above, online shopping in Thailand has been listed in the world's top 10 in terms of the percentage of online shoppers as a proportion of the whole nation's internet users. Moreover, with the policy of Thailand 4.0, which will enhance the broadband internet infrastructure to cover all areas of the country, it is worth investigating the details of the country's internet usage. According to data from the National Electronics and Computer Technology Center (NECTEC) and National Broadcasting and Telecommunications Commission, Thailand had 43.87 million internet users in 2016, increasing from 39.47 million people in 2015 and 27.65 million people in 2014 (NBTC, 2017a). Out of the total population of around 66 million people (DOPA, 2017), Thailand's internet users in 2016 accounted for 66% of the whole country's population. This number indicates that the majority of Thai residents are internet users.

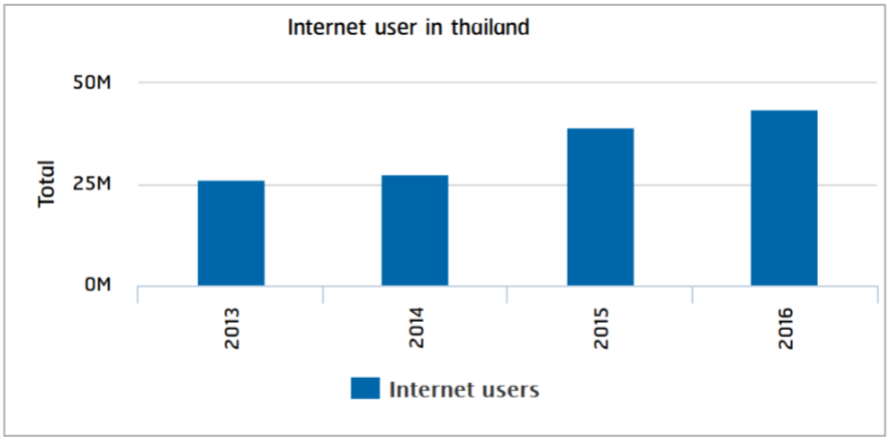



*Figure 1: Internet users in Thailand (NBTC, 2017b)*

According to the Electronic Transactions Development Agency at the Ministry of Digital Economy, Thai people spend a lot of time on the internet. Hence, in 2016 the average daily number of hours on the internet on weekdays was 6 hours and 30 minutes while on weekends, the number tended to be a little bit higher at 6 hours and 48 minutes. This when compared with 6 hours 24 minutes in 2015 indicates that the trend of time spent on the internet by Thai internet users is increasing. In addition, the age group or generation that spent most time on the internet is Generation Y or people aged between 17 and 36 years old. This group of people spent 7 hours and 12 minutes daily on the internet on weekdays and 7 hours and 36 minutes on weekends. As for the change in user's internet usage behavior, 61% of users spent more time on the internet when compared to the previous year (ETDA, 2018). This number also confirms the trend in this age of information. Moreover, with the many activities that Thai internet users perform both online and offline, users are spending increasing amounts of time using the Internet. For example, 73.8% of plane ticket reservation/purchasing activity has been performed online while only 26.2% of this activity has been performed offline. Another example is hotel reservation, where 71.9% of hotel reservation activity has been performed online while only 28.1% has been performed offline (ETDA, 2018). This may lead to the situation where some offline business may eventually become obsolete.

2.3.3 Thailand e-commerce data

From the previous section, it has been indicated that Thailand's internet usage is on the rise. Not only has the number of internet users changed, but user behavior has also changed from previous years. Before 2016, online shopping was not listed in the top 5 activities of internet users in Thailand. But in 2016, Thailand internet user behavior changed since online shopping was listed in the top 5 activities for the first time (ETDA, 2018). This trend is an indication of more user acceptance of online shopping in Thailand. Furthermore, the value of e-commerce activity in Thailand has also been on the rise. In 2016, the country's e-commerce value was 2.56 trillion Baht (80.50 billion USD), increasing from 2.25 trillion Baht (70.75 billion USD) in 2015, and 2.03 trillion Baht (63.84 billion USD) in 2014 (BOT, 2018a; ETDA, 2018).

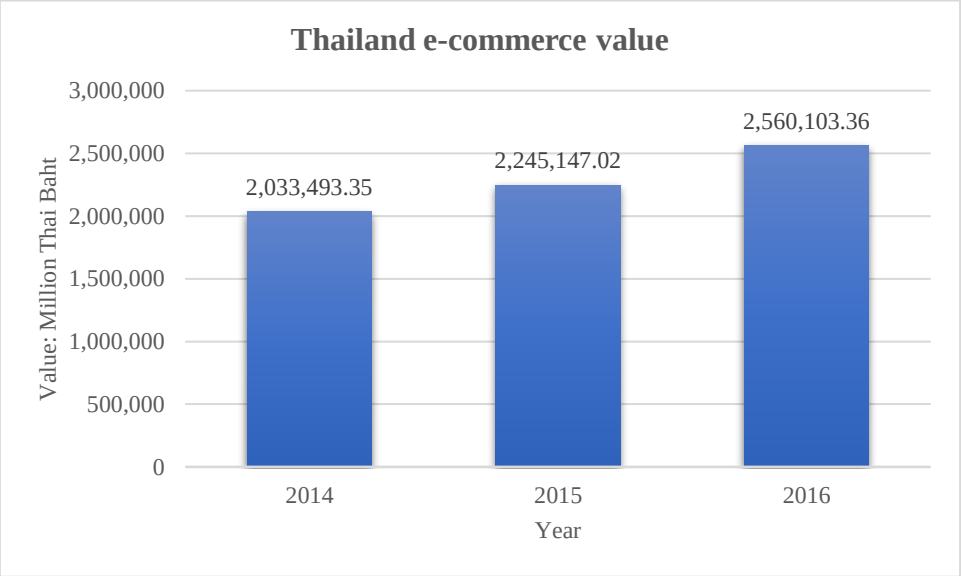



*Figure 2: Thailand's e-commerce value (ETDA, 2018)*

The number of B2C sector's transactions in 2016 accounted for 27.47% of the total e-commerce value, or 703.3 billion Baht. When comparing this number to the previous year, this segment (B2C) grew by 37.91%, which is consistent with the behavior of Thai internet users mentioned above. Online shopping has become one of the top five activities of internet users in Thailand. Data from the survey by the Ministry of Digital Economy shows that the top five activities of Thai Internet users were social media, searching for information, email usage, entertainment, and online shopping respectively

(ETDA, 2018). With the rise in the B2C e-commerce shown above, further investigation is necessary. From the perspective of the Southeast Asian region, the top five of countries for B2C e-commerce in terms of monetary value in 2015 and 2016, were Thailand followed by Malaysia, Vietnam, Indonesia, and Singapore respectively (ETDA, 2017). The details of the monetary value of each country's B2C e-commerce are shown in the figure below.

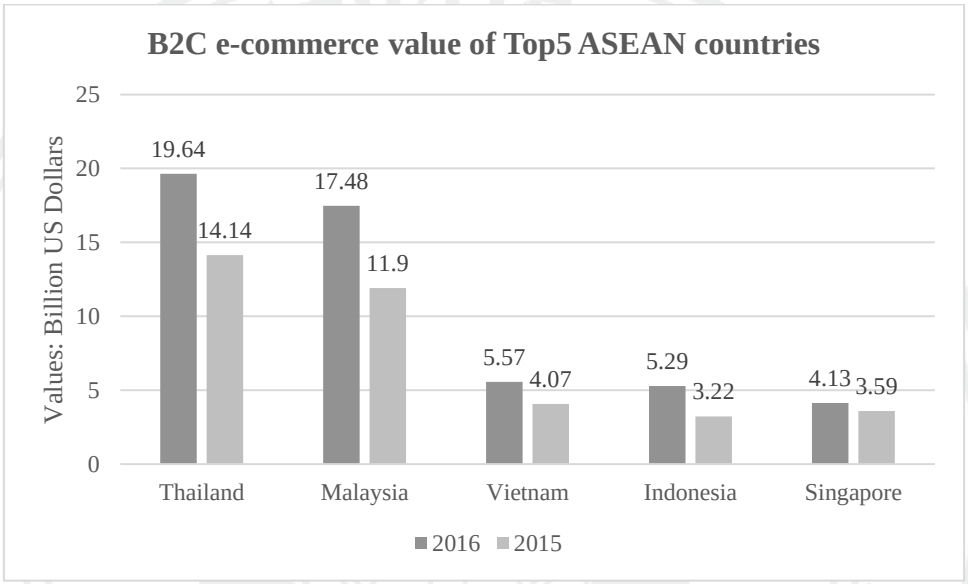



*Figure 3: B2C e-commerce value of top 5 ASEAN countries (ETDA, 2017)*

With strong B2C e-commerce in Thailand, it makes B2C e-commerce or online shopping by individuals an interesting area for further investigation. Therefore, the focal point of this research is the online shopping behavior of individual persons. According to the e-commerce classification in the previous section, individual online shopping behavior is classified into the B2C e-commerce category.

According to the analysis by the Ministry of Digital Economy of Thailand, the cause of the dramatic increase in Thailand's e-commerce value is the result of four factors (ETDA, 2017).

1. **The support from the Government for e-commerce industries in Thailand.** The government has supported the improvement of the infrastructure and has provided training to create new entrepreneurs, along with providing more

support for the current players in this industry by assigning related government agencies to support the mentioned parties. For example, the Digital Economy Promotion Agency, the Office of Small and Medium Enterprise Promotion, the Department of Business Development, and Thailand Post, have been working together under a national level budget to support entrepreneurs who want to participate in e-commerce business. Those agencies provide support from the beginning of the process in the creation of offline stores along with support in expanding markets into foreign countries. Those support processes from government agencies also comply with the policy of Thailand 4.0.

2. **Current traditional offline sellers are interested in new online sales channels.** Since online channels have been accepted by a wide range of consumers in the country, the current players in the offline market do not want to lose their market share. Therefore, they have decided to get into this new sales channel. Moreover, the online sales channel also gave opportunities for sellers to expand their customer base from domestic to international customers. In addition, with the rise of social media usage amongst internet users around the world, it is considered by businesses as a cheap way to reach potential customers, which eventually will influence customer decisions to purchase in the future (Duffett, 2015). Moreover, social media can also be used as a brand building tool (B. K. P. D. Balakrishnan, Dahnil, & Yi, 2014), which may eventually expand the market of current sellers.
3. **Opportunities for growth in the online market of Thailand.** As mentioned above, internet usage in Thailand increased from 6 hours 24 minutes per day in 2015 to 6 hours 48 minutes per day in 2016. Moreover, one of the top five activities that they perform is online shopping. One reason that online shopping has become a popular activity for Thai internet users is convenience in terms of time and place. With the technology available today, online shopping can happen in any place and at any time. Moreover, the availability of artificial intelligence can allow sellers to use big data to predict customer demand, make recommendations, or even predict the level of customer support more accurately (W.-P. Lee, Liu, & Lu, 2002). Therefore, this market will continue to grow in

the years to come.

4. **More foreign investment in the e-commerce segment in Thailand.** In the past few years, there have been a number of foreign companies operating in e-commerce-related sectors from Taiwan, China, Korea, Japan, and Singapore. These companies have invested heavily in e-Logistics, e-Marketplace, and e-Payment in Thailand. For example, Alibaba announced that it will invest US$320 million in Thailand in the digital hub in the Eastern Economic Corridor project of the government. Moreover, the Alibaba group has been present in Thailand since it acquired one of Thailand's leading online shopping websites, Lazada.co.th in 2016 (Bloomberg.com, 2016). Furthermore, Alibaba announced that in 2018 it would inject 2 Billion USD in the Lazada group. In addition to the acquisition of Lazada by Alibaba, other Chinese e-commerce leaders are also interested in Thailand's e-commerce market. First, JD.com, the second biggest player in Chinese's e-commerce business, announced that they will form a partnership with the Central Retail Group, one of the country's leading retail stores, to increase e-commerce business together. Moreover, to provide a mobile payment system for Chinese e-commerce customers, Tencent Holdings of China announced a partnership with Kasikorn Bank in 2016 (Reuters.com, 2018).

2.3.4 Thailand's online retail market data

According to the data gathered by the Ministry of Digital Economy in 2017, the industry that had the highest monetary value of e-commerce transactions in the country in 2016 was the online retail and wholesale business, with accommodation and manufacturing businesses ranked second and third, respectively. Moreover, data shows that within the online retail and wholesale business sector, the business that has the highest value was online shopping malls, which had a value of 757.63 billion Baht or 23.61 billion USD in 2016 (BOT, 2018a; ETDA, 2017). The information presented above shows that online shopping malls had the highest value as a proportion of the overall e-commerce wholesale and retail business. Therefore, more detail on this segment of e-commerce business is presented as follows.


*Figure 4: Top 3 industries in terms of e-commerce value in Thailand*

As mentioned above, this research focuses on the B2C segment (retailers of physical products, not including travel-related services) of the e-commerce market in Thailand. Therefore, it is worth investigating this online retail category in more detail. First, market data shows that Thailand has experienced double digit growth in the online retail shopping market (ETDA, 2017; MarketLine, 2016).

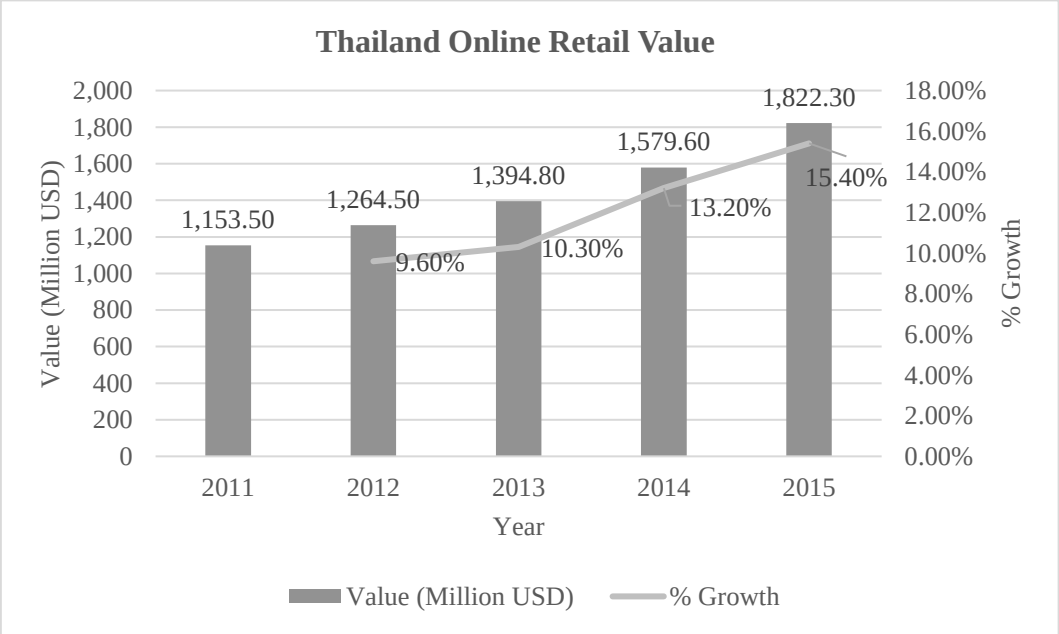



*Figure 5: Thailand online retail value (MarketLine, 2016)*

In regard to the segmentation of products sold in online retail markets, the information below presents each category of products as a percentage of total online retail sales in 2015. Electrical and electronics products had the highest proportion of 46% while apparel, accessories, luggage and leather goods came second with 19%. More detailed figures are displayed in the following chart (MarketLine, 2016).

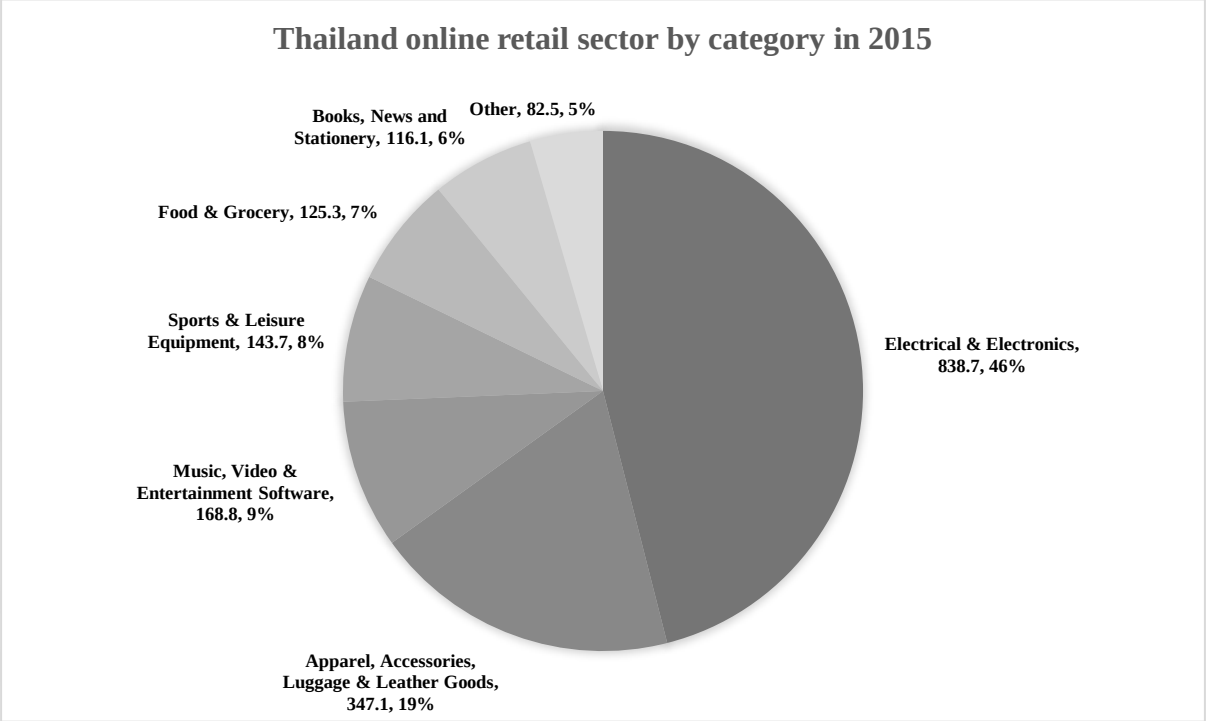



*Figure 6: Thailand online retail sector category in 2015(MarketLine, 2016)*

Moreover, to complete online retail transactions, the last activity is the delivery of physical products to the customer. Therefore, logistics is one of the important factors in the online retail business.

## 2.4 Logistics

In traditional offline markets, logistics is not such a vital part to complete business since customers and the buyers and sellers are often in the same place during the transaction. However, with online shopping, customers and sellers are seldom located in the same place. Therefore, when customers purchase physical products online, their choices

include both the physical product and the delivery service that will complete the transaction process.

2.4.1 Logistics and online shopping

According to the Council of Supply Chain Management Practice (CSCMP), logistics was defined as “the process of planning, implementing, and controlling procedures for the efficient and effective transportation and storage of goods including services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements” (CSCMP, 2018).

It is widely known that people can get similar products from several sources. For example, two of the most popular shopping websites in Thailand in 2015, lazada.co.th and weloveshopping.com (MarketLine, 2016), offer a wide range of similar items. In order to be successful in this business, an online retail store is required to get their products to customers before their competitors. Not only do online retailers have to compete amongst themselves, they also need to compete with traditional offline retailers and one key success factor is to make sure customers receive their products quickly and conveniently (Soopramanien & Robertson, 2007). Previous research supports this idea by showing that the improvement in logistics performance of retail companies has a positive effect on company performance (Schramm-Klein & Morschett, 2006). Moreover, previous research also revealed a positive relationship between the distribution service performance of the firm and customer satisfaction (Bienstock, Mentzer, & Bird, 1997; C. Garland, D., & E., 1994).

From the information above, logistics is a crucial factor in decision making in the online purchase of physical products (Hu et al., 2016). Therefore, the success of any organization in online shopping markets partly depends on the effectiveness of their distribution network. In addition, the logistics service sector itself has also been expanding along with e-commerce. as logistics costs can account for up to 40% of the total cost of the product (Bayles & Bhatia, 2000). From the above information, a study

by Skiera, Hinz, and Frischmann (2012) was conducted in Europe to compare the shipping charge strategies of online retailers to see how retailers include the cost of logistics in product pricing in order to compete with others in this business. The result shows that some retailers lower the product price and charge for delivery separately while other retailers offer free delivery but increase the product price instead. It can be seen that product delivery, which is a part of logistics, plays an important role in e-commerce retail markets. In addition, to understand more about how logistics has been integrated into e-commerce business, it is worth providing more details on how logistics operates in this business. Normally, logistics activities in e-commerce involve three main steps which are listed below (Yu, Wang, Zhong, & Huang, 2017).

1. Product replenishment. This step usually involves the delivery of products from manufacturers to a warehouse or distribution center.
2. Order fulfillment. In this step, the movement of physical products usually happens internally after an order has been placed by customers. It involves the movement of products from the retailer's distribution center to a sorting facility, through to the final packing of the product to be ready to be shipped out.
3. Order delivery. This is the last step that includes the physical movement of products from the distribution center to customers.

As mentioned above, e-commerce can be categorized in terms of the type of relationship between seller and buyer into five main categories (Delfmann et al., 2002) and the logistics activities related to these five types of e-commerce are also different from each other. However, in the study of the impact of e-commerce on logistics by Delfmann et al. (2002), government agencies (administration) were treated in the same way as business and thus, C2C e-commerce is also eliminated from this logistics research. Therefore, this research on e-commerce and logistics focuses only on B2B and B2C.

