



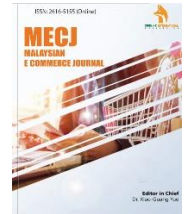
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RESEARCH ARTICLE

EMPIRICAL STUDY OF PURCHASE INTENTION AND BEHAVIOR OF E-COMMERCE CONSUMERS IN INDONESIA

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ABSTRACT

E-commerce in Indonesia is currently growing as consumers make an increasing number of online purchases, making the competition fiercer between e-commerce business players in the country. Despite this growth, e-commerce in Indonesia faces challenges remaining to their development such as a gap in internet penetration between rural and urban areas. To win the competition among all e-commerce businesses and face the existing challenges, it is necessary to determine the best strategy to retain current consumers along with getting more and more consumers. Thus, this study aims to better understand the behavior of e-commerce consumers in Indonesia by developing a structural model of purchase intention and behavior based on an adaptation of the unified theory of acceptance and use of technology 2 (UTAUT2) model, with input from other relevant theories and interviews conducted in the country. Data from questionnaires completed by 400 e-commerce consumers are analyzed using covariance-based structural equation modeling (CB-SEM). The CB-SEM analysis finds that purchase intention is significantly influenced by these six factors: facilitating conditions, perceived website quality, security, convenience, economic reasons, and social influence. Furthermore, purchase intention significantly influences the purchase behavior of consumers. Conversely, three factors considered in the study are found not to significantly influence purchase intention: hedonic motivation, variety, and delivery factors. These results help e-commerce businesses to consider important factors when determining key factors influencing consumer purchase intentions and behavior.

KEYWORDS

e-commerce, technology acceptance and use, purchase intention, purchase behavior, Indonesia.

1. INTRODUCTION

E-commerce in Indonesia has rapidly grown over the last decade, along with increases in the number of internet users, the penetration of mobile devices, and the middle-income population (Sfenrianto et al., 2018). Between 2014 and 2017, the ratio of online purchases to total annual retail sales in the country increased fourfold, from 0.7% to 3.1%. Globally, Indonesia is now ranked as one of the top three fastest-growing e-commerce markets, as measured by online purchase growth (Kinda, 2019). The behavior of e-commerce consumers contributing to this growth, therefore, merits investigation, especially considering the challenges remaining to the development of e-commerce in the country. For example, Indonesia faces a significant gap in internet penetration between rural and urban areas, with penetration rates of 48.25% and 72.41%, respectively (Asosiasi Penyelenggara Jasa Internet Indonesia (APJII), 2017). There is also a significant gap in internet penetration rates between Java and other islands such as Kalimantan, Sumatra, Sulawesi, or Papua Islands; approximately 58% of internet users are concentrated on Java, the most populous Indonesian island (Asosiasi

Penyelenggara Jasa Internet Indonesia (APJII), 2017). Moreover, the delivery of purchased goods is a significant challenge for the e-commerce industry in Indonesia, as the country is a big archipelago, with an estimated 17,508 islands, including 6,000 inhabited islands (JPMorgan Chase & Co, 2019).

Existing studies of e-commerce consumers in Indonesia have primarily focused on business-to-consumer (B2C) e-commerce (Hidayanto et al., 2017; Annisa et al., 2018; Kustiwi and Isnalita, 2018). Studies of consumer-to-consumer (C2C) e-commerce in the country have been conducted on samples from a limited selection of C2C e-commerce websites (Handayani and Arifin, 2017; Kowanda et al., 2018; Sfenrianto et al., 2018). In addition, few existing studies have analyzed consumer behaviors using the unified theory of acceptance and use of technology 2 (UTAUT2) model. Unlike previous studies, the present research evaluates the UTAUT2 then investigates consumer behavior on a wide range of both B2C and C2C e-commerce websites, including their associated mobile apps. The present research is structured as follows: Section 2 presents a review of the prior literature on purchase intentions and behaviors along with the interview

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results in the context of e-commerce websites and proposes the research hypotheses. Section 3 describes the research methodology, while section 4 and 5 discuss respectively statistical results and the related findings. Finally, section 6 and 7 conclude the paper with a discussion of the theoretical and practical contributions of the current study, together with directions for future research.

2. LITERATURE REVIEW

2.1 Theories of Technology Acceptance and Adoption Models

Models of the acceptance and use of newly introduced technologies have been synthesized mainly from psychological and sociological perspectives. These models include the theory of reasoned action (TRA), the technology acceptance model (TAM), the motivational model (MM), the theory of planned behavior (TPB), the decomposed theory of planned behavior (DTPB), the model of PC utilization (MPCU), and innovation diffusion theory (IDT) (Moore and Benbasat, 1991; Fishbein and Ajzen, 1975; Davis, 1989; Davis et al., 1989; Davis et al., 1992; Schifter and Ajzen, 1985; Ajzen, 1991; Taylor and Todd, 1995; Thompson et al., 1991). These seven models were adapted into the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003). The UTAUT model pinpointed the four critical factors associated with predicting behavioral intentions and the use of technology by employees in the organizational context. Those four factors are performance expectancy, effort expectancy, facilitating conditions, and social influences. The UTAUT model was then developed into the UTAUT2 model for application to the consumer technology context by adding three factors: hedonic motivation, price value, and habit (Figure 1) (Venkatesh et al., 2012).

