

# THE EFFECT OF E-COMMERCE AWARENESS IN E-COMMERCE TECHNOLOGY ACCEPTANCE ON MSME IN BANDUNG

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## ABSTRACT

*Electronic-commerce (E-Commerce) has become an important channel for conducting business. Researchers as well as market executives are trying to find e-commerce consumer behavior, especially Micro Small Medium Enterprise (MSME) in Bandung. The aim of this paper is to investigate what factors that affect the technology acceptance of e-commerce in Bandung, which intended to identify what improvement can be made for the future. The data for this research were collected from 133 respondents MSMEs that never use e-commerce for their business process. The research model is based on Technology Acceptance Model (TAM). Results showed that awareness has positive indirect influence to intention use but, perceived usefulness has insignificant affect towards intention to use. In conclusion, from the percentage of influence toward behavioral intention, perceived usefulness has higher total effect value compared to perceived ease of use, that is 56%. Based on previous analyzes also known that can directly affect the perceived usefulness of behavioral intention, in contrast to the perceived ease of use that must pass variables perceived usefulness beforehand. Therefore, the most important for MSMEs is the increasing number of benefits when they use e-commerce.*

*Keywords: e-commerce; TAM; Awareness; Perceived Usefulness; Perceived Ease of Use; Behavior Intention*

## ABSTRAK

*Electronic-commerce (E-Commerce) telah menjadi saluran penting untuk melakukan bisnis. Para peneliti serta para eksekutif pasar berusaha mencari perilaku konsumen e-commerce, khususnya Usaha Mikro Kecil Menengah (UMKM) di Bandung. Tujuan dari penelitian ini adalah untuk menyelidiki faktor-faktor apa yang mempengaruhi penerimaan teknologi e-commerce di Bandung, yang dimaksudkan untuk mengidentifikasi perbaikan apa yang dapat dilakukan untuk masa depan. Data untuk penelitian ini dikumpulkan dari 133 responden UMKM yang belum pernah menggunakan e-commerce untuk proses bisnis mereka. Model penelitian didasarkan pada Technology Acceptance Model (TAM). Hasil penelitian menunjukkan bahwa Kesadaran (awareness) memiliki pengaruh positif tidak langsung terhadap niat menggunakan (intention to use) e-commerce tetapi, kegunaan yang dirasakan (perceived usefulness) memiliki pengaruh yang tidak signifikan terhadap niat menggunakan (intention to use). Kesimpulannya, dari persentase pengaruh terhadap niat menggunakan (intention to use), kegunaan yang dirasakan (perceived usefulness) memiliki nilai total efek yang lebih tinggi dibandingkan dengan persepsi kemudahan penggunaan (perceived ease of use), yaitu 56%. Berdasarkan analisis sebelumnya juga diketahui bahwa secara langsung dapat mempengaruhi kegunaan yang dirasakan dari niat perilaku, berbeda dengan persepsi kemudahan penggunaan yang harus melewati variabel yang dirasakan kegunaan sebelumnya. Oleh karena itu, yang paling penting bagi UMKM adalah meningkatnya jumlah manfaat ketika mereka menggunakan e-commerce.*

*Kata kunci: e-commerce; TAM; Awareness; Kegunaan yang dirasakan; Persepsi kemudahan penggunaan; Niat berperilaku*

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## 1. Introduction

The Government of Indonesia's policy set forth in the National Medium-Term Development Plan 2015-2019 has launched nine national priority agendas or NAWA CITA where three of them are related to economic development: (1) building Indonesia from the periphery by strengthening regions and villages within the framework of the Unitary State; (2) increasing people's productivity and competitiveness in international markets; and (3) realizing economic independence by mobilizing the strategic sectors of the domestic economy. Creative economy, entrepreneurship, Cooperatives and Micro, Small and Medium Enterprises (MSME) are the three areas that have a fundamental role to realize those agenda.

In this case, the role of local government is needed, in particular the government of Bandung. Given the fact that the city of Bandung has the potential of small and medium industries of 15,040 units of business (see Table 11) with the absorption of labor reached 110,339 people (Central Bureau of Statistics Reginal Bandung, 2016), then the empowerment of this industrial sector becomes very important. One way is to provide a marketplace container for MSME principals. Due to the increasing internet users today, it would be very appropriate if the offered marketplace is digital or online.

E-Commerce has become an important channel for conducting business. Researchers as well as market executives are trying to find online consumer behavior, especially MSME in Bandung. The role of local government is needed, in this case especially Bandung. Given the fact that the city of Bandung has the potential of small and medium industries of 15,040 units of business with the absorption of labor reached 110,339 people (BPS Bandung, 2016), then the

empowerment of this industrial sector becomes very important. One way is to provide a place of marketplace for MSMEs. Due to the increasing internet users today, it would be very appropriate if the offered marketplace is digital or online.

The e-commerce marketplace that offered has the concept "coming from us, carried out by us, and for our own". Broadly speaking, this e-commerce marketplace is a fund management owned by APBD (budget of regional income and expenditure), its form of e-commerce with B2C business model in the form of virtual merchant that is destined for SMEs Bandung. The source of profit is obtained from consignment services about 10% - 20% of the selling price determined by the seller, which will be used for; (1) development from the system side, (2) donation through Bandung Education Office for teacher training from disability students for Play Group (pre-school), kindergarten, elementary and junior high school level, (3) donation via PUPR Service Bandung for disability-friendly facilities. In addition to being a means of charity, MSMEs will get some benefits that differentiate compared with existing e-commerce, namely; (1) design, managerial and financial training, (2) free professional photoshoot services, and (3) subsidized free shipping service for distribution to customers as Bandung which funded from Bandung Social Service and Cooperatives and Small and Medium Enterprise Service.

