<u>15<sup>th</sup> January 2021. Vol.99. No 1</u> © 2005 – ongoing JATIT & LLS

ISSN: 1992-8645

www.jatit.org



### ANALYSIS OF E-COMMERCE CUSTOMER BEHAVIOR: A THEORY OF PLANNED BEHAVIOR APPROACH

<sup>1</sup>EMRINALDI NUR D.P., <sup>2</sup>LEDY SHAKINA GUSRAFANI

<sup>1</sup>University of Riau, Indonesia

<sup>2</sup> University of Riau, Indonesia

E-mail: <sup>1</sup>emrinaldinur@lecturer.unri.ac.id, <sup>2</sup>ledyshakinagusrafani@gmail.com

#### ABSTRACT

This research aims to examine the determinant factors of e-commerce customer behavior based on the theory of planned behavior. The research sample consists of 216 respondents who use the internet, have an interest in e-commerce or information technology, and already make transactions in e-commerce. Determinant variables of e-commerce customer behavior are safety, trust, service quality, risk perception, attitude, subjective norm, perceived behavioral control, and intention. Analysis data uses partial least square. Based on path analysis, safety and trust can make risk perception lower. Trust also can build a positive attitude for e-commerce customers. Positive attitude, higher behavioral control, and strong normative norm lead to higher intention to do e-commerce transactions. At last, the intention to do e-commerce transactions executed by the customer to buy and pay the product online. On the other hand, there is no effect of service quality on risk perception and no effect of risk perception on intention. This research has implications for e-commerce companies to improve website safety to get customer trust and lower risk.

Keywords: Customer Behavior, E-commerce, Theory of Planned Behavior

#### 1. INTRODUCTION

Information The Internet gives benefits for people, such as to get information easily and rapidly, to make promotion, to find entertainment, and to do communication in long-distance [1]. Laudon and Laudon [2] explain six reasons why the internet has become popular, includes wider network and connectivity, reduction of communication costs, lower transaction costs, lower agency costs, flexible and interactive, and fast distribution ability.

One of the internet use purposes of business is to do e-commerce [3]. E-commerce refers to the use of communication and computer networks for doing business processes [4]. E-commerce happens if there are transactions between two parties; exchange of goods, services, or information; and internet media as a main platform for the transaction process [5]. It includes transactions of business-to-business (B2B), business-to-customer (B2C), customer-to-customer (C2C), and customerto-business (C2B) [6]. Since conventional transaction needs manual work and more time, ecommerce can help to provide fast service to customer [7]. Nickerson [8] explains that customers can access directly the electronic catalog, product presentation, customer service, product support, order entry, electronic payment, and product distribution by using the website.

A survey by Asosiasi Penyelenggara Jasa Internet Indonesia shows in 2017, internet users in Indonesia are 132.7 million people or 51.5% of 256.2 million of the total Indonesian population. Online-shopping website is the most visited content by 82.2 million users or 62% of total users. Resume of visited content by internet users is as in figure 1. Based on 82.2 million users, 63.5% of users do online transactions. In the context of safety, 92 million users feel safe to use the internet while 39.4 million still do not feel safe. Based on onlineshopping frequency, 46.1 million users do the shopping more than one time in a month. It includes transactions of buying transportation tickets, (34.1 million users), household needs (29.4 million users), and clothes needs (4.7 million users) [9]. The survey confirms that internet growth can lead to online trading [3] and e-commerce in Indonesia [10].

Figure 1: Graphic of Visited Content by Internet Users

<u>15<sup>th</sup> January 2021. Vol.99. No 1</u> © 2005 – ongoing JATIT & LLS

	6 6	
ISSN: 1992-8645	www.jatit.org	E-ISSN: 1817-3195

This The popular e-commerce company globally is *Amazon* that has some separated retail websites in the US, UK and Ireland, France, Canada, Germany, Italy, Spain, Netherland, Australia, Brazil, Japan, China, India, and Mexico. The known-well C2C ecommerce company in China is *Taobao* that similar to *eBay* and *Amazon*. In Indonesia, The known-well C2C e-commerce companies are *Bukalapak* and *Lazada*.

Since the internet media gives many options for online shopping, e-commerce companies have to think to create customer loyalty by having reliable management teams, on-time delivery, good service, well infrastructure network and safety, and interesting web design [11]. The theory of planned behavior reveals customer behavior from an ecommerce perspective [12]. The theory of planned behavior explains that attitude, subjective norm, perceived behavioral control determine the behavior [12], [13]. Theory of planned behavior is a revision of the theory of reasoned action that only capture behavior determinant factor from belief, attitude, and intention [14].

This research examines the factors that determine the e-commerce customer behavior by the theory of planned behavior approach. The first factor is safety. Safety refers to an online-shop ability to control and secure the data transaction [15]. Control function ensures the certainty and security of private submitted information during the transaction [16]. Safety issues used by the customer as a customer belief to submit the private information safely by internet media and other non-authority parties cannot access the customer information [17]. The concern of transaction safety comes from the awareness of cyber-crimes cases [18], such as credit card fraud, illegal fund transfer, etc. [3]. It is important to build e-commerce safety, such as technology encryption and authority development [17]. Based on the theory of planned behavior, the safety factor gives an important contribution to affect customer attitude and intention [19]. If a customer feels that a specific e-commerce website is secure, then they get a positive attitude to do the transaction. Safety can affect customer decisions to do e-commerce transactions [20].

The second factor is trust. Trust refers to customer willingness to depend on other parties with a certain level of risk. Trust is the core of the e-commerce network [20]. Risk of uncertainty make trust be an important factor [21] since ecommerce customer come to the online store website with the question " Is the seller trustable?" [20]. In the context of the theory of planned behavior, trust captures how far customers believe the e-commerce companies can do transactions and can protect the customer information [17]. Trust gives no risks, but it can give risks if the customer manifests the trust in real behavior. Trust can build a bad or good customer attitude. Good attitude leads to intention and manifests in buying behavior [17]. McKnight et al. [22], Verhagen et al. [23], and Ling et al. [24] find that trust affects buying intention.

