The Influence of Social Media and Perceived Logistics Service Quality: The Application of Expectation Confirmation Theory

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Abstract

The online retail business has played an important role in this era, and social media has changed the way people make purchasing decisions. However, the importance of logistics service quality is often unacknowledged in this business. This study investigates the influence of social media and logistics service quality on online purchase decisions and the effects after purchase. Data were collected and analyzed from 316 internet users throughout several universities in Thailand using a quantitative approach. To test the hypotheses, multiple regression was employed. The results show that social media significantly influences buying behavior via the TPB framework, and logistics service quality influences the satisfaction for online purchasing via ECT framework. The results of this study may help online retailers in strategic planning for both marketing and supply chain management for sustainable growth in the future.

Keywords: Expectation Confirmation Theory, Logistics Service Quality, Social Media, Theory of Planned Behavior

Introduction

The current online retailing business environment has presented both threats to traditional retail businesses and opportunities for consumers in regard to their method of consumption. Research by Carr (2017) revealed that traditional shopping malls in the United States will be directly affected by the growth of online store and 25% of those malls will eventually be forced to go out of business by 2022. Moreover, global online shopping value is expected to increase from 2.3 trillion U.S. Dollars in 2017 to more than 4 trillion U.S. Dollars by 2021 (Statista, 2019). There is no doubt that online shopping has played an important role in the current era.

Regionally, Thailand was ranked number one in B2C e-commerce value (Electronic Transactions Development Agency (ETDA), 2017). Moreover, data show that in 2016, the overall value of e-commerce in Thailand reached 2.26 trillion Baht (Electronic Transactions Development Agency (ETDA), 2017) or 79.87 billion USD, accounting for 26.1% of total GDP. This makes Thailand an interesting place to further investigate both the use of social media and online shopping.

To complete online shopping transactions, a physical product needs to be delivered to the customers as a final step. Although the level of satisfaction of online shopping customers depends on several factors, such as website design, website usability and credibility, product offering, and product information (Evanschitzky, Iyer, Hesse, & Ahlert, 2004; Lim et al., 2016), logistics services are also an important factor that affects customer satisfaction. In fact, Lin, Luo, Cai, Ma, and Rong (2016) found that one of the most frequent online shopping issues is related to logistics. Moreover, several studies in the past have found direct relationship between logistics service and customer satisfaction in online retail business (Cao et al., 2018; Hu et al., 2016). Therefore, attention needs to be given to this activity.

The main purpose of this research is to determine the connection between the influence of social media logistics service quality on online shopping behavior and customer satisfaction. This would contribute to both

business and academia. First, from the business perspective, the study of the influence of social media and perceived logistics service quality would allow the prediction of consumer behavior and satisfaction in an online shopping environment. Hence, this research also provides information that will be of utility to online shopping businesses when creating marketing strategy through the use of social media and logistics strategy to facilitate long term success. Furthermore, from an academic perspective, this study would extend the use of Expectation Confirmation Theory and the Theory of Planned Behavior by integrating logistics, social media, and online purchase behavior.

Theoretical Background

To answer the research questions, two main theories have been employed. First, the Theory of Planned Behavior (TPB) works as the main theory to determine the factors that influence purchase behavior. Expectation Confirmation Theory (ECT) works as a supporting theory in the overall framework to link the pre and post purchase behavior.

Theory of Planned Behavior

The Theory of Planned Behavior (TPB) was first developed by Ajzen in 1985 as an extension of the Theory of Reasoned Action (TRA) (Ajzen, 1985; 1991). Initially, TRA indicated that individual behaviors are driven by the intention to perform that behavior. In addition, the intention to perform that behavior is the result of the effect of two constructs, attitude toward that behavior and subjective norms (Fishbein & Ajzen, 1975). First, attitude is defined as the level of perception that an individual has for a certain behavior. The more favorable the attitude a person has towards that behavior, the greater is the possibility that the person intends to perform that behavior (Hansen, 2008). A subjective norm represents the perceived social pressure to perform or not perform the behavior (Ajzen, 1991). The possibility of the individual to perform any behavior is affected by both internal and external social factors.