This study uses the Technology Acceptance Model (Davis, 1986) as the theoretical basis in the adoption of information technology in the form of e-commerce by SMEs. According to Davis (1989), TAM is an information systems theory designed to explain how users understand and use a technology. TAM uses the Theory of Reason Action (TRA) from Fishbein and

Ajzen (1980) as a theoretical basis used to see how adoption rates are respondents in receiving information technology. In TRA, Ajzen points out that the intention of doing or not doing certain behavior is influenced by two basic variables, the first attitude (attitude towards behavior) and the second is subjective norms. Another variable in TRA is belief towards behavior (behavioral beliefs) and normative beliefs (normative beliefs). In formulating the TAM, Davis did not accommodate all the components of the theory TRA, Davis only uses the "Belief and Attitude" components, while normative belief and subjective norms are not used.

According to Davis (1989), behavior using IT begins with the perception of benefits (perceived usefulness) and perceptions about the ease of using IT (perceived ease of use). Second this component when linked to TRA is part of belief. Perception of benefits are benefitting that individuals believe can be obtained when using IT. Rather different from individual perceptions of the usefulness of IT, other variables are Davis said, influencing the tendency of individuals to use IT is perception of ease in using IT. Ease (perceived ease of use) means without difficulty or free from difficulties or no need to try hard. Thus, the perception of ease in using an IT refers to the individual's belief that the IT system to be used is not troublesome or does not require great effort when used. Perception of IT benefits (perceived usefulness) and perception of ease of use of IT (perceived ease of use) affects attitudes (attitude towards using) individuals to use IT, which will then determine do people intend to use IT (intention to use). Intention to use IT will determine whether people will use IT (actual usage). In TAM, Davis (1986) found that perceptions of IT benefits also affected perception of ease

of use of IT but does not apply otherwise. Therefore, as long as the individual feels that IT is useful in his duties, he will intend to use it regardless of whether IT is easy or not easy to use.

TAM is far more specific than TRA, because TAM is intended only for the use of computer technology (Davis *et al.*, 1989). TAM is the most influential and most widely used technology acceptance model on study in the field of Technology Information (Lee *et al.*, 2003). Previous TAM studies broadly have used various types of models with a view to getting ways a broader view and a better explanation of the admission process technology in individuals (Legris *et al.*, 2003). These conditions encourage researchers to expanding to TAM (Davis, 1989). in the context of e-commerce adoption for SMEs by adding one external variable that is believed to be relevant for applied in the context of e-commerce adoption.

Based on the description above, the purpose of this study is to know the behavioral intention to use e-commerce of MSMEs in Bandung. The results of this study will be a source of research on the advanced e-commerce website for the MSME in Bandung Raya.

## **2. Literature Review**

### **2.1. Micro Small Medium Enterprise (MSME)**

According to Law of The Republic of Indonesia Number 20 Year 2008 Regarding Micro, Small and Medium Enterprises Article 6 (*Undang-Undang Republik Indonesia Nomor 20 Tahun 2008 Tentang Usaha Mikro, Kecil Dan Menengah Pasal 6*):

- (1) Criteria for Micro Enterprises shall be as follows:
  - a. has a net worth of at most Rp50,000,000.00 (fifty million rupiah) not included land and building of business premises; or

- b. has annual sales of at most Rp300,000,000.00 (three hundred million rupiah).
- (2) Small Business criteria are as follows:
  - a. has net worth of more than Rp50,000,000.00 (fifty million rupiah) up to at most Rp500,000,000.00 (five hundred million rupiah) excluding land and buildings place of business; or
  - b. has annual sales proceeds of more than Rp300.000.000,00 (three hundred million rupiah) to with a maximum of Rp2,500,000,000.00 (two billion five hundred million rupiah).
- (3) Medium Business criteria are as follows:
  - a. has a net worth of more than Rp500,000,000.00 (five hundred million rupiah) up to at most Rp10,000,000,000.00 (ten billion rupiah) excluding land and buildings place of business; or
  - b. has annual sales of more than Rp2,500,000,000.00 (two billion five hundred million rupiah) up to a maximum of Rp50,000,000,000.00 (fifty billion rupiahs).

## 2.2 Electronic Commerce (E-commerce)

E-commerce is defined as all aspects of business and market processes enabled by the Internet. E-commerce is rapidly becoming a viable means of conducting business, as evidenced by the tremendous amounts of money spent online. Quoted from the book Kenneth Laudon, "E-commerce: Business, Technology, Society" is meant by electronic commerce is "The use of the Internet, the Web, and apps to transact business. More formally, digitally enabled commercial transactions between and among organizations and individuals (Laudon, 2010)".

There are several types of e-commerce; Business-to-Customer (B2C), Business-to-Business (B2B), Customer-to-Customer (C2C), Social e-commerce, M-commerce (mobile e-commerce), and local e-commerce. B2B is an online business that sells its goods to individual customers, in contrast to the B2C that sells its goods to fellow companies. While C2C is e-commerce that provides a container for consumers to make a sale-buy to fellow consumers. Social e-commerce is e-commerce that enable social networking and social relationships online. M-commerce is an e-commerce that refers to the use of mobile devices to enable online transactions. Last is local e-commerce, e-commerce that focuses on engaging consumers based on their current geographic location.

In research on E-commerce, the TAM was applied and extended (Koufaris, 2002) by adding consumer shopping enjoyment to PU and PEOU as predictors of intention to return to a web site for future shopping. PU, PEOU, and shopping enjoyment scores explained 54% of the variance in intention to return to the web site for future shopping.