The third factor is service quality. When the promotion is not able to determine the customer's decision, they will evaluate the service quality [25]. Service quality captures the customer's expected level of benefit and the control on it [26]. Service quality measures if the provided service can fulfill customer expectations [27]. Since previous behavior affects future intentions, service quality determines the customer's intention to do online buying in the future [20]. Service quality leads the intention to make the customer do the e-commerce transaction [28]. Baskara [29] and Sukma [30] find that service quality affects online buying decisions.

The fourth factor is risk perception. Risk perception refers to the interpretation and evaluation of the risk based on experience and belief [31]. It also captures the probability of lost subjectively to achieve something [17]. Risk perception generates the risk attitude [32] to make a step of uncertainty reduction by depending on specific people or ideas [33]. Although e-commerce gives much easiness, it still has risks [34] such as fraud or unexpected product type and quality [20]. Kimery and McCord [35] find the negative relationship between trust and risk perception. Jarvenpaa et al. [36] also find that risk perception has a negative effect on the online buying decision.

Determinant factors of customer behavior that relates to the theory of planned behavior are attitude, subjective norm, perceived behavioral control, and intention. Attitude refers to negative or positive beliefs to do a specific act [37]. A positive attitude can bring customers to buying intention. Gurung [17] and Teo and Liu [38] find the positive relationship between attitude and intention in an ecommerce transaction. Subjective norm refers to an individual perception of social pressure to do or to do not a specific behavior [39]. The subjective norm explains the customer reference level to accept the use of e-commerce [17]. Vijayasarathy [40] and Gurung [17] find that subjective norm

<u>15<sup>th</sup> January 2021. Vol.99. No 1</u> © 2005 – ongoing JATIT & LLS

ISSN: 1992-8645	www.jatit.org	E-ISSN: 1817-3195

affects customer intention to do e-commerce transaction. Perceived behavioral control comes from the belief of the existence of supporting and barrier factors to do specific behavior [12]. Higher supporting factors and lower barrier factors lead to higher behavioral control. Gurung [17] finds that perceived behavioral control affects online buying intention. Ajzen [39] explains intention as an antecedent of an appeared behavior. The intention is determined by attitude, subjective norm, and perceived behavioral control.

#### 2. LITERATURE REVIEW

#### 2.1 Theory of Planned Behavior

The theory of planned behavior by Ajzen [13] developed from the theory of reasoned action by Fishbein and Ajzen [41]. Theory of planned behavior is developed by adding the new construct, perceived behavior control, which is not in the theory of reasoned action yet. Perceived behavior control is used to monitors the limitation for individuals to do specific behavior. The theory of planned behavior explains the relationship between beliefs, attitude, intention, and behavior. The intention is the best predictor of behavior to capture a motivation. The focus of the theory of planned behavior is the intention where it is determined by attitude and subjective norm [42]. The theory of planned behavior has the advantage to identify how people control the result of their behavior so it can differentiate intentional and unintentional behavior [43] where the theory of reasoned action is a lack of people control on their behavior [37]. Figure 2 shows the framework of the theory of planned behavior.

#### Figure 2: Theory of Planned Behavior

In Figure 2 shows that the first feature of the theory of planned behavior assume that perceived behavioral control has motivational implications on the intention. People who do not have the resource of chances to behave will not have any behavioral motivation although they have a positive attitude to do specific behavior and are accepted by other people. The second feature of the theory of planned behavior provides the direct relationship between perceived behavioral control and behavior. For example, behavioral performance is not always come from motivation but also directly from the ability to control the behavior. Perceived behavioral control comes from the experience as well as the future prediction of certain behavior [44]. The theory of planned behavior believes that behavior also can come from non-motivational factors such as perceived behavioral control.

#### 2.2 Hypotheses Development

In e-commerce, safety control relates to the certainty of private submitted information during the transaction [16]. It ensures the website can secure the private information form unidentified access by unauthorized people. Safety awareness leads customers to have risk perception [17]. If the customer feels that the e-commerce website is safe and secure, they are more likely to do transactions [19]. Safe and secure transactions provide lower risk and give for customers. Gurung [17] finds that higher safety brings lower risk for customers to do e-commerce transactions.

#### H1: Safety has an effect on risk perception

Trust is the core of the e-commerce network [20]. Risk of uncertainty makes customer trust important [21]. Customers have to feel that the e-commerce website is trustable so they will do ecommerce transactions [20]. Trust refers to customer belief for e-commerce companies that they can protect customer information [17]. Succeed e-commerce companies are the companies that can build customer trust by reducing the risk [6]. Trustable e-commerce companies can directly reduce the customer's risk perception [45], [46].

#### H2: Trust has an effect on risk perception

Trust is defined as an optimistic expectation given by the trustee (e-commerce companies) to protect the interest of the trustor (customer) [47]. It reflects the belief, confidence, feeling, and expectation of online trading intention [38]. Customer builds trust from available information of e-commerce companies [17]. Trust brings the customer to make a good perception and a positive attitude [48]. E-commerce stakeholders have to fill their obligation for customers to ensure customers get a continuous positive experience in the future [11]. It can bring a positive attitude to do e-commerce [36]. McKnight and Chervany [49] and Gurung [17] find trust can generate a positive attitude for customers.

#### H3: Trust has an effect on attitude

In e-commerce, instead of promotion, customer evaluation of service quality is more

<u>15<sup>th</sup> January 2021. Vol.99. No 1</u> © 2005 – ongoing JATIT & LLS

ISSN: 1992-8645	www.jatit.org	E-ISSN: 1817-3195

superior to determine the buying decision [25]. Service quality captures customer expectations [26] where high-quality service can satisfy the customer by fulfilling their expectation [27]. Higher service quality reduces the risk perception since it can meet customer expectation [50]. Service quality includes reliability, return handling, response-ability, policy, and problem-solving that relates to lower risk [51]. When lower risk occurred, higher intention makes customers will do an e-commerce transaction [28]. Broekhuizen [50] finds service quality gives an impact on risk.