Even though TRA is widely accepted, including the online shopping behavior research area (Dash, 2014; Liu, Brock, Shi, Chu, & Tseng, 2013), it has still received some criticism. As a result, Ajzen (1985) introduced Perceived Behavioral Control (PBC) as the third construct in TRA and called it the Theory of Planned Behavior (TPB). PBC is defined as "people's perception of the ease or difficulty of performing the behavior of interest" (Ajzen, 1991, p. 183). It has proven its effectiveness in the field of online consumer behavior by Hansen, Jensen, & Solgaard (2004) who compared TRA to TPB. It was found that TPB provided better explanations of the behavior of online consumers than TRA.

Expectation Confirmation Theory

Expectation Confirmation Theory (ECT) was established by Oliver in 1980 as a model that linked both the antecedents and consequences of consumer satisfaction (Oliver, 1980). 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 the individual's intention to repurchase automobiles (Oliver, 1993) to camcorders (Spreng, MacKenzie, & Olshavsky, 1996). More recently, in information systems research, Bhattacherjee (2001) revealed how each construct in this framework was related in a new model called the Expectation Confirmation Model.

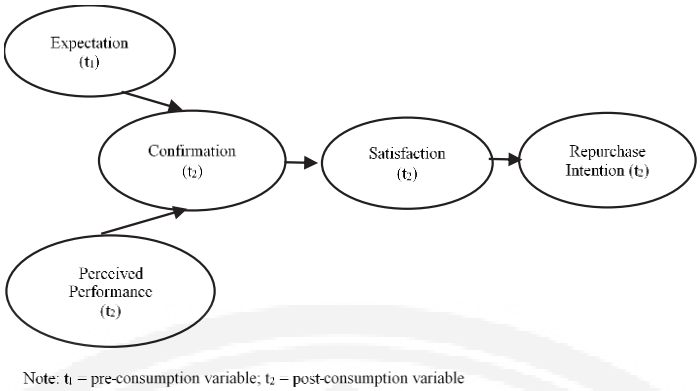

Figure 1 Expectation Confirmation Theory (Bhattacherjee, 2001, p. 353)

The steps that lead to the formation of customer intention to repurchase in the framework of ECT has been empirically studied and explained in the following sequence (Bhattacherjee, 2001; Oliver, 1980). First, customer expectation is formed before they make the purchase. Then once the customers have used the product or service, they form perceptions about its performance. After that, they judge their perception about performance by comparing it with their expectation. During this judging process, they decide whether their expectation is met or not. At this point, if performance exceeds expectation, there is positive disconfirmation. Once satisfaction has been established, customers may have an intention to repurchase. In this research, the aim is to determine the relationship between the influence of social media and logistics service quality, which happens before purchase, and its relationship with satisfaction, which happens after purchase. Therefore, the framework of ECT is employed to determine these relationships.

Hypothesis Development

Social Media Influence

Peer Communication of Electronic Word-of-Mouth (e-WOM) Via Social Media

Since social media provides an online platform for communication and interaction amongst peers, it can be used as a tool to share ideas, opinions, comments, and information. Therefore, it has become regular practice for any person to make comments in their virtual community via a social media platform, which is considered as the act of spreading word-of-mouth amongst peers (Gunawan & Huarng, 2015; Sandes & Urdan, 2013). In addition, word-of-mouth (WOM) 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 judgment (Herr, Kardes, & Kim, 1991; Kiecker & Cowles, 2001; Smith & Vogt, 1995; Weinberger & Dillon, 1980; Xia & Bechwati, 2008). The internet has provided a more reachable form of WOM called electronic WOM or e-WOM (Brown, Broderick, & Lee, 2007; Davis & Khazanchi, 2008; Godes & Mayzlin, 2004; Kiecker & Cowles, 2001; Xia & Bechwati, 2008). Due to the high degree of accessibility, it is assumed that e-WOM is more effective than conventional WOM communication (Chatterjee, 2001).

Research in several fields has also been conducted on the influence of e-WOM via social media on consumer behavior regarding online shopping. First, 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 addition, research that studied the impact of opinions on social media on

purchasing behavior via the framework of the Theory of Planned Behavior showed that experts in the field have significant impact on purchase behavior through both attitudes and subjective norms (Raghupathi & Fogel, 2015). In marketing research by Wang, Yu, and Wei (2012), peer communication via social media among Chinese internet users significantly influenced the attitude towards the products, which eventually influenced the intention to purchase. Therefore, the following hypotheses are proposed.