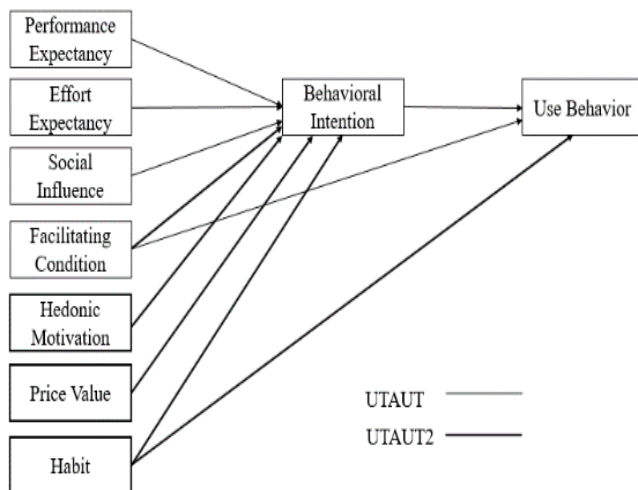


Figure 1: UTAUT2 model (Venkatesh *et al.*, 2012)

2.2 Development of Hypotheses

In this study, two terms are used: “purchase intention” and “purchase behavior.” The term purchase intention is employed to describe the behavioral intention of consumers to purchase via e-commerce. In contrast, the term purchase behavior is used to describe the actual behavior of consumers using e-commerce. The model used in this study was developed by adjusting the UTAUT2 model based on other relevant technology acceptance-and-use literature as well as insights gained through interviews with experts, consumers, and e-commerce companies in Indonesia.

2.2.1 Convenience

Convenience is one of the consumers’ main motivations for shopping online via e-commerce (Chaparro-peláez *et al.*, 2016; Shaw and Sergueeva, 2017; Prayoonphan and Xu, 2019). The convenience construct includes positive attributes such as time-saving, less effort for purchases, choice of payment methods, flexibility, and ubiquity (Chaparro-peláez *et al.*, 2016). The consumers are willing to shop through e-commerce because e-commerce websites are accessible 24 hours from any places.

Furthermore, the e-commerce makes fast transaction processes because the consumers do not need to queue to buy a product or service neither to go to the conventional stores. through saving time and effort, convenience can be reached by the consumer (Shaw and Sergueeva, 2017).

In interviews, many interviewees mentioned convenience-related purchase intention indicators, such as comfortable, busy, quick, time-saving, needs, and straightforward. This result is in accordance with the convenience factor identified in studies (Chaparro-peláez *et al.*, 2016). Finally, an interviewee from an e-commerce company in Indonesia noted that the convenience of available payment methods is one of the most critical factors in motivating consumers to shop online. Information technology can enable consumers to complete their activities with a faster process, anytime, and anywhere, depending on their choice. Therefore, the present research hypothesizes that convenience is a factor that influences purchase intention, as described by the following hypothesis:

H1: Convenience has a significant influence on the purchase intentions of consumers using e-commerce websites.

2.2.2 Perceived Website Quality

Website quality, defined as the overall excellence or effectiveness of a website in delivering the messages to its viewers, has gained great attention from both academics and practitioners since it plays an important role in developing consumers’ purchase intentions on e-commerce (Jauhari *et al.*, 2019). As confirmed by some researchers, that marketers should have their strategy to attract consumers since the number of e-commerce is very large nowadays (Jauhari *et al.*, 2019). A website acts as a communication tool between the seller and buyer since they could not meet and communicate directly or through face-to-face-interaction (Wilson *et al.*, 2019).

In UTAUT2, effort expectancy is the degree of ease/effort associated with the use of technology and has a positive effect on behavioral intention (Venkatesh *et al.*, 2012). It comprises indicator items such as easy to learn, interaction with technology that is understandable, and easy to use. This study assumes that, in an e-commerce context, effort expectancy is related to perceived website quality (Hasan and Abuelrub, 2011; Yoon and Oceaña, 2015). The interviews conducted suggest that perceived website quality, specifically an easy-to-use website or app, is one of the essential factors influencing consumer purchase intention when using e-commerce. Website quality will affect the perceived ease of use and perceived usefulness (Zhou and Zhang, 2009). If system quality, information quality, or service quality are poor, users will perceive a website as more difficult to use and less useful. In addition, users will perceive much lower ease-of-use and usefulness if a website is unreliable, shows outdated information, or responds slowly to user demands (Zhou and Zhang, 2009). Therefore, the model developed in the current study uses perceived website quality as a replacement for the effort expectancy concept. Perceived website quality has previously been mentioned as an influence on behavioral intention and usage decisions in many studies (Parasuraman *et al.*, 2005; Wixom and Todd, 2005; Ahn *et al.*, 2007; Collier and Bienstock, 2009; Yoon and Oceaña, 2015). Therefore, this study proposes the following hypothesis:

H2: Perceived website quality has a significant influence on the purchase intentions of consumers using e-commerce websites.

