The Antecedents of online customer satisfaction and customer loyalty

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Keywords

Online stores, satisfaction antecedents, satisfaction, loyalty, mediation, path analysis

Abstract

The purpose of this study is to know the mediation role of customer satisfaction in the causal relationship between 9 antecedents of customer satisfaction and customer loyalty in the Indonesian online store context. Based on the model from Liu et al. (2008), the antecedents of online store customer satisfaction are information quality, security (privacy), payment system, delivery, customer service, transaction ability, response, web design, and product variation.

Based on survey held in Indonesia during January until March 2012, the study analyzed hypotheses by path analysis method. The result shows that the influences of information quality, security (privacy), payment system, delivery, and customer service toward customer loyalty are significantly mediated by customer satisfaction. Two other antecedents that are transaction ability and response have no significant effect to both customer satisfaction and customer loyalty. Whereas 2 other antecedents that are web design and product variation only have a direct significant effect to customer loyalty.

This study contributes an insight from Indonesian online store context to identify which antecedents of customer satisfaction need to be addressed in arranging an effective e-commerce strategy.

Introduction

Many marketers, nowadays, are beginning to develop online product marketing. With the online facilities, customers will be able to communicate and do the transactions with the marketers, without any physical distance and time constrain. Internet site is currently used as a 24/7 store (Dawson & Kim 2009), so the consumers can search, view, and choose products according their needs and wants. The ease due to these technology developments would change the shopping habits. The marketers do not need to meet face-to-face with the buyers. The consumers are able to serve themselves with the features of the site. The online system is considered more practical for the consumers to choose their own products, payment methods, delivery system, and many more. Satisfied customers would be loyal to the online store. Therefore, the satisfaction factors of the online shoppers still need to be investigated.

In the marketing science, indicators for a loyal customer are repurchase intentions, brand switching reluctance, and positive word-of-mouth (WOM) communications. Satisfaction is the level of feeling obtained after evaluating the experience of using or consuming certain product (Giese & Cote 2002). In the online context, improving the website performance is a way to achieve the customer satisfaction. Internet website has a variety of aspects that must be improved to meet customer satisfaction which directly influence purchase decisions. Customer satisfaction will lead to repurchase intentions, brand switching reluctance, and willingness to do the WOM.

A research by Szymanski & Hise (2000) initially investigates the antecedents of online consumers' satisfaction. They examine online shopping satisfaction factors, convenience,

product offering and information, website design, and financial security. Complementing previous studies, Liu et al. (2008) examined the antecedents of customer satisfaction in online shopping in China, with nine antecedents, divided based on the stage of purchase: the quality of information, site design, and a variety of products at the stage of information and alternatives seeking; transaction capabilities, site response, security/privacy, and payment system in the execution phase of purchase, as well as management and customer service delivery at the post-purchase. This study uses the antecedents of customer satisfaction by Liu et al. (2008). Srinivasan et al. (2002) has conducted research on online customer loyalty, causes, and consequences in the context of business-to-consumer (B2C). Hsin & Hsin (2011) has conducted research on customer satisfaction online (e-satisfaction) and online loyalty (e-loyalty), while Gera (2011) has conducted research on customer satisfaction models online (e-satisfaction) and customer loyalty online (e-loyalty) using structural equation modeling (SEM). Research Gera (2011) examined the role of mediating variables in the context of online using path analysis. Baron & Kenny (1986) conducted research on mediation and moderation models and calculation of statistics in social research on psychology. A research by Yang et al. (2009) investigates the mediating role of online customer satisfaction in the relationship of antecedents of customer satisfaction and the online game loyalty.

From the interview with three online consumers, there was an overview of consumer behavior and the things they consider in the context of online shopping. It provides preliminary information about the setting of this study. Consumers' considerations to shop online are the website display, information, store response in serving the consumers, store credibility, and transactions security.

This research tries to fill the gap of the previous studies: the antecedents of online customer satisfaction as examined by Liu et al. (2008), online customer satisfaction relationships with the online customer loyalty as examined by Hsin & Hsin (2011), and the mediating role of online customer satisfaction in the relationship of its antecedents with the online customer loyalty as mentioned by Yang et al. (2009), in the context of online stores.