### H4: Service quality has an effect on risk perception

Risk perception is an interpretation of specific risk based on experience and belief [31]. It captures the subjective probability of failure to get something [17]. In the buying transaction context, it brings customers to perceive some risk [52] and determine their attitude toward the risk [32]. Lower risk perception makes customer has a higher intention to do a transaction [36] since risk perception has negative relationship positive attitude (Teo and Liu, 2007). Jarvenpaa et al. [36], Gurung [17], and Teo and Liu [38] find that risk perception give an impact on customer attitude.

#### H5: Risk perception has an effect on attitude

E-commerce contains some risks [34]. It includes fraud, wrong product items, and unfit product quality that make higher uncertainty for customers [20]. The customer tends to do ecommerce transactions in a lower risk company than the higher one. Buying intention comes from lower worries of uncertainty. In contrast, if the customer feels that e-commerce companies bring higher risks, then customer has a lower intention to do a transaction [36]. Forsythe and Shi [53] and Montoya-Weiss et al. [54] find that risk perception determines the customer's intention to buy the product online.

## H6: Risk perception has an effect on the intention

Attitude captures positive or negative beliefs to perform a specific behavior [37]. It is determined by individual evaluation of certain behavior. Attitude comes from consequences and evaluation of behavior [37]. When behavior evaluation result generates positive consequences, people tend to behave favorably [17]. It transforms the intention into a specific behavior. The theory of planned behavior explains attitude as a determinant factor of intention [39], further, the intention brings customers to do e-commerce transactions [36]. Gurung [17] and Teo and Liu [38] find the relationship between attitude and intention in ecommerce.

#### H7: Attitude has an effect on the intention

Subjective norm is a perception of social pressure for an individual to do or not do specific behavior [39]. It is assumed as a belief to accept or do not accept the behavior [37]. The belief in the subjective norm is called normative belief. People tend to do specific behavior if they believe that other people accept and support the behavior [37]. The subjective norm is the combination of individual belief and motivation to comply. When people believe that social referent supports them to do specific behavior, they will feel social pressure to do it [17]. In an e-commerce context, subjective norm captures the customer reference to accept the adoption of e-commerce. When a customer feels to accept e-commerce, they have more intention to do an e-commerce transaction [17]. Vijayasarathy [40] and Gurung [17] find that subjective norm increases e-commerce transaction intention.

## H8: Subjective norm has an effect on the intention

Perceived behavioral control is defined by some supporting or barrier factors in performing the behavior [12]. It generates control belief and perceived power control of supporting or barrier factors. Higher perceived behavioral control comes from higher supporting factors and lower barrier factors. Higher perceived behavioral control leads to higher intention [37]. In e-commerce, perceived behavioral control refers to the easiness and difficulties of doing e-commerce transactions [17]. Gurung [17] finds that perceived behavioral control make customer tend to do e-commerce transaction.

## H9: Perceived behavioral control has an effect on the intention

The intention is an antecedent of behavior made by attitude, subjective norm, and perceived behavioral control [39]. Intention predicts the likelihood of behavior accurately. A higher intention to perform a specific behavior leads to a higher possibility that the behavior appeared. In ecommerce, buying intention is one of the main <u>15<sup>th</sup> January 2021. Vol.99. No 1</u> © 2005 – ongoing JATIT & LLS

|--|

driven factors to make the customer do the transaction and pay for the product [55]. Intention determines the buying behavior of the customer.

#### H10: Intention has an effect on behavior

Based on hypotheses development and previous findings, the research framework is described as in figure 3.

Figure 3: Research Framework

#### **3. RESEARCH METHOD**

#### 3.1 Sample

This research uses a purposive sampling method to determine the sample with certain criteria, which are: (1) individual has to uses the internet; (2) individual has an interest in ecommerce or information technology; (3) individual already make the transaction in ecommerce. This research uses a partial least square analysis method with more than 200 samples. The net sample of this research is 216 respondents.

#### 3.2 Data and Research Variables

This research uses primary data where accessed data directly from the sources, which is from respondents. Data collection and variables measurement use five scale questionnaires. The endogenous variable is the behavior of using e-commerce. It captures the responses to the external stimulus [56]. Behavior is measured by four dimensions which are customer needs (2 items of the question), benefits (2 items of the question), repeated buying (3 items of the question) [57].

Exogenous variables are safety, trust, service quality, risk perception, attitude, subjective norm, perceived behavioral control, and intention. Safety is measured by two dimensions of data secret (3 items of the question) and security assurance (4 items of the question) [58]. Trust measured by three dimensions of satisfaction assurance (3 items of the question), attention (2 items of the question), and honesty (2 items of the question) [30]. Service quality measured by five dimensions of tangibility (2 items of the question), reliability (2 items of the question), responsiveness (3 items of the question), assurance (2 items of the question), and empathy (2 items of the question) [59]. Risk perception is measured by three dimensions of product risk (2 items of the question), transaction risk (2 items of the question),

and psychological risk (2 items of the question) [20]. Attitude is measured by behavioral beliefs and outcome evaluation (2 items of the question) [48]. Subjective norm is measured by a single question of normative beliefs [48]. Perceived behavioral control is measured by a single question of the level of difficulty [48]. The intention is measured by a single dimension of consumer's willingness to purchase with 2 items of the question [60].

#### 3.3 Analysis Method

This research uses the partial least square method as data analysis. It includes outer model analysis, inner model analysis, and path analysis. Hypotheses test uses path analysis where hypotheses accepted if t-statistics values are significant. The path already provided as in figure 3 in the "Hypotheses Development" section.