In B2B e-commerce, transactions are performed between business organizations. Thus, the volume per transaction is high. Normally, this type of transaction involves the buying and selling of raw materials or parts to be assembled to make the finished

products at the buyer's facility (Yu et al., 2017). Since the volume per transaction is large, any mistakes related to each transaction tend to have a larger impact on the business than small volume B2C transactions. Thus, the risk involved in B2B e-commerce transactions is usually greater than B2C e-commerce (Ta, Esper, & Hofer, 2015).

2.4.3 Logistics models for e-commerce.

The study by Yu et al on logistics and supply chain management categorized logistics activities in the e-commerce business and proposed the following models (Yu et al., 2017).

*2.4.3.1 Self-Support Model*

This model involves the logistics activities performed by the seller companies themselves. Companies who employ this logistics approach tend to believe that final shipment process to customers is the key success factor for e-commerce business (H. L. Lee & Whang, 2001) and therefore, conduct the logistics activities themselves. Even though this approach seems to be a good approach in terms of control, it usually leads to various problems. One of the main drawbacks of this approach is financial (A. & J., 1996). As investing in the logistics network involves a lot of capital, it could end up lowering the company's profit.

*2.4.3.2 Outsourcing Model*

One of the main reasons that most companies choose this approach is financial. By outsourcing the logistics activities to someone else means that companies do not have to invest a lot of money in the logistics network (Xiao, Xia, & Zhang, 2014). Therefore, they can focus more on the activities that they do best, and their level of competitiveness should increase, which would eventually lead to higher profit. However, this approach does not come without drawbacks. This model, in contrast to the previously mentioned model, allows the company to have less control over logistics activities. Therefore, if the outsourced logistics company fails to maintain the required standard, such as late

delivery, e-commerce companies could experience damage.

As both approaches have pros and cons, most companies in this business chose to mix those two approaches when they conduct e-commerce business (Yu et al., 2017). By performing some important parts of the logistics activity in house and outsourcing others to a third party logistics service provider (Hultman, Hertz, Johnsen, & Johnsen, 2009), the drawbacks of both approaches can be minimized.

In addition to the previously-mentioned models, logistics activities in current e-commerce businesses are use supporting techniques which help in managing logistics activities more efficiently. Traditionally, to manage logistics in e-commerce business, no supporting systems were needed other than the regular online webpage platform. However, with the current rapid growth of this business, a large number of transactions are made every day. Therefore, supporting techniques are needed. From the definition of logistics that has been discussed previously, logistics activity includes managing both transportation and storage. As a result, the required supporting technique is called the Logistics Information System, which includes a warehouse management system and a transportation management system (Yu et al., 2017).

As it is widely known that large e-commerce sellers such as amazon.com have to deal with large numbers of orders daily, it is virtually impossible to manage its warehouse without any help from technology. As a result, the Warehouse Management System (WMS) plays an important role in managing the logistics and inventory of large e-commerce businesses. One of the main functions of WMS is the real time inventory whereabouts. With this technology, it can track the number of items left in the inventory, along with the specific location in the warehouse of each item, including information on incoming goods, the distribution center, and even the return inventory (Wakabayashi, Suzuki, Watanabe, & Karasawa, 2014). One of the tools that enables WMS is RFID or the Radio Frequency Identification System to track the location of each item and to use the combined data for inventory management, or even to plan the

optimized forklift routes inside the warehouse, which will eventually enable the overall logistics system to work more efficiently (Chow, Choy, Lee, & Lau, 2006). Moreover, the use of another supporting tool called the Transportation Management System, enables a firm to manage the whole fleet of vehicles effectively, including route planning and energy management (Tie & Tan, 2013). In addition, ,TMS has been designed and developed to support and enable the optimization of logistics in e-commerce business (Yu et al., 2017).

One example company that has effectively managed its logistics to become successful in e-commerce business is Amazon.com. It is widely-known that Amazon is a giant e-commerce company that is considered as one of the biggest internet retailers in the United States (Yu et al., 2017). Amazon can save a lot of money in terms of warehouse storage space by effectively managing its inventory. The use of WMS has enabled Amazon to integrate its inventory in partner warehouses instead of keeping everything at Amazon. Therefore, it has reduced the need of Amazon to keep high levels of inventory. As for the products that need to be kept in Amazon's warehouse, the use of WMS makes the product identification system easy to use and offers an automatic storage and transportation system within its warehouse (Hays, Keskinocak, & de López, 2005). Moreover, having an effective transportation management system enables Amazon to calculate and manage the overall transportation system to make sure that products arrive at customer destinations on time and cost effectively (Oti, 2013). One unique character of Amazon is the use of parcel carriers to deliver goods to customers during the last phase of delivery. Products are sorted in the transportation hub and delivered to customers by carriers who are familiar with the delivery routes, such as UPS or USPS (Boyer, Boyer, Frohlich, & Hult, 2004).

As mentioned in the previous section, logistics activities consist of three main activities; product replenishment, product fulfillment, and order delivery. WMS plays an important part in product replenishment and product fulfillment while TMS plays an important role in product delivery. Therefore, it can be seen that logistics not only plays an important role in cost saving and managing resources from the supply side of the business, but it also affects the satisfaction of buyers since logistics is considered as a

vital part of online shopping as it is the last part in which the transaction is completed and the product is delivered to the customer. In this research, the focal point of the logistics activity is customer satisfaction, which is evaluated in the order delivery part of the logistics process.

In addition to logistics, which is considered as the final step in the online shopping transaction, another factor that influences customers to purchase online is social media. The details about social media are discussed below.

## 2.5 Social media and online shopping

The data by Statista (2018c) shows that social media is one of the most popular and most influential activities for internet users globally. Social Media has been described as online applications that were built on the foundation of Web 2.0, and allow users to generate and exchange content (Kaplan & Haenlein, 2010; L. Leung, 2013). While this definition by Kaplan and Haenlein (2010) has been widely accepted, there are other definitions of social media that have been employed. For example, Leonardi, Huysman, and Steinfield (2013) defined social media as applications that allow their users to share knowledge, content, and interact with others. Hence, social media, according to this definition, is viewed from the perspective of the web 2.0 era rather than the static read-only type of web-based information provider in Web 1.0. Therefore, the key elements that make social media different from the previous era are sharing, conversation engagement, and communication between users (Ahmed, Ahmad, Ahmad, & Zakaria, 2018). This unique aspect of social media is also an aspect that made social media become more popular in this Web 2.0 era (Filo, Lock, & Karg, 2015).

Social media can be applied in wide range of internet sites and online applications which include personal social networks (Facebook, myspace, or LinkedIn), weblogs and microblogs site (personal blogs and twitter), video and picture sharing sites (YouTube and Flickr), and collaborative knowledge sites (Wikipedia) (Ahmed et al., 2018; Kaplan & Haenlein, 2010; Osatuyi, 2013). With the unique information-sharing characteristic of social media  its utility goes beyond personal use. The popularity of

social media has encouraged both private and public organizations to use social media to communicate with the public. For example, higher education institutes in Malaysia use social media as a platform to encourage students to study (V. Balakrishnan & Gan, 2016). Moreover, some government organizations use social media to create awareness amongst citizens (Dekker & Bekkers, 2015). In addition, in the business sector, social media has been widely used as a platform for advertising and marketing tools to communicate with potential customers (Alalwan, Rana, Dwivedi, & Algharabat, 2017). As a result, social media is a powerful platform that can be widely used as a communication and sharing medium, both at the individual and organizational level.

In regard to the usage rate of social media, the number of social media users has been increasing every year and is expected to continue increasing in the near future. Data shows that the overall number of global social media users in 2017 reached 2.46 billion people, which is a dramatic increase from 0.97 billion people in 2010. Moreover, the growth rate has been very high and it is predicted that by 2020, the number of global social media users will reach 3.02 billion people (eMarketer, 2017b). Moreover, this number of social media users in 2017 represented 71% of global internet users. From a regional perspective, as of January 2017, Asia represented 53% of total global social media users (Statista, 2017a). In Thailand, the usage rate of social media has risen dramatically. In September 2017, the number of social media users was reported to be 75% of the total population (Statista, 2018d). Of the many social media platforms that are available in the market, Facebook was ranked as the most popular in Thailand, while YouTube, Line, Facebook Messenger, and Instagram were ranked 2 to 5, respectively (Statista, 2018d).

As seen in the previous section, social media is considered as a big part of online activity for most internet users. Consequently, social media has become an important marketing tool for retail business in this age of information. According to previous empirical research, social media can be used either as a platform for peer socialization or advertising media to influence consumer behavior and purchase intention (B. K. P. D. Balakrishnan et al., 2014; Duffett, 2015; Erkan & Evans, 2016; Gunawan & Huarng, 2015; Raghupathi & Fogel, 2015; Shang, Wu, & Sie, 2017; Wang, Yu, & Wei, 2012).

Social media influences consumer behavior in a number of ways. These include the use of social media as a form of online advertisement (Y.-R. R. Chen, 2017; Duffett, 2015; Luarn, Lin, & Chiu, 2015; Thornhill, Xie, & Lee, 2017), the use of social media as a platform to spread word-of-mouth (WOM) (Gunawan & Huarng, 2015; Mikalef, Giannakos, & Pateli, 2013; Palazon, Sicilia, & Lopez, 2015; Pramono, Wihuda, & Adawiyah, 2017; Wang et al., 2012) , and the use of social media as a platform to acquire information from others (B. K. P. D. Balakrishnan et al., 2014; Raghupathi & Fogel, 2015; Ramanathan, Subramanian, & Parrott, 2017; Z. Zhu, Wang, Wang, & Wan, 2016).

## 2.6 Theories

The theories that will be used as the theoretical framework in this study are taken from Expectation Confirmation Theory (ECT) and the Theory of Planned Behavior (TPB). First, Expectation Confirmation Theory works as the overall framework to link the pre and post purchase behavior together. The Theory of Planned Behavior works as the main theory since it shows the effect of each contributing factor on purchase behavior, which will be discussed and presented in the following section. The overall view of this study will be presented in the conceptual model in the later section.

### 2.6.1 Expectation Confirmation Theory

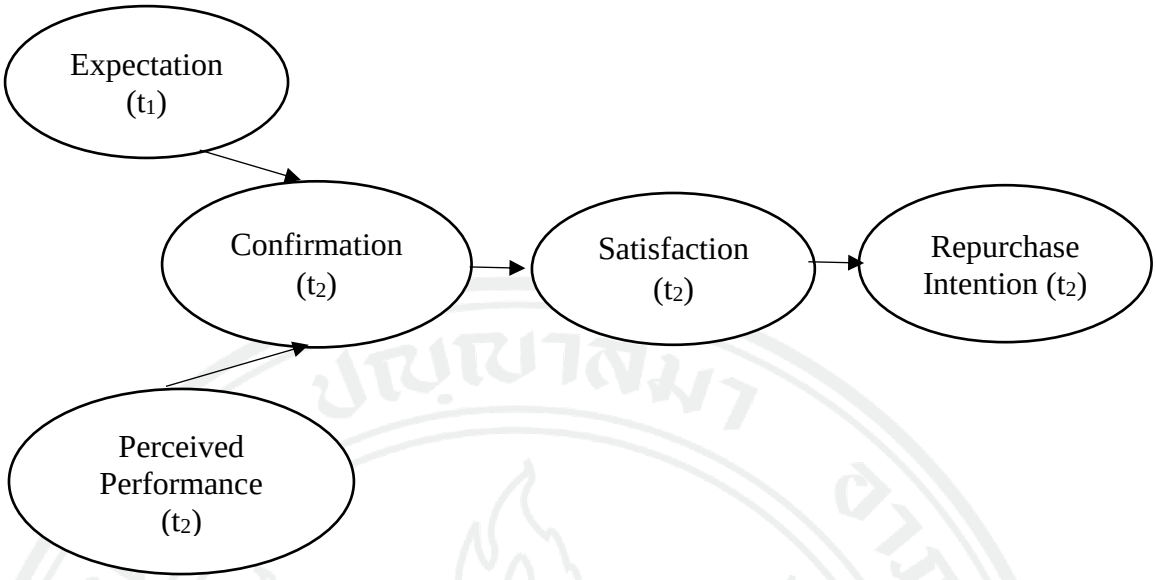
Expectation Confirmation Theory (ECT) was originally proposed by Oliver in 1980 when he created a model that links both the antecedents and consequences of consumers satisfaction (Richard L. Oliver, 1980). The development of theory that showed the relationship between pre-purchase and post purchase behavior was initially conducted earlier in psychology and marketing research studies (R. E. Anderson, 1973; Richard L. Oliver, 1977). First, research by Weaver and Brickman (1974) indicated that when customers have high expectations about a product, it leads to perceived negative disconfirmation. In contrast, when customers have low expectations, their perceived disconfirmation will be on the positive side. After this research was published, another research was conducted by Oliver in 1977 to further investigate the effect of expectation

and disconfirmation on post purchase product assessment, or the level of customer satisfaction (Richard L. Oliver, 1977). The result showed that both expectations and product disconfirmation individually affect post purchase product assessment at different times. Product expectations are formed before then product has been used or purchased, while product disconfirmation, either positive or negative, will be formed after the product has been used or purchased. However, this study did not include an important factor, which is the post purchase intention to repurchase the product. In 1980, Oliver conducted research to link the antecedents and consequences of product satisfaction together. In this marketing research, flu vaccination program patients were employed as research samples. The experiments were conducted in two phases using two questionnaires in two different timeframes on the same set of samples. During the first phase of the survey, the questions measured expectations, attitudes, and behavioral intention about getting flu shots. After the flu shot had been given, the second phase of survey was conducted by deploying the second set of questionnaires. In the second phase, the questions asked about the level of disconfirmation by asking them to rate their perceptions of getting flu shots when compared to their expectations. The subjects were then asked to rate their satisfaction and the possibility that they would like to receive another flu shot in the future. The study revealed the following results. First, the level of disconfirmation was found to be influenced by both pre-purchase expectations and post purchase attitude toward the product. The level of post purchase product satisfaction was then influenced by the level of disconfirmation. After that, satisfaction then influenced the likelihood of future purchases (Richard L. Oliver, 1980).

This framework has been widely-used and supported in much service marketing research (E. W. Anderson & Sullivan, 1993; Dabholkar, Shepherd, & Thorpe, 2000; Richard L. Oliver, 1980; Tse & Wilton, 1988). Furthermore, this theory has been used to help in forecasting the post purchasing behavior of consumers in terms of the intention to repurchase in several industries ranging from automobiles (Richard L. Oliver, 1993) to camcorders (Spreng, MacKenzie, & Olshavsky, 1996). In service industries, this theory has also been used to forecast the repurchase intention for

business-to-business professional services (Patterson, Johnson, & Spreng, 1997) and the restaurant service industry (Dabholkar et al., 2000).

In the original research paper of this theory, Oliver (1980) did not show the relationship between each construct of this framework. However, when this theory was employed in Information Systems research, Bhattacherjee (2001) showed how each construct of this framework was related. The picture has been modified by the author and is shown below. As mentioned above, this theory has been widely-used in consumer behavior marketing research, and later in information system-related studies, and was later adapted by Bhattacherjee (2001) to create a new model called the Expectation Confirmation Model. This model, along with the original ECT theory, has also been accepted and later used in information system, information technology, and even education or medical-based studies ((Chou, Lin, Woung, & Tsai, 2012; H., M., & L., 2004; McKinney, Yoon, & Zahedi, 2002). For example, a study on e-learning in patient education from Taiwan's medical research also used ECT as the base theoretical framework (Chou et al., 2012). It was found that the patients' intention to continue the e-learning process was significantly related to other constructs, including expectations, perceived performance, confirmation/ disconfirmation, and satisfaction. In addition, this theory was also used to study repurchase intention which was influenced by satisfaction in service businesses in Taiwan (C.-P. Lin, Tsai, & Chiu, 2009). In addition, the Expectation Confirmation Model, along with the Theory of Planned Behavior were used to predict the intention to continue using mobile internet services in Korea (B. Kim, 2010). In the context of online shopping, O. Pappas et al. (2014) used ECT as a theoretical framework and found relationships between expectancy, satisfaction, and intention to repurchase for online shopper in Greece. Moreover, the result of this study revealed that satisfaction directly and positively influenced the intention to repurchase for online shoppers.




Note: $t_1$ = pre-consumption variable; $t_2$ = post-consumption variable

*Figure 7: Expectation Confirmation Theory (Bhattacherjee, 2001, p. 353)*

The steps that lead to the formation of customer intention to repurchase in the framework of ECT were empirically studied and explained in the following sequence (Bhattacherjee, 2001; Richard L. Oliver, 1980). It begins with the formation of customer expectations about a particular product or service before they make the purchase. The next step in the process is when the customers use the product or service and form perceptions about its performance. After that, they compare the actual performance of the product or service with their expectation. During this judging process, they arrive at a judgement as to whether their expectation is confirmed or not. At this point, if positive disconfirmation is confirmed, they feel a level of satisfaction based on their levels of disconfirmation and expectation. Once satisfaction has been established, customers may form an intention to repurchase. On the other hand, if dissatisfaction has been established, customers would not form an intention to repurchase, which will lead to the discontinuation of use of the particular product or service. The framework of ECT suggests that customer intention to repurchase is determined by the level of satisfaction after the use of the product or service (Richard L. Oliver, 1980, 1993). Hence, in order to establish customer intention to repurchase, one first needs to create customer satisfaction.

The following sections will explain the definition and meaning of each construct in the ECT model in detail.

*2.6.1.1 Expectation*

First, the term ‘expectation’ is defined. Based on the literature review, the term expectation has been defined in many ways. Some research investigated expectation from the perspective of behavior. It defined expectation as the possibility of a specific consequence occurring after an action is taken (Bardwell, 1984). However, in service management research papers, the definition of expectation tends to vary. First, “expectations are viewed as predictions made by customers about what is likely to happen during an impending transaction or exchange” (Valarie A. Zeithaml, Berry, & Parasuraman, 1993, p. 2). This definition, which can be called a “predictive expectation” is the classical thinking of expectation as the probability of an incidence in the future (W., 2004). On the other hand, the term expectation can also be defined as what customers really want, or hope for, from the service provider (Boulding, Kalra, Staelin, & Zeithaml, 1993; Valarie A. Zeithaml et al., 1993). This approach can be called “normative expectation.” Despite the differences in the above definitions, these two approaches are frequently combined as the customers both want and believe in the service capabilities (W., 2004). This combination is adopted in this research.

*2.6.1.2 Perceived Performance*

Perceived performance refers to the perception or attitudes towards the product or service performance immediately after it has been used or consumed. In the original study by (Richard L. Oliver, 1980), this construct was called ‘post purchase attitude’ since it is the attitude towards the product after the customers have experienced it However, later research by (Bhattacherjee, 2001) called it ‘Perceived Performance’, which is similar to post purchase attitude. In addition, this concept refers to the stage in which the attitude is formed after the consuming or using process. Once the perception has been formed, it can also directly influence the level of disconfirmation and

indirectly influence the level of satisfaction through the disconfirmation level (Bhattacherjee, 2001; Chou et al., 2012; Richard L. Oliver, 1980).

*2.6.1.3 Expectation confirmation/disconfirmation*

Disconfirmation/Confirmation is a specific term that has been used in psychology and marketing research (R. E. Anderson, 1973; Richard L. Oliver, 1977). To explain the meaning of this term, the following example will be used. First, during the pre-purchase of, or pre-exposure to, the product, customers have only expectations about the performance of the product, which could come from any source. However, when the product has been used or purchased, the customer can compare the product's perceived performance with their initial expectation and determine a comparative result. If the performance exceeds expectations, it will result in positive disconfirmation. On the other hand, if the performance is less than expected, it will lead to negative disconfirmation (Richard L. Oliver & Bearden, 1985). The positive disconfirmation process was later called confirmation by other researchers (Bhattacherjee, 2001; Churchill & Surprenant, 1982; Tse & Wilton, 1988).

*2.6.1.4 Satisfaction*

Satisfaction has been defined in retailing journals as "the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience" (Richard L. Oliver, 1981, p. 29). Thus, ECT suggests that a low level of expectation and a high level of performance would lead to positive disconfirmation, which will eventually influence the level of customer satisfaction. However, (Helson, 1964) suggested that expectation individually can also be an antecedent of satisfaction since expectation acts as a baseline or point of reference for customers to assess the performance of the product. As a result, high level of expectation would lead to higher satisfaction. On the other hand, a low level of expectation would eventually lead to lower satisfaction. Furthermore, the framework of ECT determines that a high satisfaction level based on prior usage would lead to the intention to repurchase.

*2.6.1.5 Intention to repurchase*

Repurchase can be defined as consumer behavior that results in the purchase of the same product more than once (Curtis, Abratt, Rhoades, & Dion, 2011). Richard L. Oliver (1999) included repurchase as a subset of customer loyalty since loyalty in this study was defined as a customer's repeat purchase. However, K.Y., Y.V., and Xiande (2004) defined loyalty as the intention to purchase from the same seller based on the level of satisfaction rather than the actual behavior, which also concurs with the definition of loyalty proposed by Richard L Oliver (1997). From the studies that have been mentioned previously, the intention to repurchase can be considered as an effect that results from that satisfaction that is felt after an actual purchase.

Therefore, the intention to repurchase is considered as an element of post purchase intention. The intention to repurchase depends on the level of satisfaction for the purchased product or service (Richard L. Oliver, 1980). Moreover, Howard (1974) also explained that satisfaction not only influences post purchase intention, but also post purchase attitude, which also concurs with the Theory of Planned Behavior, which states that attitude influences behavioral intention (Ajzen, 1985), which means that post purchase behavior influences the intention to repurchase.