This study confirmed, in E-commerce, the previous TAM research results concerning the importance of PU in predicting intentions to use a system (Koufaris, 2002). According to Lal (1999) and Lal (2005), entrepreneur's qualification has a significant influence whereby the author measures the knowledge base as the qualification standard. The author also pointed out that the entrepreneur's qualification will impose considerable relationship in the degree of e-commerce or information technology adoption and hence, perceived usefulness and perceived ease of use of e-commerce have a direct positive relationship to entrepreneur's qualification. The fact provided by Lal

(1999 & 2005) is supported by Porter and Donthu (2006) as well in which the authors suggested that the decision to adopt a new technology is related strongly to the amount of knowledge one has as adopters with higher educational levels tend to have the ability to understand “how to” knowledge more quickly than those with less education. As a result, it can be concluded that education level has a relationship with the degree of e-commerce perceived usefulness and perceived ease of use respectively.

### 2.3 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM), was first introduced by Davis in 1989. TAM made specifically for modeling the information system user adoption. The Theory of Reaction Action (TRA) provided the theoretical framework used by Davis (1989) to study technology adoption behavior. A belief set for adopting technology was generated by Davis in consistence with Fishbein and Ajzen’s (1980) recommendation. The belief set consisted of two elements, perceived usefulness (PU) and perceived ease of use (PEOU). Davis (1989) defined PU as “the degree to which a person believes that using a particular [information] system would enhance his or her job performance” (p. 320), and PEOU as “the degree to which a person believes that using a particular [information] system would be free of effort” (p. 320). A visual representation of the elements in the TAM is presented in Figure 1. (Appendix).

TRA proposes that a person’s behavior is determined by the person’s intention to perform the behavior; and the “intention” is a function of the person’s attitude toward the behavior and subjective norms. Therefore, “intention” is the best predictor because it cognitively represents a person’s readiness to perform

certain behavior which is antecedent. “Intention” is determined by three factors: attitude towards the specific behavior, subjective norms, and perceived behavioral control (Ajzen, 2005). Based on TAM2, the model will use mental representations in order to evaluate acts between important work objectives and use of the system, showing a pattern of basic behavior for responsive judgment to use performance (i.e. perceived usefulness). Hence, the study considers that subjective judgement combined with perceived judgment. In other words, a direct effect applied on perceived usefulness, means that in their experience, user acceptance has already been connected to awareness as subjective judgement.

M-banking is a fresh encounter to the majority of consumers; therefore, a decreased level of awareness (AWA) turns out to be the hurdle in the reception and adoption of M-banking (Al-Somali *et al.*, 2009). Moreover, awareness is considered to be a significant variable leading to the adoption of M-banking by influencing the attitude (Chen, 2013). Awareness of virtual banking and its advantages significantly impact PEOU and PU of virtual banking (Al-Somali *et al.*, 2009). Davis (1989) also shows that whether people tend to use or not use the application depends on whether it will be helpful to job execution. Apparently perceived usefulness can be treated as “the degree to which a person believes that using a specific system will enhance his or her work”. Hence, the study raises the following hypotheses:

H<sub>1</sub>: The awareness has a significant positive effect on perceived ease of use.

H<sub>2</sub>: The awareness has a significant positive effect on perceived usefulness.

TAM mainly used to explain,

evaluate and predict a user's acceptance of information system. Davis (1989) adopts original rational behavior theory and planned behavior theory as basis for his model and re-inspecting the user's computer acceptance theory, thus proposing a technology acceptance model modification, proposing that perceived usefulness and perceived ease-of-use are important factors influencing user technology acceptance. Davis (1989) develops a proper rating scale for the two variables perceived usefulness and perceived ease-of-use, and conducted related empirical research. These arguments supported in analysis results of two studies by Adams *et al.*, (1992). Specifically, when using rating scales, study results support that psychological properties of perceived usefulness and perceived ease-of-use confirm the assumptions, and that a cause-effect relationship exists between these two variables. Ahn *et al.*, (2004), studied user behavior of web shopping; Brown and Jayakody explores e-commerce user behavior toward B2C (Business-to-Customer) information systems. All results verify that perceived ease-of-use have a significant positive effect on perceived usefulness.

Chiou *et al.*, (2009) discussed the relationship of perceived usefulness, perceived ease of use and four of the usability attributes, which are efficiency (time to complete task), effectiveness (task completed ratio), memorability (browsing and searching time for non-regular user) and learnability (number of errors occurred for novice). Perceived usefulness focuses on measuring end-user's subjective perception of overall job performance improvement, productivity, or effectiveness when supported by information technology. Accordingly, the study proposes the following hypothesis:

H<sub>3</sub>: The perceived ease-of-use has a significant positive effect on perceived usefulness.

In a study from 2008 evaluating user acceptance of advanced mobile communication services, López-Nicolás *et al.*, (2008) find that information technology acceptance frequently affected by use behavior intention. Intended use is "a behavioral tendency of people to keep using a certain technology, level of intention to use can be predicted by their behavior towards that certain technology" (Davis, 1989). Perceived Usefulness (PU) is defined as a "criterion of the individual's subjective opinion on the utility (useful or not) offered by the certain technology in task-related context". While, perceived ease of use (PEOU) is "a cognitive effort (hard or easy) needed to learn and apply the new technology". Also, a study of continuous use of mobile networks: a study of use of online learning by hi-tech company engineers (Hong *et al.*, 2006) and a study of consumers' attitudes toward using mobile TV service (Jung *et al.*, 2009) all found that both perceived ease-of-use and perceived usefulness have a positive effect on use behavior intention. Thus, the study proposes the following hypotheses:

H<sub>4</sub>: Perceived ease of use has a significant positive influence on behavior intention to use e-commerce

H<sub>5</sub>: Perceived usefulness has a significant positive influence on behavior intention to use e-commerce.