2.2.3 Social Influence

Social influence can be defined as interpersonal influence and external influence (Bhattacharjee, 2000). Interpersonal influence emerges from word-of-mouth influence by friends, colleagues, superiors, and other prior adopters, while external influence emerges from mass media reports, expert reviews, and opinions. Furthermore, based on the theory proposed by some researchers, both internal and external social influences affect the acceptance of the technology (Rogers, 2003). The effect of social influence from family, friends, and others is considered an internal source, while advertising, mass media, and other marketing-related sources are considered external sources (Hwang, 2010).

Studies in the relevant literature show that social influence has a positive

impact on the behavioral intention of consumers to shop online (Kim et al., 2009; Dwivedi et al., 2019). In addition, in interviews, consumers, experts, and representatives of e-commerce companies in Indonesia stated that recommendations from family and friends and advertisements on television are important factors in motivating consumers to shop online. Following prior research, the present research adopts social influence as a factor that has a significant influence on the purchase intention in e-commerce. Therefore, the following hypothesis is presented:

H3: Social influence has a significant influence on the purchase intentions of consumers using e-commerce websites.

2.2.4 Facilitating Condition

Infrastructure is generally accepted to be an essential factor influencing consumers' purchase intention on e-commerce websites in Indonesia. E-commerce experts in Indonesia highlight that Indonesia is a developing country consisting of many islands with varying levels of population, economic development, and infrastructure. This structure makes it difficult to build a fiber-optic-based backbone. Another indicator that can be categorized as infrastructure is the level of internet access fees, which are relatively expensive in Indonesia (Boerhannoeddin, 2016).

In adapting them to existing theories such as UTAUT2, the factors considered to be components of infrastructure in Indonesia can be treated as facilitating conditions. Facilitating conditions in UTAUT2 are defined as consumers' perception, given the available resources, of their ability to perform a behavior (Venkatesh et al., 2012). The facilitating condition construct used in this study is not the same as that in UTAUT2 but is adapted using other relevant theories and interview results. For example, a group researcher described infrastructure problems for the e-commerce industry in developing countries, such as lack of access at a reasonable cost to computers, software, and other hardware, as well as inadequate telecommunications, transportation, and shipping networks (Jennex et al., 2004).

Therefore, the present research includes information technology (IT) equipment and internet access as indicators of facilitating conditions. Accordingly, the facilitating conditions factor is predicted to be one of the factors significantly influencing both purchase intention and purchase behavior in e-commerce. Therefore, the two following hypotheses are proposed:

H4: Facilitating conditions have a significant influence on the purchase intentions of consumers using e-commerce websites.

H5: Facilitating conditions have a significant influence on the purchase behaviors of consumers using e-commerce websites.

2.2.5 Hedonic Motivation

Emotional value refers to the pleasure that individuals feel in interacting with others through online or internet services (Hsiao and Chen, 2016). According to a study, hedonic motivation consists of factors such as adventure, buying for friends and family, and enjoying socializing with others when shopping, and influences purchase intention (Arnold and Reynolds, 2003). Furthermore, highlighted that hedonic motivation is influenced by adventure, authority, and status and influences the behavioral intention (To et al., 2007). In UTAUT2, defined hedonic motivation as the fun or pleasure derived from using technology and identified a positive relationship between hedonic motivation and intention (Venkatesh et al., 2012). Hedonic motivation is widely recognized in the literature as one of the factors that influence purchase intention (Arnold and Reynolds, 2003; To et al., 2007; Venkatesh et al., 2012; Hsiao and Chen, 2016). In this study, hedonic motivation is also included as a factor that influences purchase intention. Therefore, the following hypothesis is proposed:

H6: Hedonic motivation has a significant influence on the purchase intentions of consumers using e-commerce websites.

2.2.6 Economic Reason

Several scholars have identified that prices and promotions influence consumers in online shopping (Chiang et al., 2018). As reported by reference, consumers believe that they will get inexpensive products through e-commerce and they often look at prices and promotions. Besides, consumers use e-commerce to buy products after acknowledging that the prices for these products are relatively more expensive at offline or conventional stores (Chiang et al., 2018). Monetary value can be measured through the financial benefits and costs incurred in the transaction or through the use of goods and services. In other words, customers will be more encouraged to complete a purchase transaction if it can save them money, for example, through discounts or rebates (Hidayanto et al., 2017).

Furthermore, many interviewees mentioned price factors, such as prices that are relatively cheaper than those in offline stores, discounts, and convenience in comparing prices between products from different sellers. Existing research supports these observations, finding that the internet enables consumers to easily compare prices from different sellers, to pay lower costs, and to find better prices than at traditional sellers; these factors have been defined as the construct of economic reasons (Chaparro-peláez et al., 2016). Therefore, the present research accounts for this concept by including the construct of economic reason as a factor that influences the purchase intention through e-commerce. Thus, the present research puts forward the following hypothesis:

H7: The economic reason has a significant influence on the purchase intentions of consumers using e-commerce websites.