#### 4. RESULT AND DISCUSSION

#### 4.1 Respondent Characteristics

#### Table 1: Respondent Characteristics

Respondent consists of 138 females or 63.9% of the total of 216 respondents and 78 males or 36.1% of the total of 216 respondents. Most respondents, 61.1 % of total respondents, are 19-25 years old and the least respondents are under 19 years old with 2.8% of total respondents. Respondent includes 26.0% of respondents with a high school degree, 10.1% respondent with an associate degree, and 63.9% respondent with a bachelor's degree. Most of the respondents spend 11-15 hours to use the internet (32.4% of total). Most of the respondents (60.2%) already make e-commerce transaction more than one time.

#### 4.2 Descriptive Statistics

#### Table 2: Descriptive Statistics

Table 2 shows safety has a minimum value of 1 and a maximum value of 5. On average, the value of safety is 3.406 with its deviation of 0.815. Trust has a minimum value of 2 and a maximum value of 5. On average, the value of trust is 3.762 with its deviation of 0.671. Service quality has a minimum value of 2 and a maximum value of 5. On average, the value of service quality is 4.525 with its deviation of 0.837. Risk perception has a minimum value of 2 and a maximum value of 5. On average, the value of risk perception is 3.315 with

<u>15<sup>th</sup> January 2021. Vol.99. No 1</u> © 2005 – ongoing JATIT & LLS

		34111
ISSN: 1992-8645	www.jatit.org	E-ISSN: 1817-3195

its deviation of 0.672. Attitude has a minimum value of 2 and a maximum value of 5. On average, the value of attitude is 3.778 with its deviation of 0.760. The subjective norm has a minimum value of 1 and a maximum value of 5. On average, the value of the subjective norm is 2.819 with its deviation of 0.967. Perceived behavioral control has a minimum value of 1 and a maximum value of 5. On average, the value of perceived behavioral control is 2.883 with its deviation of 0.948. The intention has a minimum value of 1 and a maximum value of 5. On average, the value of intention is 2.822 with its deviation of 0.908. The behavior has a minimum value of 2 and a maximum value of 5. On average, the value of behavior is 3.561 with its deviation of 0.749.

#### 4.3 Analysis of Outer Model

#### Table 3: Validity and Reliability

Analysis of the outer model refers to validity and reliability tests as in table 3. Validity test uses loading factor value while reliability test uses composite reliability and average variance extracted values [61]. Table 3 shows the loading factor value for all question items is above 0.5. It indicates that questionnaires are valid. Composite reliability values for all variables are above 0.6 while the average variance extracted value for all variables is above 0.5. It indicates that questionnaires are reliable.

#### 4.4 Analysis of Inner Model

#### Table 4: R-Square Analysis

Analysis of the inner model refers to Rsquare analysis as in table 4. It shows the explanatory power of the regression model on the dependent variable [61]. Table 4 shows R-Square (Adjusted R-Square) value for the intention model is 0.521 (0.516) which indicates 52.1% (51.6%) of intention explained by risk perception, attitude, subjective norm and perceived behavioral control while 47.9% (48.4%) of intention explained by other variables. R-Square (Adjusted R-Square) value for behavior model is 0.514 (0.493) which indicates 51.4% (49.3%) of behavior explained by intention while 48.6% (50.7%) of behavior explained by other variables. R-Square (Adjusted R-Square) value for the risk perception model is 0.238 (0.222) which indicates 23.8% (22.2%) of risk perception explained by safety, trust, and service quality while 76.2% (77.8%) of risk perception explained by other variables. R-Square (Adjusted R-Square) value for attitude model is 0.263 (0.240) which indicates 26.3% (24.0%) of attitude explained by risk perception while 73.7% (76.0%) of attitude explained by other variables.

#### 4.5 Hypotheses Test and Discussion

#### Table 5: Path Analysis

Hypotheses test use path analysis as in table 5. Table 5 shows path analysis of safety on risk perception has t-statistics of 1.900 (significant in 0.10). The result indicates that H1 accepted; safety has an effect on risk perception. Generally, the safety concept explains the ability to protect customers from potential threats. It can be the protection of private information submission or secure transactions, especially to keep it from accesses of unauthorized parties. Safety information and transaction protection make customer interpret e-commerce website has lower risk. There is also a possibility that customer experience give impact on risk perception of ecommerce. The result is consistent with Gurung [17] who finds safety has an effect on risk perception.

Path analysis of customer trust on the risk perception has t-statistics of 2.033 (significant in 0.5). The result indicates that H2 accepted; trust has an effect on risk perception. Trust is a psychological area to accept things based on expectations of good behavior from others. In ecommerce, trust refers to customer belief that ecommerce companies can protect the customer, especially to mitigate uncertainty risk. Customers can feel the lower risk of trustable e-commerce companies. Marketing activities and technology development can help e-commerce companies to improve trust. The result is consistent with Jarvenpaa et al. [45], Kimery and McCord [35], and Gurung [17] who find higher trust can reduce risk perception.

Path analysis of trust on attitude has tstatistics of 4.508 (significant in 0.01). The result indicates that H3 accepted; trust has an effect on attitude. Trust is the expectation given by ecommerce companies to the customer. When the customer trust e-commerce companies to meet customer expectation, the customer will make a good perception and lead to a positive attitude. It brings customers to want to experience more in the future when e-commerce companies can meet their expectations. The result is consistent with <u>15<sup>th</sup> January 2021. Vol.99. No 1</u> © 2005 – ongoing JATIT & LLS

ISSN: 1992-8645

www.jatit.org



E-ISSN: 1817-3195

McKnight and Chervany [49] and Gurung [17] who find trust increases a positive attitude.

Path analysis of service quality on risk perception has t-statistics of 1.438 (insignificant). The result indicates that H4 is rejected; there is no effect of service quality on risk perception. Highquality service is not always brought a lower risk. Although the online service provided well, potential risk can come from external parties besides customer and e-commerce companies. Service quality characteristics such as reliability or responsiveness do not consider external risk.

