# Analysis of Factors Contributing to Impulse Buying Behavior of E-Commerce Users

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| ARTICLE INFO | ABSTRACT |
|---|---|
| | Ease of accessing the internet and information technology triggers impulsive buying behavior through increased accessibility to products and services that facilitate the buying process. Through internet facilities by browsing, consumers can feel like window shopping in a mall. This study focuses on the Java-Bali area which is a strategic location in access to products. Data were collected from 273 respondents of E-commerce users using a survey method. Structural Equation Modeling (SEM) modeling technique with SmartPLS 3.0 software. The results show that e-commerce browsing and the big five models have a significant effect on urge to purchase and impulse purchase. E-commerce usage intensity and urge to purchase have no effect on impulse purchases and the results of the mediation role test of urge to purchase have no effect on e-commerce browsing, e-commerce usage intensity, and the big five model on impulse purchases. |
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## Introduction

The development of information technology has a transformational impact, especially on business. [1] said that, one of the new concepts is e-business or the term e-commerce, as a perfection of the direct marketing element. From a marketing perspective, the focus of e-commerce is to maximize shopping efficiency by offering product catalogs, advanced searches,

product recommendations, and one-click purchases[2]. Many people surf using the internet to access a product. The existence of online channels and information technology has triggered impulsive buying behaviors among consumers through increased accessibility to products and services because it facilitates the purchase process [3].

Many experts agree that the lack of planning is a contributing factor to the purchase to be categorized as impulsive [4]. Through internet facilities by browsing consumers can feel like window shopping in a mall. The time consumers spend browsing e-commerce can trigger interest in purchasing the desired goods. So that through this browsing can provide information to consumers regarding the product to be purchased. The more time allocated will provide stimulation in impulse buying because you feel the need for the product. Bweb rowser is used for product purchase activities in a timely and efficient manner to achieve the goal comfortably and efficiently at the same time a little effort. Web browsing is the initial phase of online purchases that involves shoppers searching for information and making choices through the website. Shoppers place great emphasis on information gathering and browsing during online shopping. Theintensity of Facebook usage can be used to measure Facebook usage and this scale consists of the number of friends, the average time spent per day, and six additional items about a user's connection and engagement with Facebook.

Impulse purchase behavior is to make an unplanned or sudden purchase and unthinkable in advance to buy that particular product. Impulsive buyers usually have the characteristics of not doing long-term thinking. Emotionally they feel attracted to the product of the object and the presence of a desire to fulfill satisfaction [5]. According to Ref. [6] Impulse purchase behavior is experienced by consumers at the age of around 18-39 years. In other studies it was shown that women have a greater tendency in impulse purchase than men [7].

Impulse purchase behavior can be influenced by internal or intrinsic factors in the form of self-control. Personality in consumers is an important personal factor that determines and reflects a person's response to the environment in making a purchase. The psychological features of a person are reflected in his consumption behavior. This behavior of this individual person is depicted on a dimension known as the Big Five Personality [8]. Currently, the Big Five Personality which includes extraversion, emotional, conscientiousness, agreeableness and openness is considered the benchmark of personality trait theory. An individual may have all five of the Big Five Personality traits but may score high on one or several traits and lower on other traits.

This research focuses on the Java-Bali area which is a strategic location in access to obtain products. In addition, according to BPS data, there are 10 metropolitan cities covering 4 Java Islands and 6 outside Java. Java and Jakarta are the economic centers of Indonesia, and

Bali. In addition, the population of Java, West Java, East Java and Central Java is the province with the largest number. Looking at the data, the area can be a consideration for retailers in offering products to meet consumer needs. Based on several existing studies, researchers identified several differences in research settings. Previous research conducted by [8] shopping malls in Malang, Indonesia. [9] research focus on hypermarkets and supermarkets in India which are influenced by consumer traits and situational factors. Finally, the research [10] conducted research related to impulse purchases in Surabaya malls, Indonesia related to fashion products.

This study focuses on what factors influence impulse purchase behavior in Ecommerce users. The Big Five Model theory is the theoretical background used in this study. Ease and convenience in using Ecommerce is one of the factors consumers choose online shopping. The selection of Big Five Model (BFM) variables to be studied is related to impulse purchase behavior in Ecommerce users. It is used to fill in the gaps in previous studies that have been carried out [2]. The Big Five Model (BFM) is an accurate theory to be used as a benchmark theory of personality traits [2]. BFM has five dimensions, namely agreeableness, neuroticism, extraversion, openness, and conscientiousness. Everyone has those 5 dimensions on himself, but with different values. Previous research, stated that BFM affects online consumer behavior.