### 3. Research Method

#### 3.1. Sample

The current study was designed to assess the factors affecting behavioral intention to use e-commerce among MSME in Bandung. Thus, the target population of this study was MSME in Kota Bandung, particularly fashion sector,

who adopt e-commerce in running business activities.. The target population included of different age groups, income levels, education levels, ethnic backgrounds, and marital status.

Sampling is the process of selecting a sufficient number from the population, so research on samples and understanding of the nature or its characteristics will make it possible to generalize properties or these characteristics on the population elements (Sekaran, 2003). Sample retrieval technique in the study was convenience sampling, which is the sample that became members of an accessible population (Sekaran, 2003). Retrieval technique sample in the study was convenience sampling, which is the sample that became members of an accessible population (Sekaran, 1992).

For Structural Equation Modeling (SEM) analysis, there are several theories to determine the number of samples. According to Ibna (2009) the number of samples which must be fulfilled for using SEM is at least 100 sample ( $\geq 100$ ). Also using Partial Least Square (PLS) path modeling the needed sample size is minimum 30 to 100 cases (Yamin & Kurniawan, 2011). Therefore, 100 or more respondents are sufficient enough based on those references.

### **3.2. Data Collection**

A quantitative approach was used in this research. In order to empirically test the hypotheses developed in the previous section, data were collected using a convenience sampling approach via an online self-administered survey. The first reason for using this sampling technique is because it offers an easy way to collect the raw data for further analysis. Secondly, it saves time and costs as the respondents are randomly selected. E-commerce was described to participants as an electronic commerce application that gives the user the opportunity to make the everyday

commercial transactions (such as selling product, inventory check, checking delivery address, and etc. using a mobile phone, desktop, or other devices. The participation in the study was voluntary. To increase content validity, it was indicated that the survey should be filled out by a respondent who is familiar with e-commerce concept. To encourage participation and reduce self-reporting bias, all participants were given the opportunity to receive the findings of the study.

One hundred and thirty-three respondents were collected. The respondents consist of 77 females (57,9%) and 56 males (42,1%). The respondents are the small entrepreneurs who have shopped in the e-commerce but not using e-commerce as a tool in business processes, in particular for marketing and sales activities. The six age categories were 19 years or younger with 6% (n=8), 20-24 years with 45.1% (n=60), 25-29 years with 30% (n=40), 30-34 years with 12% (n=16), 35-39 years with 2.6% (n=3) and 4,5% respondents (n=6) are more than 40 years old. The age category from 20-24 years has the highest percentage of respondents while the age category from 35-39 years has the lowest percentage of respondents.

### **3.3. Measurement Scalling**

A typical seven-point Likert scale was used to measure the constructs presented in the proposed model (scores were ranged from 1= strongly disagree to 7= strongly agree with neutral score= 4). The conceptualization and development of the questionnaire was based on the existing literature, resulted in total of 25 items. The questionnaire instrument (see Table 1, Appendix) was developed based on the constructs of perceived usefulness, perceived ease of use, process (Woodroof & Kasper, 1998).

## **4. Results and Discussions**

### **4.1 Descriptive Analysis of E-Commerce Awareness Variables**

Table 2 at Appendix provides the mean and standard deviation of one of the independent variables associated with the awareness of SMEs on e-commerce which has a fairly high average performance. From the table it is known that respondents tend to have a good awareness about e-commerce. It can be seen from the grand mean value of 5.925 and the standard deviation with a high level of 0.925. While the value of the standard deviation informs that the respondents' answers are not too different from each other. It can be interpreted, respondents tend to have a good awareness about e-commerce.

All dimensions of the variables of e-commerce awareness, it appears that the procedural dimension has the smallest mean value of 5.894. That value is already quite large, but when compared with other dimensions, the dimensions of procedure of having the lowest value. Procedure dimension describes whether the owners of SMEs have enough information about the procedures and how to use e-commerce. The low value of this dimension in comparison with other dimensions allegedly because respondents do not practice the use of e-commerce directly for its business activities. Therefore, the government of Bandung as a provider of e-commerce services for MSMEs, should provide knowledge in the form of infographics and tutorials in the utilization of e-commerce for MSMEs later.

### **4.2 Descriptive Analysis of Perceived Ease of Use Variable**

Ease of Use Perceived variables in this study belong to the independent variable has a fairly high of average performance value as 5.949 with a

standard deviation of 0.898. This variable is used to assess the perceptions of respondents about the ease of use of e-commerce. From the mean value is high enough it can be concluded that the respondents perceived ease of use of e-commerce with quite good. Existing E-commerce, considered very easy to use, even for beginners though.

Table 3 in Appendix shows that the lowest mean derived from the perceived ease to learn dimension with a value of 5.849. This dimension measures the perceived business owners about e-commerce that will be easy to learn as one tool to help the business process. From further analysis performed by the researchers, it is known that the low valuation given the respondents came from the statement "In my opinion, learning to use e-commerce is an easy matter". The results of this analysis provide the conclusion that most respondents consider that e-commerce is something that is rather easy to learn. This is because almost half of the respondents came not from the millennial generation.