Identification of customer satisfaction as a mediator in the relationship of the information quality, website design, product variation, transaction ability, response, security/privacy, payment system, delivery, and customer service and online customer loyalty is necessary because Liu et al . (2008) proposed a new online store antecedent of customer satisfaction (quality of information, website design, product variation, transaction ability, response, security/privacy, payment system, delivery, customer service) and had not done research on the consequences, customer satisfaction. Meanwhile, Szymanski & Hise (2000) and Hsin & Hsin (2011) have conducted a study to the consequences of customer satisfaction online store, but the research had not proposed specific antecedents, as in Liu et al. (2008). Yang et al. (2009) has conducted research on the role of online customer satisfaction as a mediator of its antecedents and customer loyalty in the context of online games. Yang et al. (2009) did not include information quality, website design, product variation, transaction ability, response, security/privacy, payment system, delivery, customer service, customer satisfaction, and loyalty in a single model. Therefore, this research examines the mediating role of customer satisfaction in the relationship of its antecedents and customer loyalty in the online store context.

The purpose of this research is to test the antecedents of online customer satisfaction and to know the empirical model of online consumer behaviour, related to the mediating role of online customer satisfaction.

Theoretical Framework
Customer Loyalty

Chaudhuri & Holbrook (2001) and Hsin & Hsin (2011) mentioned that there are two kinds of loyalty: attitudinal loyalty and behavioral loyalty. Attitudinal loyalty indicates long-term psychological commitment of a consumer to a store or company (Caruana 2002; Shankar et al. 2003; Hsin & Hsin 2011). Attitudinal loyalty can be seen from the psychological involvement, favoritism, and a sense of goodwill on certain products (Chang et al. 2009).

In this study, loyalty is measured by two dimensions: word-of-mouth communications (WOM) and repurchase intentions. WOM is oral communication between individuals, between the communicator and the recipient of a message about a product, but not to advertise (non commercial) (Arndt 1967; Bansal et al. 2004). Repurchase intention refers to the evaluation of consumers to make purchases at the same store or business in the future, based on previous experience (Hellier et al. 2003).

In the online context, consumer loyalty is defined as a commitment to keep buying a particular product and a tendency to do positive WOM consistently in the future (Chang et al. 2009).

The Antecedents of Online Customer Satisfaction

Liu et al. (2008) formulate the antecedents of consumer satisfaction based on the stages of online purchasing process: information search and evaluation of alternatives, purchasing, and post-purchase stage. At the information search and evaluation of alternatives stage there are information quality, website design and merchandise attributes. While at the purchasing stage there are transaction ability, responsiveness, security/privacy, and payment. In the post-purchase stage, Liu et al. (2008) included delivery and customer service. Those antecedents may have an impact on customer satisfaction online store.

Customer Satisfaction

Satisfaction is an emotional or cognitive response to a focus (expectations, product, consumption experience, etc.), at a time (after consumption, after the vote, the accumulation of experience, etc.). Satisfaction is a post-purchase phenomenon. Satisfaction was measured only during the evaluation process (Giese & Cote 2002).Westbrook & Reilly (1983), quoted in Giese & Cote (2002) revealed that satisfaction is an emotional response to the experience with the product (or service) that have been purchased, retail outlets, or even patterns of behavior such as shopping and buying behavior. Emotional response was preceded by a cognitive evaluation process, perception (or belief) of an object, action, or condition, compared to the value of the individual (or the needs and wants).

Early research on the antecedents of online customer satisfaction has done by Szymanski & Hise (2000). The study suggests that the convenience factor, product merchandise, website design, and financial security became the antecedents of online customer satisfaction. Liu et al. (2008) divides the antecedents of online customer satisfaction based on the stage of the process in making a purchase. At the information search and evaluation of alternatives stage, the experience will be represented by dimensions such as the information quality and website design. These dimensions serve as marketing stimuli that can be controlled by marketers.