2.2.7 Security

Reported by some researchers, consumers are concerned about the security of their personal information, as they will seldom shop online on e-commerce websites that use their personal information without permission (Chiang et al., 2018). Also, they can change their online shopping channel because of different levels of security that affect their purchasing decisions. Therefore, security affects consumer purchase intention to use e-commerce (Chiang et al., 2018). This construct was also obtained based on studies, which stated that security affects purchase intention (Azam et al., 2012; Escobar-Rodríguez and Bonsón-Fernández, 2016). The selection of this construct was also supported by the results of interviews with e-commerce companies, consumers, and experts who mentioned payment systems that guaranteed the safety and privacy of personal data as important factors influencing consumer intention. Security in the current study is defined as consumer perception of whether e-commerce companies appropriately maintain online transactions involving financial and personal information. Based on the above description, the present research hypothesizes that security influences the purchase intention of consumers using e-commerce, as follows:

H8: Security has a significant influence on the purchase intentions of consumers using e-commerce websites.

2.2.8 Variety

Reported in study, product variety is important for stores, since it will give more potential consumers to purchase products there (Chiang et al., 2018). Furthermore, e-commerce can provide a wide variety of products and information (Chiang et al., 2018). Product variation is one of the crucial factors that motivate online shopping, based on interviews with consumers and e-commerce companies in Indonesia. Variety is also adapted from research by and not included in the UTAUT2 model (Chaparro-peláez et al., 2016). Consumers can benefit from using e-commerce because the internet offers them access to a wide variety of brands, stores, and products (Chaparro-peláez et al., 2016). As such, consumers are able to find many products easily. In some study, variety is concluded to have a significant influence on the e-commerce purchase experience or actual purchases (Chaparro-peláez et al., 2016). The current study thus hypothesizes that variety positively influences purchase behavior in e-commerce. Therefore, the following hypothesis is proposed:

H9: Variety has a significant influence on the purchase behaviors of consumers using e-commerce websites.

2.2.9 Delivery

Another factor added in this study is the delivery of goods, which emphasize on the methods to deliver the purchased goods to the consumer in cross-border trade (Kalinic, 2014; Chaparro-peláez et al., 2016). Based on the interviews conducted, delivery is an important issue for Indonesia as an archipelagic country where transportation and delivery of goods are more complicated than in non-archipelagic countries. This insight from the interviews is in line with the findings of the Indonesian E-commerce Roadmap 2017, which mentioned delivery as one of the major issues facing the e-commerce industry (Sekretariat Kabinet RI-Deputi Bidang Perekonomian, 2017).

Consumers consider the issue of how goods will be shipped when online shopping using e-commerce websites, as shown in studies such as that (Fu et al., 2007). They identified factors related to goods delivery, such as delivery costs, delivery quality, and delivery time. Based on interviews with an e-commerce company in Indonesia, consumers also consider the system of delivery tracking offered by e-commerce websites when shopping online. In this study, delivery time, delivery quality, and the delivery tracking system are included as items within the delivery factor. The present research investigated the influence of the delivery factor on purchase behaviors, represented in the following hypothesis:

H10. Goods delivery has a significant influence on the purchase intentions of consumers using e-commerce websites.

2.2.10 Purchase Intention

This current study modifies the behavioral intention in UTAUT2 and describes it as purchase intention, which is defined as aiming to continue using e-commerce in the future, always trying to use it in everyday life, and planning to continue using it regularly (Venkatesh et al., 2012). Furthermore, this study adapts the report, which identified purchase intention as the intention to use products/services, the intention to recommend them to others, and the intention to find information about products/services and tailors it to fit actual conditions in Indonesia (Ferdinand, 2002).

In the present research, purchase intention is estimated to be a factor that significantly influences purchase behavior (Ferdinand, 2002; Venkatesh et al., 2012). Purchase intention comprises indicators such as the intention to shop online using an e-commerce website, the intention to find information about products/services on the e-commerce website, and the intention to find information about e-commerce. The present research hypothesizes that purchase intention has a significant influence on purchase behavior when shopping online using e-commerce. Therefore, the following hypothesis is proposed:

H11. Consumer purchase intention has a significant influence on the purchase decisions of consumers using e-commerce websites.

2.2.11 Purchase Behavior

There are two ways to measure behavior: objectively and subjectively (Straub et al., 1995). In general, objective measures are based on data about usage of the system, such as the total number of interactions with the system or the time spent in the system. This data is not available at the pre-adoption stage. Conversely, subjective measures are often based on self-reported data about the intensity or frequency of use of a system; again, actual system usage measurements are generally not available at the pre-adoption stage (Turner et al., 2010). The present study relies on subjective measures of system usage, in line with UTAUT2, such as the frequency of use of e-commerce websites by consumers and the amount they spend shopping online each month (Venkatesh et al., 2012).

The research model containing the 11 hypotheses defined above is presented in Figure 2.