The factors that influence satisfaction presented in the framework of ECT focus only on the attitudes that are formed by individual customers. Therefore, it lacks other factors that are also important in the decision making process, especially in an online environment. These factors are social factors and perceptions about how easy or difficult performing those behaviors is. Previous studies have also shown that those factors are important antecedents of consumer behavior (Ajzen, 1991; Holbrook & Batra, 1987). These factors can be found in the framework of the Theory of Planned Behavior (TPB).

2.6.2 Theory of Planned Behavior

As mentioned above, even though ECT is a popular theory and can be used as a predictor for the behavioral intention to repurchase, it lacks other important factors. However, there is another theoretical framework that has been widely-used in the field

of consumer behavior and management to explore the behavior of consumers in the context of online activity (George, 2004; Hansen, 2008; B. Kim, 2010). The theory is called the Theory of Planned Behavior (TPB). This theory was first developed by Azjen in 1985 as an extension to the Theory of Reasoned Action (TRA) (Ajzen, 1985, 1991). The TRA indicated that the behavior of individuals is driven by the intention to perform that behavior, which is the essence of this theory. In addition, the intention to perform that behavior is the effect of two constructs, the attitude toward that behavior and subjective norm (Fishbein & Ajzen, 1975). It means the intention to perform any behavior is driven by both positive attitudes towards that behavior and the belief that other people in society think they should perform the behavior. Even though this theory has been widely-accepted and used throughout consumer behavior research, including online shopping behavior research (Dash, 2014; Matthew, L., Gui, Rongwei, & Ting-Hsiang, 2013), it has still received criticism from researchers in this field. The critiques indicated that even though the individual has an attitude and is affected by subjective norm, that individual may eventually not have the intention to perform that particular behavior because they lack the resources, opportunity, or ability to perform that behavior (Ajzen, 1991).

Ajzen (1985) thus introduced a new theory called the Theory of Planned Behavior (TPB) in 1985. In this theory, a third construct was introduced into the theory as another antecedent of behavioral intention. This construct was called “perceived behavioral control” or PCB. The introduction of the third construct in the TPB model proved its effectiveness in the field of online consumer behavior by Hansen, Møller Jensen, and Stubbe Solgaard (2004) by comparing TRA to TPB. The result shows that TPB gave better explanations about the behavior of online consumers than TRA. The figure below shows the framework of TPB.

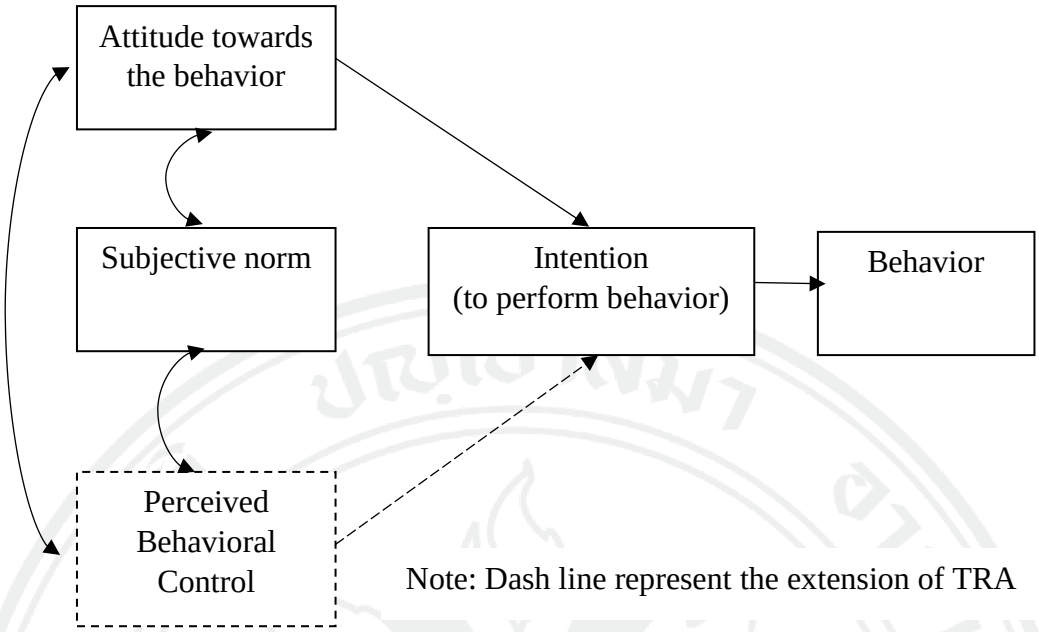



*Figure 8: Theory of Planned Behavior (Ajzen, 1991, p. 182)*

As seen from the figure above, TPB, as an extended version of TRA, proposed the same predictive construct for performing behavior as TRA, which is the intention to perform it (Ajzen, 1985, 1991). Furthermore, the intention to perform that particular behavior was found to be influenced by three constructs. Those three constructs are the attitude towards the behavior, subjective norm, and perceived behavioral control (Ajzen, 1985, 1991). In the original research of TPB, Ajzen proposed that behavioral belief leads to attitude, normative belief leads to subjective norm, and control belief leads to Perceived Behavioral Control.

Although the original model of TPB (presented in figure 2.2) shows the relationship between Attitude, Subject Norms, and Perceived Behavioral Control, it has since been shown in several research works that the mentioned relationships are usually omitted (Chu, Chen, & Sung, 2015; George, 2004; Hansen, 2008; Hansen et al., 2004; Joo, 2015; E. Kim, Lee, Sung, & Choi, 2016; J. Lin, Chan, & Wei, 2006; Zhao & Nor Othman, 2011) For example, a study of the intention to buy groceries online in Sweden by Hansen (2008) was conducted using the framework of all three variables of TPB but did not examine the relationship between each variable in the hypothesis testing. Another study of online purchase behavior in the United States by George (2004) was

also conducted via the framework of TPB without the hypothesis testing of the relationships between the three previously-mentioned variables of TPB. Furthermore, in the context of social media and online shopping, a study of Twitter users and online shoppers was conducted via the framework of TPB. Similar to other studies, it also excluded the study of the relationships between the three main variables of TPB (Chu et al., 2015). Therefore this study aims to follow the approach of the previously-mentioned studies by omitting the hypothesis testing of the relationships between Attitude, Subjective norm, and Perceived Behavioral Control.

In research related to the field of information technology, research by Riemenschneider, Harrison, and Mykytyn (2003) aimed to determine the factors that affect the decision making process about the adoption of information technology by small businesses in the United States. In this research, the researchers used TPB as a part of their theoretical framework. The result shows that attitude and subjective norm significantly influenced the intention to adopt information technology for small businesses. Moreover, another research which aimed to study the factors that influenced the use of instant messaging software also employed TPB as a basis. However, this research separated the study into two distinct models and conducted the analysis separately for each type of software. The results showed that attitude and subjective norm significantly affected the intention to use both types of software while perceived behavioral control only significantly affected the users of one type of software (J. Lin et al., 2006).

In an online shopping research context, Limayem, Khalifa, and Frini (2000) revealed in a longitudinal study that attitude, subjective norm, and perceived behavioral control significantly affected online consumer behavior. Another study by George (2004), which studied the factors that influence online purchasing, also used TPB as its theoretical basis. The results showed that respondents who believed in the trustworthiness of the internet (Attitude) and believed in their own ability to buy online (Perceived Behavioral Control) were more likely to make online purchases than those who do not have those beliefs. Furthermore, qualitative research t conducted in the United Kingdom and Denmark to determine the opinions of online grocery shoppers also used TPB as a basis of the study. All three constructs in TPB were used as the basis

of the in-depth interviews to determine the factors behind the intention to buy or not to buy groceries online (Kim Ramus & Asger Nielsen, 2005). Another online shopping-related study was conducted in Taiwan with online bookstore shoppers using TPB as the theoretical basis. College students in Taiwan were employed as samples to predict the intention to shop at online bookstores by separating the samples into three segments. The results showed that each segment had different online shopping behaviors. However, all segments revealed that perceived behavioral control did not significantly influence the intention to shop online (S.-I. Wu, 2006). The use of TPB in online shopping research was expanded to make cross-cultural comparisons between Korea and the United States. In this research, the researcher used subjective norm from TPB and other variables to determine the factors that influenced the intention to shop online. In addition, cultural difference was used as another antecedent factor in regard to subjective norm to investigate the difference in the behavior. The result showed that both cultures gave similar result in terms of the factors that influenced online shopping behavior, but the degree of importance was different for the two cultures (Choi & Geistfeld, 2004).

Moreover, a study by Hsu, Yen, Chiu, and Chang (2006) extended the use of TPB by including Expectation Confirmation Theory (ECT) in the research. This research investigated the factors that affected the repurchase behavior in an online shopping environment by including the constructs from ECT, which are disconfirmation and satisfaction. Moreover, the result of this study showed that satisfaction and disconfirmation significantly impacted the intention to repurchase online, which indicates that TPB by itself may not be the best tool to use to predict post purchase behavior. The results of previous study show similar results to another study on information system. This study indicated that TPB is best used to explain the intention to perform the behavior, but not the intention to continue to perform that behavior (Mathieson, 1991). As a result, later research by B. Kim (2010), which studied the continual usage of mobile data services in South Korea, integrated TPB with the Expectation Confirmation Model, which is the modified version of the ECT framework in the study.

Even though the definition of TPB and its explanation has been discussed in the section above, detailed definitions of each construct in this theory should be provided. Therefore, the definitions of all three constructs are presented below.

*2.6.2.1 Attitude*

The framework of both TRA and TPB indicates that attitude towards q certain behavior is a predictive factor for the individual's intention to perform that behavior. Thus, attitude can be defined as the level of perception that an individual has on certain behavior, which ranges from favorable to unfavorable. As a result, the more favorable the attitude a person has towards that behavior, the greater the possibility that the person intends to perform that behavior (Hansen, 2008). As mentioned earlier, the antecedent of attitude is behavioral belief. Research in information technology has proved that belief in the internet's trustworthiness positively and significantly influences attitudes towards online shopping, which will eventually influence the behavior to purchase online (George, 2004). Furthermore, research was also conducted in Sweden using online questionnaires to study the factors that influence internet users' willingness to purchase online. This research also used TPB as its basis to identify the relationship between each variable. Moreover, this study showed that the factor that significantly and positively influenced attitudes toward online shopping was self enhancement or the willingness to get things done effectively. On the other hand, the factor that significantly but negatively influenced attitudes toward online shopping was conservation (Hansen, 2008).

*2.6.2.2 Subjective norm*

The second construct in both TRA and TPB is subjective norm (SN). The concept of this construct is strongly related to the society in which each individual is located. It was stated that a subjective norm is the perceived social pressure to perform or not perform the behavior (Ajzen, 1991). As a result, the possibility of the individual performing any behavior is affected by both external (TV programs, advertising, and

other media in both direct and indirect communication patterns) and internal (family, colleagues, and friends) factors. This concept has been supported in many previous research works in many fields of study. For example, in the field of consumer behavior for financial products, it was proven that subjective norm directly influence the intention to buy financial products (Abduh & Abdul Razak, 2011; Amin & Chong, 2011; Ejye Omar & Owusu-Frimpong, 2007). Moreover, in the context of online shopping behavioral intention, subjective norm have also been empirically studied and their significance has been proven as an antecedent of online shopping behavior in several research works (Lu, Yao, & Yu, 2005; K. Ramus & Nielsen, 2005). For example, research by Hansen et al. (2004) empirically proved a direct relationship between the impact of subjective norm on online purchasing intention for online grocery shoppers. Moreover, research conducted in Turkey also revealed that subjective norm indirectly influenced Turkish online shopper's intention to purchase (Çelik, 2011). Interestingly, a study of online shopping adoption in urban areas of China, where the number of people has dramatically increased recently, showed that subjective norm significantly influenced online shopping behavior (S. Zhu & Chen, 2016). To measure subjective norm, research on online shopping posed multiple questions to determine the influence of the views of family members and friends on online shopping (Hansen et al., 2004).

*2.6.2.3 Perceived Behavioral Control*

As mentioned previously, in order to create TPB, Ajzen (1985) added another construct to the framework of TRA, which is called Perceived Behavioral Control (PCB). This construct was defined as "people's perception of the ease or difficulty of performing the behavior of interest" (Ajzen, 1991, p. 183). When Ajzen proposed the Theory of Reasoned Action (TRA), it was assumed that most behavior is under volitional control, which means each individual has the ability, opportunity, and resources to perform the behavior. However, there are some situations in which people may not have complete volitional control over the behavior of interest. Ajzen (2002) provided an example of a situation where the lack of volitional control may result in a change in behavior. The example was the case where a person wanted to get a job at a technology company. He

or she may have done everything they could to apply for a job, but eventually did not get an offer because the company decided to hire someone who was more capable. This is the reason why the third construct of PCB had to be added into the TRA to form the new TPB.

In the context of Information Technology research, PBC could be determined by the user's capability to perform the task successfully, which will be reflected in their perception of controllability, which will eventually affect the intention to perform the task (B. Kim, 2010). Furthermore, a study by Hansen et al. (2004) compared TPB and TRA in the context of online shopping and found that the inclusion of PBC gave better results in the prediction of the intention to purchase online. To measure the PBC, the researcher asked five questions to collect the respondents' viewpoints on how difficult they found online shopping along with the problems related to purchasing online.

## 2.7 Conceptual Foundation

### 2.7.1 Social Media Influence

#### *2.7.1.1 Peer communication of electronic word-of-mouth (e-WOM) via social media*

Since social media provides an online platform, such as Facebook or Instagram, for communication and interaction between peers, it can also be used as a tool to share ideas, opinions, comments, and information. Therefore, it has become regular practice for people to make comments in virtual communities via a social media platform, which is considered as an act of spreading word-of-mouth between peers (Gunawan & Huarng, 2015; Sandes & Urdan, 2013). In addition, the work of Mohammad and Neda (2012) indicated that word-of-mouth (WOM) is a form of informal communication about products or services between people who have little commercial involvement with the mentioned products or organizations. Therefore, it is widely-known to play an important role in creating and influencing consumer attitudes and behaviors since it often has a strong impact on product judgement (Herr, Kardes, & Kim, 1991; Kiecker & Cowles, 2002; R. E. Smith & Vogt, 1995; Weinberger & Dillon, 1980; Xia &

Bechwati, 2008). As a result, several researches have shown that WOM is a more powerful tool to influence consumers than other forms of communicating media such as regular advertisements or recommendations in magazine articles (Bickart & Schindler, 2001; D. Smith, Menon, & Sivakumar, 2005; Trusov, Bucklin, & Pauwels, 2009).

As shown in the statistics above, internet usage rate has been increasing, and the expansion of internet has resulted in a more reachable form of WOM called electronic WOM or e-WOM (Brown, Broderick, & Lee, 2007; A. Davis & Khazanchi, 2008; Godes & Mayzlin, 2004; Kiecker & Cowles, 2002; Xia & Bechwati, 2008). Due to its high degree of accessibility, it is assumed that e-WOM is more effective than conventional WOM communication (Chatterjee, 2001). It is also shown in other studies that online reviews, which is a form of e-WOM, have significantly influenced the popularity and sales of products (Chevalier & Mayzlin, 2006; Y. Liu, 2006). For example, research conducted by (Duan, Gu, & Whinston, 2008) proved that positive comments on a movie directly influenced sales by measuring sales performance in the following weeks. Another interesting research was conducted to test the effect of online review comments on the intention to purchase books on amazon.com and barnesandnoble.com, which are two of the biggest online bookstores in the United States. The results show that positive comments caused an increase in sales of that book. However, a more interesting point would be the impact of negative comments on the sales of that book. Result shows that negative comments had a stronger effect on the sales of the book than positive comments (Chevalier & Mayzlin, 2006).

Since it is now common for people to use social media to communicate e-WOM, the role of e-WOM has changed dramatically. For example, a comment that used to be limited to the person's personal contacts can now being spread to a much larger audience via the use of social media. Moreover, Sandes and Urdan (2013) found in marketing research that the perspective of consumer trust in North America has shifted. This research showed that when comparing two time periods, consumers now rely less on traditional media such as television, magazines, or newspapers; the only medium that consumers rely on more was the internet. This trend is also evident in Latin

America where 92% of consumers trust the product recommendations that they received on the internet from people that they are familiar with.

Research in several fields has also been conducted on the topic of e-WOM through the influence of social media on the behavior of consumers regarding online shopping activities. First, study has revealed that consumer generated messages via social media have a greater impact than brand generated messages in terms of recommendation (Chatterjee, 2015). Moreover, a study by Muralidharan and Men (2015) found a significant and positive relationship between peer communication and social media shopping behavior for social media users in China and the United States. In this study, it was also found that social interaction, as an antecedent of peer communication and shopping behavior, was more important to Chinese than American social media users. Additionally, in research that studied a group of undergraduate college students in New York in regard to the impact of the opinion leadership of social media on purchasing behavior, the authors employed the Theory of Planned Behavior (TPB) as the basis of the study. Interestingly, the results show that the opinion of a leader or expert in a particular field has a significant impact on purchase behavior through the attitude and subjective norm aspects of TPB (Raghupathi & Fogel, 2015).

Not only has e-WOM in social media been used to make comments on products, but it has also been used as a marketing tool since spreading e-WOM can work in the same way as the spreading of a virus, as it can be multiplied and transmitted to other users of social media (Vilpponen, Winter, & Sundqvist, 2006). Recent research conducted by Gunawan and Huarng (2015) partially used the Theory of Reasoned Action (Heilbroner, Thurow, Ajzen, & Fishbein, 1980) as a basis to assess the relationship between the viral effect of social media and the consumer's intention to purchase. One hypothesis that was tested and accepted in this research is that consumer attitude is influenced by peer communication or e-WOM via social media (D. Smith et al., 2005), and positively affects the intention to purchase a virally marketed product or service. Another hypothesis in this research was that subjective norm, which are also influenced by e-WOM in social media, have a significant and positive effect on the consumer intention to purchase.

The influence of e-WOM on purchasing behavior is another aspect that can be investigated via through attitude in the framework of TPB, as discussed earlier. Research that surveyed college students in the United Kingdom by Erkan and Evans (2016) revealed the significant and positive effect of attitude on e-WOM on social media and consumer purchase intention. Moreover, research conducted using an online survey in China by Wang et al. (2012) revealed that peer communication on social media was significantly and positively related to product attitude. It was aslo proved that product attitude significantly and positively influenced purchase intention.

It is widely-accepted that peer communication on social media or e-WOM influences purchasing behavior (Muralidharan & Men, 2015; Raghupathi & Fogel, 2015), it is worth broadening this study. In the marketing study of Wang et al. (2012), which aimed to determine the relationship between peer communication via social media and its impact on the intention to purchase, Chinese internet users were surveyed.The results revealed that peer communication via social media significantly influenced attitude towards the products, which in turn, influenced the intention to purchase. Therefore, the following hypothesis based on the relationship between peer communication of e-WOM and the constructs of TPB has been proposed.

*Hypothesis 1: Peer communication of e-WOM via social media has a positive effect on attitudes towards online shopping purchase behavior.*

As mentioned above in the Theory of Planned Behavior, subjective norm represent the impact of other people's comments on the individual's behavioral intention. It can be assumed that social media communication should have the same effect. As seen in the research of Gunawan and Huarng (2015) using college students in Indonesia as samples, online social pressure significantly and positively influence online consumers' subjective norm. Therefore, the following hypothesis is proposed.

*Hypothesis 2: Peer communication of e-WOM via social media has a positive effect on subjective norm.*

*2.7.1.2 Online advertisement via social media*

In traditional marketing before the era of social media, marketers spread advertisement information through the use of traditional media such as television, radio, and print without knowing exactly whether customers would see the messages or not. It was also more difficult to predict purchasing behavior afterwards. However, with the rise of social media, its speed, interactivity, convenience for both marketers and customers, and customization ability have made it a more popular advertising platform than traditional media (Duffett, 2015). As a result, advertising spending on social media has dramatically increased and has been forecast to increase every year. It was predicted to reach almost $36 billion by 2017 (eMarketer, 2015). Moreover, data as of January 2018 showed that Facebook was the most popular social network with monthly active users of more than 2.16 billion (Statista, 2018b).

Previous research that was conducted to investigate the relationship between Facebook advertising and the intention to purchase seems to give mixed messages. First, the research by Bannister, Kiefer, and Nellums (2013) surveyed college students in the United States revealed negative messages in regard to Facebook advertising. Hence, the samples did not purchase products that had appeared in Facebook advertising. In addition, qualitative research revealed that consumers found internet advertising annoying and disruptive. It was found that online advertising interrupted their online browsing activities (Rettie, 2001). On the other hand, research conducted on young adults (aged 18-30) in South Africa revealed a positive effect of Facebook advertising on the intention to purchase and purchases (Duffett, 2015). The result of this research supports other research in this field. First, research that was conducted on Facebook smartphone app users in Taiwan also showed that Facebook advertising had a positive impact on consumer attitudes and the intention to purchase (Yang, 2012). In addition, a study of college students in Malaysia also revealed a significant and positive relationship between online advertising and the purchase intention of internet users (B. K. P. D. Balakrishnan et al., 2014). Furthermore, a study in the hospitality business also showed that the attitude towards Facebook affected attitudes towards the brand

advertised on the Facebook page, which eventually influenced the intention to purchase (X. Y. Leung, Bai, & Stahura, 2013).