At the stage of the buying process, consumers will make a purchase. Chen & Chang (2003) identified the components of online shopping: interactivity, transaction and fulfillment (execution/payment). Liu et al. (2008) discuss this in more detail by including variables such as transaction ability, response, security/privacy, and payment system.

Next, after making a purchase, consumers will receive a product that has been purchased and generally, marketers provide customer service. Therefore, Liu et al. (2008) included variables such as delivery and customer service in the antecedents of online customer satisfaction.

Hypotheses

In the online context, the Internet as a venue for the marketing process will reduce the information searching costs (Yang & Peterson 2004). Information quality of the website is associated with the information on the website itself, the function of the website, the product variation, and prices. At the stage of the information search and evaluation of alternatives, the information quality determines online customer satisfaction (Liu et al. 2008). The information will assist consumers to the purchase decision. The more information available, it will lead consumers to better buying decisions and will lead to the higher online satisfaction level (Szymanski & Hise 2000).

H1: The higher level of information quality will give a significant effect on customer satisfaction online store.

According to Wang et al. (2010), the design of the website is associated with consumer perception of the organization and order at the site. The aesthetic dimension, in particular, is related to consumer perception of the existence of the website. Online consumers with different motivations will respond to the website design in different ways as well as consumer motivation affects the information processing patterns and emotions. Manes (1997) in Liu et al. (2008) and Szymanski & Hise (2000) states that the good website has a good organization, so consumers will be easy to find the desired information about the product. Good website design is a neat screen appearance, clear information path, and quick information loading. Those elements will make a fun shopping for consumers and may influence customer satisfaction.

H2: Good website design will give a significant effect on online customer satisfaction.

Liu et al. (2008) mentioned the merchandise attributes at the stage of information search and evaluation of alternatives. According to Szymanski & Hise (2000), merchandise attributes is defined as factors related to the offer for online sale which is not included in the website design and shopping convenience. Specifically, the attributes is defined as merchandise variety and quality products that reflect a certain price. The lower costs of information seeking and the more product variations, it will be more attractive to consumers, because consumers may get more information and choose a variety of products in one place. Strauss & Frost (2009) states that online shopping in one online store will save the time. Wide variety of products, the impression of superior products, and the perception of low prices will have a positive impact on customer satisfaction.

H3: Product variations will give a significant effect on online customer satisfaction.

At this stage of the purchase, site response, security/privacy of data, transaction capability, and the payment system may affect customer satisfaction. According to Kim et al.

(2009), the ability to manage an online store transaction data will determine the consumer trust in the online store. In an online store occurred more than one transaction, especially when the store is crowded with consumers online. The skills to manage store transactions are necessary to serve the customers. The better management of the store, customers will be pleased to make a deal with the store. According to Liu et al. (2008), these things have an impact on online customer satisfaction. If an online store able to manage their transactions well, it will have a positive impact on customer satisfaction.

H4: The good transaction ability will have a significant impact on online customer satisfaction.

Szymanski & Hise (2000) mentioned that consumers will be more interested in a site that can minimize their costs in finding the information they need, related to the intended products. Chen & Chang (2003) stated that online consumers have a low tolerance. Consumers who shop on the internet do not like to wait any longer. An online store can manage the site in such a way that consumers can explore the site store well, for example using a bigger visitor quota, so that it can accommodate when a certain number of visitors explore the store. The faster the response of a site to consumers, then consumers will be more attracted to the site.

H5: The fast response of the online store will give a significant effect on online customer satisfaction.

The result of the Bruskin - Goldberg Research in 1999 in Szymanski & Hise (2000) states that 75% of people who shop over the Internet puts the security of transactions as the main reasons for buying a product online. Security/privacy becomes an important factor to consider when consumers shop online. Security/privacy will affect consumer trust. This includes payment security and consumer information. People will shop at an online store if they believe that online stores will keep their financial information and security. With their trust in the online store, the consumers will have good experience and will impact on their satisfaction (Kim et al. 2009).

H6: The security/privacy will give a significant effect on online customer satisfaction.