### **4.3 Descriptive Analysis of Perceived Usefulness Variable**

Table 4 in Appendix shows the statistical data of the Perceived Usefulness variable included in the intervening variable. When compared with other variables, Perceived Usefulness has the highest mean value. The magnitude reaches 6.058 with the standard deviation of 0.903. This value indicates a very high level of benefits of e-commerce. That is, overall respondents consider that e-commerce is very useful.

### **4.4 Descriptive Analysis of Behavior Intention to Use Variable**

The next descriptive analysis is about behavior intention to use e-commerce. This variable measures the



tendency of respondents to want to do the same activity, which in this case relates to using e-commerce in its business process. Trend in behavior intention other than measurable than the intention of respondents to start using e-commerce in business process, can also know the willingness of respondents to re-use e-commerce in the future. A mean value of 5.839 (see Table 5 in Appendix) indicates a positive behavioral intention that leads to a loyal attitude, which will determine the sustainability of a company in the future (Chen, 2013). From the high mean value can be concluded that the respondent agreed to start using e-commerce in business process, and re-use e-commerce in the future.

#### **4.5 Validity and Reliability Test**

The analysis in this section will examine whether the questionnaire asked to the respondent is an appropriate variable measurement tool and can produce consistent and accurate answers. Testing is done through partial least square analysis on SmartPLS 3 software. Table outers loadings above is output from the test validity. Seen from all dimensions and indicators tested, its loading factor values vary with numbers ranging from 0.5 to 0.9 (see Table 6 in Appendix). The number has met the assumption of the validity of a variable. Because the condition of a construct can be declared valid is having a value of factor loading above 0.5. This factor loading shows the correlation value between the indicator and the constants. The higher the value the higher the loading factor validity of a variable.

In addition to informing the level of validity of a variable, this test also identifies the accuracy of sentences made by researchers. Seen from the table above that the largest loading factor is in the indicator to measure the overall information with a value of 0.812. The

statement on this item is the respondent's knowledge of the overall e-commerce information. Thus, it can be concluded that the statement is appropriate to measure e-commerce awareness of respondents. While the item that has the smallest validity is dimension perceived ease to learn, with a value of 0.671. Although its value is not as big as other dimension, this item is still included in valid category. The small validity of perceived ease to learn compared to other dimensions is presumably because the meaning of perceived ease to learn as easiness in studying e-commerce cannot be represented by the statement "I think learning to use e-commerce is easy." Many respondents who have never used e-commerce in their business processes, especially for marketing and sales activities, then it is suspected to be the reason why the item has the smallest value compared with other items.

The result of reliability testing above shows that all Cronbach's alpha values are above 0.7. Table in appendix 7 also informs that the composite reliability of all variables is above 0.7 with an AVE output value above 0.5. Therefore, the questionnaire can still be said to be reliable and statements in the questionnaire is accurate statement to test respondents' answers.

#### **4.6 Hypothesis Test**

From the table 8 at Appendix, it is known that in general the hypothesis proposed by the researcher accepted. this means that one variable with another variable tested has a positive and significant effect. It is identified from the statistic t values above 1.96 and the p values less than 0.05 with the original sample values positive. As if the value is below the required standard, then the hypothesis is rejected.

Testing of first hypothesis ( $H_1$ ) and second ( $H_2$ ) about e-commerce awareness

influence to perceived ease of use and perceived usefulness accepted. These results are consistent with the findings of Laukkannen *et al.*, (2007), Huang *et al.*,(2011), and Al-Somali *et al.*, (2010). Awareness is said to be an acceptable factor in its adoption (Qazi *et al.*, 2016). As in this study, e-commerce awareness directly affects positively and significantly to the perceived ease of use and perceived usefulness without the need to be mediated by other variables. These findings indicate that awareness among business owners about the e-commerce start of awareness of the benefits, the use of the procedure, until the whole information.

The hypotheses H<sub>3</sub> represent the paths connecting perceived ease of use with perceived usefulness. The hypotheses are accepted as it is significant and this outcome is in line with the studies of and Venkatesh *et al.*, (2003). The outcome here indicates that PEOU influences positively and significantly on perceived usefulness. This outcome shows that since e-commerce is a user-friendly application and very basic skills are required to use this application; MSMEs are willing to embrace e-commerce services. According to Davis (1989), technology becomes useful when its usage becomes easy, and PEOU determines perceived usefulness. Hence, it is estimated that the technology which appears to be convenient and easy facilitates its usage rather than the system which appears to be complicated. Otherwise stated, technology convenient to use will create the best cost/benefit ratio for the achievement-oriented people (Venkatesh & Morris, 2000).

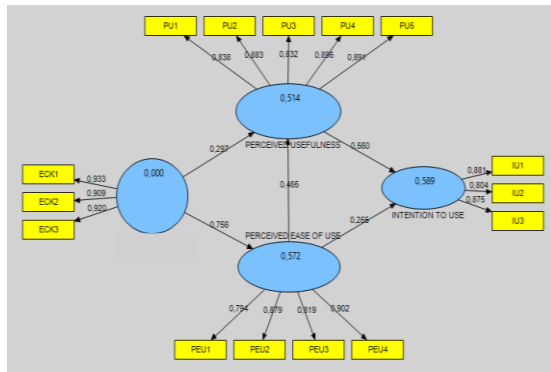
The next is testing hypotheses regarding the intention to use behavioral variables, namely the fourth and fifth hypotheses. The hypotheses are accepted as they are significant and these outcomes are in line with the studies of Yuan *et al.*,

(2017). This reflects behavioral *intention to use* could predicted positively by perceived ease-of-use and perceived usefulness. Moreover, the perceived ease-of-use scored slightly higher than perceived usefulness, as demonstrated by standard path coefficients.