The way that social media advertising influences users in terms of purchase intention can be explained based on the literature review. First, the concept of online display advertising should be explained. Online display advertising (display ad) is advertising messages or graphics that are displayed on a web page, online application, or any form of information online. These display ads can be in any form of banner, text, or even video. Customers can click on these display ads to reach the destination, usually a branded website or a social media page, to get more information or make an online purchase depending on the type of destination page (Zhang & Mao, 2016). Even though the statistics revealed that the rate of online clicks was relatively low, it proved that it significantly increased the number of sales at retail stores both online and offline (Fulgoni & Lipsman, 2014). In order to determine the reason behind this relationship, the psychological steps should be explained. First, if the online users click on social media display ad, it means they have already paid attention to the ad itself in contrast to the users who do not click the display ad at all. In addition, the information processing model, (McGuire, 1968), suggested that greater attention to the information will result in more positive attitudes toward that particular information. Furthermore, a study of social media users, who were college students in the United States, revealed a significant and positive relationship between the number of ad clicks and attitudes toward products via product evaluation (Zhang & Mao, 2016). According to the Theory of Planned Behavior (Ajzen, 1985), there is a relationship between attitude and behavioral intention. As mentioned above, social media ad clicks lead to positive attitudes about products, this step could be an antecedent to the purchase of products. The study by (Zhang & Mao, 2016) proved the existence of a relationship between product evaluation, which results in positive or negative attitudes, and the intention to purchase the products displayed in the online ad. Moreover, a study of students in Taiwan revealed that Facebook advertising had a positive influence on consumer attitudes toward the products and their intention to purchase (Yang, 2012). In addition, a study on students in the United States showed that Facebook pages have a positive influence on attitude and the intention to purchase (M., Pamela, & Erin, 2013).

From the above information, the following hypothesis is proposed.
*Hypothesis 3: Click on online advertisements via social media have a positive effect on attitudes toward online shopping.*

From the Theory of Planned Behavior, the concept of perceived behavioral intention was defined as the people's perception of their own capability to perform the task. In the context of internet online shopping, with click on advertising, users possess the ability to use the online platform without any difficulty. Therefore, this could lead to the perception that they have the ability to perform other online activities such as online purchase. Thus, the following hypothesis is proposed.

*Hypothesis 4: Click on online advertising via social media has a positive effect on perceived behavioral control in online purchasing behavior.*

2.7.2 Logistics service quality

As mentioned in the previous chapter, logistics plays an important role in online shopping as the final activity of the transaction. In order to be successful in this market, a retailer needs to have superior service quality than the competitors (Ehmke & Mattfeld, 2012). Moreover, previous research shows that the improvement of service quality is directly related to the firm's operational performance (Samson & Terziovski, 1999). In addition, research has shown that some of the most common problems in online shopping are related to logistics. These problems include late delivery and the incorrect shipment of products (Yong Lin, Luo, Cai, Ma, & Rong, 2016).

To understand the concept of logistics service quality, the concept of service quality should be discussed. The concept of service quality originated from Expectation Confirmation Theory as discussed in the previous section. Marketing research in the past has used this theory as a basis to measure service quality (Grönroos, 1984;

Parasuraman, Zeithaml, & Berry, 1985). Moreover, the early model of service quality, called SERVQUAL, originated in the work of Parasuraman et al. (1985) who employed ECT as the basis of the model. However, in logistics-related research, another concept of service quality has been used as a measurement variable, called logistics service quality.

The concept of logistics service quality can be traced back to research in the 1970s (Yong Lin et al., 2016), but it was not empirically proven and conceptualized until laters. During the early period of logistics excellence measurement, researchers tended to look at logistics from the logistics service provider perspective but not from the customer perspective (Ackerman, 1989, 1991; Witt, 1991). In order to look at logistics from the customer perspective, researchers have integrated two elements, marketing customer service and physical distribution service (PDS) and this idea has been used as the basis of later researches (Mentzer, Gomes, & Krapfel Jr, 1989; Rinehart, Cooper, & Wagenheim, 1989). The concept of a physical distribution service (PDS) consists of three main elements, availability, timeliness, and quality (Mentzer et al., 1989). While developing the dimension of logistics service quality scale of measurement, Mentzer, Flint, and Kent (1999) included PDS as a component of logistics service quality. Moreover, they added six more constructs to complete the measurement of all dimensions of logistics service quality and eventually included nine constructs to measure logistics service quality. All nine constructs have been tested and validated (John T. Mentzer, Daniel J. Flint, & Hult, 2001; Mentzer et al., 1999). The nine concepts of logistics service quality are listed below:

1. Personnel contact quality. This concept refers to the quality of the supplier's contact person from the customer perspective. This includes how helpful and knowledgeable the supplier's contact person is in the customer's view (Bitner, 1990). This dimension was considered important because research shows that in most service business, the perception of quality was formed during service delivery (Parasuraman et al., 1985). Therefore, this dimension is important in measuring service quality. In the world of online shopping, personal interaction may be minimal. However, the concept of a real time chat helpdesk may be

considered as a form of personal contact.

2. Order release quantities. This concept refers to the availability of products. The concept of availability has been recognized as one of the main dimensions of logistics quality (Mentzer et al., 1989). Therefore, in order to satisfy customers, customers should receive the amount of products that they ordered.
3. Information quality. This concept refers to the perception of quality of information that has been provided by the sellers. Thus, the quality and availability of product information would affect the customer's decision making process (Bienstock et al., 1997; Mentzer et al., 1999)
4. Ordering procedures. This concept refers to how easy and effective the ordering process is (Bienstock et al., 1997; Mentzer et al., 1999; Mentzer et al., 1989).
5. Order accuracy. This concept refers to the number of correct shipments that match the order numbers during shipment. It also includes the correct sequence of arrival when multiple orders have been placed (Bienstock et al., 1997; Mentzer et al., 1999; Mentzer et al., 1989).
6. Order condition. This concept refers to the condition of the received products whether the products arrived damage-free or not (Bienstock et al., 1997; Mentzer et al., 1999; Mentzer et al., 1989). When the product is damaged, it cannot be used and may affect customer satisfaction.
7. Order quality. This concept refers to the quality of products in terms of its conformance to quality dimensions. (Novack, Rinehart, & Langley, 1994), i.e. a product that conforms to both its specifications and customer expectations. This dimension may not be confused with order accuracy or order condition since order accuracy deals with the amount of products that has actually been delivered compared to the quantity that has been ordered. In addition, order condition deals with the quantity of products that has been delivered undamaged.
8. Order discrepancy handling. This concept refers to how the suppliers or sellers handle problems that occur after customers have received the products (Novack et al., 1994). For example, when customers received inaccurate or low quality

products, they would ask for help from the sellers. This concept measures how the issues are handled by the sellers.

9. Timeliness. This dimension refers to the time that an order takes to be delivered to customers. It focuses on whether the time of delivery has been kept as promised. Moreover, it also measures the amount of time between the placement of the order and the time that customers actually receive the products (Hult, Hurley, Giunipero, & Nichols, 2000).

Although all of the nine mentioned dimensions of logistics service quality are widely accepted, it has not been without criticism. Since the development of this measurement scale was based on only one organization in the United States (Defense Logistics Agency) (Mentzer et al., 1999), the critique doubts its validity when used in other organizations in other countries (Mentzer, Myers, & Cheung, 2004). Therefore, it is worth studying more related research that has been conducted in other organizations or other countries. First, a research from Taiwan tested the relationship between all nine constructs of logistics service quality and customer satisfaction and customer loyalty in the online retail business. The results of this research revealed that all dimensions of logistics service quality directly affected customer loyalty and customer satisfaction (Huang, Kuo, & Xu, 2009). Moreover, another research studied the relationship between logistics service quality and customer satisfaction for online shoppers in China. The empirical result also showed that there was a significant relationship between logistics service quality and customer satisfaction (Yong Lin et al., 2016). Furthermore, a study in Spain revealed a direct and positive relationship between logistics service quality and customer satisfaction, which indirectly affected customer loyalty. However, in the previously-mentioned research conducted in Spain, the authors only employed four out of nine dimensions of the logistics service quality scale (Irene, David, Gloria, & María, 2008). In addition, a research work from the United States that studied the relationship between logistics service quality in terms of technology usage used only eight out of the nine elements of logistics service quality (Bienstock, Royne, Sherrell, & Stafford, 2008). Interestingly, one research that was conducted in China with Chinese online shoppers, which is one of the biggest e-commerce markets in the

world (Europe, 2017), found that only six out of nine constructs of the logistics service quality scale to be valid (Feng et al., 2007). As seen from several researches mentioned earlier, especially in the e-commerce-related field, logistics service quality has a significant positive relationship with customer satisfaction and customer loyalty. However, some research studies indicated that all of the constructs of the logistics service quality scale may not be appropriate to be used in every study, especially in other fields and other regions than the United States.

As mentioned above, logistics service quality plays an important role in online shopping activity since logistics is the last part which completes the online shopping activity by delivering the products to customers. Thus, if customers have negative perceptions about the logistics service, they may end up not making the decision to purchase online. Therefore, the author proposes the hypothesis as follows.

*Hypothesis 5: The level of perceived logistics service quality has a positive effect on online purchase behavior.*

From the information on previous studies presented in the previous section, there is a clear relationship between logistics service quality and customer satisfaction, which will then affect loyalty. However, in this research, the focal point of logistics service quality is from the perception of internet users. As indicated in the previous consumer behavior research by Spreng and Mackoy (1996), perceived service quality has a similar influence on satisfaction as service quality. Therefore, this study proposes the following hypothesis.

*Hypothesis 6: The level of perceived logistics service quality has a positive effect on the level of customer satisfaction.*

2.7.3 Online Purchase Behavior

Online shopping behavior, or internet purchasing behavior, is the behavior of making the purchase of any product or service over the internet. In recent years, online shopping

has been listed as one of the most popular activities for internet users. Locally, Thailand's internet users in 2017 listed online shopping as one of the top 5 activities that they do while online (ETDA, 2018). As previously mentioned, more than 8,600 offline retail stores in the United States closed in 2017 (Carr, 2017). This trend could indicate a gradual change in consumer shopping behavior from offline to online. This rate of adoption could come as a result of internet users realizing the benefits that they get from online shopping (Wani & Malik, 2013). A study by (Forsythe, Liu, Shannon, & Gardner, 2006) identified the benefits of shopping online in four dimensions, which are convenience, a wide range of product selection, comfort of shopping, and enjoyment. However, the adoption of online shopping does not come without obstacles. When consumers purchase products online, one thing that distinguishes offline and online purchases is the level of visibility of the products. In online shopping, consumers cannot see the physical products before they purchase, which would lead to a perceived risk as to whether the shopping transaction was being done safely or not. Previous studies also showed that one of the main obstacles in online shopping decision making is risk. First, a study on the acceptance of online shopping by Liang and Huang (1998) found that one factor related to user acceptance of online purchase is the level of uncertainty or perception of risk in the online shopping activity. Furthermore, several studies have also linked online purchase decision making with risk, which includes financial risk, product risk, and convenience risk (Forsythe et al., 2006; Graham & Philip, 2006; Li & Zhang, 2002). To identify the features of online shopping behavior, the framework from TPB has been proposed to describe the influencing factors. In the context of online shopping, the framework of TPB has been widely used to predict purchase behavior. First, research surveyed online shoppers in Sweden on their willingness to buy online, using the framework of TPB (Hansen, 2008). The results showed all three constructs positively and significantly affected the willingness to buy online. Another study on social media users in Taiwan by Gunawan and Huarng (2015) also showed the significant effect that attitude and subjective norm have on behavioral intention to purchase. The typical model of TPB links all three constructs with behavioral intention, which is the antecedent of actual behavior. However, this study will be collecting cross-sectional data, which will be collected at one point in time. This leads to the impossibility of collecting data on the reflection of intention to purchase

and post-purchase behavior. The same approach was employed by George (2004) when surveying online shoppers in the United States. This research also found that attitude and perceived behavioral control significantly affected internet purchasing behavior (George, 2004). From the above information, the hypotheses based on the constructs of TPB are proposed.

Attitude in the TPB was treated as a predictive factor of the individual's intention to perform the behavior. The more positive attitude the individual has on that behavior, the greater the possibility that the individual would want to perform that behavior. Thus, the hypothesis is proposed as follows.

*Hypothesis 7: Attitude towards online shopping has a positive effect on online shopping behavior*.

Subjective Norm is defined as a social factor or social pressure that an individual feels when living in a society. The framework of TPB also states that subjective norm influence the intention to perform the behavior. Therefore, in the online shopping context, the following hypothesis is proposed as follows.

*Hypothesis 8: Subjective norm have a positive effect on online shopping behavior.*

Perceived behavioral control means the perception of the individual on the task as to how capable that individual is at performing that task. In an online shopping context, it means how the person perceives how easy it is to conduct online shopping. Therefore, the following hypothesis is proposed.

*Hypothesis 9: Perceived behavioral control over online shopping has a positive effect on online shopping behavior.*

### 2.7.4 Satisfaction

The concept of customer satisfaction has been widely explored and studied since the 1970s in marketing research (Hennig-Thurau & Klee, 1997). Satisfaction in the consumer behavior context has been defined as "the summary of psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience" (Richard L. Oliver, 1981, p. 29). According to the framework of Expectation Confirmation Theory that has been previously discussed in this chapter (Richard L. Oliver & Bearden, 1985), expectation is an antecedent of satisfaction before receiving the product or service. In addition, expectation performs as a reference point of the consumer in order to evaluate the received product or service. Moreover, after the products have been used, users form a perception on the product or service performance, and then users assess the perceived performance against the expectation and determine whether the expectation is confirmed or not. After that, users form a level of satisfaction as satisfied or unsatisfied. From the statement above, the lower the expectation, the greater the possibility that positive satisfaction can be generated (Bhattacherjee, 2001). As a result, the level of satisfaction is formed only after the product or service has been purchased and received.

As previously discussed, one of the objectives of this research is to determine the influence of social media on customer purchase behavior, satisfaction, and repurchase intention. Social media acts as an indirect antecedent of satisfaction. In addition, previous researches in marketing have been conducted to determine the relationship between advertisement and customer satisfaction. For example, a study by Jolodar and Ansari (2011) found that television advertising in Iran significantly influenced product satisfaction. Moreover, another study in India also shows that advertising indirectly influenced customer satisfaction via purchase behavior (Zubair Tariq, 2014). In this study, social media acts as an influencing factor, the same as advertising in the previously-mentioned researches. Therefore, the relationship between purchase behavior and satisfaction should be studied as it has already been proven in the research by Zubair Tariq (2014). Therefore, the following hypothesis is proposed.

*Hypothesis 10: Online purchase behavior is positively related to the level of satisfaction for online shopping.*

2.7.5 Intention to repurchase

Repurchase intention has been defined as the circumstances where there is a high possibility for customers to buy a particular service or product again from the same seller. This term has been used interchangeably with the term 'customer loyalty' in several research studies since loyalty can be measured by the repurchase intention of customers (Ahn, Ryu, & Han, 2004; Hellier, Geursen, Carr, & Rickard, 2003). One key success factor of the online shopping business is to establish customer loyalty because this will generate long-term sales from repeat customers (C.-W. D. Chen & Cheng, 2009; M. Liu & Xiao, 2008; Valarie A Zeithaml, Parasuraman, & Malhotra, 2002). Several studies have found positive and significant relationships between long-term customer loyalty and the company's growth and profit (Hellier et al., 2003; Molla & Licker, 2001). A study by C. Kim et al. (2012) used customer repurchase intention as an antecedent to predict the success of online shopping businesses.

In the context of online shopping, the intention to repurchase can be identified from more than one aspect. For example, Chiu, Chang, Cheng, and Fang (2009) measured intention to repurchase by conducting a survey with 360 Taiwanese online shoppers of only one website. O. Pappas et al. (2014) measured intention to repurchase online by conducting a questionnaire survey with Greek online shoppers without any specification of the website that they purchased from. This research regards the intention to repurchase in the same way as O. Pappas et al. (2014) by measuring the intention to repurchase online without any specification of product type or online shopping website.

Several research studies have shown a relationship between customer satisfaction and intention to repurchase. For example, research that was conducted in Korea to determine the antecedents of internet shopping repurchase intention, found a significant relationship between satisfaction and repurchase intention (C. Kim et al., 2012).

Moreover, another study on internet users in Europe also revealed a positive relationship between satisfaction about the online shopping experience and the intention to repurchase, with prior experience as a moderator to strengthen this relationship (O. Pappas et al., 2014). In addition, while developing the expectation confirmation model in the information systems research field, Bhattacherjee (2001) conducted a survey in the United States and found a significant and positive relationship between the user's satisfaction level and the intention to continue the usage of the service. Furthermore, a study in Taiwan on service industries in Taiwan also proved that customer satisfaction indirectly influenced customer loyalty through self-determined motivation (C.-P. Lin et al., 2009). Therefore, the following hypothesis is proposed.

*Hypothesis 11: Online shopping satisfaction has a positive effect on the intention to repurchase.*

**2.9 List of all Hypotheses.**

The purpose of this research is to determine the influence of social media on online shopping behavior and the influence of perceived logistics service quality on online shopping behavior, which will further affect customer satisfaction and eventually the intention to repurchase. The theoretical framework of this research was taken partly from Expectation Confirmation Theory and the Theory of Planned Behavior. Therefore, as previously discussed, the hypotheses that represent the relationships between each construct are summarized below.

*Hypothesis 1: Peer communication of e-WOM via social media has a positive effect on attitude towards online shopping purchase behavior.*

*Hypothesis 2: Peer communication of e-WOM via social media has a positive effect on subjective norm.*

*Hypothesis 3: Click on online advertisement via social media has a positive effect on the attitude toward online shopping.*

*Hypothesis 4: Click on online advertisement via social media has a positive effect on perceived behavioral control over online purchase behavior.*

*Hypothesis 5: The level of perceived logistics service quality has a positive effect on online purchase behavior.*

*Hypothesis 6: The level of perceived logistics service quality has a positive effect on the level of customer satisfaction*

*Hypothesis 7: Attitude towards online shopping is has a positive effect on online shopping behavior.*

*Hypothesis 8: Subjective norm have a positive effect on online shopping behavior.*

*Hypothesis 9: Perceived behavioral control over online shopping has a positive effect on online shopping behavior.*

*Hypothesis 10: Online purchase behavior is positively related to the level of satisfaction for online shopping*

*Hypothesis 11: Online shopping satisfaction has a positive effect on the intention to repurchase.*

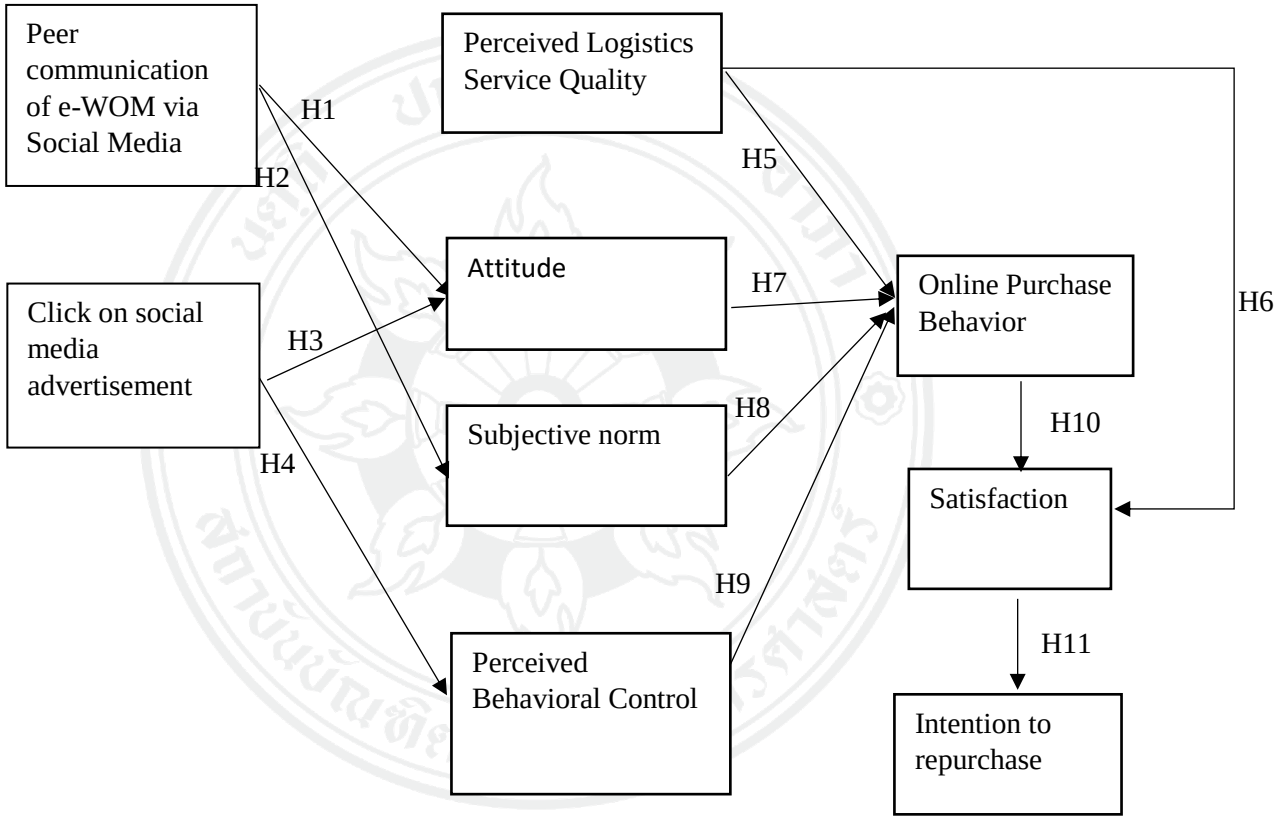



*Figure 9: Proposed Conceptual Model*

# CHAPTER 3
# RESEARCH METHODOLOGY

This chapter presents information related to the research methodology in this study. First, the research design is discussed to present the overall picture regarding the methodology of this study. The sampling and data collection methods are then presented, along with the measurement of constructs in the conceptual model. After that, the control variables, the back translation technique, the pilot test, and the analytical method will be discussed at the end of this chapter.