According to Lim and Dubinsky (2004), the payment system is one of the important considerations in online shopping. During the transaction, the consumers choose the payment method that is convenient for them. When a potential buyer wants a product in an online store, he/she is financially able to buy it, but did not find a suitable payment system, and then he/she will not buy the products. For example, if an online store only offers credit card payment system, then people who do not have credit cards can not buy the product in the store even though they wanted the product and have enough cash to buy it. The more payment systems provided by online stores, consumers will have the alternatives and they can choose the payment method that suits their conditions. Consumers will be happier if they can choose the mode of payment. Convenience payment mechanisms have a positive effect on customer satisfaction (Szymanski and Hise 2000 and Liu et al. 2008).

H7: a convenient payment system will give a significant effect on online customer satisfaction.

After the execution of the purchase online, most companies will deliver their products to customers through the delivery agent they trust, and provide customer service, such information and complaint handling when there were any defective products or undesirable things happened. Most of online marketers in Indonesia handed delivery services to other companies. Marketers only manage the delivery process. The online stores do the product

packaging and determine the shipping agent to send the product to their customers. Sometimes the online store informs their customers that they have sent their products through a specific agent. The customers will see product delivery as an important factor, because they have paid the product and they are waiting for it. Consumers will be satisfied if they received the products they have paid as promised by the store. According to Liu et al. (2008), delivery can affect online customer satisfaction.

H8: The good delivery management will give a significant effect on online customer satisfaction.

Shankar et al. (2003) suggested that the customer services of a website will affect the consumer satisfaction of that site. The better the quality of the service, then the customer will be satisfied. Consumers sometimes need information and/or additional services from the online store. Therefore, the stores usually provide contacts for the consumer if they want to ask or make complaints related to the products and online store. Good customer service will have a positive effect on customer satisfaction (Liu et al. 2008).

H9: Good customer service will give a significant effect on online customer satisfaction.

There are two dimensions of loyalty, attitudinal and behavioural (Chaudhuri & Holbrook 2001; Hsin & Hsin 2011). This study investigates attitudinal loyalty, measured using repurchase intentions and word-of-mouth communications (WOM). Repurchase intentions is the individual's decision to buy more products from the same company, in the current situation and environment (Hellier et al. 2002). According to Assael (1998), marketers will always examine the elements of marketing stimuli which may influence purchase intent. For example, the product, pricing, advertising strategy, packaging, and point of purchase (store atmosphere or site).

WOM is a personal communication about a product between the customers, neighbours, friends, family members, and acquaintances (Kotler & Armstrong 2008). According to Mowen & Minor (2001) WOM refers to the exchange of comments, thoughts, or ideas between two or more customers, none of which are the official marketer of the company.

Castaneda et al. (2009) suggested that satisfaction is the most relevant variable of customer loyalty. In the online environment, customer satisfaction can reduce the intention of brand switching and increase repurchase intentions, as well as the WOM (Hsin & Hsin 2011).

H10: Online customer satisfaction will give a significant effect on online customer loyalty.

Caruana (2002) examined the mediating role of customer satisfaction in the relationship of service quality with customer loyalty in the context of traditional shopping. In the online context, Yang et al. (2009) examined the mediating role of customer satisfaction in the relationship of customer satisfaction antecedents with the online game loyalty and the research found that satisfaction mediates its antecedents to the online game loyalty. This study hypothesizes that customer satisfaction mediates the relationship of its antecedents with online customer loyalty in the online store context.