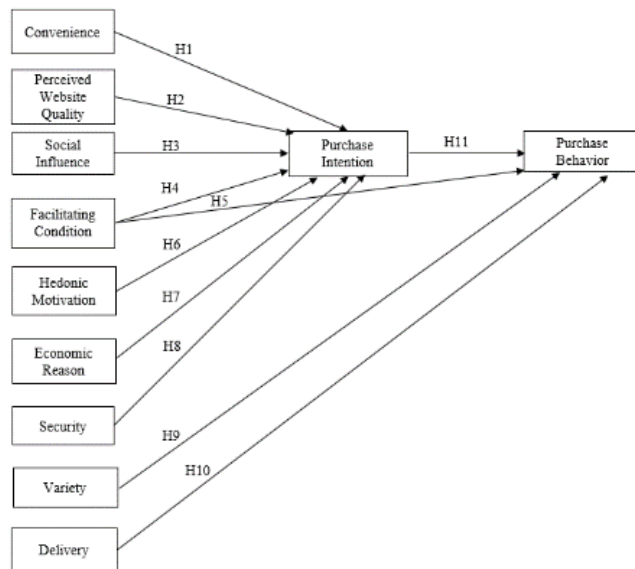


Figure 2: Proposed research model

3. METHODS

3.1 Measurement

This study adopts as indicators a set of measurement items related to the theory of technology acceptance and consumer behavior towards e-commerce. These indicators were developed based on sources such as theories of technology acceptance and use, literature studies, and other related theories. The present research also adapted the results of interviews based on a methodology of the integration of issue analysis, social survey, and statistical analysis (Kadono, 2015). During the interview, respondents were asked about their motivations for using e-commerce websites to shop online, and an in-depth discussion of each of the factors mentioned was had. Then, the results of the interviews were elaborated upon with previous studies, so that the selection of factors was adjusted to the actual conditions in Indonesia. The respondents for the interviews were four consumers, two experts, and two representatives of two different e-commerce companies.

Academics in the field of e-commerce and consumers were also asked about the suitability of these indicator items for measuring purchase intention and behavior when using e-commerce websites, as part of content validation. The survey participants gave responses to each item measured on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), a tool for measuring attitudes or preferences adapted from (Zikmund et al., 2012). Latent constructs with several indicator items, explain the factors that are used in the present research. SEM using the AMOS 25 analysis tool was used to validate the causal relationship between the variables in the proposed research model. The survey design comprised two parts. The first part consisted of information on demographic characteristics, including gender, age, marital status, payment method preferences, frequency of using e-commerce websites per month, and island of residence, and included a nominal scale.

The second part of the survey consisted of 32 questionnaire items. Three items each were used to measure the convenience construct, perceived website quality, and social influence, with one additional item for convenience, that of the payment method. Facilitating conditions were measured using two items, hedonic motivation was measured using two items, economic reason was measured using three items, security was measured using three items, variety was measured using three items, and goods delivery was measured using three items (Venkatesh et al., 2012; Chaparro-peláez Pascual et al., 2016; Hwang, 2010; Hasan and Abuelrub, 2011; Venkatesh et al., 2012; Yoon and Occeña, 2015; Datta, 2011; Venkatesh et al., 2012; Chiu et al., 2014; Datta, 2011; Venkatesh et al., 2012; Chiu et al., 2014; Venkatesh et al., 2012; Chaparro-peláez et al., 2016; Park and Kim, 2003; Azam et al., 2012; Escobar-Rodríguez and Bonsón-Fernández, 2016; Chaparro-peláez et al., 2016; Fu et al., 2007).

Finally, purchase intention was measured using three items and purchase behavior was defined as the frequency of using e-commerce websites and the level of online expenditure on e-commerce websites each month (Ferdinand, 2002; Venkatesh et al., 2012).

3.2 Sample and Data Collection

The questionnaire was given to people who had purchased products or services at least once from one of the following 12 e-commerce websites: Lazada, Tokopedia, Bukalapak, Blibli, Shopee, Zalora, Elevenia, MatahariMall, Qoo10, Blanja.com, Bhinneka, and Berrybenka. Some are business-to-consumer (B2C) websites and some are consumer-to-consumer (C2C) websites, but they all have similarities, for example providing an online platform for individual sellers to sell their products to consumers and facilitating financial transactions between the seller and consumer. The questionnaire was written in English and was reviewed for its content validity by academics, e-commerce experts, and consumers. It was translated into Indonesian for distribution to the respondents, with back-translation used to ensure the equivalence of the questionnaire items. After the questionnaire was ready, the survey was distributed by a marketing company with a database of Indonesian e-commerce consumers to a panel of Indonesian consumers who had used an e-commerce website during the six months prior to the questionnaire being distributed, with randomized options to anticipate bias and measure the concentration of respondents. The 400 valid responses were analyzed in this study.

3.3 Demographic Characteristics

The questionnaire was distributed online and completed by a total of 400 respondents. The demographic profile of the respondents is summarized in Table 1. Respondents were in their 20s, 30s, and 40s, with percentages of 44.3%, 41.2%, and 14.5%, respectively. By marital status, respondents are 57% married, 41.75% single, and 1.25% other. The majority of the respondents live on Java (70%), with others from Sumatra (15%), Kalimantan (7.5%), and Sulawesi (7.5%). In addition, most of the respondents had more than two years of online shopping experience.