## 3.1 Research Design

This research has been designed to answer the questions posed in the previous chapters. As mentioned, the purpose of this research is to determine the factors that influence the online shopping behavior of Thailand's internet users, which is linked to satisfaction and the intention to repurchase based on the Theory of Planned Behavior and Expectation Confirmation Theory. Moreover, data were collected and tested based on the framework of these theories. Based on the previous research on information systems that was conducted using these theories as its theoretical framework, a quantitative research approach is employed (B. Kim, 2010). However, this research does not intend to explain the phenomena of the study, but rather seeks to confirm the hypotheses that derive from previous literature. Moreover, to be generalizable, the sample size needs to be big enough to represent the overall population. Therefore, this research employs a quantitative method based on a deductive approach as this approach is usually employed when using a data set to test theory (Saunders, Lewis, & Thornhill, 2016). Moreover, the instrument used in this research is a self-administered questionnaire. This type of instrument is cost effective, easy to deliver, and can reach a large number of respondents in a short period of time. In addition, there is no need for the researchers or interviewers to be present during data collection. Furthermore, the fact that the interviewers have no direct involvement with the respondents could prevent interviewer bias during data collection. However, self-administered questionnaire does not come without disadvantages. If the questions are not expressed clearly the respondents would

not have the opportunity to ask questions to clarify their understanding (Godwill, 2015). Additionally, the questions that are used in the questionnaire are based on previous research which will be discussed in the following sections.

## 3.2 Sampling Plan

### 3.2.1 Population and Sample Size

As indicated in the previous chapter, this study aims to study the behavior of online shoppers in Thailand, who are internet users in Thailand. The statistics show that Thailand had 43.87 million internet users in 2016 (NBTC, 2017a). Therefore, the total population in this work is the internet users in Thailand, which is equal to 43.87 million people. As a result, population sampling is necessary since sampling is the selection of a group of samples within the population that represent the character of the overall population (Singh & Masuku, 2014). In addition, sampling also has advantages in terms of the shorter time and lower cost for data collection (Groves, 2004). Therefore, sampling has been widely used in various fields of research such as business, scientific, and medical research (Singh & Masuku, 2014).

To determine the sample size of quantitative research, several approaches have been published and employed in previous research (Singh & Masuku, 2014). However, this research employs the simplified formula to determine sample size proposed by Yamane (1967). The formula is $n = \frac{N}{[1+N(e)^2]}$ where n is the sample size that will be surveyed, N is the size of the whole population, and e is the level of precision. In addition, in this research, the confidence level of 95% and 5% error is used. The population of internet users in Thailand is 43.87 million people (NBTC, 2017a), N in the formula will be equal to 43.87 million. After applying all of the known numbers in the sampling size formula, the sample size is equal to 400. It should be stated here that sample size means the number of responses that have been returned and are usable, not the number of mailed out questionnaires (Singh & Masuku, 2014).

3.2.2 Sampling Method

As mentioned in the previous section,t the size of the sample is determined by using several methods, which in this research is the simplified formula proposed by Yamane (1967). However, the method to determine which individuals are to be selected as the sample in this research should also be discussed. The methods to select the samples can be separated into two main categories, probability and nonprobability sampling methods. For the probability sampling method, every individual in the total population has an equal chance, or non-zero chance, of being selected as a sample. On the other hand, nonprobability sampling is the sampling method where the chance of being selected is unknown since the selection process is based on the subjective judgement or the convenience of the researchers.

In this research, the researcher employed the convenience sampling method to select the sample from the population, which is considered as a nonprobability sampling method. However, information in the previous chapter shows that generation Y or people aged between 17 and 34 years old are the group of people who spent most time online when compared to other age groups in Thailand (ETDA, 2018). Moreover, data shows that the age group of internet users that spent the most money on the internet in Thailand in the B2C e-commerce segment are also the people between 18 and 34 years of age (Statista, 2018a). As a result, the questionnaire has been distributed to samples at universities in Thailand including Assumption University and Silpakorn University.

In order to ensure that the respondents had direct experience in social media usage and online shopping, the first section in the questionnaire included screening questions, which asked the respondents whether they had any experience in social media usage and online shopping or not. If the answer was no, there would be no need to do further analysis with that respondent and the questionnaire would be eliminated.

To minimize the bias in the data collection by one group of respondents, the questionnaire was distributed to several universities in Thailand, some of which are in Bangkok, while others are in other regions of the country.

### 3.3 Construct Measurement.

As mentioned earlier, data collection in this research was conducted by the distribution of a questionnaire. Therefore, the questionnaire needed to be designed to measure each construct in the conceptual model proposed in the previous chapter. In this research, the questions used in the questionnaire were adapted from previous related research. In addition, before the questions for measuring each construct were asked, screening questions were asked first to ensure the respondents had experience in social media usage and online shopping. If the respondents answered no or indicated that they had never had any social media usage and/or online shopping experience, they were recommended not to continue filling in the questionnaire and the questionnaires were eliminated. In contrast, if the respondents indicated that they had experienced online shopping by answering yes to the screening question, they were able to answer the questions related to the measurement of the constructs.

Each construct in the conceptual model was measured using a six-point Likert scale. As indicated by R. Garland (1991), the middle point or the "neither agree nor disagree" choice creates social desirable bias. Moreover, the use of an even number of choices in the Likert scale would reduce the possibility of the central tendency and social desirable bias (Greenleaf, 1992; Johnson, Fendrich, & Hubbell, 2002). Moreover, a recent study also shows that the middle point or 'neither choice' may be overused in research (Nadler, Weston, & Voyles, 2015). Therefore, an even number of choices or a six-point Likert scale is used in the construct measurement of this research.

First, peer communication via social media was measured using the questions taken from previous research by Wang et al. (2012), which was developed from an earlier article on marketing by Moschis and Churchill Jr (1978). Moreover, the research by Wang et al. (2012) proved a relationship between peer communication via social media and intention to shop online. Next, click on social media advertising was measured by using questions from the work of (Zhang & Mao, 2016). In their research, they found that click on social media advertising indirectly influenced purchase intention.

*Table 1: Questions on Social Media Influence*

| **Social media influence** | | |
|---|---|---|
| Indicator | Question | Original Work |
| Peer Communication via Social Media | I talked with my peers about the product on social media. | (Wang et al., 2012) |
| | I talked with my peers about buying the product on the Internet. | |
| | I asked my peers for advice about the product. | |
| | I obtained the product information from my peers. | |
| | My peers encouraged me to buy the product. | |
| Click on social media advertising | I clicked on the display ads on a social media site to understand more about the products. | (Zhang & Mao, 2016) |
| | I clicked on the display ads on a social media site to make a purchase. | |
| | I clicked on the display ads on a social media site to get more information about the products. | |

To measure perceived logistics service quality (LSQ), this research began with the investigation of all 9 elements of LSQ developed by Mentzer et al. (1999) . This scale of measurement is widely-accepted and has been used in many researches in both B2B and B2C e-commerce segments as mentioned in the previous section. However, as stated earlier, each research has different results in terms of the significance of the number of elements used for measurement in each survey since some elements can only be asked to the B2B segment due to their irrelevance in B2C e-commerce (Bienstock et al., 2008; Feng et al., 2007; Irene et al., 2008). In the research conducted by Feng et al. (2007), logistics service quality was measured using a modified version of the scale originally developed by Mentzer et al. (1999). In the research by Feng et al. (2007), the researchers concluded that only six dimensions in LSQ had a significant impact on the profit of an online shopping business for Chinese online shoppers. In order to create the LSQ questions in the survey for this research, four elements were eliminated from

the measurement since they are not relevant to the context of B2C e-commerce and online shopping. The eliminated elements are order release quantities, information quality, order procedure and order quality. The reasons for the elimination of those four elements are explained below.

First, order release quantities, as mentioned in the literature review section, means customers receiving the quantities that they ordered. While this element might be crucial in B2B e-commerce, it would not be able to measure the quality of logistics service since it deals directly with the seller rather than the logistics company or the logistics unit that the sellers provide. Second, information quality and ordering procedure deal directly with the quality of the information about the products that are available for sale and the procedure that is used to order the product from the suppliers. Again, these dimensions are important in B2B e-commerce but not relevant to B2C e-commerce. Last, order quality may sound relevant to logistics service for online shopping but it deals directly with the quality of the product rather than the quality of shipment which is not relevant to service quality in B2C e-commerce.

After the questions were created based on the modification of the previous LSQ scale (Mentzer, Flint, & Hult, 2001; Mentzer et al., 1999), a pilot test was needed to test the constructs of the remaining variable. The result could then be used to determine how many dimensions of LSQ there should actually be in this survey. The procedure of the pilot test will be discussed in the following section. Moreover, the questions that were included in the pilot test are shown in the following table.

*Table 2: Questions on Logistics Service Quality*

| Logistics Service Quality | | |
|---|---|---|
| Indicator | Question | Original Work |
| Personnel Contact Quality | The online helpdesk tries to understand my situation. | (Mentzer et al., 2001; Mentzer et al., 1999) |
| | Problems are resolved by the online helpdesk. | |
| | The information provided by online | |

| | | |
|---|---|---|
| | helpdesk is adequate. | |
| Order Accuracy | Shipments rarely contain the wrong items. | |
| | Shipments rarely contain an incorrect quantity. | |
| | Shipments rarely contain substituted items. | |
| Order Condition | I always receive goods in satisfactory condition. | |
| | I am happy with the condition of packages received from the company. | |
| | Damage rarely occurs as a result of the transport mode or carrier. | |
| Order Discrepancy Handling | In the case of an unsatisfactory product, the correction process is satisfactory. (For example, return or exchange process) | |
| | The online store has an adequate process regarding unsatisfactory logistics process | |
| Timeliness | Time between placing order and receiving delivery is short. | |
| | Products are delivered on the date promised. | |
| | The amount of time a product is on back-order is short. | |

The measurement questions of Attitude, Subjective norm, and Perceived Behavioral Control will use questions that have been modified from previous research. First, the study by George (2004) measured the direct relationship between all three constructs in the TPB and purchase behavior, bypassing the intention to purchase, which concurs with this research. Therefore, some questions in the measurement of Attitude, Subjective norm, and Perceived Behavioral Control were taken from the mentioned research. Moreover, some questions to measure attitude towards online shopping were adapted from a recent study on online shopping using the conceptual model that dervied from the Theory of Reasoned Action (TRA) and the Technology Acceptance Model (TAM) by Lim (2015). In addition, for the questions adapted from the study by George (2004) for the measurement of Subjective norm, questions were added by using the modification of questions from the work of Ramayah, Rouibah, Gopi, and Rangel (2009) where TRA was used as the theoretical framework to measure the intention to use online trading for the stock market in Malaysia. In addition to the questions that

were modified from the work of George (2004), for the measurement of Perceived Behavioral Control more questions were added from research on online grocery shopping using TPB as the theoretical framework by Hansen (2008). However, the measurement of this construct also included one reverse-coded question to check the consistency of the respondents when answering the questions.

*Table 3: Questions based on Theory of Planned Behavior*

| Theory of Planned Behavior | | |
|---|---|---|
| Indicator | Question | Original Work |
| Attitude | Buying products over the internet is a good idea | (George, 2004; Lim, 2015) |
| | Buying products over the internet is a wise idea | |
| | Buying products over the internet is an idea I like | |
| | Using the internet to buy products is pleasant | |
| | I like to buy what I need from the internet | |
| Subjective Norm | People who influence my behavior would think I should buy products over the internet | (George, 2004; Ramayah et al., 2009) |
| | People who are important to me would think I should buy products over the internet | |
| | People who influence my behavior would think that buy products from the internet is a wise idea | |
| | People who are important to me would think that buy products from the internet is a wise idea | |
| Perceived Behavioral Control | I am capable of buying products over the internet | (George, 2004; Hansen, 2008) |
| | Buying products over the internet is entirely within my control | |
| | I have resources and knowledge and the ability | |

| | | |
|---|---|---|
| | to buy products over the internet | |
| | In general, electronic shopping is very complex (Reverse question) | |

Next, to measure online shopping behavior, the measurement questions were adapted from the previous work by Patwardhan and Yang (2003) and more recent work by Lim (2015) where seven questions were asked. In addition, the measurement of satisfaction and the intention to repurchase is performed by using questions taken from the work by O. Pappas et al. (2014). In the mentioned research, the researchers used these questions to measure satisfaction and the intention to repurchase online, which are similar to the variables this research intends to measure. In addition, some questions for the measurement of satisfaction were also modified from the work of I.-L. Wu (2013), which studied satisfaction and the intention to complain in online shopping. Furthermore, additional questions to measure the intention to repurchase were also modified from previous research that studied the factors affecting internet shopping value and its relationship with repurchase intention (C. Kim et al., 2012)

*Table 4: Questions on Online Shopping Behavior, Satisfaction, and Intention to Repurchase*

| Indicator | Question | Original Work |
|---|---|---|
| Online Shopping Behavior | I shop on the Internet | (Lim, 2015; Patwardhan & Yang, 2003) |
| | I buy many different products on the Internet | |
| | I make use of online coupons/ discounts on goods and services | |
| | I follow up on good deals on the Internet | |
| | I buy a product online even if other buying options are available | |
| | I make online purchases frequently | |
| | Overall, I have made many online purchases | |
| Satisfaction | I am satisfied with the online shopping experience | (O. Pappas et al., 2014; I.-L. Wu, 2013) |
| | I am pleased with the online shopping experience | |
| | My feeling with using online shops was good | |

| | | |
|---|---|---|
| | Purchasing products from online stores is a good idea. | |
| | I like to purchase products from online stores. | |
| Intention to Repurchase | I intend to continue to purchase goods from the Internet shopping site that I regularly use | (C. Kim et al., 2012; O. Pappas et al., 2014) |
| | I intend to acquire product information from the Internet shopping site that I regularly use | |
| | I intend to recommend the Internet shopping site that I regularly use to people around me | |
| | I intend to continue online shopping in the future | |
| | I will continue online shopping in the future | |
| | I will regularly use online shops in the future | |

**3.4 Control Variables.**

To test other factors that may influence the dependent variables, control variables have also been included in this study. Hence, the inclusion of the respondents' gender, age group, nationality, level of education, monthly personal income level, monthly household income level, residential area (urban/rural), hours spent on the internet, social media platform used, and average money spent online per month will be included in this study. Some of the mentioned control variables were also presented in research on online shopping and social media, with some additional variables proposed by the author (Duffett, 2015; George, 2004; C. Kim et al., 2012). In addition, the mentioned control variables were measured using the following scales. First, gender was measured using a nominal scale by identifying male=1 and female=0. Next, age group was measured by an ordinal scale using the following age ranges: below 18, 18-24, 25-34, 35-44, 45-54, 55-64, and more than 64. Nationality were measured by a nominal scale as Thai and Non-Thai with the specification of the respondent's nationality. Moreover, level of education was measured by employing an ordinal scale as follows; lower than high school, high school, bachelor's degree, master's degree, and doctoral degree.

Furthermore, monthly personal income level was also measured using an ordinal scale with the ranges as follows; lower than THB10,000, THB10,001-30,000, THB30,001-50,000, and more than THB50,000. Residential area was measured by separating the area into two main categories as Bangkok and others and was measured using a nominal scale using urban=1 and rural=0. For hours spent on the internet, the respondents selected the range as provided in the questionnaire as it was measured using an ordinal scale with the following range; less than 1 hour, 1-3 hours, 3-5 hours, 5-7 hours, and more than 7 hours. In addition, the average money spent online per month was measured by giving the range for the respondents to fill in and was measured in an ordinal scale as follows; lower than THB1,000/ THB1,001-5,000/ THB5,001-10,000/ THB10,001-30,000/ more than THB30,000. Next, the questionnaire asked about the product category in which the respondents made online purchases by giving the top five categories for Thai online shoppers (ETDA, 2018) which are Fashion, Health & Beauty, IT & Gadgets, Household items, Food Service and others, which was also measured as a nominal scale. Moreover, the reasons for buying online was measured using a nominal scale by also giving the top five reasons for Thai online shoppers as indicated by ETDA (2018) as follows; Convenience, Promotion, Price, Products only available online, Quick Delivery with the addition of others for the respondents to fill in. Lastly, the platform that the respondents used for online shopping was also measured using a nominal scale by giving the following choices Mobile Phone, Tablet, Notebook Computer, Desktop Computer, and Other .

### 3.5 Back Translation Technique.

For this study, the samples were college students in Thailand, but it cannot be assumed that every individual in the sample understands the Thai language since many international students are now studying in Thailand. Therefore, the questionnaire was created in two languages, Thai and English. The English version of the questionnaire was created by taking the questions directly or by modifying questions from previous research. All of the questions were then translated into Thai by a translator. To ensure the accuracy of the translation from English to Thai, a back translation technique has

employed by the second translator. the two set of English questionnaires were then compared to ensure the accuracy of the translation.

3.6 Pilot Test

To ensure the reliability of the items measuring the variables being studied, a pilot test was employed. By having 0.7 as the cut-off point, items with a score lower than 0.7 were removed and therefore eliminated from further analysis (Saunders et al., 2016). Moreover, the questions in the questionnaire were tested in order to determine problems that respondents may have experienced during the data collection period. Moreover, in order to determine whether a 5 point or 6 point Likert scale should be used in the final version of the questionnaire, the pilot test was separated into two sets. Therefore, the questions with a 6 point Likert scale were distributed to the first group of participants, while the questions with a 5 point Likert scale were distributed to the second group of participants. The researcher performed the pilot test with 40 participants per group as recommended by Connelly (2008). Therefore, the pilot questionnaire was distributed to the first and second sets of sample who were all in the generation Y age group, and the information gathered by the pilot test was used to create the final version of the questionnaire.

The results of the pilot test can be categorized into two main parts. The first was to decide whether a 5 point or a 6 point Likert scale was more appropriate for this research. The result from the multiple regression analysis of the pilot test showed that the 6 point scale questionnaire gave stronger results (8 out of 11 hypotheses) than the 5 point scale (5 out of 11 hypotheses). in terms of significant relationships between variables in the hypotheses proposed in the conceptual model. Table 5 shows the results of the pilot test for both scales.

*Table 5: Pilot test result comparing 5 and 6 point Likert Scales*

| **Hypotheses** | **5 point Likert Scale** | | **6 point Likert Scale** | |
|---|---|---|---|---|
| | **p-value** | **Result** | **p-value** | **Result** |
| H1: e-WOM → Attitude. | 0.239 | **Rejected** | 0.000 | Supported |

| Hypotheses | 5 point Likert Scale | | 6 point Likert Scale | |
|---|---|---|---|---|
| | p-value | Result | p-value | Result |
| H2: e-WOM → Subjective norm. | 0.000 | Supported | 0.000 | Supported |
| H3: Click on Social Media advertisement → Attitude. | 0.004 | Supported | 0.032 | Supported |
| H4: Click on Social Media advertisement → Perceived behavioral control. | 0.001 | Supported | 0.000 | Supported |
| H5: Perceived logistics service quality → Online purchase behavior. | 0.864 | **Rejected** | 0.830 | **Rejected** |
| H6: Perceived logistics service quality → Satisfaction | 0.447 | **Rejected** | 0.001 | Supported |
| H7: Attitude → Online shopping behavior. | 0.090 | **Rejected** | 0.011 | Supported |
| H8: Subjective norm → online shopping behavior. | 0.334 | **Rejected** | 0.117 | **Rejected** |
| H9: Perceived behavioral control → Online shopping behavior. | 0.402 | **Rejected** | 0.374 | **Rejected** |
| H10: Online purchase behavior → Satisfaction | 0.000 | Supported | 0.000 | Supported |
| H11: Satisfaction → Intention to repurchase | 0.000 | Supported | 0.000 | Supported |

After the 6 point scale was chosen, to evaluate the reliability of the multiple item scale questions, the reliability test was performed and there was one variable, Perceived Behavioral Control, with a Cronbach's alpha value lower than 0.7 as shown in the table below.

*Table 6: Reliability results of Pilot Test*

| Variables | No. of items | Cronbach's Alpha |
|---|---|---|
| Peer communication via e-WOM | 5 | 0.926 |
| Click on Social Media advertisement | 3 | 0.915 |
| Attitude towards online shopping | 5 | 0.938 |
| Subjective norm | 4 | 0.913 |
| **Perceived Behavioral Control** | **4** | **0.370** |
| Perceived Logistics Service Quality | 14 | 0.947 |

| | | |
|---|---|---|
| Online Purchase Behavior | 7 | 0.946 |
| Satisfaction | 5 | 0.976 |
| Intention to repurchase | 6 | 0.969 |

With further investigation by performing the reliability test to show "Cronbach's Alpha if Item Deleted" as presented in the table below, it shows that removing the fourth question would result in changing Cronbach's alpha value to 0.858. Therefore, the fourth question was removed from the data collection process.