H11: Online customer satisfaction mediates the relationship of its antecedents (information quality, website design, product variation, transaction ability, response, security/privacy, payment system, delivery, and customer service) with online customer loyalty.
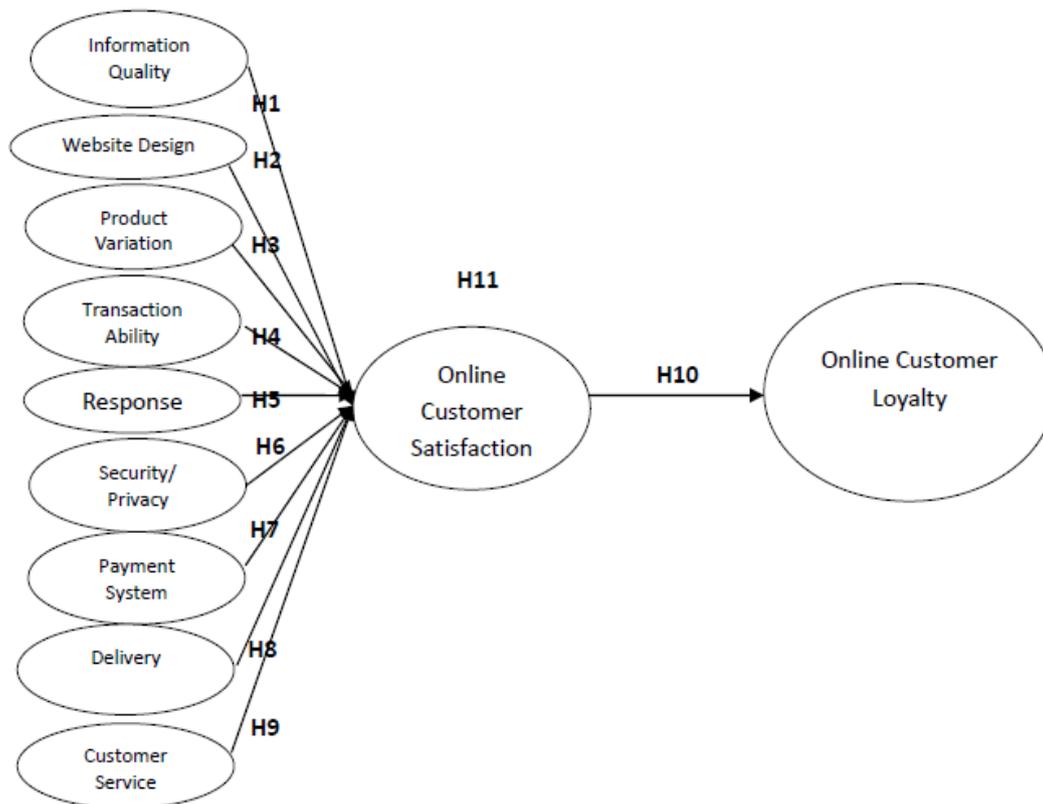
Figure 1. *Research Model*

Figure 1. Sources: Liu et al. (2008), Hsin & Hsin (2011), and Yang et al. (2009)

Research Method

The survey was conducted on January-March 2012, using online and offline questionnaires. The questionnaire uses 5 Likert scales. Purposive sampling is used in this research. The respondents are people who have made at least a purchase in an online store in the last six months. These criteria were applied to reduce errors due to memory (recall effect), so that respondents are able to recall their experiences when they shopped in an online store. The research is conducted in Indonesia, but not limited by geographic area since we use online questionnaires with verification code and offline questionnaires. Respondents are Indonesian online shop consumers. The address of online questionnaires was distributed via e-mail to the respondents and the offline questionnaires were distributed in Yogyakarta. A total of 208 respondents obtained, consist of 107 respondents for online questionnaires and 101 respondents for offline questionnaires.

Discussion and Conclusion

The preliminary test was conducted to 61 respondents to determine the validity of the questionnaire items and the adequacy of the sample before continuing the actual sample size. Before testing the validity and reliability of the instrument, an independent sample T-test was performed to the online and offline data. The results of the independent samples T-test showed that there were no significant differences between online and offline data, so we use both online and offline data in this study.

Confirmatory factor analysis performed using AMOS 18.0 with n = 208. A total of 19 exogenous variables' items were excluded because it does not meet the requirements of the

validity of the instrument (the factor loadings were below 0.50 or there were cross-loadings). A total of 2 endogenous variables' items were excluded, so that the total items used for the subsequent analysis were 28.

Reliability test was conducted using SPSS. From the test results, it is known that the value of Cronbach's Alpha for each variable is more than 0.6, so the entire items are reliable.