Demographic Variable	Category	Count (Percentage)
Age	20–29 years old (20s)	177 (44.3%)
	30–39 years old (30s)	165 (41.2%)
	Older than 40 years (40s)	58 (14.5%)
Marital status	Single	167 (41.8%)
	Married	228 (57.0%)
	Other	5 (1.2%)
Island of residence	Java	280 (70.0%)
	Sumatra	60 (15.0%)
	Kalimantan	30 (7.5%)
	Sulawesi	30 (7.5%)
Shopping online experience	More than 2 years	144 (36%)
	1–2 years	109 (27.3%)
	9–12 months	44 (11%)
	7–9 months	28 (7%)
	4–6 months	25 (6.3%)
	Less than 1 month	20 (5%)

4. RESULTS

4.1 Reliability and Validity

The data received from the 400 respondents was used to confirm the reliability of the variables being used in the research. The reliability of all the variables, as measured using the Cronbach’s alpha coefficient, exceeded 0.7, as shown in Table 2. The confirmatory factor analysis (CFA) indicates the one-dimensionality, the convergence, and the discriminant validity on the multi-item size of each variable (Table 2). Each item and variable can be evaluated by examining the variance extracted (0.5 or above) and potential variable reliability using Cronbach’s alpha (0.7 or above) to verify the reliability and validity of the model (Hair et al., 1998). The indicators were all valid, with a loading factor of more than 0.5 or above, except for two, but these two indicators are considered important

in the analysis of this study (Hair et al., 2006). All variance extracted measures used exceeded the recommended level of 0.5 (see Table 2). The results show that both the items and variables have acceptable reliability and validity.

Variables	Items	Factor Loading	AVE	Cronbach Alpha
Convenience	CON1	0.648	0.66	0.895
	CON2	0.758		
	CON3	0.613		
Perceived website quality	PW1	0.7	0.66	0.892
	PW2	0.589		
	PW3	0.623		
Social Influence	SI1	0.549	0.65	0.904
	SI2	0.654		
	SI3	0.737		
Facilitating condition	FC1	0.654	0.72	0.897
	FC2	0.57		
Hedonic motivation	HM1	0.415	0.68	0.9
	HM2	0.853		
Economic reason/Price	ECO1	0.701	0.61	0.894
	ECO2	0.476		
	ECO3	0.608		
Security	SE1	0.671	0.66	0.894
	SE2	0.584		
	SE3	0.635		
Variety	VAR1	0.689	0.68	0.899
	VAR2	0.679		
	VAR3	0.763		
Goods delivery	DEL1	0.586	0.62	0.893
	DEL2	0.575		
	DEL3	0.648		
E-commerce Intention	INT1	0.592	0.64	0.891
	INT2	0.54		
	INT3	0.551		

Variables	Squared root of AVEs and Correlation										
	AVE	CON	PW	SI	FC	HM	ECO	SE	VAR	DEL	INT
CON	0.66	0.813									
PW	0.66	0.603	0.813								
SI	0.647	0.264	0.471	0.804							
FC	0.718	0.603	0.544	0.283	0.847						
HM	0.684	0.422	0.564	0.598	0.448	0.827					
ECO	0.607	0.644	0.606	0.421	0.582	0.479	0.779				
SE	0.659	0.542	0.612	0.528	0.506	0.577	0.529	0.812			
VAR	0.683	0.724	0.642	0.553	0.629	0.376	0.606	0.474	0.826		
DEL	0.602	0.583	0.701	0.537	0.472	0.574	0.681	0.707	0.508	0.878	
INT	0.644	0.676	0.671	0.507	0.601	0.566	0.654	0.684	0.604	0.615	0.803

In addition, discriminant validity is indicated when the average variance extracted (AVE) of each variable is greater than the quadratic correlation coefficient with other variables, as shown in Table 3 (Fornell and Larcker, 1981).

4.2 Hypothesis Testing

This research used covariance-based structural equation modeling (CB-SEM) in the construction of a model that represents the relationship between the eleven variables measured by several items. CB-SEM is used to test the research model using AMOS 25.0. The calculation of multiple fit indices used the data gathered from the 400 respondents to assess the research model. The suitability statistics are all shown to be a good fit ($\chi^2 = 1044,926$; $\chi^2 / df = 3.166$; RMSEA = 0.074; CFI = 0.862; GFI = 0.863; TLI = 0.818). As shown, all measurements meet the recommended values. A group researcher suggests that the recommended value for GFI should exceed 0.8 (Liao et al., 2006). As such, there is a reasonable overall fit between the model and the observed data, where the index is marginally acceptable (Liao et al., 2006). The results also show that the χ^2 statistic is significant. Figure 3 represents the results and relationships between the different variables. The results support the significance of seven of the eleven hypotheses: H1, H2, H3, H4, H7, H8, and H11. The remaining four hypotheses, H5, H6, H9, and H10 are confirmed not to be significant.