*Table 7: Reliability results of the Pilot Test for the deleted questions*

| Question | Cronbach's Alpha if Item Deleted |
|---|---|
| I am capable of buying products over the internet | -.281 |
| Buying products over the internet is entirely within my control | -.048 |
| I have resources and knowledge and the ability to buy products over the internet | -.139 |
| **In general, electronic shopping is very complex (Reverse question)** | **.858** |

### 3.7 Data Analysis Approaches

As mentioned before, data was collected through a self-administered survey, and the survey result from the questionnaires was analyzed using the Statistical Package for Social Sciences or SPSS software. The results of the analysis will be used to test the proposed hypotheses.

First, to analyze data from the questions in the questionnaire, the answers were input as numbers converted from the measurement in the Likert scale for each question. They were then processed using Multiple Regression Analysis with the significance level at 0.05 or 95% confidence level. Moreover, to test the validity of the questions since all the the constructs were measured using multiple item questions, factor analysis was

also peformed. In addition, the measurement of control variables that was mentioned earlier were also included in this analysis as descriptive statistics.

# CHAPTER 4
# DATA ANALYSIS

## 4.1 Response Rate

All the questionnaires were electronically distributed and collected via the internet through several sources including e-mail and social media websites. All the respondents input their information via Google Forms by themselves to minimize errors during the data input process. Out of the 375 questionnaires, 345 sets of questionnaires were found to have been completely filled. From the number of completely filled questionnaires, the response rate was 92.53%. In addition, only these complete questionnaires were considered as valid and were used in further analysis.

## 4.2 Demographics of respondents

To summarize all the demographic data of the respondents, descriptive statistics were employed. First, the results showed that out of 345 respondents, only 40% were male while female respondents accounted for 60% of the respondents (male = 135, female = 210). Since the survey was conducted focusing on internet users in Thailand, it was not surprising that the nationality of most participants was Thai (Thai = 88.1%). Although the age groups of the participants range from below 18 to 64 years of age, the majority of respondents were in the age group of 18 to 24 (90.1%). As for the level of education, most of the participants held a bachelor's degree (86.4%), followed by high school graduates (7.5%), master's degree graduates (5.2%), doctoral degree holders (0.6%), and lower than high school education (0.3%). Regarding the level of personal income, around 60% of the participants had a monthly income level between 10,001and 30,000 baht while almost one third (28%) of the respondents had personal income at10,000 baht or lower. Regarding the residential area, most of the participants were located in Bangkok (83%) and the rest were from other areas. As for the average time spent online per day, 33.6% of the respondents spent 5-7 hours, 30.7% spent 3-5 hours, 20.7% spent more than 7 hours, 14.2% spent 1-3 hours and only 1.2% spent less than 1 hour online. This results from the survey show were similar to the national survey by ETDA (2018).

The national survey showed that internet users in Thailand spent between 4and 8 hours per day online. In addition, this number could increase in the future since the national survey also showed that 60% of Thailand's internet users spent more time online compared to the previous year (ETDA, 2018).

In regard to the social media platform that the respondents used, Facebook was ranked number one as 100% of the participants answered that they used Facebook, followed by Line, YouTube and Instagram respectively. It should be noted here that multiple answers are allowed in this question since many people used more than one social media platform.

As mentioned in the previous section, the screening questions were asked as to whether the participants had any experience of online shopping in the past 12 months. The questions about the amount spent on online shopping were 100% valid since all of the participants who answered this question had already passed the screening questions. Therefore, it can be concluded that all of the respondents had made online purchases in the last 12 months. The results show that almost half of the respondents (48.7%) spent between 1,001-5,000 baht per month online, while around one third (34%) spent less than 1,000 per month while only 0.9% of all the respondents spent more than 30,000 baht per month on average online.

Regarding online purchase behavior, respondents were asked about the products that they had bought online. In this question, multiple answers were allowed to ensure that all of the necessary information was collected. The results show that the three most popular product categories were fashion, IT and gadgets, and household products respectively. This result also concurs with the national survey that was conducted by the Ministry of Digital Economy in 2017 which found that the top three categories of products bought online by Thai internet shoppers were also fashion, IT, and household products, respectively (ETDA, 2018).

Another aspect of online shopping that is related to shopping behavior is the reason behind the shoppers' decision to buy online instead of offline. The survey shows that convenience was the most popular reason to buy products online, followed by price and

promotion, respectively. According to the national survey, the most popular reason for users to buy online was also convenience, followed by quick delivery, promotion, and price, respectively (ETDA, 2018). Thus, it shows that the results of this study were similar to the national survey.

In regard to the devices used to access the internet, mobile phone was ranked number one since 95.3% of the respondents used mobile phones to access the internet, followed by notebook computer and tablet, respectively. This question also allowed multiple answers since most internet users used more than one device to access the internet. The detailed data is shown in the table below.

*Table 8: Social media platform*

| Platform | Frequency | Percent |
|---|---|---|
| Facebook | 345 | 100% |
| YouTube | 325 | 94% |
| Line | 334 | 97% |
| Instagram | 323 | 94% |
| Twitter | 164 | 48% |
| LinkedIn | 30 | 9% |
| WeChat | 61 | 18% |
| WhatsApp | 4 | 1% |
| Others | 5 | 1% |

*Table 9: Demographic profile*

| Measurement | Item | Frequency | Percent |
|---|---|---|---|
| Gender | Male | 135 | 39.1 |
| | Female | 210 | 60.9 |
| Age | Below 18 | 1 | 0.3 |
| | 18-24 | 311 | 90.1 |
| | 25-34 | 23 | 6.7 |
| | 35-44 | 8 | 2.3 |
| | 55-64 | 2 | 0.6 |

| | | | |
|---|---|---|---|
| Nationality | Thai | 304 | 88.1 |
| | Other | 41 | 11.9 |
| Education | Lower than high school | 1 | .3 |
| | High school | 26 | 7.5 |
| | Bachelor's degree | 298 | 86.4 |
| | Master | 18 | 5.2 |
| | Doctoral | 2 | .6 |
| Monthly Income | Lower than 10,000 | 97 | 28.1 |
| | 10,001 - 30,000 | 213 | 61.7 |
| | 30,001 - 50,000 | 22 | 6.4 |
| | More than 50,000 | 13 | 3.8 |
| Residential Area | Bangkok | 287 | 83.2 |
| | Other | 58 | 16.8 |
| Time spent online per day | Less than 1 hour | 4 | 1.2 |
| | 1 - 3 hours | 49 | 14.2 |
| | 3 - 5 hours | 106 | 30.7 |
| | 5 - 7 hours | 116 | 33.6 |
| | More than 7 hours | 70 | 20.3 |
| Monthly online spending | Less than 1,000 | 120 | 34.8 |
| | 1,001 - 5,000 | 168 | 48.7 |
| | 5,001 - 10,000 | 32 | 9.3 |
| | 10,000 - 30,000 | 22 | 6.4 |
| | More than 30,000 | 3 | .9 |

*Table 10: Product categories bought*

| Item | Frequency | Percent |
|---|---|---|
| Fashion | 256 | 74% |
| Health & Beauty | 184 | 53% |
| IT and Gadgets | 122 | 35% |
| Household items | 69 | 20% |
| Food Service | 107 | 31% |

| | | |
|---|---|---|
| Others | 17 | 5% |

*Table 11: Reasons for buying online*

| Item | Frequency | Percent |
|---|---|---|
| Convenience | 297 | 86% |
| Promotion | 191 | 55% |
| Price | 215 | 62% |
| Product Available Online | 135 | 39% |
| Quick Delivery | 101 | 29% |
| Others | 4 | 1% |

*Table 12: Devices use to access the internet*

| **Item** | **Frequency** | **Percent** |
|---|---|---|
| Mobile Phone | 329 | 95% |
| Tablet | 57 | 17% |
| Notebook Computer | 111 | 32% |
| Desktop Computer | 61 | 18% |

### 4.3 Reliability Test

As mentioned in the previous chapter, all of the variables in this study were measured by using multiple item scale questions. To ensure that the scales of measurement had adequate internal consistency, reliability analysis was performed. As mentioned in the previous chapter, the cut-off point was 0.7, which means any variable with a Cronbach's Alpha value lower than 0.7 was removed from the analysis (Saunders et al., 2016). Furthermore, to determine which questions should be removed if the Cronbach's Alpha value was below 0.7, the value "Cronbach's Alpha if item deleted" was also displayed during the analysis process. During the pilot test, one question in one variable that had a low Cronbach's Alpha value was removed. Therefore, during the actual data collection and data analysis, no further variable had a Cronbach's Alpha value lower than 0.7. The detailed results of the reliability tests for each construct are shown below.

*Table 13: Reliability result*

| **Variables** | **No. of** | **Cronbach's** |
|---|---|---|

| | items | Alpha |
|---|---|---|
| Peer communication via e-WOM | 5 | 0.937 |
| Click on Social Media advertisement | 3 | 0.907 |
| Attitude towards online shopping | 5 | 0.943 |
| Subjective norm | 4 | 0.933 |
| Perceived Behavioral Control | 3 | 0.916 |
| Perceived Logistics Service Quality | 14 | 0.953 |
| Online Purchase Behavior | 7 | 0.950 |
| Satisfaction | 5 | 0.960 |
| Intention to repurchase | 6 | 0.959 |

**4.4 Validity Test**

In order to ensure the validity of the questions used in this study, factor analysis was performed. The factor analysis began with the Kaiser-Meyer-Olkin measure of Sampling Adequacy (KMO) and the Bartlett's Test of Sphericity. First, the KMO test was use to prove the adequacy of sampling for the analysis. The Bartlett's Test of Sphericity was used to verify whether the correlation between the items was appropriate for factor analysis. Field (2018) suggested that the value of KMO should be at least 0.5 and Bartlett's Test value should be lower than 0.05 (at the 95% level of significance) for the sample to be considered adequate. All of the variables in this study passed both the KMO and Bartlett's Test and could be considered as valid samples. All the KMO and Bartlett's Test values for all the variables are shown in table 12.

*Table 14: KMO and Bartlett's test result of Independent Variables*

| **Variables** | **No. of items** | **KMO** | **Bartlett's** |
|---|---|---|---|
| Peer communication via e-WOM | 5 | 0.934 | 0.000 |
| Click on Social Media advertisement | 3 | | |
| Perceived Logistics Service Quality | 14 | | |

*Table 15: KMO and Bartlett's test result of Theory of Planned Behavior Variables*

| **Variables** | **No. of items** | **KMO** | **Bartlett's** |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Attitude towards online shopping | 5 | 0.944 | 0.000 |
| Subjective norm | 4 | | |
| Perceived Behavioral Control | 3 | | |

*Table 16: KMO and Bartlett's test result of Dependent Variables*

| **Variables** | **No. of items** | **KMO** | **Bartlett's** |
|---|---|---|---|
| Online Purchase Behavior | 7 | 0.975 | 0.000 |
| Satisfaction | 5 | | |
| Intention to repurchase | 6 | | |

Data from the previous tables shows that all of the variables were suitable for the next step of factor analysis. Therefore, factor extraction and rotation were performed. For the factor extraction, there are several methods that can be used to extract the number of factors ranging from principal components, unweighted least square, generalized least squares, maximum likelihood, principal axis factoring, alpha factoring, and image factoring. Moreover, to maximize the loading of each construct on the extracted factor, rotation can help by changing the absolute value of the variable and keeping the differential value constant (Field, 2018). Even though there are several rotation methods, they can be divided into two main categories; orthogonal and oblique rotations. If the factors are expected to be independent from each other, then orthogonal rotation should be selected. On the other hand, if the factors are expected to correlate, oblique rotation should be selected. Furthermore, in situations where constructs deal with attitudes, traits, or mental abilities, it can be assumed that those constructs or some dimensions of these constructs would be correlated with each other (Fabrigar, Wegener, MacCallum, & Strahan, 1999). In this study, Promax, which is an oblique rotation method, was employed.

In addition to the extraction and rotation methods, items that have low factor loadings with a value less than 0.4, and items with cross loading issues were also eliminated from the analysis. The details of factor analysis information are displayed in the table below.

*Table 17: Factor analysis for the independent variables*

| Independent Variables | e-WOM communication | Click on social media ads. | Logistics Service Quality |
|---|---|---|---|
| I talked with my peers about the product on social media. | | .850 | |
| I talked with my peers about buying the product on the Internet. | | .903 | |
| I asked my peers for advice about the product. | | .905 | |
| I obtained the product information from my peers. | | .846 | |
| My peers encouraged me to buy the product. | | .748 | |
| I click on the display ads on Social Media Site to understand more about the products. | | | .816 |
| I click on the display ads on Social Media Site to make a purchase. | | | .822 |
| I click on the display ads on Social Media Site to get more information about the products. | | | .863 |
| The online helpdesk tries to understand my situation. | .654 | | |
| Problems are resolved by the online helpdesk. | .657 | | |
| The information provided by online helpdesk is adequate. | .685 | | |
| Shipments rarely contain the wrong items. | .813 | | |
| Shipments rarely contain an incorrect quantity. | .866 | | |
| Shipments rarely contain substituted items. | .793 | | |
| I always receive goods in satisfactory condition. | .769 | | |
| I am happy with the condition of packages received from the company. | .784 | | |
| Damage rarely occurs as a result of the transport mode or carrier. | .802 | | |

| | | | |
|---|---|---|---|
| In case of product unsatisfactory, correction process is satisfactory. (For example, return or exchange process) | .804 | | |
| The online store has adequate process regarding unsatisfactory logistic process | .806 | | |
| Time between placing order and receiving delivery is short. | .797 | | |
| Products are delivered on the date promised. | .772 | | |
| The amount of time a product on back-order is short. | .829 | | |
| Total Variance Explained | **50.600** | **12.694** | **7.025** |

Table 17 presents the data from the factor extraction and rotation of all independent variables, which includes peer communication via e-wom, click on social media advertising, and perceived logistics service quality with factor loadings between 0.654 and 0.905. Out of 22 items that were tested, there were three components that had eigenvalues over one as presented in table. These three components could explain 50.6%, 12.694%, and 7.025% of the variance, respectively. From the Promax rotation, it shows that there was no cross loading. Therefore, no variable was removed from this analysis.

*Table 18: Factor analysis for the TPB variables*

| TPB Variables | Attitude | Subjective norm | Perceived Behavioral Control |
|---|---|---|---|
| Buying products over the internet is a good idea | .945 | | |
| Buying products over the internet is a wise idea | .959 | | |
| Buying products over the internet is an idea I like | .815 | | |
| Using the internet to buy products is pleasant | .895 | | |
| I like to buy what I need from the internet | .571 | | |
| People who influence my behavior would think I should buy products over | | .700 | |

| | | | |
|---|---|---|---|
| the internet | | | |
| People who are important to me would think I should buy products over the internet | | .928 | |
| People who influence my behavior would think that buy products from the internet is a wise idea | | .957 | |
| People who are important to me would think that buy products from the internet is a wise idea | | .921 | |
| I am capable of buying products over the internet | | | .805 |
| Buying products over the internet is entirely within my control | | | .903 |
| I have resources and knowledge and the ability to buy products over the internet | | | .909 |
| Total Variance Explained | **69.490** | **9.265** | **5.087** |

For the variables from the Theory of Planned Behavior, factor analysis was conducted by principal component factor and Promax rotations. The 12 items were factored out into three components as expected. First, Attitude had a loading score between 0.571 and 0.945; Subjective norm had a loading result between 0.700 and 0.921, and Perceived Behavioral Control had a factor loading of 0.805. In terms of the total variance explained, Attitude explained 69.490%, while Subjective norm and Perceived Behavioral Control explained 9.265 and 5.087% respectively. During the factor extraction and factor rotation, there was no cross loading for any item among these variables. Therefore, none of the items were eliminated.

*Table 19: Factor analysis for the Dependent variables*

| Dependent Variables | Purchase Behavior | Satisfaction | Repurchase Intention |
|---|---|---|---|
| I shop on the Internet | .719 | | |
| I buy many different products on the Internet | 1.050 | | |
| I make use of online coupon/ discounts on goods and services | .706 | | |
| I follow up on good deals on the Internet | .681 | | |
| I buy a product online even if other buying options are available | .607 | | |

| | | | |
|---|---|---|---|
| I make online purchases frequently | .950 | | |
| Overall, I have made many online purchases | 1.077 | | |
| I am satisfied with the online shopping experience | | | 1.085 |
| I am pleased with the online shopping experience | | | 1.121 |
| My feeling with using online shops was good | | | .750 |
| Purchasing products from online stores is a good idea. | | | .786 |
| I like to purchase products from online stores. | | | .558 |
| I intend to recommend the Internet shopping site that I regularly use to people around me | | .563 | |
| I intend to continue online shopping in the future | | 1.136 | |
| I will continue online shopping in the future | | 1.063 | |
| I will regularly use online shops in the future | | .911 | |
| Total Variance Explained | **74.681** | **3.093** | **1.819** |

For the dependent variables, there were actually 18 items in this category. However, after factor extraction and rotation, two items were found to have cross loading with other items. Those items were 'I intend to continue to purchase goods from the Internet shopping site that I regularly use', and 'I intend to acquire product information from the Internet shopping site that I regularly use'. Therefore, these items were removed. As a result, only 16 items were used in the following analysis.

## 4.5 Hypothesis testing

### 4.5.1 Correlation Analysis

To test the proposed hypotheses, the first step was to conduct correlation analysis. The correlation analysis was conducted to determine the relationships between the variables

that were identified in the conceptual model. The resultsfrom the Pearson correlation coefficient analysis are shown in the table below.

*Table 20: Correlation Analysis*

| Construct | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Peer Communication via Social Media | 1 | | | | | | | | |
| 2. Click on social media advertising | .532** | 1 | | | | | | | |
| 3. Perceived Logistics Service Quality | .537** | .434** | 1 | | | | | | |
| 4. Attitude | .469** | .359** | .707** | 1 | | | | | |
| 5. Subjective norm | .525** | .449** | .639** | .716** | 1 | | | | |
| 6. Perceived Behavioral Control | .470** | .357** | .647** | .803** | .728** | 1 | | | |
| 7. Purchase Behavior | .545** | .417** | .628** | .768** | .708** | .756** | 1 | | |
| 8. Satisfaction | .495** | .382** | .673** | .794** | .686** | .802** | .897** | 1 | |
| 9. Intention to Repurchase | .520** | .378** | .659** | .750** | .665** | .788** | .856** | .893** | 1 |

**p<0.01

The correlation analysis results shown in the table above represent the interrelationships between the nine constructs. All the correlations were found to be positive and significant at the 0.01 significance level. Moreover, the coefficient values of the correlation ranged 0.357 to 0.897.

Even though the results from the correlation analysis show positive and significant relationships between each variable, they only show the relationships between the variables. In order to determine the causal effect between the variables, correlation analysis could not provide the answers. Therefore, to test the proposed hypotheses, multiple regression analysis needs to be performed.

### 4.5.2 Multiple Regression Analysis

As mentioned earlier, multiple regression analysis was performed to test the causal effect of all the proposed hypotheses As a result, 10 out of 11 hypotheses were proved to be significantly positively related. Moreover, a summary of the hypothesis testing, along with the beta coefficients are displayed in the following figure. In addition, a detailed explanation of the multiple regression analysis is provided as follows.

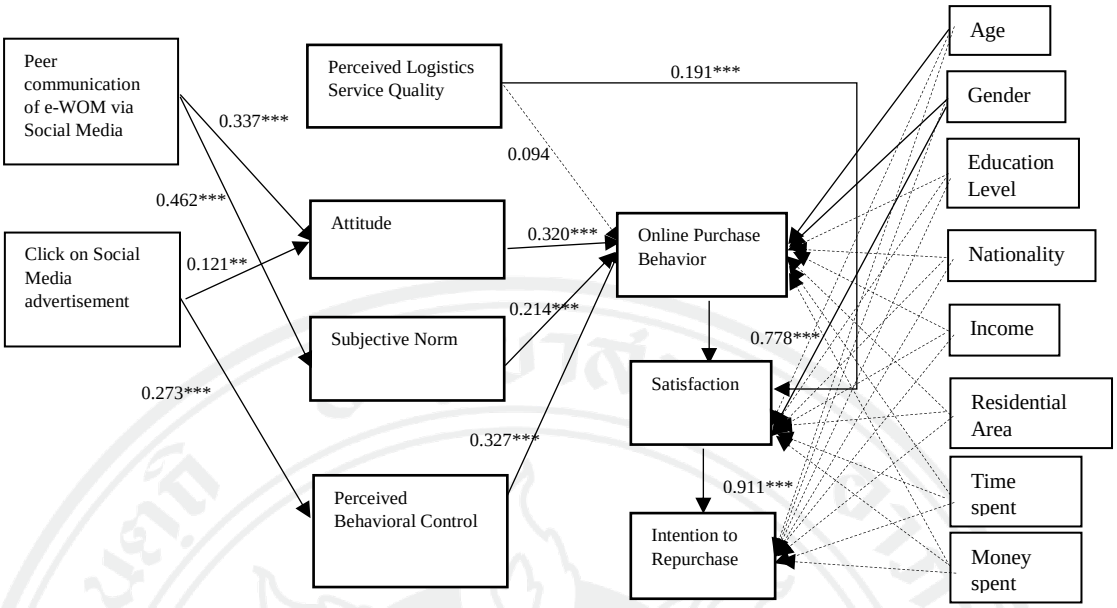



*Figure 10: Overall conceptual framework with hypothesis testing result*

*4.5.2.1 Hypothesis testing on the influence of social media and the TPB constructs.*

To test the hypotheses that predict the relationship between the influence of social media and the three constructs from the Theory of Planned Behavior, multiple regressions were performed.