Path analysis of risk perception on attitude has t-statistics of 2.742 (significant in 0.01). The result indicates that H5 accepted; risk perception has an effect on attitude. Risk perception shows the customer's perception of the probability of loss. Risk perception becomes a consideration factor for customers to make a buying decision. Risk perception makes a risk attitude. Lower risk perception makes risk attitude generate the positive attitude of customers to do e-commerce transactions. The result is consistent with Jarvenpaa et al. [36], Gurung [17], and Teo and Liu [38] who find a negative relationship between risk perception and positive attitude.

Path analysis of risk perception on intention has t-statistics of 0.635 (insignificant). The result indicates that H6 rejected; there is no effect on risk perception on intention. Most of the respondents; 130 of 216; do e-commerce transactions more than one time. Mostly, customer respondents still intend to do e-commerce transactions although risks of product, transaction, and psychology still exist. There is a possibility that customer experiences make them do an ecommerce transaction. When high experience exists, customers tend to accept a higher risk [62]. Further, it is hard to tell that risk perception can directly affect intention without considering the risk attitude [17].

Path analysis of attitude on intention has tstatistics of 8.231 (significant in 0.01). The result indicates that H7 accepted; attitude has an effect on intention. Attitude captures the result of the evaluation of behavior. It involves behavioral belief and outcome evaluation. When customer evaluation of transactions e-commerce has positive consequences, they take it as a belief, further, it reflects a positive attitude. Since a positive attitude occurred, the customer has a higher intention to do an e-commerce transaction. The theory of planned behavior also captures that attitude on a specific behavior can bring impact on intention. The result is consistent with Gurung [17] and Teo and Liu [38] who find the relationship between attitude and intention in an e-commerce transaction.

Path analysis of subjective norm on intention has t-statistics of 1.673 (significant in 0.10). The result indicates that H8 accepted; subjective norm has an effect on intention. Subjective norm is an individual perception of social pressure to do specific behavior. Subjective norm reflects an individual belief to agree or disagree for doing something. People have the intention to show their behavior if they believe that people agree with them. It is a combination of individual beliefs and motivation to comply. In ecommerce, subjective norm refers to if customer references agree for customers doing e-commerce transactions. If the agreement exists, customers tend to show their behavior in an e-commerce transaction. The result is consistent with Vijayasarathy [40] and Ketabi et al. [63] who find subjective norm affects the intention to do ecommerce transactions.

Path analysis of perceived behavioral control on intention has t-statistics of 5.177 (significant in 0.01). The result indicates that H9 accepted; perceived behavioral control has an effect on intention. Perceived behavioral control is determined by supporting and barrier factors of behavior. It is a combination of control beliefs (the control factor) and perceived power control (the power to control). Higher perceived behavioral control comes from higher support and lower barrier factors. When customers can take over control of their behavior, they tend to do ecommerce transactions. In e-commerce, perceived behavioral control refers to supporting and limitation factors of using online transactions. The result is consistent with George [64] and Ketabi et al. [63] who find higher perceived behavioral control leads to higher intention.

Path analysis of intention on behavior has t-statistics 15.668 (significant in 0.01). The result indicates that H10 accepted; intention has an effect on behavior. Since the intention is made by attitude, subjective norm, and perceived behavioral control [39], the intention has high accuracy to predicts behavior. A higher intention of doing something creates behavior to do it. In the context of ecommerce, if customers tend to do e-commerce transactions, they will do the transaction and finish it with the payment process. The intention of doing e-commerce transaction comes from a positive attitude on e-commerce and customer's belief. © 2005 – ongoing JATIT & LLS

ISSN: 1992-8645

www.jatit.org

#### 5. CONCLUSION

This research objective is to capture ecommerce behavior by using the theory of planned behavior. The theory of planned behavior explains that behavior comes from strong intention where the intention is a combination of subjective norm, attitude, and perceived behavioral control. In the context of e-commerce; safety, trust, service quality, and risk perception needed to determine the attitude and intention.

Based on the analysis, safety and trust can make risk perception lower. Trust also can build a positive attitude for e-commerce customers. Positive attitude, higher behavioral control, and strong normative norm lead to higher intention to do e-commerce transactions. At last, the intention to do e-commerce transactions executed by the customer to buy and pay the product online. On the other hand, there is no effect of service quality on risk perception since some service quality characteristics, such as reliability or responsiveness, do not consider risk from external parties. Risk perception also does not affect intention since most of the respondents can tolerate higher risks of ebecause commerce transactions 60.2% of respondents already make e-commerce transactions more than one time.

This research has implications for ecommerce companies to improve website safety to get customer trust and lower risk. E-commerce companies are expected to manage safety, trust, and risk as marketing tools to get higher customer intentions. This research has limitations for not considering the technology environment factors. Although sample selection has criteria that the respondent understands and uses technology and the internet, this research does not consider the technology environment such as hardware and software to do an e-commerce transaction. There possibility that low-quality hardware and software bring higher risk and reduce the intention to do ecommerce transactions. Future research is expected to examine e-commerce customer behavior considering the technology environment factor or use the experimental method by allowing respondents directly to do e-commerce transaction experiment in a sufficient technology environment.

#### **REFRENCES:**

[1] N. Firdaus, "Perbedaan Tingkat Kecanduan Situs Jejaring Sosial Facebook pada Mahasiswa dengan Tipe Kepribadian Introvert dan Ekstravet: Studi Komparatif Deskriptif pada Mahasiswa Universitas Pendidikan Indonesia," Universitas Pendidikan Indonesia, 2013.