#### 4.7 Path Analyses

Explanations on the path analysis will provide information related to the pattern of relationships between variables. The pattern is presented through a diagram showing the influence of each dimension to its own variable and direct influence variables simultaneously. In addition, researchers will also present the total magnitude of the effect of a variable identified through direct and indirect influence.

Figure 1 is a diagram illustrating the pattern of relationships between variables according to the research model. The first analysis that can be done from the image is to identify the magnitude of each dimension coefficient in affecting each variable. In the variable E-commerce awareness (ECK), the lowest dimension is benefit (ECK2) because it has the lowest coefficient of 0.909. Therefore, in the context of MSMEs, the emphasis and awareness of all the benefits that will be obtained from e-commerce should be more emphasized because there are still who argue that e-commerce is not too important for business processes. In the second variable, perceived ease of use, the highest coefficient is derived from the dimension perceived ease of mastering. Therefore, it is concluded that MSME business people assume that it will be easy to control an app or e-commerce website.



**Figure 1. Path Coefficient**

As for the variable perceived usefulness and behavioral intention, all indicators indicate the coefficient value is not much different, which means that statements to measure both variables are equally important in representing perceived usefulness and behavioral intention to use e-commerce. The coefficient of path between the variables perceived ease of use and behavioral Intention is the smallest that is equal to 0, 265. The coefficient with the largest value, the same as the research of Yuan *et al.*, (2017), originating from a pathway that links between e-commerce awareness and perceived ease of use of 0.756. It supports the research. From the value of the coefficient, the next researcher conducted a second analysis related to simultaneous effects. The magnitude of the effect can be seen directly in the diagram or in the R square 4.8 above. Diagrams and R square tables (see Table 9) show that e-commerce affects perceived ease of use of 57.2%. Then, if the value of e-commerce plus perceived ease of use variables separately, will affect perceived usefulness of 51.4%. These findings suggest that although e-commerce awareness does not have significant direct effect on perceived usefulness, it still contributes to the perceived usefulness if through perceived ease of use first. In addition, from table R square above can be seen that the variable perceived ease of use and perceived usefulness

simultaneously affect the behavioral intention to use of 58.9%. These findings also indicate, although the perceived ease of use does not have significant direct influence on behavioral intention, it still contributes to behavioral intention if through perceived usefulness beforehand.

The contribution of a variable in influencing other variables through linking variables as in the case of e-commerce awareness and perceived usefulness is called indirect effect. Table 10 at Appendix shows that the magnitude of the influence of the independent variable was much higher (64.8%) when added to its indirect effects. This indicates that MSME's assumption about e-commerce is beneficial will increase if they are aware of the existence of e-commerce with all the benefits and convenience first. The same is true in cases of perceived ease of use and behavioral intention. Table 10 shows that the magnitude of the influence of the independent variable was much higher (52.5%) when added to its indirect effects. This indicates that interest in using e-commerce will increase if MSMEs find it easy to use e-commerce for their business processes.

Judging from the percentage of influence toward behavioral intention, perceived usefulness has higher total effect value compared to perceived ease of use, that is 56%. Based on previous analyzes also known that can directly affect the perceived usefulness of behavioral intention, in contrast to the perceived ease of use that must pass variables perceived usefulness beforehand. Therefore, the most important for MSMEs is the increasing number of benefits when they use e-commerce. Although the descriptive analysis of the mean value of the perceived ease of use of e-commerce is quite good, but the analysis of the total effect states that the effect is relatively small when compared

with variable perceived usefulness. Therefore, in addition to continuously striving to improve perceived ease of use, the city of Bandung as an applicator e-commerce for MSMEs should focus more on increasing the benefits of e-commerce for MSMEs city of Bandung. It should be applied to e-commerce to be offered, information about the benefits of e-commerce for the sustainability of a business should be highlighted. Because it is empirically proven based on previous analysis, it will increase the behavioral intention to use e-commerce.

## 5. Conclusion

The results of the analyses show that:

1. E-commerce awareness has a positive effect on perceived ease of use in e-commerce adoption, so hypothesis 1 is supported. This matter shown by the existence of a positive relationship between E-commerce Awareness and perceived ease of use. SMEs who are confident in their ability to use computers affect their perception of the ease with which e-commerce offers.
2. E-commerce awareness has a positive effect on perceived usefulness in the adoption of e-commerce, so hypothesis 2 is supported. This is shown by the existence of a positive relationship between the two. The assumption of SMEs that he is able to use a computer will affect his perception of the benefits of e-commerce itself.
3. Perceived ease of use has a positive effect on perceived usefulness in e-commerce adoption so hypothesis 3 is supported. Positive relationship between perceived ease of use and perceived usefulness shows that the perception of ease in e-commerce always be influence perceptions of

benefit.

4. Perceived ease of use has a positive effect on Intention to Use in e-commerce adoption so hypothesis 4 is supported. Relationship positive between Perceived Ease of Use and Intention to Use shows that if the perception of ease in e-commerce can improve the performance of SMEs, then the perpetrators SMEs want to use e-commerce in their business activities.

This study is considered valuable to the Indonesian commerce sector, especially for MSME in Bandung as it provides a unique and significant managerial and practical contribution as it has focused on the customers' perceptions factors as the major important factors influencing attitude and adoption of e-commerce services. This study has tested a TAM E-commerce extension model can be applied at MSME sector in Bandung. The findings of the current study demonstrate that the proposed model has good explanatory power and approves its robustness in predicting consumers' behavioral intention to adopt e-commerce.