First, multiple regression analyses between the peer communication of e-WOM and Click on social media advertisement as the independent variables, with Attitude towards online shopping as the dependent variable were performed. The result shows that both relationships in hypothesis1 and hypothesis3 were statistically supported with unstandardized beta coefficients of 0.337 and 0.121 respectively, with an R square of 0.237 with a standard error of estimation equal to 0.933. Regression analysis was also performed with the inclusion of a multicollinearity test, and the result shows that the VIF values are 1.39 and 1.39 respectively, which are lower than 10, which is the highest acceptable point (Hair, Black, Babin, & Anderson, 2009). Therefore, multicollinearity was not a concern. In addition, the prediction of attitude for online shopping, along with a detailed regression result, can be written in the form of equation as follows.

Attitude for online shopping = 2.575 + 0.337 Peer communication via e-WOM + 0.121 click on social media advertising ± 0.933

*Table 21: Multiple regression result for Attitude for online shopping as the dependent variable*

| | β | t-value | p- value | VIF | Result |
|---|---|---|---|---|---|
| (Constant) | 2.575 | 12.819 | .000 | | |
| H1: e-WOM → Attitude. | .337 | 6.945 | **.000** | 1.396 | Supported |
| H3: Click on Social Media advertisement → Attitude. | .121 | 2.743 | **.006** | 1.396 | Supported |
| $R^2 = 0.237$ | | | | | |

Next, multiple regression analysis was conducted with Subjective norm as the dependent variable and peer communication via e-WOM as the independent variable. The results also show that the peer communication via e-WOM significantly and positively affected Subjective norm, which supports hypothesis 2. Furthermore, the β coefficient was 0.462 and the VIF value was 1.0, which indicates that multicollinearity was not found. In addition, the R square value of this regression analysis was 0.276 with a standard error of estimation equal to 0.919. The prediction equation of subjective norm and the detailed multiple regression results are shown below.

Subjective norm = 2.312 + 0.462 Peer communication via e-WOM ± 0.919

*Table 22: Multiple regression result for Subjective norm as the dependent variable*

| | β | t-value | p- value | VIF | Result |
|---|---|---|---|---|---|
| (Constant) | 2.312 | 12.400 | .000 | | |
| H2: e-WOM → Subjective norm | .462 | 11.432 | **.000** | 1.000 | Supported |
| $R^2 = 0.276$ | | | | | |

The next multiple regression analysis was the analysis for Perceived Behavioral Control as the dependent variable. As indicated in the conceptual model, the independent variable was click on social media advertisement. The result of this regression analysis shows that hypothesis 4 was supported. The β coefficient of the predictor was 0.273 while the R square of this regression was 0.127 with a standard error of estimation equal

to 0.967. In addition, the VIF value was 1.00, which is also lower than the maximum acceptable value of 10. Thus, there was no multicollinearity found in this analysis. The prediction equation for perceived behavioral control and the detailed multiple regression analysis results are presented below.

Perceived Behavioral Control = 3.589 + 0.273click on social media advertising ± 0.967

*Table 23: Multiple regression result for Perceived Behavioral Control as the dependent variable*

| | β | t-value | p- value | VIF | Result |
|---|---|---|---|---|---|
| (Constant) | 3.589 | 21.363 | .000 | | |
| H4: Click on Social Media advertisement → Perceived behavioral control | 0.273 | 7.073 | **.000** | 1.000 | Supported |
| $R^2$ = 0.127 | | | | | |

*4.5.2.2 Hypothesis testing between TPB constructs, perceived logistics service quality and online purchase behavior.*

The multiple regression analysis result with online purchase behavior as the dependent variable was conducted by using perceived logistics service quality, attitude towards online shopping, subjective norm, and perceived behavioral control as the independent variables. Moreover, in this analysis, all of the control variables were included in the analysis to determine the effect of the characteristics of the respondents on the regression result.

In this regression analysis, hypothesis 5 was rejected hypotheses 7, 8, 9 were supported with am R square equal to 0.687 with a standard error of estimation equal to 0.629. From the factors that significantly affected online shopping behavior, Perceived Behavioral Control had the highest contribution with the highest β value of 0.327 while Attitude was β=0.320 and Subjective norm was β=0.214 and were thus second and third, respectively. With the inclusion of the control variables, it was found that gender and age had significant effects on online purchase behavior while other factors were not statistically significant. For gender, the β value was a positive number, which means

female respondents tended to purchase online more than male respondents. For age group, since β was negative, it means the younger generation tended to purchase online more than older generations. Furthermore, the prediction equation for online purchase behavior and the detailed multiple regression results are presented below.

Online Purchase Behavior = 0.039 + 0.320 Attitude towards online shopping +0.214 Subjective norm + 0.327 Perceived Behavioral Control ± 0.629

*Table 24: Multiple regression result for online purchase behavior as dependent variable*

| | β | t-value | p- value | VIF | Result |
|---|---|---|---|---|---|
| (Constant) | .039 | .113 | .910 | | |
| H5: Perceived logistics service quality → Online purchase behavior. | .094 | 1.792 | .074 | 2.245 | Rejected |
| H7: Attitude → Online shopping behavior. | .320 | 5.234 | **.000** | 3.672 | Supported |
| H8: Subjective norm → online shopping behavior. | .214 | 4.224 | **.000** | 2.585 | Supported |
| H9: Perceived behavioral control → Online shopping behavior. | .327 | 5.445 | **.000** | 3.348 | Supported |
| **Control Variables** | | | | | |
| Gender | .160 | 2.202 | **.028** | 1.087 | |
| Age | -.271 | -2.835 | **.005** | 1.572 | |
| Nation | .018 | .169 | .866 | 1.045 | |
| Education Level | .090 | .953 | .341 | 1.248 | |
| Income Level | .078 | 1.258 | .209 | 1.599 | |
| Residential Area | -.007 | -.075 | .940 | 1.040 | |
| Time spent online per day | .054 | 1.516 | .130 | 1.090 | |
| Money spent online per month | .062 | 1.497 | .135 | 1.148 | |
| R2 = 0.687 | | | | | |

*4.5.2.3 Hypothesis testing between perceived logistics service quality, online purchase behavior and satisfaction.*

The previous regression analysis proved the relationship between several factors and online purchase behavior. In addition, in order to determine the influence online purchasing has on customer satisfaction, multiple regression with satisfaction as the dependent variable was performed with perceived logistics service quality and online

purchase behavior as the independent variables. In this analysis, the control variables were also included.

The results from the multiple regression show that hypotheses 6 and 10 are supported with R squares of 0.832 with a standard error of estimation equal to 0.448. For the factors that were found to have positive effect on satisfaction, both perceived logistics service quality and online purchase behavior were statistically significant with β values of 0.191 and 0.778. respectively. This indicates that online purchase behavior had more influence on satisfaction than perceived logistics service quality. In addition, gender was the only control variable that had a significant effect on satisfaction with β equal to -0.072. The negative β number indicates that male respondents tended to be more satisfied with online purchase.

Furthermore, the prediction equation of satisfaction and the detailed multiple regression results are presented below.

Satisfaction = 0.412 + 0.191 perceived logistics service quality + 0.778online purchase behavior ± 0.448

*Table 25: Multiple regression result for satisfaction as the dependent variable*

| | **β** | **t-value** | **p- value** | **VIF** | **Result** |
|---|---|---|---|---|---|
| (Constant) | .412 | 1.684 | .093 | | |
| H6: Perceived logistics service quality → Satisfaction | .191 | 5.812 | **.000** | 1.726 | Supported |
| H10: Online purchase behavior → Satisfaction | .778 | 27.075 | **.000** | 1.737 | Supported |
| **Control Variables** | | | | | |
| Gender | -.159 | -3.071 | **.002** | 1.092 | |
| Age | .087 | 1.273 | .204 | 1.585 | |
| Nation | .057 | .754 | .451 | 1.040 | |
| Education Level | -.058 | -.863 | .389 | 1.246 | |
| Income Level | .001 | .013 | .990 | 1.598 | |
| Residential Area | -.001 | -.021 | .983 | 1.022 | |
| Time spent online per day | .001 | .059 | .953 | 1.087 | |
| Money spent online per month | -.034 | -1.143 | .254 | 1.150 | |
| $R^2 = 0.832$ | | | | | |

*4.5.2.3 Hypothesis testing between satisfaction and intention to repurchase.*

For the last variable in the conceptual model, intention to repurchase, multiple regression analysis was also performed with the inclusion of the control variables. Even though there was only one independent variable, satisfaction, it is worth studying its influence on the intention to repurchase. The result from the multiple regression analysis shows a significant but unsurprising relationship between satisfaction and the intention to repurchase, with an R square of 0.801 with a standard error of estimation equal to 0.495, and a β value of satisfaction of 0.911. Furthermore, multiple regression analysis was also performed with the inclusion of the control variables. However, result shows that none of the control variables had a significant effect on the intention to repurchase. The prediction equation of intention to repurchase and the detailed multiple regression results are presented below.

Intention to repurchase = 0.258 + 0.911 Satisfaction ± 0.495

*Table 26: Multiple regression result for intention to repurchase as the dependent variable*

| | **β** | **t-value** | **p- value** | **VIF** | **Result** |
|---|---|---|---|---|---|
| (Constant) | .258 | .987 | .324 | | |
| H11: Satisfaction → Intention to Repurchase | .911 | 36.505 | **.000** | 1.009 | Supported |
| **Control Variables** | | | | | |
| Gender | .091 | 1.605 | .109 | 1.078 | |
| Age | .002 | .021 | .983 | 1.567 | |
| Nation | -.036 | -.427 | .669 | 1.036 | |
| Education Level | .104 | 1.408 | .160 | 1.242 | |
| Income Level | -.041 | -.852 | .395 | 1.575 | |
| Residential Area | .088 | 1.217 | .224 | 1.019 | |
| Time spent online per day | -.020 | -.722 | .470 | 1.083 | |
| Money spent online per month | -.006 | -.174 | .862 | 1.141 | |
| $R^2$ = 0.801 | | | | | |

*4.5.2.4 Summary of the hypothesis testing*

The information that was presented in the previous section was from the detailed testing of the proposed hypotheses in the conceptual model of this research. To summarize all the results, table xxx below presents the overall results of the hypothesis testing, along with the statistical values.

*Table 27: Summary of the hypothesis testing*

| **Hypotheses** | β | **p-value** | **Result** |
|---|---|---|---|
| H1: e-WOM → Attitude | 0.337 | 0.000 | Supported |
| H2: e-WOM → Subjective norm | 0.462 | 0.000 | Supported |
| H3: Click on Social Media advertisement → Attitude | 0.121 | 0.006 | Supported |
| H4: Click on Social Media advertisement → Perceived behavioral control | 0.273 | 0.000 | Supported |
| H5: Perceived logistics service quality → Online purchase behavior. | 0.094 | 0.074 | Rejected |
| H6: Perceived logistics service quality → Satisfaction | 0.191 | 0.000 | Supported |
| H7: Attitude → Online shopping behavior. | 0.320 | 0.000 | Supported |
| H8: Subjective norm → online shopping behavior. | 0.214 | 0.000 | Supported |
| H9: Perceived behavioral control → Online shopping behavior. | 0.327 | 0.000 | Supported |
| H10: Online purchase behavior → Satisfaction | 0.778 | 0.000 | Supported |
| H11: Satisfaction → Intention to repurchase | 0.911 | 0.000 | Supported |

# CHAPTER 5
# CONCLUSION, DISCUSSION AND RECOMMENDATIONS

## 5.1 Summary of the study

The main objective of this study is to determine the factors that influence online purchase behavior, satisfaction, and intention to repurchase by focusing on two main aspects, logistics service quality and social media. In order to answer the research questions, the hypotheses on the relationships between each variable were proposed and the conceptual model of this study was based on two main theories. First, Expectation Confirmation Theory (ECT) was employed as an overall framework that links pre and post purchase behavior. Second, the Theory of Planned Behavior (TPB) was used as a supporting theory to predict purchase behavior via the three main factors, attitude, subjective norm, and perceived behavioral control.

For the research methodology, a quantitative method based on the deductive approach was employed with an internet-based self-administered questionnaire as the data collection technique. Out of 375 set of filled questionnaires, 345 sets were valid and were used in further analysis using IBM SPSS version 21. The data analysis process began with the analysis of descriptive statistics, and reliability and validity tests were then also performed. Finally, multiple regression analysis and multicollinearity analysis were performed.

The results from the analysis show that social media significantly influenced online purchase behavior via the framework of TPB as expected. In addition, online purchase behavior significantly influenced satisfaction. However, perceived logistics service quality did not significantly influence online purchase behavior but did influence satisfaction, which eventually influenced the intention to repurchase.

## 5.2 Discussion of the results

### 5.2.1 Effect of social media on online purchase behavior

The first part of the study was based on the question of whether social media can influence online purchase behavior or not. To answer this question, a set of hypotheses was proposedand tested via the framework of the Theory of Planned Behavior. The result statistically supported all the proposed hypotheses, which can be explained in detail as follows.

In accordance to the empirical results, it was found that peer communication of e-WOM via social media has a significantly positive effect on attitudes on online shopping. The use of electronics in spreading word of mouth was found to influence the attitude of internet shoppers/users. Hence, the use of electronics in spreading messages among peers can influence the sense of awareness which could trigger a positive attitude toward purchasing online. Thus, to have a positive or negative attitude towards any behavior, e-WOM has played an important role as an antecedent to attitude since it is one of the trusted sources of information for consumers. This is because people tend to believe people who they are familiar with, especially people whom they believe receive little or no benefit from the spread of e-WOM. Moreover, previous researchers showed that word of mouth communication is a highly effective tool in forming and changing the attitudes of consumers as can be seen in several previous studies (Herr et al., 1991; Kiecker & Cowles, 2002; Xia & Bechwati, 2008). For example, a study in Latin America found that more than 90% of the respondents trusted the online product review from people they are familiar with, which represents trust in e-WOM (Sandes & Urdan, 2013). In addition, the result confirms the findings of several studies on the effect of e-WOM via social media on attitude towards online shopping in Indonesia, the United Kingdom, and China (Erkan & Evans, 2016; Gunawan & Huarng, 2015; Wang et al., 2012). The increasing use of social media with its high penetration rate to online users has made it a habit for many people to spend a lot of time using social media. Since they spend a lot of time on social media, it can be assumed that users spend less time consuming information from other sources i.e. traditional offline media, television, and

regular radio. Moreover, social media is a form of two-way communication which allows users to communicate back and forth. With a communication method that allows users to interact with each other, users feel more comfortable to communicate, which leads to the formation of trust in the messages they receive on social media. Therefore, is not uncommon for people to believe the messages that are spread via social media. Thus, with the high penetration rate of social media and trust in e-WOM, the test result of the first hypothesis was as expected. This result not only provides empirical validation for other studies that have been conducted in the same field of e-commerce, but also extends the validation into this relationship between Thai internet users.

Next, the relationship between peer communication of e-WOM via social media and subjective norm was tested in this empirical study. The empirical result revealed that the use of social media to spread word-of-mouth had a significantly positive effect on subjective norm. In other words, social media use to spread comments amongst friends can directly influence the feeling of being pressured by peers, especially for people who want to stay in the 'in-group' of their society. Subjective norm are defined as the perceived social pressure to perform or not to perform a particular behavior (Ajzen, 1991; S. Zhu & Chen, 2016). As a result, comments or information sharing via social media among peers or friends within the same society would be influenced by subjective norm. For example, Online shopping or product reviews are posted on Facebook which can be seen as a pressure for other members or "Facebook friends" to purchase the same product. The buyer then posts it on Facebook to be accepted by the others. Moreover, a study of college students in Indonesia also found the same relationship between online social pressure and subjective norm (Gunawan & Huarng, 2015). In addition, the empirical result from this study also confirms the relationship between the mentioned variables in other previous works with the extension of the subject in the study to extend the geographic demography by focusing on Thailand's internet users.

Another variable that contributes to the influence of social media in this study is click on social media advertising. The empirical result shows that click on social media advertising has a significantly positive effect on attitudes about online shopping. To

understand the relationship between these two variables, the concept of each variable should be discussed first. As previously revealed, the concept of attitude reflects the level of perception any individual has on the behavior, which ranges from favorable to unfavorable. Moreover, social media advertising, which is a form of advertising, is designed to persuade consumers to buy the product by triggering a sense of awareness towards the advertised product. With social media features that are quick, interactive, and convenient for both advertisers and consumers, it has proven its effectiveness over traditional media. As a result, social media advertisement has become a more popular advertising platform than traditional media (Duffett, 2015). In addition, the unique feature of advertising that social media companies such as Facebook or Instagram offer is the ability to customize the display of advertisement to match the user's profile. With the customization of information that matches each user's preferences, the advertisement message would catch the user's attention more than regular random online advertising media. As a result, the message in the advertising media that users are interested in would lead to the action of clicking on that particular advertising because the users are actually interested in the advertisement message. Once users indicate that they are interested in the information on the advertisement by performing the click on the advertisement, it would trigger a positive attitude towards the products displayed in the advertisement message. Moreover, this finding also extends and verifies the findings of several previous studies in other regions. For example, the study of internet users in the United States by Zhang and Mao (2016) and the study of college students in Taiwan by Yang (2012) also found a positive effect of social media advertisement on attitude towards the products.

For the third construct of the Theory of Planned Behavior, Perceived Behavioral Control (PBC), the empirical analysis was performed to test the relationship between click on social media advertisement and PBC. The empirical result shows that click on social media significantly and positively affects PBC. As previously discussed, PBC is defined as the perception of people on his or her own capacity to perform the action without any difficulty (Ajzen, 1991). Therefore, the "click" on a social media advertisement is one of the actions that show the ability of users to perform an online activity without any difficulty. Thus, this action would lead to the perception of internet

users that they can perform other online actions such as online purchase without any difficulty. Hence, the perception of having the ability to perform the action corresponds with the concept of PBC. The following section will analyze the factors that influence online shopping behavior.

The next step in this study was to determine the effect of all three variables of the TPB on online shopping behavior. All the relationships of these three variables with online shopping behavior were statistically supported. Therefore, the empirical result also confirms the Theory of Planned N which indicates that the behavior to perform the action was being driven by all three factors, attitude, subjective norm, and PBC.

From the empirical analysis, the result shows that attitude towards online shopping has a positive effect on online shopping behavior. Attitude is defined as the representation of the individual's aspect on the object of interest, ranging from favorable to unfavorable. On the other hand, behavior is defined as the action performed by an individual (Ajzen & Fishbein, 1977). Therefore, in order to have the willingness to perform the behavior, he/she must have a positive attitude towards the behavior. In this study, which focused on online shopping behavior, a person with a favorable attitude towards online shopping would indeed perform the action or the behavior of online shopping. In addition, in this study, it has been proven statistically that factors that drive attitude towards online shopping are peer communication via social media and click on social media advertisement. Therefore, both peer communication via social media and click on social media advertisement are the factors that drive attitude, which then affects online purchase behavior.

From the above section, subjective norm are defined as social pressure the individual gets from their peers or the society that they belong to. With the fact that a lot of people would like to feel that they belong to a group or society, they tend to perform the same actions as their peers. Therefore, subjective norm is highly likely be one of the reasons that persuades people to buy online, especially after communicating with their peers via social media about the products that their peers have already bought online. The effect of subjective norm on behavioral intention has been proven in much research conducted in several fields (Joensuu-Salo, Harry Matlay, Varamäki, & Viljamaa, 2015; E. Kim et

al., 2016; S. Zhu & Chen, 2016). In addition, research by Chiou (1998) showed a clear and distinct relationship between subjective norm and purchase behavior. With the findings in the mentioned studies and the empirical result from this study, it proves that subjective norm or so-called peer pressure could be a significant factor that influences internet users to buy online.

The third variable in the TPB is Perceived Behavioral Control or PBC. As mentioned earlier, during the development of the Theory of Planned Behavior, the discovery of PBC was considered as a new variable and added to the earlier model of the Theory of Reasoned Action. As a result, PBC was considered as an add-on variable rather than one of the original factors that influence behavioral intention. The empirical results show that PBC has a statistically positive effect on online purchase behavior. Perceived behavioral control in this study can been described, in the context of online shopping, as the perception that internet users are capable of performing online purchases without any difficulty. Therefore, online purchase, which would be considered as a challenging task for someone with low technical experience, can be the result of the perception that users are confident that they can purchase online without any technical obstacles. For example, some internet users may have a positive attitude towards online shopping and most of their friends shop online, but they may find the online purchase process too complex. As a result, the perception of not having enough knowledge to perform the behavior leads to the decision not to purchase online.

The empirical result regarding the control variables in the multiple regression revealed that when online purchase behavior was the dependent variable, the age and gender of the respondents were the only two factors that significantly affected purchase behavior. The result shows that the female respondents tended to purchase online more than the male respondents. The result on gender difference shows the same direction as a study of online shoppers in New Zealand, which found that females had significantly more intention to buy online than male internet users (R. Davis, Smith, & Lang, 2017). In addition, a study by RoyDholakia (1999) supported this study by showing that shopping is considered as a female-dominated activity. Moreover, another study found that there are other motives that drive shopping activity than just the activity of buying things that

are needed. Female shoppers were found to be driven by the desire to relax and to fill their free time (Buttle & Coates, 1984). Thus, it is uncommon for the result in this study to find out that female tend to buy online more than men regarding the findings that has discussed previously. Another control variable that revealed its significance in online purchase behavior was age, The empirical results show that younger age groups tended to purchase online more than older age groups. This result is not surprising since it is well-known that generation Y spend the most time on the internet (ETDA, 2018). However, the older generations are the age group that has more money and spending power than younger ones. So, there may be some argument that older generations, with their higher spending power, should shop online more than the younger generations. However, the older generations were found to have lack of trust in online purchase, which was considered one of the main obstacles for them to buy online (Molesworth & Suortti, 2002).