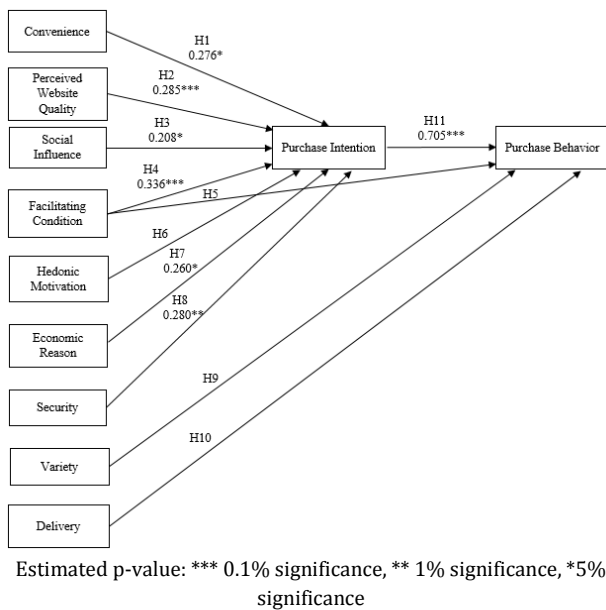


Figure 3: The result of testing the model

5. DISCUSSION

Based on the result of the hypotheses testing, the facilitating condition is confirmed to have a significant and positive influence on purchase intention (Figure 3). This result is consistent with the results obtained, showing that individuals in Indonesia would intend to use e-commerce websites to shop if they had more reliable IT equipment and data connections for accessing websites (Venkatesh et al., 2012; Datta, 2011). Perceived website quality has a significant and positive influence on the purchase intentions of consumers shopping online using e-commerce (Figure 3), which is consistent with the results reported (Venkatesh et al., 2012; Datta, 2011). In this study, most consumers are in their 20s and 30s. This demographic has been found to be more concerned about website content and appearance (Yoon and Ocoña, 2015).

Security is confirmed to have a significant influence on purchase intention (Figure 3), which is in line with the results of studies (Azam et al., 2012; Park and Kim, 2003). Security influences consumers' intention to shop online; they must trust or believe that information about payments and their private data will be securely protected and managed by the e-commerce website. In terms of convenience, this research confirms that this factor significantly influences purchase intention (Figure 3). Based on this result, consumers are likely to shop online due to the flexibility, comforts, or convenience provided by e-commerce websites, which is in line with the findings of the study conducted (Chaparro-peláez et al., 2016). Accordingly, e-commerce websites should ensure that consumers can complete their purchases with little effort, and various payment options should be available for consumers to choose from (Chaparro-

peláez et al., 2016). Additionally, the convenience provided by e-commerce websites, such as ease of access from different locations and at different times, encourages people to shop using e-commerce websites. In our survey, 85.5% of consumers are aged 20–39 years (Table 1); people within this range of productive ages do not have as much time to shop offline, especially on weekdays, because they typically go to school or work.

Economic reasons affect purchase intention on e-commerce websites directly and significantly (Figure 3). In other words, consumers often choose e-commerce websites to shop because of the lower prices of products compared to offline stores and the fact that shopping online using e-commerce allows them to compare prices from different retailers, sellers, or shop owners effortlessly (Chaparro-peláez et al., 2016). In our survey, most consumers are married (see Table 1), suggesting that they may need to manage family expenditures, making them more sensitive to costs or prices. Our interviews support this finding, affirming that e-commerce consumers in Indonesia are concerned about promotions and discounts when shopping online, and that the highest e-commerce transaction levels are seen around festivals or other occasions when websites offer promotions and discounts on prices.

In this study, social influence is seen to have a significant influence on purchase intention (Figure 3). The items of this factor are recommendations from friends and family, as well as e-commerce promotions on television. Many researchers confirm that consumers choose e-commerce websites due to social influence, such as being encouraged by friends and family to use a particular e-commerce website (Venkatesh et al., 2012; Hwang, 2010; Yoon and Ocoña, 2015). Likewise, in Indonesia, social influence, such as recommendations from friends and family, remains a very effective influence on consumers. E-commerce companies should therefore strive to make good impression on buyers by demonstrating their professionalism in serving consumer needs through their website. Indonesian consumers are also interested in shopping using e-commerce websites because of the influence of e-commerce advertising campaigns on television; Indonesian viewers are also more sensitive to TV advertising than to that on other technology devices (Lukman, 2014).

Hedonic motivation doesn't significantly affect the purchase intentions. The other two factors considered in the model used in this study were goods delivery and variety, which seemed not to influence purchase behaviors on e-commerce websites significantly. Hedonic motivation does not significantly influence purchase intention, which suggests that purchases conducted on e-commerce websites are mainly driven by the needs of the consumers rather than fun or pleasure. Furthermore, delivery does not significantly influence purchase behaviors, which could mean that the delivery has not been a problem for consumers in Indonesia using e-commerce. Furthermore, variety does not significantly influence purchase behaviors, which could suggest that product variation does not influence consumer motivation to purchase through e-commerce.