The sample size in this study is 208 and the value of KMO-MSA is 0.900 ($\geq$0.500). It means the sample is adequate for this research. In the path analysis, the final multivariate values obtained after excluding the outliers is 3.288. Normality of the data is indicated by the value of critical ratio (CR), which is between +2.58 and -2.58 (Hair et al. 2006). This value is obtained after excluding 63 sample units which have the farthest Mahalanobis distance, so the sample used for path analysis is 145 units (n=145).

Figure 2. *Goodness of Fit of the Model*
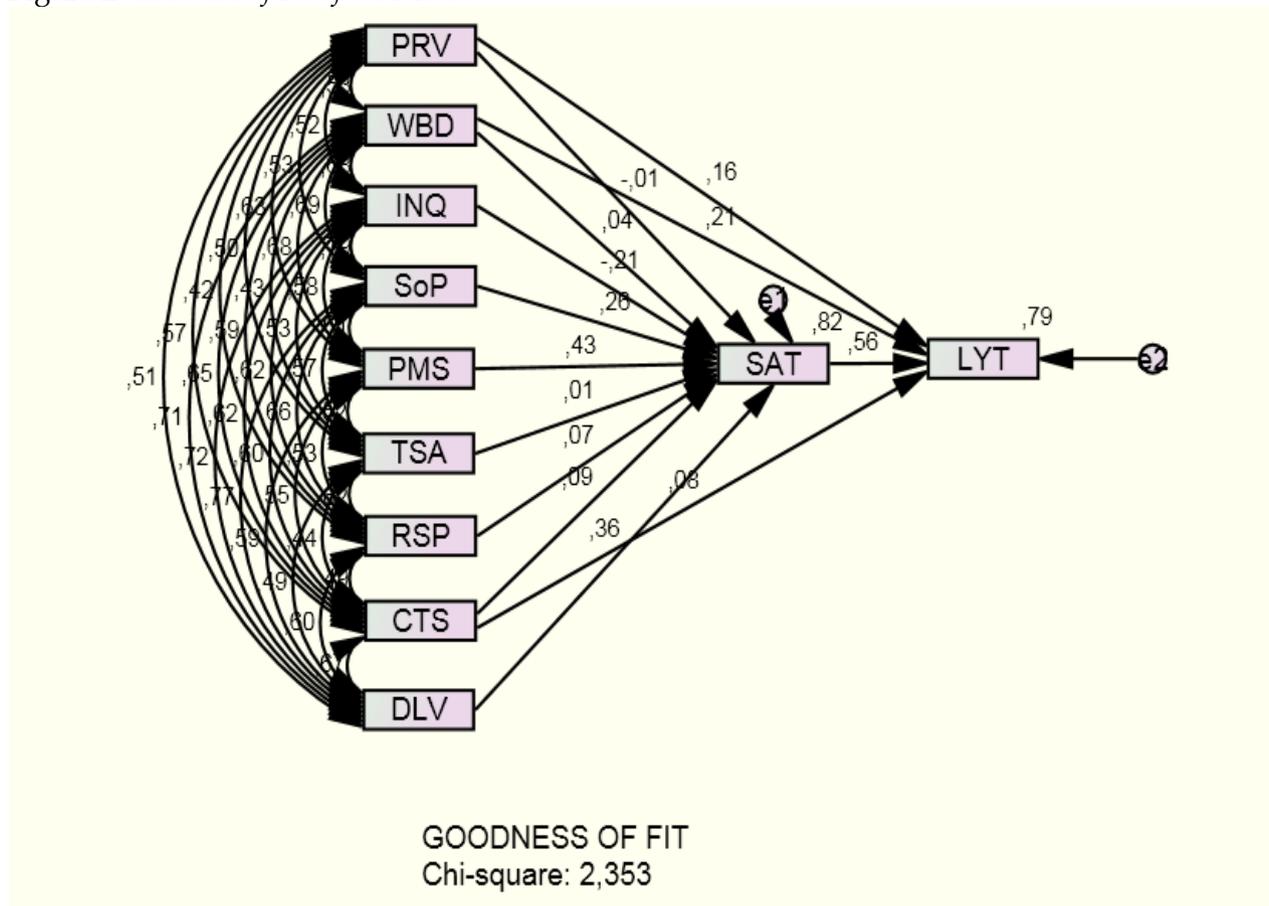

GOODNESS OF FIT
Chi-square: 2,353

Figure 2. PRV = Product Variation; WBD = Website Design; INQ = Information Quality; SoP = Security/Privacy; PMS = Payment System; TSA = Transaction Ability; RSP = Response; CTS = Customer Service; DLV = Delivery; SAT = Customer Satisfaction; LYT = Customer Loyalty.