Regarding the significance of gender and age group on online purchase behavior, it is important for businesses to apply this information in the online sales industry. From a marketing perspective, with the availability of direct and segment marketing technology via social media, marketing strategy can be planned to focus on the correct segment in order to increase sales.

5.2.2 Effect of perceived logistics service quality on online purchase behavior and satisfaction for online purchase

The second aim of this study was to answer the research questions proposed in the previous chapters as to whether the quality of the logistics service has any significant effect on online purchase behavior and satisfaction for online purchase or not. The empirical results show that logistics service quality does not have any significant effect on purchase behavior but has a significant effect on satisfaction for online purchase, which can be explained in the following sections.

First, the effect of perceived logistics service quality shows some relationship but it is not statistically significant enough to have a conclusive effect on online purchase

behavior. However, the previous section showed that social media has been proven to have a significant positive effect on online purchase behavior. The differences result from the reasons discussed in the previous sections. Information received from peers and advertisement via social media could influence and stimulate the intention to buy, which eventually leads to purchase behavior. On the other hand, most consumers would realize the quality of logistics only after the online purchase activity has been completed, which happens after the decision-making process of the purchase activity. As a result, logistics service quality did not have a significant effect on purchase behavior, which would happen during the decision making-process of the online purchase activity.

Regarding the empirical result, it was found that perceived logistics service quality has a significantly positive effect on satisfaction on online purchase. The logistics service is the last step to complete the transaction of online shopping by delivering the physical products to customer, and the data analysis yielded the expected empirical result. From the previous chapter, logistics service quality in this study consists of five dimensions, which are personnel contact quality, order accuracy, order condition, order discrepancy handling, and timeliness.

First, personnel contact quality in the e-commerce context means the availability and ability of the online helpdesk to solve problems. The ability to solve problems in regard to the delivery service is a crucial part that can make customers feel satisfied with the purchase. For instance, when customers have queries regarding shipping and delivery, such as to specify the date of delivery or to follow up their purchase, both the availability of a help desk, and the ability of the online helpdesk to help customers are necessary. As some online shopping websites do not have a physical store, it is essential for the seller to provide an online helpdesk for customers as a contact point in case anything happens. Otherwise, customers would feel lost and would have nobody to talk to. Therefore, the ability and knowledge of the online helpdesk would directly lead to the satisfaction of consumers who purchase online.

The second dimension of perception on logistics service quality in online shopping in this study is order accuracy. This dimension reflects the accuracy of items in the shipments in terms of both quantity and quality. Logistics is not only related to shipment or delivery; it also includes the packing of the products before the shipment occurs. Therefore, having the wrong items or an incorrect quantity of product would create frustration for consumers. As a result, receiving the correct product and the correct quantity would lead to satisfaction about online purchase.

Next, order condition is another dimension of logistics service quality included in this study. When customers received orders, they expect the products that they bought to arrive in good condition. Furthermore, the condition of the delivered products is a result of the quality of the delivery, storage, and handling processes. Moreover, one of the disadvantages of online shopping is the inability to see the physical products beforehand. As a result, customers may be reluctant to purchase especially if they have any doubt about the condition of the products that will be delivered to them.
However, when customers decide to purchase online and end up receiving damaged products or products in lower than expected condition, customers would be frustrated and as a result would feel unsatisfied. On the other hand, when products arrive undamaged or in good condition, or in even better condition than expected, customers would feel positive about their online purchase transaction, which would eventually lead to satisfaction.

The fourth dimension of logistics service quality in this study is order discrepancy handling. In this dimension, the respondents were asked about their perceptions about the ability of the online seller to solve problems in regard to their shipments. This dimension is directly related to delivery problems such as wrong delivery address or incorrect shipment. The ability to handle these problems on time would make customers happy and satisfied. Moreover, when customers decide to return or exchange the purchased goods for any reason, the method of handling the returned products would directly affect the level of satisfaction for the buyers. For example, Lazada.co.th make this process convenient for consumers by letting customers click in the application to generate a return label, print it out, and the product can then be left at any Seven-Eleven

in the country. After the customer has left the returned package at Seven Eleven, the customer can track their returned package online until they get their money back, which usually takes less than 7 days. With this level of convenience in the handling of returned orders, customers would be highly satisfied with the process since it is even more convenient than returning offline products where customers need to go to a physical store to initiate the refund protocol, which usually takes longer.

The last dimension of logistics service quality is timeliness. This dimension reflects the time that customers have to wait between placing an order and the time of receiving the order. As mentioned earlier, delivery time is one of the most obvious factors that distinguish offline and online shopping. In offline shopping, consumers have the ability to see and select a product, and then make a payment and take their purchased product home by themselves, which means there is virtually no waiting time between purchasing and receiving the products. In contrast, with online shopping, buyers have to wait until the purchased products are delivered, which could be one of the factors why consumers decide not to buy online. Therefore, the shorter the waiting time, the greater the chance for consumers will make the decision to buy online. In this study, timeliness includes not only products being delivered quickly, but also delivery on the date as promised. When the products are delivered at the time that was promised, customer satisfaction is generated. Moreover, according to the framework of ECT discussed earlier, when products are delivered on the date as promised, it means that customer expectation has been met, which will lead to positive disconfirmation, and will eventually lead to satisfaction (Bhattacherjee, 2001).

5.2.3 Indirect effect of social media on satisfaction about online purchase.

From the empirical results, besides logistics service quality, another factor that has a positive effect on satisfaction is buying behavior, which is influenced by social media. Therefore, social media has an indirect influence on satisfaction for online purchasing. In addition, social media influence in this study has been categorized into two factors, peer communication of e-WOM via social media and click on social media advertisement.

First, the communication of e-WOM via social media is not a one-way communication; it creates interaction among peers who are previous and potential buyers. Moreover, when previous buyers recommend a product or website, they are likely to already be satisfied with the product or service. Thus, when their peers are satisfied with the product, it would be highly likely that the potential buyers would be influenced by their peers not only to purchase the same product, but also to have the same attitude towards the same product as their peers. As a result, buying products or services that have been recommended by their peers via e-WOM would lead to satisfaction about the online purchase. In addition, peer communication via social media can be considered as an electronic or virtual form of social interaction and social influence. As shown in previous studies, social interaction leads to satisfaction in online shopping and social influence affects online shopping purchase behavior, which eventually leads to satisfaction (Christodoulides & Michaelidou, 2010; S. Zhu & Chen, 2016).

Several researches in the past have shown a clear relationship between advertisement and satisfaction (Jolodar & Ansari, 2011; Zubair Tariq, 2014). Thus, social media provides customized and even more specific advertisement and product recommendation for potential customers. Moreover, the information displayed in the online advertisement via social media can catch the users' attention more than a regular online advertisement. As a result, a click on a social media advertisement, which is a demographic-specific advertisement, may result in buying behavior and eventually satisfaction about online purchasing because users would be pleased with the information that they see. With the above information, along with the research by Jolodar and Ansari (2011), it can be concluded that social media advertisement indirectly influences satisfaction via online purchase.

### 5.2.4 Effect of satisfaction on intention to repurchase

According to the empirical result, it was found that satisfaction about online purchasing has a significantly positive effect on the intention to repurchase. This result is not surprising since it has been shown in several previous studies that satisfaction has a

direct effect on the intention to repurchase (Bhattacherjee, 2001; C. Kim et al., 2012; O. Pappas et al., 2014; Valvi & West, 2013). When customers are satisfied, it means they have positive feelings towards the experience of previous purchases from the sellers (Bhattacherjee, 2001; Bhattacherjee & Sanford, 2006; C.-P. Lin et al., 2009; O. Pappas et al., 2014). In the online shopping context, it is common practice for buyers to find information before making an online purchase. Therefore, it would be easier for buyers to buy from a vendor who has already given buyers a good experience rather than buying from a new seller and risk being unsatisfied. Therefore, consumers tend to repurchase from the same vendors with whom they have already had positive experiences.

## 5.3 Contribution of the study

This section aims to explain the contributions of this study by categorizing them into academic and management contributions. Both types of contribution are explained in detail as follows.

### 5.3.1 Academic contribution

It has been indicated above that this study was based on the application of two theories, Expectation Confirmation Theory and the Theory of Planned Behavior. The empirical results of this study have confirmed and extend the use of these theories in a broader context.

According to the model in the Expectation Confirmation Theory by Richard L. Oliver (1980) and later developed by Bhattacherjee (2001), the relationship between pre and post purchase behavior is as follows. First, customers create *expectations* about the product before purchasing. Once the customers have received the product, they judge their *perception on performance* by comparing it with their expectation. If the expectation is met, it will lead to positive *confirmation*/*disconfirmation*. On the other hand, if the perception on performance fell below expectation, negative *disconfirmation* is created. Furthermore, positive disconfirmation will lead to *satisfaction* while

negative disconfirmation will lead to *dissatisfaction*. Moreover, *satisfaction* may lead to the *intention to repurchase*. The relationship of social media and logistics service quality in regard to online purchase into the context of the ECT framework can be explained as follows.

Before a customer performs an online purchase, their expectation comes from the message that they have already received from their peers via social networking or the online advertisement that they have read. Moreover, for online shopping, customers also expect that they would receive their products correctly, on time, and in good condition. After the products have reached the customer, the quality of the products and shipment would then be compared with the expectation that the customers had, and either positive or negative *disconfirmation* will be formed. If positive disconfirmation is formed, it will lead to *satisfaction*, which will eventually trigger the desire to *repurchase* online. As a result, the perception of social media and logistics service quality would fit into the framework of ECT, even in the age of e-commerce. This study, therefore, not only confirms Expectation Confirmation Theory, but also extends its usage into e-commerce business in Thailand.

The next theory presented in this study is the Theory of Planned Behavior (TPB). TPB describes the reasons behind the intention to perform any behavior. The intention to perform any behavior is driven by three elements, attitude, subjective norm, and perceived behavioral control (Ajzen, 1991).

With the information presented in the previous topic about the influence of social media on online purchase behavior, this study has statistically proved that social media, including the elements of peer communication of e-WOM via social media and click on social media advertisement, can influence online purchase behavior via the framework of TPB as follows. First, peer communication of e-WOM via social media leads to *attitude* and is affected by *subjective norm*. Next, click on social media advertisement significantly affects *attitude* and *perceived behavioral control*. All three main variables of TPB lead to *purchase behavior*. Therefore, this part of the study verifies that the Theory of Planned Behavior is still valid in the age of e-commerce.

Although previous studies have already applied TPB framework for B2C e-commerce business (George, 2004; Hansen, 2008; Hansen et al., 2004; Hsu et al., 2006), the extension of the application of this framework to Thailand also confirms the validity of this theory in this region.

Regarding the academic contribution of this study in other regions, the results from this study can be applied to study online shopping behavior in other South East Asian countries with similar characteristics such as Laos, Cambodia, or Myanmar. Since the results show that most of the respondents live in Bangkok, which represents a city area rather than an urban area, further study can replicate this study in different cities or other areas in this region to compare the results of the studies.

In addition, the empirical results of this study also fill the gap in the literature since no other studies, to the knowledge of the author, have integrated the influence of social media and logistics into purchase behavior in the segment of B2C e-commerce.

5.3.2 Management contribution

The overall business implication of the empirical analysis of this study is discussed as follows.

First, peer communication of e-WOM via social media has been statistically proven to be a factor that affects online purchase behavior. Therefore, to be successful in this business, marketing strategy should be created that includes this factor in the plan. For example, to increase online sales, an e-commerce website can use marketing strategy that involves spreading e-WOM via social media among friends by giving incentives to people who make recommendations. For instance, offering discounts to anyone who “shares” or “likes” their official page or who make comments and uses the hashtag related to their website or products on their social media page. Such a marketing campaign would lead to the creation of e-WOM among the customers’ peers. This type of marketing campaign should be carefully planned and developed since it has been proven in previous studies that word-of-mouth is more effective in influencing

consumers than other advertising platforms (Bickart & Schindler, 2001; D. Smith et al., 2005; Trusov et al., 2009).

Next, click on social media advertisement was found to significantly affect online purchase behavior. In order for a business to benefit from this result, management teams should include social media advertising in their budget. However, the study by Pfeiffer and Zinnbauer (2010) proved that social media advertisement alone did not give the best results for businesses. In this study, it was found that a mixture of traditional and new media with a carefully planned marketing strategy is the best way to promote a business. Therefore, business plans and budgets should allocate resources to both traditional and social media advertisement. With traditional advertising, all the information is displayed to the audience as one-way communication without being able to target a specific audience. In contrast, social media has created an opportunity for advertisers to select their target audience according to their personal preferences and demographic profiles. Moreover, the trend of social media advertisement spending has dramatically risen. According to eMarketer (2015), social media advertisement spending was predicted to reach almost $36 billion in 2017. With the results of this study, data on the use of social media advertisement and trends in social media advertisement spending should give e-commerce business guidance on how their advertising strategy should be planned.

Customer loyalty is considered as one of the crucial factors to succeed in this business. Thus, this study also shows that satisfaction influences the intention to repurchase. Another factor that has been shown to have a significant effect on satisfaction, which also affects loyalty, is the quality of the logistics service. Therefore, businesses can use information from the empirical results, based on the five dimensions of logistics service quality that have been included in this study, as a starting point to focus on the logistics aspect in order to satisfy customers. Moreover, online retail business is different to traditional retailing in terms of the way customers perform the purchase activity, the time that customers have to wait for the delivery of the products, and the inability to see or check the quantity and quality of the purchased items before payment. Therefore, a logistics strategy should be established in order to compete with offline retailers.

First, the quality of the online helpdesk should be closely monitored since this is the only contact point that customers have with the seller. Unlike a traditional offline store that has a salesperson that customers can interact with, online stores only have a website or an application that customers can interact with. If online helpdesks are available 24/7 and can help in solving most of the customers' problems, it would definitely create satisfaction for the buyers. Next, product accuracy and product condition are the next dimensions that online retailers and logistics service providers need to ensure. In terms of accuracy, the sellers need to have a quality control system when packing the products. Furthermore, sellers also have to work closely with the logistics service providers to ensure that the shipping process does not damage the shipped products. While not all online sellers provide return or exchange options for purchased products, many of the leading online retailers provide free return for customers. To make sure that customers are satisfied with the return process, return logistics have to be simple and user friendly. For example, Lazada.co.th provides a return logistics channel by offering free return of any product by drop them off at any branch of 7-11 throughout Thailand. By having an easy return process, users would have more confidence to buy online since they can always return unsatisfactory products. The last dimension of logistics service quality is time. As previously mentioned, one main difference between online and offline retail is the time it takes to deliver products after the order is placed. To close this gap, online sellers should make sure that customers receive their products as soon as possible. This can be done by using more efficient logistics service providers or to work closely with the logistics providers to improve their speed of delivery.

### 5.4 Policy Recommendations

Regarding the results from the empirical analysis and discussion in this study, this section is the discussion of the policy recommendations for the country in relation to the e-commerce market, social media, and logistics in Thailand. In addition to the information discussed in the section above, the recommendations based on the current situation of the country are as follows.

Data from the ministry of digital economy shows that online shopping in Thailand has become more and more popular, with a value of 703 billion Baht in 2016, which represented growth of 38% from the previous year (ETDA, 2017). Consequently, the government should support this sector of business to enable sustainable growth.

First, broadband internet coverage throughout the country should be supported by the government. Since the internet is the backbone and the only medium of communication for e-commerce for both sellers and buyers, the expansion of broadband internet infrastructure to cover all of the urban and rural areas in the country would help to facilitate the promotion and development of e-commerce in Thailand. Moreover, the results from the empirical analysis also show that most respondents purchase online via mobile devices. Therefore, coverage expansion of broadband internet is not limited to only household fiber-optic networks, but it also requires the expansion of the hi-speed mobile network. With the coming of fast 5G technology, the National Broadcasting and Telecommunication Commissions should facilitate the establishment of this new technology as soon as possible since this new technology will be a game changer in terms of connectivity. For example, a fast 5G network would make the usage of online advertisement via social media, which is considered as customized advertisement that has a positive effect on online purchasing, even more effective because the usage of video interactive advertisements via mobile device would not be limited by the speed of the mobile network.

However, the availability of the internet alone is not enough to facilitate the expansion of e-commerce. The convenience and security of payment transactions is also another crucial factor. According to the survey by the Ministry of Digital Economy in 2017, one of the main factors why Thai internet users decided not to purchase online was the fear of fraud transaction (ETDA, 2018). As a result, the enforcement and expansion of related financial laws and regulations to ease the convenience of making online payments and to apply stricter fines and penalties for related crimes should be implemented. First, for convenience of payment, the government should establish a policy for the public to use other forms of payment rather than cash. Currently, many online sellers offer a cash on delivery option, but this is not the most convenient method

of payment since customers need to make sure that they have cash on hand when the products are delivered. This leads to the second problem, which is the security of online payments. As mentioned above, many consumers are afraid of being defrauded, so they decide not to make online purchases. If the government can solve the online payment problem by strengthening the financial regulations and enforce the law to the maximum level, a lot of people may decide to make online purchases and use online payment options because they would be confident that their money will not be lost in the process.

As mentioned above, to complete an online purchase transaction, products must be delivered to the buyers as the final activity. Therefore, the logistics service is another crucial part of online shopping.

The government of Thailand has already established the policy of Thailand 4.0, which includes every dimension of the economy. For logistics, the government has an infrastructure action plan that covers 36 projects, covering railways, highways, airports, and seaports all over the country (BOI, 2018). Moreover, the establishment of the Eastern Economic Corridor (EEC) project is also a driving force for the overall expansion of the transportation infrastructure. However, this plan may not be enough to facilitate the dramatic expansion of e-commerce in the country since other factors are also evident. First, the government should facilitate international buyers by expediting the custom clearance service to be faster and more convenient. Next, the integration of information technology to support the overall logistics system should be applied.

**5.5 Limitations of the study**

Even though this study tries to cover a lot of aspects related to social media, online shopping, and customer loyalty, there are still limitations that should be pointed out. First, in regard to the antecedent variables to online shopping behavior, although there are more variables other than social media and logistics that can be antecedents of online shopping behavior (Chung-Hoon & Young-Gul, 2003), this study only focused on the influence of social media and perceived logistics service quality as the

antecedents of online shopping purchase behavior. Second, this study was conducted based on a quantitative approach. Thus, the detailed exploration of each construct via semi-structured or unstructured interview was not possible. Therefore, this will limit understanding in terms of detail. Furthermore, the sampling technique used in this research was purposive sampling, which is a form of non-probability sampling, which could create non-probability sampling bias. Regarding the data analysis methodology, this study employed the multiple regression method using SPSS software, which requires multiple regression analyses from the mentioned software. Other methods, such as Structural Equation Modeling (SEM), were not employed.

### 5.6 Future research

This research was conducted in Thailand and only studied Thailand's internet users to verify the hypothesized relationships between the variables. To verify and further expand the findings of this study, the extension of the geographical population to include different cultures and regions is recommended. Hence, comparative studies using respondents from different cultures as a moderating factor should be further explored in future research. The result may give yield benefits for business especially in terms of marketing and supply chain management strategic planning for international online businesses.

Since the result of this study has already confirmed the validity of both Expectation Confirmation Theory and the Theory of Planned Behavior, further study can expand the findings of this study into other types of e-commerce. For example, the integration of e-commerce and social media, which creates a new platform called Social Commerce (Liang & Turban, 2011) should be further investigated using the frameworks of the two mentioned theories as the theoretical background.

In addition to the validation of the two main theories in this age of e-commerce and social media, future study can study the uniqueness of the South East Asian region's online shopping behavior and develop a new theory that is specifically designed for consumers in this region.

Regarding the influence of social media on online purchase behavior, future study should further explore each variable that has already been proven to have a significant effect on online purchase behavior. First, the spread of e-WOM should be expanded and should not be limited to peer communication. e-WOM that is communicated by celebrities or other famous online influencers should be further investigated. It can then be determined which type of influencer would have strongest effect on online purchase behavior for Thai internet users. Next, the mixture of online and traditional media in advertisement has already been proven by Pfeiffer and Zinnbauer (2010) to have the best effect in convincing consumers to buy. Therefore, future study should explore what type of social media advertisement, along with its mixture with traditional media, would have the greatest effect on the online purchase behavior of Thai consumers.

Moreover, to explore the reasons behind each relationship, then use of a qualitative approach is recommended. As a result, the true intentions behind the decision to purchase online, satisfaction, and repurchase can be further explored in detail.

Regarding the empirical results on logistics service quality, it shows a significant positive effect on satisfaction in online purchasing. However, this study was only conducted based on logistics service quality as one variable. Further study should look at other variables and determine the effect of each factor on satisfaction. This may help businesses to focus on each of the dimensions of logistics service.

Regarding the data analysis method in the research methodology, this study employed the multiple regression technique to determine the relationships between variables. The intention was to determine the effect the independent variables had on each dependent variable. However, due to the complexity of this model, other tools such as Structural Equation Modelling (SEM) can be employed in further study to shorten the data analysis. Moreover, the use of Structural Equation Modelling (SEM) in future research can also yield more detailed analytical results by showing the direct and indirect causal effects between each variable. For example, the direct effect of peer communication of

e-WOM via social media on online purchase behavior can be investigated by the use of SEM.

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