Based on the results of this study, purchase behavior is significantly influenced by purchase intention (Figure 3), in which purchase intention is influenced substantially by facilitating conditions, perceived website quality, security, convenience, economic reason, and social influence. However, all these factors influencing purchase intention seem not to influence purchase behavior. Accordingly, as long as purchase intention is firm, the consumer will eventually make the purchase.

5.1 Theoretical Contribution

As a theoretical contribution, this study proposed a structural model explaining the factors influencing e-commerce purchase intention and behavior in Indonesia. Within the model, this research gathered and analyzed the variables considered most influential on purchase intention and behavior in the country. The e-commerce model in this study is differentiated from those used in prior literature on e-commerce acceptance and use by analyzing e-commerce in Indonesia, a developing country with a unique situation and characteristics. It thus contributes to existing knowledge in the e-commerce research field. This study also

represents a fruitful direction for research by examining e-commerce purchase intention and behavior, which, so far, has not been well evaluated in the Indonesian context. Therefore, this study contributes to the knowledge and literature on e-commerce in Indonesia by focusing more on evaluating the UTAUT2 model as one of the theoretical foundations of online purchase intention and behavior, combining it with other relevant theories and interview results, and applying advanced statistical analyses method (e.g., CB-SEM).

The structural model obtained in this study makes a theoretical contribution to the literature on e-commerce in Indonesia by proposing several constructs and indicators. For example, the convenience construct has been mentioned in prior literature. However, this construct is still infrequently mentioned in Indonesian e-commerce literature, with a few exceptions, such as the study, which states that the convenience construct has yet become the main driver for Indonesian consumers to make online purchases (Sfenrianto et al., 2018). The present study found that convenience is one of the main drivers for Indonesian consumers to make online purchases. This study also proposes new insights, i.e., multiple payment options, as one indicator of the convenience construct, which is still seldom mentioned in the literature.

In addition, this study proposes an economic reason construct, and finds that it is a very important factor in Indonesian consumers' online purchase decisions, with the establishment of other important indicators such as the ability to easily compare prices from different retailers/sellers and promotions/discounts. This factor also received less attention in prior studies examining e-commerce purchase intentions and behavior, especially in the Indonesian context. This study also found a security construct, which is not included in UTAUT2, to be one of the main drivers motivating consumers to shop online on e-commerce websites. Further research can explore these constructs.

5.2 Practical Contribution

From a practical point of view, this study has identified three main factors affecting e-commerce purchase intention and behavior, which any e-commerce businesses can consider: facilitating condition, perceived website quality, and security. The security factor must be seriously considered to ensure the trust of all consumers. Based on our interviews with e-commerce companies, security is foundational to the e-commerce marketplace establishment, which facilitates financial transactions between consumers and sellers through the internet. Security concerns reflect awareness of past cases of fraud targeting consumers shopping via the internet. Consequently, it is critical for e-commerce businesses to provide security for consumers. The facilitating condition and perceived website quality factors may give e-commerce business ideas for marketing strategies that attract consumers from specific regions or of certain ages, respectively.

For facilitating conditions, based on the survey in this study, most existing e-commerce consumers in Indonesia live on Java island, which generally has more reliable internet connectivity than other islands. This condition suggests that it is important for e-commerce businesses to prioritize their marketing target to consumers in areas that have adequate IT equipment and internet infrastructure to support e-commerce penetration. Finally, regarding perceived website quality, most consumers in the survey of this study are young people in their 20s and 30s, who are more concerned about website content and appearance. Therefore, e-commerce companies should aim to design websites that provide clear, understandable, up-to-date, comprehensive, and complete information about the details of products/services, especially because when shopping online, consumers do not interact with salespeople. It also indicates that e-commerce business can adjust their marketing strategies to attract consumers from specific age ranges, such as young people.

6. CONCLUSION

This research investigated factors influencing the purchase intention and purchase behavior of e-commerce consumers using CB-SEM tools and surveys conducted in Indonesia. Specifically, six factors with significant

influence were identified for purchase intention through e-commerce. In order of significance, these are: facilitating conditions, perceived website quality, security, convenience, economic reason, and social influence. Moreover, purchase intention was confirmed as a significant factor in influencing purchase behavior on e-commerce websites. Specifically, hedonic motivation was not significantly influencing the purchase intention. Furthermore, the variety and goods delivery were not significantly affecting the purchase behavior. In essence, purchases are made in the country due to the needs of e-commerce consumers rather than for fun, delivery is not an issue for e-commerce consumers, and product variation is not the primary motivation for e-commerce consumers to purchase.

These results could thus contribute to the advancement of e-commerce research and practice, especially in Indonesia or any developing country having similar geographical conditions and a population with several social inequalities. However, there are limitations to the generalizability of the current findings. Indonesia has high mobile phone and internet penetration rates but a relatively low rate of online shopping. These findings may differ from those of studies in other countries with different situations. Consequently, additional variables could be added as strong predictors of purchase intention and behavior in such countries. Insignificant variables could be removed or combined with other variables to modify the model to get better results. Finally, demographic conditions such as gender, age, area of residence, and occupation could be explored as well in future research.

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