- [2] K. C. Laudon and J. P. Laudon, Management Information Systems: Managing the Digital Firm, 12th ed. New Jersey: Prentice Hall, 2012.
- [3] A. Rofiq, "Pengaruh Dimensi Kepercayan (Trust) terhadap Partisipasi Pelanggan Ecommerce," Universitas Brawijaya, 2007.
- [4] R. McLeod, *Management Information System*. New Jersey: Pearson Prentice Hall, 2008.
- [5] R. E. Indrajit, *Manajemen Sistem Informasi dan Teknologi Informasi*. Jakarta: Elex Media Computindo, 2001.
- [6] B. J. Corbitt, T. Thanasankit, and H. Yi, "Trust and E-commerce: A Study of Consumer Perceptions," *Electron. Commer. Res. Appl.*, vol. 2, no. 3, pp. 203–215, Sep. 2003.
- [7] L. S. Almilia and L. Robahi, "Penerapan Ecommerce sebagai Upaya Meningkatkan Persaingan Bisnis Perusahaan," in Seminar Nasional Teknologi Informasi Universitas Sahid, 2007.
- [8] R. C. Nickerson, *Business and Information* Systems, 2nd ed. New Jersey: Pearson Prentice Hall, 2001.
- [9] Asosiasi Penyelenggara Jasa Internet Indonesia, Infografis Penetrasi dan Perilaku Pengguna Internet Indonesia: Survey 2017. Jakarta: APJII, 2017.
- [10] Z. Liao and M. T. Cheung, "Internet-based E-shopping and Consumer Attitudes: An Empirical Study," *Inf. Manag.*, vol. 38, no. 5, pp. 299–306, Apr. 2001.
- [11] M. M. Akbar and N. Parvez, "Impact of Service Quality, Trust, and Customer Satisfaction on Customers Loyalty," *ABAC J.*, vol. 29, no. 1, pp. 24–38, 2009.
- [12] I. Ajzen, "The Theory of Planned Behavior," Organ. Behav. Hum. Decis. Process., vol. 50, no. 2, pp. 179–211, Dec. 1991.
- [13] I. Ajzen, *Attitudes, Personality, and Behavior*. Chicago: Dorsey Press, 1988.
- [14] I. Ajzen and M. Fishbein, Understanding Attitudes and Predicting Social Behavior. New Jersey: Prentice Hall, 1980.
- [15] C.-H. Park and Y.-G. Kim, "The Effect of Information Satisfaction and Relational Benefit on Consumers' Online Shopping Site Commitments," J. Electron. Commer.

	© 2005 – ongoir	ng JATIT	LLS JATTA
ISSN:	1992-8645 <u>www.j</u>	atit.org	E-ISSN: 1817-3195
	<i>Organ</i> , vol. 4, no. 1, pp. 70–90, 2006.		2015.
[16]	F. Belanger, J. S. Hiller, and W. J. Smith,	[27]	F. Tjiptono, <i>Pemasaran Jasa</i> . Malang:
	"Trustworthiness in Electronic Commerce:		Banyumedia Publishing, 2011.
	The Role of Privacy, Security, and Site	[28]	K. de Ruyter, J. Bloemer, and P. Peeters,
	Attributes," J. Strateg. Inf. Syst., vol. 11,		"Merging Service Quality and Service
	no. 3–4, pp. 245–270, Dec. 2002.		Satisfaction. An Empirical Test of an
[17]	A. Gurung, "Empirical Investigation of The		Integrative Model," J. Econ. Psychol., vol.
	Relationship of Privacy, Security, and Trust		18, no. 4, pp. 387–406, Jun. 1997.
	with Behavioral Intention to Transact in E-	[29]	I. P. Baskara, "Analisis Pengaruh
	commerce," University of Texas at		Kepercayaan, Keamanan, Kualitas
	Arlington, 2006.		Pelayanan, dan Persepsi Risiko terhadap
[18]	G. J. Udo, "Privacy and Security Concerns		Keputusan Pembelian melalui Situs Jejaring
	as Major Barriers for E-commerce: A		Sosial (Social Networking Websites),"
	Survey Study," Inf. Manag. Comput.		Universitas Dian Nuswantoro, 2014.
	Secur., vol. 9, no. 4, pp. 165–174, Oct.	[30]	A. A. Sukma, "Analisis Faktor-faktor yang
	2001.		Mempengaruhi Keputusan Pembelian
[19]	W. D. Salisbury, R. A. Pearson, A. W.		Social Networking Websites," J. Ekon.
	Pearson, and D. W. Miller, "Perceived	50.47	<i>Manaj.</i> , no. 2012, pp. 1–11, 2012.
	Security and World Wide Web Purchase	[31]	P. Slovic, <i>The Perception of Risk</i> . London:
	Intention," Ind. Manag. Data Syst., vol.	[20]	EarthScan, 2000.
[20]	101, no. 4, pp. 165–177, Jun. 2001.	[32]	D. N. A. R. Dewi, "Analisis Persepsi Risiko (Diele Demonstrien) dem Sileen Dieile (Diele
[20]	S. Mauludiyanwati, Pengarun		(Risk Perception) dan Sikap Risiko (Risk
	Repercayaan, Reamanan, Rualitas		Wirewashawan Damula "Surahawa 2014
	Managunakan E commerce Terhadan	[22]	I N Shoth and M Vankatagan "Bigk
	Kenutusan Dembelian Online "Universitas	[33]	J. N. Sheth and W. Venkatesali, Kisk-
	Negeri Vogyakarta 2017		Consumer Behavior," I Mark Res. vol. 5
[21]	R Wulandari "Analisis Faktor-faktor yang		no $3 \text{ n} 307 \text{ Aug} 1968$
[21]	Mempengaruhi Kepercayaan Konsumen	[34]	D Sihombing "Online Shop Iadi Tren di
	dan Dampaknya Terhadan Minat	[51]	Tahun 2012," <i>Kompasiana</i> 2012 [Online]
	Lovalitas "Universitas Diponegoro 2014		Available:
[22]	D. H. McKnight, V. Choudhury, and C.		https://www.kompasiana.com/dannysihomb
[]	Kacmar, "The Impact of Initial Consumer		ing/550d3edba33311251c2e3aa4/online-
	Trust on Intentions to Transact with a Web		shop-jadi-trend-di-tahun-2012. [Accessed:
	Site: A Trust Building Model," J. Strateg.		31-Jan-2020].
	Inf. Syst., vol. 11, no. 3-4, pp. 297-323,	[35]	K. M. Kimery and M. McCord, "Third-
	Dec. 2002.		Party Assurances: The Road to Trust in
[23]	T. Verhagen, S. Meents, and YH. Tan,		Online Retailing," in Hawaii International
	"Perceived Risk and Trust Associated with		Conference on System Sciences, 2002.
	Purchasing at Electronic Marketplaces,"	[36]	S. L. Jarvenpaa, N. Tractinsky, and M.
	Eur. J. Inf. Syst., vol. 15, no. 6, pp. 542-		Vitale, "Consumer Trust in an Internet
	555, Dec. 2006.		Store," Inf. Technol. Manag., vol. 1, pp.
[24]	K. C. Ling, L. T. Chai, and T. H. Piew,	50 <b>-</b> 7	45–71, 2000.
	"The Effects of Shopping Orientations,	[37]	Z. Ahcmat, "Theory of Planned Behavior,
	Online Trust and Prior Online Purchase		Masihkah Relevan?," 2010. [Online].
	Experience toward Customers' Online		
	Purchase Intention," Int. Bus. Res., vol. 3,		http://zakarija.staff.umm.ac.id/download-
[25]	no. 3, p. 63, Jun. 2010.		as-pdf/umm_blog_article_112. pdf.
[23]	A. Raje and V. I. Knanna, Impact of E-	[20]	[Accessed: 20-Dec-2019].
	Behavior in an Online Shonning" Int. I	[30]	E commerce in the United States
	Comput Sci Manag Stud vol 12 no 2		Singapore and China "Omega vol 25 no
	$1_{5}$ 2012		1  nn  22-38  Feb  2007
[26]	F Tiintono and G Chandra Pamasaran	[30]	I Aizen Attitudes Personality and
r=01	Strategik, 4th ed. Yogyakarta: Andi Offset,	[22]	Behavior, Revised an. London: McGraw