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 norms.*

Online Advertisement via Social Media

With the rise of social media, its speed, interactivity and convenience for both marketers and customers, and its 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 was predicted to reach almost $36 billion by 2017 (eMarketer, 2015). In addition, research conducted with young adults in South Africa revealed the positive effect of Facebook advertising on the intention to purchase and purchase behavior (Duffett, 2015). The result of this research revealed similar results to research that was conducted on Facebook users in Taiwan, which showed that Facebook advertising had a positive impact on consumer attitudes and the intention to purchase (Yang, 2012). Furthermore, a study of college students in Malaysia also found a significant and positive relationship between online advertising and purchase intention for internet users (Balakrishnan, Dahnil, & Yi, 2014).

From the above information, the following hypothesis is proposed.

Hypothesis 3: *Click-on online advertising via social media has a positive effect on attitudes toward online shopping.*

From the Theory of Planned Behavior, perceived behavioral control was defined as the people's perception of their own capability to perform a task. In the context of internet online shopping in regard to click-on advertisements, it can be assumed that users were able 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 over online purchase behavior.*

Logistics Service Quality

Logistics plays an important role in online shopping as the final activity to complete the transaction. In order to be a winner in this market, each retailer needs to have superior service quality to the competitors (Ehmke & Mattfeld, 2012). In addition, research has shown that some of the most frequent problems of online shopping are related to logistics (Lin, Luo, Cai, Ma, & Rong, 2016).

In the early age of logistics quality measurement, while developing the dimensions of a logistics service quality scale of measurement, Mentzer, Flint, & Kent (1999) introduced nine constructs to measure logistics service quality. All of the nine constructs have been tested and validated (Mentzer, Flint, & Hult, 2001; Mentzer et al., 1999). The nine dimensions of logistics service quality are Personnel Contact Quality, Order Release Quantities, Information Quality, Ordering Procedures, Order Accuracy, Order Condition, Order Quality, Order Discrepancy Handling, and Timeliness.

Although all nine dimensions of logistics service quality are widely accepted, they may not all be relevant in every industry (Mentzer, Myers, & Cheung, 2004). First, a study from Spain, which used only four out of nine dimensions of LSQ, revealed a positive relationship between logistics service quality and customer satisfaction, which indirectly affects customer loyalty (Saura, Francés, Contrí, & Blasco, 2008). However, research that was conducted with Chinese online shoppers in China, one of the biggest e-commerce markets of the world (Ecommerce Europe, 2016), found out that only six out of nine constructs of the logistics service quality scale were valid (Yi-Xiong, Zheng, & Tan, 2007). As seen in several researches mentioned earlier, especially in the e-commerce field, logistics service quality has a significant positive relationship with the customer satisfaction level and customer loyalty. Therefore, the following hypotheses are proposed.

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

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

Online Purchase Behavior

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 (Electronic Transactions Development Agency (ETDA), 2017). To identify the causes of online shopping behavior, the framework from TPB has been proposed as an influential factor. First, research that surveyed online shoppers in Sweden in regard to their willingness to buy online, using the framework of TPB showed that all three constructs of TPB influenced the willingness to buy online (Hansen, 2008). Furthermore, a study by Limayem, Khalifa, and Frini (2000) revealed in a longitudinal study that attitude, subjective norms, and perceived behavioral control had significantly affected online consumer behavior. Another research that studied online shoppers in Korea and the United States found that subjective norms significantly influence online shopping behavior (Choi & Geistfeld, 2004).

Another study of social media users in Taiwan by Gunawan and Huarng (2015) also revealed the significant effect of attitude and subjective norms on behavioral intention to purchase. From the above information, the hypotheses based on the constructs of TPB are proposed as follows.

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

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

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

Satisfaction

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" (Oliver, 1981, p. 29). According to ECT (Oliver & Bearden, 1985), expectation is the antecedent of satisfaction before receiving the product or service. Therefore, the lower the expectation, the greater the possibility that positive satisfaction can be generated (Bhattacherjee, 2001).