In this era, a vast increase has been observed in the use of mobile devices so this study is conducted to analyze those factors which affect the consumer attitude to use the e-commerce. To explore the better understanding of the user's intention, we used usefulness and ease of use as mediators. The result of this study will give information on the user's patterns to use the technology, which will be helpful for the financial institutions.

System compatibility shows a significant effect on PEOU and PU. To increase the compatibility with the e-commerce, more features should be added on in the system. Awareness is also an important determinant that affects the customer's attitude via PEOU. government should increase the MSMEs

awareness by educating them or informing them through mass media or social networking sites. Another way by which the consumer awareness can be increased by offering training courses to the government free of cost. The PEOU and usefulness have a significant effect on the user's intention to use the e-commerce. So, the government should further ease their e-commerce portal by adding features like e-shipping, e-CRM, etc., linking their system with an online support system which should be available to the users in a single, expand the e-commerce services by giving high speed for data transferring and high bandwidth sites so the system should not be detached during transactions. Moreover, the tutorial on how to use e-commerce should also be available for the users as this will help to increase their intention to use this technology.

### 5.1 Managerial Implication

The findings of this research have

other implications as well for the entrepreneurial characteristics in the perspective of research on e-commerce adoption that described the determinants in e-commerce adoption among entrepreneurs. The determinants, entrepreneurial characteristics, also further verified the appropriateness and validity of technology acceptance model (TAM) and its application in measuring for the e-commerce adoption.

Besides theoretical implication, the findings of this research also suggest important practical implication for information systems managers or online business owners as well as organizations that are planning to adopt e-commerce. It is evident from this study that in order to avoid hindrance of e-commerce adoption in an organization, perceived ease of use and perceived usefulness of the e-commerce applications should be established by giving appropriate training and exposure.

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## APPENDIX

**Table 1. Variable Instruments**

Variable	Dimensions	Description	Scale	Label	Author
<b>E-commerce awareness</b>	Overall information	Overall, i have received enough information about e-commerce	Seven-point Likert scale 1= strongly disagree to 7=strongly disagree With neutral score = 4	ECK1	Al-Somali et.al, 2009
	Benefit	I have received enough information about the benefits of using e-commerce		ECK1	
	Procedure	I have received enough information about the procedures and how to use e-commerce		ECK3	
<b>Perceived Ease of Use</b>	Perceived ease to learn	In my opinion, learning to use e-commerce is an easy matter		PEU1	Hsu et al, 2011
	Perceived ease to do	In my opinion, it is to do what i want in an application or e-commerce website		PEU2	
	Perceived flexibility	In my opinion, e-commerce is flexible to use		PEU3	
	Perceived ease to mastering	It would be easy for me to master the use of e-commerce		PEU4	
<b>Perceived Usefulness</b>	Rapid sales	Using e-commerce will increase my productivity		PU1	
	Higher sales performance	Using e-commerce will improve my performance in sales		PU2	
	Higher productivity	Using e-commerce will increase my productivity		PU3	
	More effective	Using e-commerce will increase my effectiveness in the sales process		PU4	
	Increase sales	Using e-commerce will be easier for main the sales process		PU5	
<b>Intention to Use</b>	Selling product	I will be using e-commerce to sell my products		IU1	
	Availability of access	If i have access to use e-commerce, then i will use it		IU2	
	Use more often in the future	I would be more likely to use e-commerce to meet the future needs of my sales		IU3	

**Table 2. Analysis Descriptive of E-Commerce Awareness Variable**

No	Dimension	Mean	Std. Deviation
1	Overall information	5,947	0,907
2	Benefit	6,015	0,929
3	Procedure	5,894	0,939
	<b>Grand Mean</b>	<b>5,952</b>	<b>0,925</b>

**Table 3. Descriptive Analysis of Perceived Ease of Use Variable**

No	Dimension	Mean	Std. Deviation
1	Perceived ease to learn	5,849	0,957
2	Perceived ease to do	5,954	0,894
3	Perceived flexibility	6,127	0,865
4	Perceived ease to mastering	5,864	0,877
	<b>Grand Mean</b>	<b>5,949</b>	<b>0,898</b>

**Table 4. Descriptive Analysis of Perceived Usefulness Variable**

No	Dimension	Mean	Std. Deviation
1	Rapid sales	6,112	0,926
2	Higher sales performance	5,992	0,900
3	Higher productivity	5,872	0,980
4	More effective	6,150	0,857
5	Increase sales	6,165	0,854
	<b>Grand Mean</b>	<b>6,058</b>	<b>0,903</b>

**Table 5. Descriptive Analysis of Behavior Intention to Use Variable**

No	Dimension	Mean	Std. Deviation
1	Selling product	5,691	0,897
2	Availability of access	5,736	1,021
3	Use more often in the future	6,090	0,882
	<b>Grand Mean</b>	<b>5,839</b>	<b>0,934</b>

**Table 6. Validity Test**

No	Variable / Dimensions	Standardize Loading factor			
		E-commerce awareness	Perceived Ease of Use	Perceived Usefulness	Intention to Use
1	Overall information	0,812			
2	Benefit	0,760			
3	Procedure	0,712			
4	Perceived ease to learn		0,671		
5	Perceived ease to do		0,773		
6	Perceived flexibility		0,750		
7	Perceived ease to mastering		0,800		
8	Rapid sales			0,768	
9	Higher sales performance			0,810	
10	Higher productivity			0,747	
11	More effective			0,810	
12	Increase sales			0,787	
13	Selling product				0,708
14	Availability of access				0,657
15	Use more often in the future				0,795