	© 2005 – ongoin	ng JATIT	& LLS
ISSN:	1992-8645 <u>www.</u>	jatit.org	E-ISSN: 1817-3195
[40]	Hill Education, 2005. L. R. Vijayasarathy, "Predicting Consumer Intentions to Use On-line Shopping: The Case for an Augmented Technology	[54]	Patronage and Risk Perceptions in Internet Shopping," <i>J. Bus. Res.</i> , vol. 56, no. 11, pp. 867–875, Nov. 2003. M. M. Montoya-Weiss, G. B. Voss, and D.
[41]	<ul> <li>Acceptance Model," Inf. Manag., vol. 41, no. 6, pp. 747–762, Jul. 2004.</li> <li>M. Fishbein and I. Ajzen, Belief, Attitude, Intention, and Behavior. Massachusetts: Addison-Wesley Publishing Company, 1075</li> </ul>	[55]	Grewal, "Determinants of Online Channel Use and Overall Satisfaction with a Relational, Multichannel Service Provider," <i>J. Acad. Mark. Sci.</i> , vol. 31, no. 4, pp. 448– 458, Sep. 2003.
[42]	J. Hartono, <i>Sistem Informasi Keperilakuan</i> , Revision. Yogyakarta: Andi Offset, 2007.	[55]	"Service Level Agreement Parameters for Ecommerce Cloud," <i>Int. J. Sci. Knowl.</i>
[43]	F. D. Nuary, "Implementasi Theory of Planned Behavior dalam Adopsi E- commerce oleh UKM," Universitas Sebelas	[56]	Comput. Inf. Technol., vol. 4, no. 6, pp. 8– 20, 2013. S. Notoatmodjo, Pendidikan dan Perilaku Kasakatan Jakatai Binaka Cinta 2002
[44]	S. Azwar, Sikap Manusia, Teori, dan Pengukurannya. Yogyakarta: Pustaka Belajar 2003	[57]	T. P. Siburian, "Analisis Pengaruh Kualitas Pelayanan Konsumen pada Warung Ucok Durian Iskandar Muda Medan Terhadan
[45]	S. L. Jarvenpaa, N. Tractinsky, and L. Saarinen, "Consumer Trust in an Internet Store: A Cross-Cultural Validation," J.	[58]	Keputusan Pembelian," Universitas Sumatera Utara, 2013. A. Raman and V. Annamalai, "Web
[46]	Comput. Commun., vol. 5, no. 2, Jun. 1999. P. A. Pavlou and D. Gefen, "Building Effective Online Marketplaces with Institution-Based Trust," <i>Inf. Syst. Res.</i> , vol.		Services and e-Shopping Decisions: A Study on Malaysian e-Consumer," <i>Int. J.</i> <i>Comput. Appl.</i> , vol. 2, no. 5, pp. 54–60, 2011.
[47]	15, no. 1, pp. 37–59, Mar. 2004. L. T. Hosmer, "Trust: The Connecting Link between Organizational Theory and Philosophical Ethics" <i>Acad Manag Rev</i>	[59] [60]	Z. Yamit, <i>Manajemen Kualitas Produk dan Jasa</i> . Yogyakarta: Ekonosia, 2005. N. K. Malhotra, S. S. Kim, and J. Agarwal, "Internet Users' Information Privacy
[48]	vol. 20, no. 2, pp. 379–403, Apr. 1995. P. A. Pavlou and M. Fygenson, "Understanding and Predicting Electronic Commerce Adoption: An Extension of the	[61]	Concerns (IUIPC): The Construct, the Scale, and a Causal Model," <i>Inf. Syst. Res.</i> , vol. 15, no. 4, pp. 336–355, Dec. 2004.
[49]	Theory of Planned Behavior," <i>MIS Q.</i> , vol. 30, no. 1, p. 115, 2006. D. H. McKnight and N. L. Chervany,	[01]	Metode Alternatif Dengan Partial Least Squares (PLS), 4th ed. Semarang: Badan Penerbit Universitas Diponegoro, 2014.
[50]	"What Trust Means in E-Commerce Customer Relationships: An Interdisciplinary Conceptual Typology," <i>Int. J. Electron. Commer.</i> , vol. 6, no. 2, pp. 35–59, Dec. 2001. T. Broekhuizen <i>Understanding Channel</i>	[62]	S. B. Sitkin and L. R. Weingart, "Determinants of Risky Decision-Making Behavior: A Test of the Mediating Role of Risk Perceptions and Propensity," <i>Acad.</i> <i>Manag. J.</i> , vol. 38, no. 6, pp. 1573–1592, Dec. 1995
[30]	Purchase Intentions: Measuring Online and Offline Shopping Value Perceptions. Ridderkerk: Labyrinth Publications, 2006.	[63]	S. N. Ketabi, B. Ranjbarian, and A. Ansari, "Analysis of the Effective Factors on Online Purchase Intention through Theory
[51]	M. Wolfinbarger and M. C. Gilly, "eTailQ: Dimensionalizing, Measuring and Predicting Etail Quality," <i>J. Retail.</i> , vol. 79,		of Planned Behavior," Int. J. Acad. Res. Bus. Soc. Sci., vol. 4, no. 4, pp. 374–382, Apr. 2014.
[52]	no. 3, pp. 183–198, Jan. 2003. R. A. Bauer, "Consumer Behavior as Risk Taking," in <i>Dynamic Marketing for</i> <i>Changing World</i> , Chicago: American Marketing Association, 1960, p. 389.	[64]	J. F. George, "The Theory of Planned Behavior and Internet Purchasing," <i>Internet Res.</i> , vol. 14, no. 3, pp. 198–212, Jul. 2004.