Previous research in marketing has been conducted to determine the relationship between advertising and customer satisfaction. First, a study by Joloudar and Ansari (2011) found that television advertisements in Iran significantly influenced product satisfaction. Moreover, another study from India also showed that advertisements

indirectly influenced customer satisfaction via purchase behavior (Tariq, 2014). In this study, social media acts as an influencing factor, the same as advertising in the mentioned researches. Therefore, the following hypothesis is proposed.

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

Methods and Materials

Based on the previous research in the field of information systems that has been conducted using ECT and TPB in the theoretical framework, a quantitative research approach has been selected (Kim, 2010). Moreover, a quantitative method based on a deductive approach usually employed when dealing with the use of data sets to test a theory (Saunders, Lewis, & Thornhill, 2016). Furthermore, the instrument used in this research is a self-administered questionnaire.

Construct Measurement

The item of measurement of the questionnaire in this research has been constructed based on previous related research works with the implementation of pretests to ensure the reliability of all the measurement items. First, peer communication of e-WOM was measured using questions developed from previous research by Wang et al. (2012). Next, click-on social media advertising was measured by items developed from the work of Zhang and Mao (2016), which found that click-on social media advertising indirectly influenced purchase intention.

The next part is the measurement of perceived logistics service quality (LSQ), beginning with the investigation of all 9 elements of LSQ developed by Mentzer et al. (1999). However, several previous researches used different numbers of measurement items in LSQ (Bienstock, Royne, Sherrell, & Stafford, 2008; Yi-Xiong et al., 2007; Saura et al., 2008). In order to create the LSQ questions in the survey for this research, following the techniques of previous research, four elements have been 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.

Next, the measurement items of TPB, Attitude, Subjective Norms, and Perceived Behavioral Control were adapted from several previous research works. First, some questions were adapted from the study of online shoppers by George (2004) with the addition of some questions taken from later works by Lim (2015); Ramayah, Rouibah, Gopi, and Rangel (2009), and Hansen (2008).

To measure online shopping behavior, the measurement questions were adapted from the previous work by Patwardhan and Yang (2003) and Lim (2015). In addition, the measurement of satisfaction was adapted from the previous works that studied online customers satisfaction (Kim, Galliers, Shin, Ryoo, & Kim, 2012; Pappas, Pateli, Giannakos, & Chrissikopoulos, 2014; Wu, 2013).

Each construct in the conceptual model was measured using a six-point Likert scale as it was indicated by the research work by Garland (1991) that the middle point choice created a bias.

Sampling and Data Acquisition Method

In this research, the researcher employed the convenience sampling method, which is considered as nonprobability sampling method, to select the sample from the population with the sample size equals to 400. As a result, the questionnaires were distributed to universities throughout Thailand with the main target as students who are internet users. Moreover, university students are categorized as Gen Y population, which are the group that spend most time online (Electronic Transactions Development Agency (ETDA), 2017).

Results

With the 400 sets of questionnaires distributed, 338 gave answers. Out of 338 respondents, 316 gave valid answers. 192 were female while 124 were male and 92% were from the age group of 18-24. Moreover, the majority of the respondents (89%) were Thai and 82% were living in Bangkok. Furthermore, 61% of the respondents had income between 10,001 and 30,000 baht while 29% had income lower than 10,000 baht. For education, 88% held a bachelor's degree. Additionally, 33% spent 5-7 hours while 30% spent 3-5 hours online daily. For online spending per month, 48% spent between 1,001 and 5,000 baht while 35% spent less than 1000 baht. Furthermore, the previously-mentioned demographic data will be used as control variables in the multiple regression analysis.

Validity and Reliability of the Measurement Tool

In order to ensure reliability and validity, factor analysis and a reliability test were conducted. The results revealed that all variables had a Cronbach's alpha higher than 0.7, which indicates an acceptable level of internal consistency. Furthermore, to investigate the validity of each construct, factor analysis was performed with the items that had a threshold value of lower than 0.4 were removed.