Table 1.
Goodness of Fit Indicators

GFI	0,997
AGFI	0,968

CMIN/DF	0,392
TLI	1,025
CFI	1,000
RMSEA	0,000

Source: primary data

Table 2.
Result Summary

Hypothesis	β	P	Note
H1: The higher level of information quality will give a significant effect on customer satisfaction online store.	-0,210	0,001	Supported
H2: Good website design will give a significant effect on online customer satisfaction.	0,043	0,489	Not Supported
H3: Product variations will give a significant effect on online customer satisfaction.	-0,008	0,867	Not Supported
H4: The good transaction ability will have a significant impact on online customer satisfaction.	0,008	0,869	Not Supported
H5: The fast response of the online store will give a significant effect on online customer satisfaction.	0,069	0,199	Not Supported
H6: The security/privacy will give a significant effect on online customer satisfaction.	0,258	<0,001	Supported
H7: a convenient payment system will give a significant effect on online customer satisfaction.	0,428	<0,001	Supported
H8: The good delivery management will give a significant effect on online customer satisfaction.	0,356	<0,001	Supported
H9: Good customer service will give a significant effect on online customer satisfaction.	0,091	0,091	Supported
H10: Online customer satisfaction will give a significant effect on online customer loyalty.	0,561	<0,001	Supported
H11: Online customer satisfaction mediates the relationship of its antecedents (information quality, website design, product variation, transaction ability, response, security/privacy, payment system, delivery, and customer service) with online customer loyalty.	Partially Supported		

Source: data analysis

Based on the results of data analysis, customer satisfaction mediates the relationship of information quality, security/privacy, payment system, delivery, customer service, and online consumer loyalty. The transaction ability and the response effect on the online satisfaction and online customer loyalty were not significant. The website design and product variation effect on online satisfaction is not significant; however it has significant effect directly to online customer loyalty.

The mediating role of customer satisfaction was examined simultaneously. Simultaneous testing allows researchers to see the effect of mediation more easily and quickly. From the path

analysis, it is known that customer satisfaction mediates the relationship of 5 antecedents of customer satisfaction to online customer loyalty. Those antecedents are information quality, security/privacy, payment system, delivery, and customer service. Those 5 antecedents support the proposed hypotheses. While the antecedents of the other 4 can be explained as follows:

The transaction ability and the response effect on the online satisfaction and online customer loyalty were not significant. It means, customer satisfaction does not mediate the relationship between those two antecedents and online customer loyalty. The website design and product variation effect on the online satisfaction is not significant, but they have significant direct effect to the online customer loyalty, each with a coefficient of 0.205 and 0.155, with p <0.05. Thus, the hypotheses were not supported by those four antecedents.

Liu et al. (2008) found that all antecedents but response have significant effect to the customer satisfaction. While Yang et al. (2009) found that all satisfaction antecedents – experience value, transactions, and service quality- are mediated by the customer satisfaction to online customer loyalty. The result of this study does not support Yang et al. (2009) findings, because customer satisfaction only mediates 5 of 9 satisfaction antecedents to the online customer loyalty.

Research Limitations and Direction for Further Research

This research was done with data collected online and offline, thus requiring different test before processing the subsequent analysis. Independent and dependent variables in the study was assessed by the same respondents, so there is a possibility of bias. The nine independent variables have collectively significant correlation, meaning that the influence of the nine variables on satisfaction and loyalty occurs after cross-correlated.

It is recommended for the further research to test the nine antecedents of customer satisfaction and customer loyalty with larger sample sizes, both online and offline. The nine antecedents are advised to be tested by grouping into 3 categories according to the purchase stage, i.e. information and alternatives searching, purchasing, and post-purchase.

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