ISSN: 1992-8645

www.jatit.org

E-ISSN: 1817-3195

Characteristics No. of Despendent Percentage of Total				
Char		No. of Kespondent	Tercentage of Total	
Gender	Male	78	36.1%	
	Female	138	63.9%	
Age	< 19 years old	6	2.8%	
	19-25 years old	132	61.1%	
	26-35 years old	42	19.4%	
	36-45 years old	8	3.7%	
	> 45 years old	28	13.0%	
Education	High School	56	26.0%	
	Associate Degree	22	10.1%	
	Bachelor Degree	138	63.9%	
Internet Usage	< 6 hours	26	12.0%	
	6-10 hours	52	24.1%	
	11-15 hours	70	32.4%	
	16-20 Hours	20	9.3%	
	> 20 hours	48	22.2%	
E-Commerce	One time	86	39.8%	
Transaction	More than one time	130	60.2%	

#### **TABLES:**

Table 1: Respondent Characteristics

#### Table 2: Descriptive Statistics

Variable	Mean	Min	Max	Standard Deviation
Safety	3.406	1.000	5.000	0.815
Trust	3.762	2.000	5.000	0.671
Service Quality	4.525	2.000	5.000	0.837
Risk Perception	3.315	2.000	5.000	0.672
Attitude	3.778	2.000	5.000	0.760
Subjective Norm	2.819	1.000	5.000	0.967
Perceived Behavioral Control	2.833	1.000	5.000	0.948
Intention	2.822	1.000	5.000	0.908
Behavior	3.561	2.000	5.000	0.749

www.jatit.org

ISSN: 1992-8645



E-ISSN: 1817-3195

Variable	Question Item	Loading Factor	Composite Reliability	Average Variance Extracted
Safety	1	0.825	0.936	0.676
-	2	0.892		
	3	0.891		
	4	0.796		
	5	0.769		
	6	0.790	_	
	7	0.780		
Trust	1	0.670	0.897	0.557
	2	0.749	_	
	3	0.827	_	
	4	0.645	_	
	5	0.751	_	
	6	0.811	_	
	7	0.752		
Service Quality	1	0.548	0.924	0.527
	2	0.576	_	
	3	0.815	_	
	4	0.789	_	
	5	0.764	_	
	6	0.746	_	
	7	0.745	_	
	8	0.788	_	
	9	0.774	_	
	10	0.680	_	
	11	0.708		
Intention	1	0.920	0.876	0.780
	2	0.845		
Subjective Norm	1	1.000	1.000	1.000
Perceived Behavioral Control	1	1.000	1.000	1.000
Behavior	1	0.846	0.939	0.632
	2	0.734	_	
	3	0.765	_	
	4	0.725	_	
	5	0.803	_	
	6	0.847	_	
	7	0.793	_	
	8	0.826	_	
	9	0.806		
Risk Perception	1	0.769	0.886	0.564
	2	0.784	_	
	3	0.756	_	
	4	0.719	_	
	5	0.716	_	
	6	0.759		
Attitude	1	0.898	0.873	0.774
	2	0.861		



ISSN: 1992-8645	www.jatit.org	E-ISSN: 1817-3195
	Table 4: R-Square Analysis	

	R-Square	Adjusted R-Square
Intention	0.521	0.516
Behavior	0.514	0.493
Risk Perception	0.238	0.222
Attitude	0.263	0.240

	Tabl	e 5:	Path	Anal	ysis
--	------	------	------	------	------

Path	t-Statistics	P Values
Safety -> Risk Perception	1.900***	0.058
Trust -> Risk Perception	2.033**	0.043
Trust -> Attitude	4.508*	0.000
Service Quality -> Risk Perception	1.438	0.151
Intention -> Behavior	15.668*	0.000
Subjective Norm -> Intention	1.673***	0.095
Perceived Behavioral Control -> Intention	5.177*	0.000
Risk Perception -> Intention	0.635	0.526
Risk Perception -> Attitude	2.742*	0.006
Attitude -> Intention	8.231*	0.000
*Significant in 0.01, **Significant in 0.05, ***Significant in 0.10		



Figure 1: Graphic of Visited Content by Internet Users



Figure 2: Theory of Planned Behavior

JATIT

#### ISSN: 1992-8645

www.jatit.org

E-ISSN: 1817-3195



Figure 3: Research Framework