Table 1 Reliability and Validity Test Result

Variables	No. of items	Cronbach's Alpha	Factor Loading
Peer Communication via e-WOM	5	0.934	0.913 - 0.764
Click on Social Media Advertisement	3	0.900	0.875 - 0.822
Attitude towards Online Shopping	5	0.941	0.976 - 0.488
Subjective Norms	4	0.929	0.952 - 0.671
Perceived Behavioral Control	3	0.912	0.928 - 0.793
Perceived Logistics Service Quality	14	0.953	0.873 - 0.640
Online Purchase Behavior	7	0.949	0.900 - 9.616
Satisfaction	5	0.958	0.920 - 0.654

Regression Result

First, Variance Inflation Factor (VIF) analysis was performed and the result showed that none of the variables had a VIF value of more than 10, which indicates no multicollinearity problems.

To test the proposed hypotheses, multiple regression, with the inclusion of control variables with online purchase behavior and satisfaction as dependent variables was performed and the result showed that all hypotheses were supported ($P < 0.05$) except H5 ($P > 0.05$). Table 2 shows that the relationships between the influence of social media and the concepts of TPB for both peer communication of e-WOM and click-on online advertising are supported. First, peer communication of e-WOM had a positive effect on attitude ($\beta = 0.402$, $p < 0.000$) and subjective norms ($\beta = 0.527$, $p < 0.000$). Next, click-on online advertisement positively influenced attitude ($\beta = 0.153$, $p < 0.000$) and perceived behavioral control ($\beta = 0.354$, $p < 0.000$). On the other hand, the relationship between perceived logistics service quality and online purchase behavior was not supported ($\beta = 0.013$, $p = 0.781$). However, perceived logistics service quality had a positive effect on satisfaction ($\beta = 0.186$, $p < 0.000$). Moreover, the relationships between all of the concepts of TPB and online

purchase behavior were supported. In addition, the regression result also showed that online purchase behavior positively affected satisfaction (β = 0.774, p < 0.000).

Table 2 Multiple Regression Test Result

Hypotheses	Standardized Coefficient (β)	t-value	p-value	Result
H1: e-WOM → Attitude	0.402	6.987	0.000	Supported
H2: e-WOM → Subjective norm	0.527	10.983	0.000	Supported
H3: Click-on Social Media advertisement → Attitude	0.153	2.659	0.008	Supported
H4: Click-on Social Media advertisement → Perceived behavioral control	0.354	6.699	0.000	Supported
H5: Perceived logistics service quality → Online purchase behavior	0.013	0.278	0.781	Not Supported
H6: Perceived logistics service quality → Satisfaction	0.186	5.927	0.000	Supported
H7: Attitude → Online shopping behavior	0.316	5.183	0.000	Supported
H8: Subjective norm → online shopping behavior	0.240	4.653	0.000	Supported
H9: Perceived behavioral control → Online shopping behavior	0.338	5.830	0.000	Supported
H10: Online purchase behavior → Satisfaction	0.774	24.685	0.000	Supported