**Table 7. Reliability Test**

No	Variable	Cronbach's Alfa	Rho_A	Composite Realiability	AVE
1	E-commerce awareness	0,812	0,877	0,853	0,545
2	Perceived Ease of Use	0,810	0,826	0,873	0,632
3	Perceived Usefulness	0,784	0,588	0,806	0,676
4	Intention to Use	0,760	0,706	0,804	0,677

**Table 8. Partial Hypothesis test**

Hypothesis	Variable	Path Coefficient			Conclusion
		Original Sample (O)	T Statistics ( O/STDEV )	P Values	
H1	E-commerce Awareness → Perceived Ease of Use	0,193	2,411	0,017	Accepted
H2	E-commerce Awareness →	0,147	3,806	0,000	Accepted

	Perceived Usefulness				
<b>H3</b>	Perceived Ease of Use → Perceived Usefulness	0,392	5,091	0,000	Accepted
<b>H4</b>	Perceived Ease of Use → Behavioral Intention to Use	0,213	6,314	0,000	Accepted
<b>H5</b>	Perceived Usefulness → Behavioral Intention to Use	0,482	5,355	0,000	Accepted

**Table 9. Magnitude of Influence**

<b>Variable</b>	<b>R Square</b>
<b>Perceived Ease of Use</b>	<b>0,572</b>
<b>Perceived Usefulness</b>	<b>0,514</b>
<b>Intention to Use</b>	<b>0,589</b>

**Table 10. Direct and Indirect Influence**

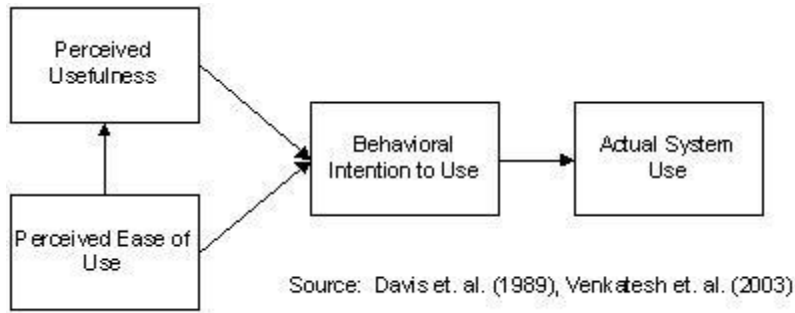
Variable	Effect	Perceived Ease of Use	Perceived Usefulness	Intention to Use
<b>E-commerce awareness</b>	Direct	0,756	0,297	
	Indirect		0,351	0,182
	Total	0,756	0,648	0,182
<b>Perceived Ease of Use</b>	Direct		0,465	0,265
	Indirect			0,260
	Total		0,465	0,525
<b>Perceived Usefulness</b>	Direct			0,506
	Indirect			
	Total			0,506

**Table 11. Development of Micro, Small, Medium Business (MSME) and Large Enterprise Data 2012-2013**

No	Indicator	Unit	Total		Development per year (2012-2013)	
			2012	2013	Total	%
<b>1</b>	<b>Business Unit (a+b)</b>	Unit	56.539.560	57.900.787	1.361.227	2,41
	a. Micro, Small, Medium Enterprise	Unit	56.534.592	57.895.721	1.361.129	2,41
	Micro Business	Unit	55.856.176	57.189.393	1.333.217	2,39
	Small Business	Unit	629.418	654.222	24.083	3,94
	Medium Enterprise	Unit	48.997	52.106	3.110	6,35
	b. Macro Business	Unit	4.968	5.066	98	1,97
<b>2.</b>	<b>Manpower</b>	Person	110.808.154	117.681.244	6.873.090	6,20
	a. Micro, Small, Medium Enterprise	Person	107.657.509	114.144.082	6.486.573	6,03
	Micro Business	Person	99.859.517	104.624.466	4.764.949	4,77
	Small Business	Person	4.535.970	5.570.231	1.034.262	22,80
	Medium Enterprise	Person	3.262.023	3.949.385	386.517	21,07
	b. Macro Business	Person	3.150.645	3.537.162	386.517	12,27
<b>3.</b>	<b>GDP at current prices</b>	Rp. billion	8.241.864,3	9.014.951,2	773.086,9	9,38
	a. Micro, Small, Medium Enterprise	Rp. billion	4.869.568,1	5.440.007,9	570.439,8	11,71
	Micro Business	Rp. billion	2.951.120,6	3.326.564,8	375.444,2	12,72
	Small Business	Rp. billion	798.122,2	876.385,3	78.263,1	9,81
	Medium Enterprise	Rp. billion	1.120.325,3	1.237.057,8	116.731,5	10,42
	b. Macro Business	Rp. billion	3.372.296,1	3.574.943,3	202.647,2	6,01
<b>4.</b>	<b>Investment at current prices</b>	Rp. billion	2.283.872,9	2.609.778,8	325.905,8	14,27
	a. Micro, Small, Medium Enterprise	Rp. billion	1.250.801,1	1.655.233,5	404.432,5	32,33
	Micro Business	Rp. billion	175.529,1	185.717,2	10.188,1	5,80

Small Business	Rp. billion	452.790,0	620.216,0	167.426,0	36,98
Medium Enterprise	Rp. billion	622.482,0	849.300,3	226.818,3	36,44
b. Macro Business	Rp. billion	1.033.072,9	954.545,2	(78.526,6)	(7,60)

**Figure 1. Technology Acceptance Model**



**Figure 2. Research Framework**