***p < 0.001, **p < 0.01, *p < 0.05

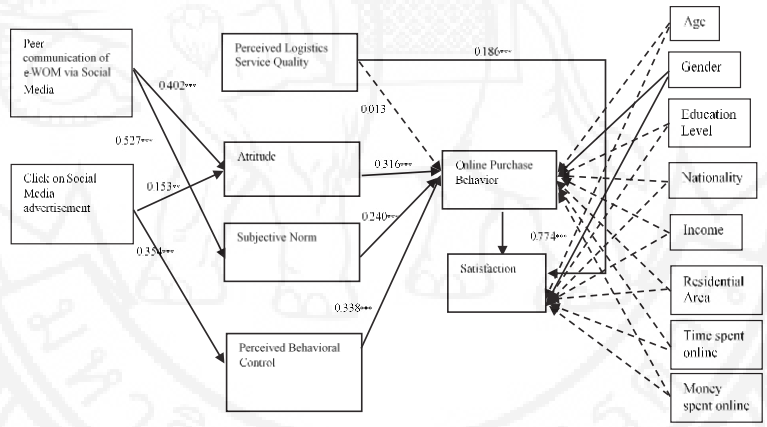

Figure 2 Multiple Regression Result for the Conceptual Model

Discussion

The purpose of this research has been separated into the measurement of two main factors, the influence of social media and perceived logistics service quality on online purchase behavior and customer satisfaction. The results from the data analysis show interesting but not unexpected results. First, social media via the communication of e-wom and click-on social media advertising clearly influence online purchasing behavior via the TPB framework. On the other hand, logistics service quality does not have any significant effect on purchase behavior. This means that e-WOM via social media actually influenced online buying behavior through both attitudes and subjective norms. This information is an extension of previous research that indicated a relationship between e-WOM communication and purchase behavior (Muralidharan & Men, 2015; Raghupathi & Fogel, 2015; Wang et al., 2012) with the inclusion of click-on social media advertisement. This suggests that online

retailers should put effort into advertising to encourage people to buy online. Moreover, logistics service quality seems to be unconnected to purchase behavior. Therefore, in order to increase the number of new users in this business, online retailers could use the result from the analysis to plan their strategy with details of recommendation on strategic planning presented in the following topic.

However, both online purchase behavior and perceived logistics service quality are shown to have a significant effect on customer satisfaction for online purchase. Even though this information is not new, as Lin et al. (2016) demonstrated that logistics service quality is significantly related to customer satisfaction in e-commerce business, this study shows that logistics service quality was not found to influence anyone to buy, but rather satisfies online shoppers afterwards. Furthermore, satisfaction could lead to the intention to repurchase as seen in the study of online shoppers in Taiwan by Kim et al. (2012). Therefore, it can be assumed, albeit not conclusively, that logistics service quality could further influence the intention to repurchase in this business. Moreover, with the inclusion of control variables into the analysis, it shows that the only demographic factor that is significant in the analysis is gender, which shows that females are more likely to make online purchases and be satisfied with their purchase than male respondents. Additionally, it means other demographic factors such as education, income, and the money and time that people spend online do not have any effect on their purchase behavior.

Research Implications

The results from the data analysis reveal several interesting points that should be taken into account in this highly competitive and expanding business environment. Not only do online retailers compete against each other, but they also need to compete with the traditional offline store. The results from this research can be applied into business practice as follows. First, in order to encourage and influence people to shop online at any particular website, peer communication is a crucial factor. This is due to the fact that people believe in their peers via social media when they make online purchase decisions (Wang et al., 2012). Therefore, media spending in this business should be carefully planned and distributed between traditional and online advertisement. For example, a marketing campaign should include a strategy to let people "share" or talk about their products or websites in social media by offering incentives for people who share their positive thoughts about the products via social media since it has already been proven in this research that peer communication via social media can actually influence the intention to buy online. In addition, the results of this study also suggest that online advertising can actually encourage consumers to make the decision to buy products online. As a result, advertising should be carefully planned to make online advertising appear more on online users' screens in the form of pop-ups. If advertising can encourage users to click on it, there is a possibility that users will eventually buy their products. Taking into account the fact that this research has revealed a larger number of female online shoppers, online retailers can select advertising that is designed to appeal to female users more than male users.

Another business implication that makes this research unique is the inclusion of logistics service quality. While the result of the data analysis does not show any significant relationship between logistics service quality and buying behavior, it shows a significant positive effect on satisfaction. Therefore, in order to make customers satisfied, a good online marketing strategy is not enough by itself; the quality of logistics service should also be included in the business plan. As a result, online retailers should focus on logistics service quality in every dimension that is included in this study. For example, sellers should spend more money on express delivery rather than trying to reduce cost by using cheaper but slower transportation options. Moreover, the accuracy and condition of shipment, the provision of an online helpdesk, and a return or exchange procedure are also crucial

to customer satisfaction. Therefore, online sellers should also focus more on these issues rather than leave these tasks to the delivery companies.

Limitations & Future Research

Since there are likely to be more variables that act as antecedents of online shopping behavior (Park & Kim, 2003), future study could include other variables that influence online purchase such as internet trust, internet security, and the quality of the internet service provider. Moreover, the methodology of this study is a quantitative approach, which limits understanding about the reasons for each answer. Future study should therefore also include qualitative approaches to further investigate the issues in greater depth. In addition, the hypothesis testing of this research involved several multiple regressions. Further study could employ the method of Structural Equation Modelling (SEM) to run the complete model.

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