In previous studies, impulse purchases were only associated with F-commerce browsing and F-commerce usage Intensity only. F-commerce browsing was found to have no significant effect on impulse purchases but had a positive effect on the impulse to make purchases, while F-commerce usage intensity was significant in influencing impulse purchases.

The contribution of this study is in accordance with the advice of the study [2] to test the role of the Big Five Model Theory (BFM) in solving what factors affect impulse purchase behavior in Ecommerce users. The personality of the individual has a tremendous impact on impulse purchases [11]. Different personalities, ages and genders will also give a tendency to engage in different impulse purchase behaviors. The use of age and gender moderation is based on the findings that impulse buying behaviors are experienced by consumers at the age of about 18-39 [6] and are more carried out by women [7]. BFM has also been shown to have a relationship with urge to purchase in studies conducted by [2]. In the same study, it was shown that personality traits in the BFM theory have an important role in relation to urge to purchase and will eventually affect impulse purchase. Urge to purchase indicates the condition under which desire arises when facing an object, which means that this happens before the appearance of impulse buying [12]. This study aims to explain the relationship between E-commerce browsing, urge to purchase, usage intensity, Big Five Model, and impulse purchase.

## Development of Hypotheses

### A. E-commerce browsing dan urge to purchase

Ref. [12] explains that websites used by retailers have a significant impact on unplanned purchases or impulse buying. Through browsing sites, one of them with the platform becomes a situational factor that can encourage impulsive purchases by consumers. This situation is caused because the internet has browsing facilities for all circles of society. So that it encourages people to shop anytime and anywhere. Ref. [13] browsing in the research conducted is divided into hedonic browsing and utilitarian browsing which encourages to behave impulse buying. In addition, these browsing variables motivate consumer searches. Browsing is the first step for consumers in finding information and making decisions. The reason for this is that some consumers spend time browsing rather than purchasing. There is an influence of browsing on the urge to buy. In the study, it was explained that users by browsing while shopping, will give a higher probability of unplanned purchases than non-browsing. The situation is caused by browsing for a long time will get stimulation to make purchases unplanned.

H1. E-commerce browsing has a positive effect on the urge to purchase

### B. E-commerce usage intensity dan urge to purchase

Ref. [2] say that e-commerce consumers can shop at any time and from any location. They can now browse the internet easily due to these ubiquitous ecommerce features. As a result, e-commerce allows online customers to visit their favorite e-commerce pages regularly. The likelihood of consumers being interested in a particular item increases as the frequency of browsing e-commerce sites increases. The pleasant mood of the consumer has to do with the desire to make impulse purchases. Social networks can increase a person's self-esteem. An increase in self-esteem as a result of the use of online social networks can lead to a loss of self-control and more impulsive behaviors. They went on to say that the frequency with which people use e-commerce can cause them to make irrational decisions, such as increasing their spending. Based on the already existing literature, we propose hypotheses:

H2. E-commerce usage intensity has a positive effect on the urge to purchase

### C. Big Five Model dan urge to purchase

Urge to purchase is "a state of desire experienced when facing an object in the environment. This clearly precedes the actual and spontaneous and sudden action of impulses". Urge to purchase is associated with a poor ability to intentionally suppress stronger or automatic responses. Although there is no established theory linking the big five model to the urge to purchase, there is a correlation between consumer responses to product design and openness to experience does exist. "The degree at which an individual feels the urge to acquire things

that have an attractive design (e.g., 'If the product design really "talks" to me, I feel compelled to buy it.')" is how the "Response" scale is measured. Based on these findings, we believe that the big five models will have a huge impact on the urge to purchase in e-commerce, leading to the following hypothesis:

H3. Big Five Model has a positive effect on the urge to purchase

### D. Urge to purchase dan E-commerce Impulse Purchase

Urge to purchase is a spontaneous behavior and precedes impulse purchase behavior. Existing literature shows a significant relationship between urge to purchase and impulse purchase [2]. The impulse to buy is impulsively high then they tend to make impulsive purchases. in line with other studies. findings from Huang (2016) stated that urge to purchase was found to be significant in predicting impulsive buying behavior. Consumers will be aroused in impulsive behavior when looking around the store. However, in this study, impulses are explained offline by searching the store. Besides they can't prevent not to impulse buying despite trying their best. Urges have a positive and significant relationship with impulse buying. But peer communication has a bigger relationship for people to do impulse buying. Urge to buy has no effect because it only happens when before consumers do shopping impulsively. Based on the already existing literature, we propose hypotheses:

H4. Urge to purchase has a positive effect on E-commerce Impulse Purchase

### E. E-commerce browsing dan E-commerce Impulse Purchase

Exploring the initial stages of online purchases made by buyers to find information about related products/services through ecommerce or websites. Previous literature found a positive relationship between internet browsing and online impulse purchases. This is due to the tendency of people who have the pleasure of browsing and ignoring outcomes, tend to give rise to hedonists who have an impact on buying impulses. In contrast to previous findings, Ref. [12] found an insignificant relationship between e-commerce browsing and impulse purchases. Browsing is a search for information carried out by consumers, for the later stage of decision making. This browsing provides sensory stimulation. However, the results showed that browsing was insignificant. This is due to the possibility that the time consumers spend looking through products does not fully encourage impulsive buying behavior. In addition, because the context of this search is only the scope of Facebook. Both directly and mediation browsing had a significant influence on impulse buying. Browsing provides hedonistic motivation in making impulsive purchases. Consumers who browse an e-commerce site will get their own pleasure in finding information about a product. They are more free and widely informed although it is not certain to actually buy or not. Therefore, we propose a hypothesis:

H5. E-commerce browsing negatively affects Ecommerce Impulse Purchase

### F. Ecommerce usage intensity dan E-commerce Impulse Purchase

Ecommerce makes it easier for customers to reach all stores not limited to distant times and locations so that it encourages impulse purchases more [7]. found that the increase in the use of f-commerce drove an increase in purchases. Therefore, we propose a hypothesis :

H6. E-commerce usage intensity has a positive effect on E-commerce Impulse Purchase

### G. Big Five Model dan Ecommerce Impulse Purchase

Personality is one of the factors that causes a person to make purchases unplanned. There are personality traits that explain individual differences. They will get low or high marks on certain dimensions. There is an influence of personality on impulse buying. Especially openness to change has a positive effect. In addition, some dimensions have a positive and negative relationship. The dimensions that have a positive influence on impulse buying are openness but not significant, extraversion, while negative are conscientiousness, agreeableness, neuroticism. Therefore, we propose a hypothesis :

H7. Big Five Models positively affect Ecommerce Impulse Purchase

### H. The role of mediation urge to purchase

Both directly and browsing mediation had a significant influence on impulse buying. In this study, the focus of the product is fashion, impulse buying has a relationship with browsing which influences impulsive buying. Context of impulse buying in digital celebrities or influencers in encouraging motivation to do impulse buying. Searching for information through those celebrities in a virtual environment can convince others. Their role becomes an agent to shape the behavior of their audience. Urge to purchase has a significant positive relationship with browsing and impulse purchase. It is urgent as mediation has an insignificant influence. The context of this study is offline impulse in a mall. While the independent variable is the store environment, this is influenced by the lack of attractiveness of the stores in the Mall. If a site or browsing feature is not interesting, it does not cause an urge to buy. This urgent relationship in mediating is positive. Research shows that urge has a positive relationship in mediating but is not significant because of environmental differences. Examples of the intended environment are visual appeal, quality of service and characteristics of customers especially women.

H8. Urge to Purchase mediates the relationship between E-Commerce Browsing and E-Commerce Impulse Purchase

The psychological effect of personality traits provides a construction of understanding of consumers who have different reactions in various conditions. Urge to buy has a role can play as a mediation of emotions such as the anticipated regret that retailers can successfully engage deep feelings in the minds of consumers on impulse purchases. According to research by Ref. [12] urge to buy can mediate consumers in making spontaneous purchases. Urge to

buy impulsively is a picture of the state of consumers who want an object in a certain environment. Previous studies on impulsive purchases have shown that it is difficult to control urge during proximity to products, while attractive displays also create more urge to buy. The main dependent variable is impulse purchase and that includes the purchase of real goods or the satisfaction of impulses. Therefore, the higher the urge to buy consumers, the tendency to make impulsive purchases also increases. Therefore, we propose a hypothesis:

H9. Urge to Purchase memediasi hubungan antara Big Five Model dan E-Commerce Impulse Purchase

H10. Urge to Purchase memediasi hubungan antara E-Commerce Usage Intensity dan E-Commerce Impulse Purchase

## Research Model

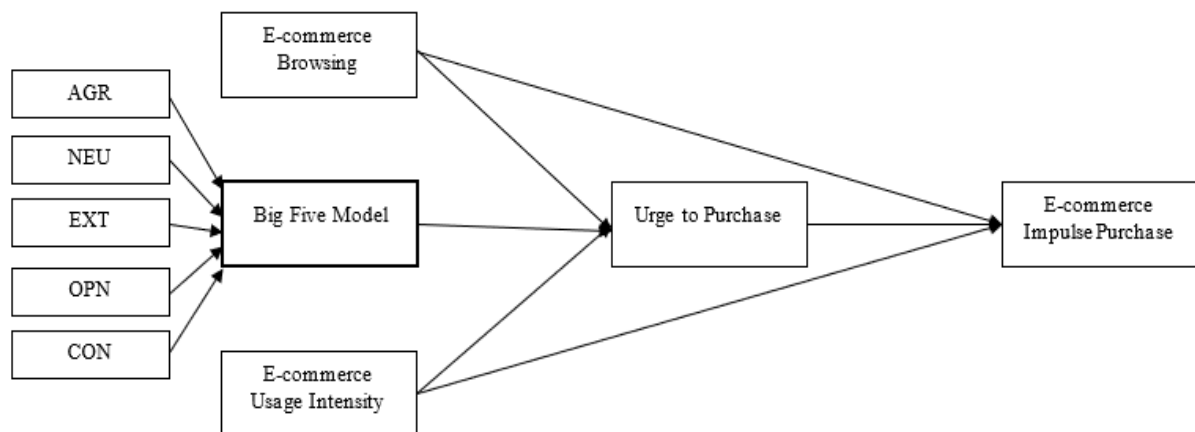Figure 1 shows the research model based on theories and literatre reviews.



**Fig. 1.** Research model

## Methods

### A. Research Design

This research is a quantitative research with the aim of testing the influence between variables and conducting hypothesis tests. The type of data used is primary data. Primary data is obtained from the results of distributing questionnaires online and is cross-sectional. The population in this study is e-commerce consumers in Indonesia in the age range of 16-64 years. This population was selected based on the age range, percentage of users and e-commerce purchase activity in Indonesia according to GWI data survey results of users aged 16 to 64 years have high purchasing power on e-commerce purchases. The percentage of using online shopping applications on HP/Tablet is 78.2%, buying products online is 87.1%, visiting retail websites and online stores is 87.3%. The category of e-commerce purchases based on the age

of 16-24 years is 84.8%, the age of 25-34 years is 88.5%, the age of 35-44 years is 89%, and the age of 45-54 years is 89.4%.

Sampling in this study was carried out in a non-probability manner. The sample was selected using purposive sampling, with the criteria that active e-commerce consumers in Indonesia at least make one transaction in the age range of 16-64 years. The selection of this sample was carried out based on data from the GWI survey about e-commerce activities in Indonesia. This study used partial least square-structural equation modeling (PLS-SEM). Therefore, it is necessary to take into account the sample amount required for analysis using the method (PLS-SEM). To determine the sample size using the Cohen approach based on statistical power and effect size when determining the minimum sample size, for statistical power 80%, significance level 5 %, minimum R2 10%, with the maximum number of arrows leading to a construct amounting to 7, then the sample size required is 137. However, a large sample size can improve the accuracy and consistency of PLS-SEM estimation results. Therefore, the sample in this study will be greater than ten times the number of structural paths in the model.

## B. Data Analysis Techniques

This study uses quantitative analysis to test hypotheses or measure the influence between variables with structural equation models (Structural Equation Modeling / SEM). There are two types of SEM that are widely known, namely covariance-based SEM and partial least square SEM. This study used a partial least square structural equation model. Partial least square (PLS-SEM) is a type of SEM that aims to test predictive relationships between constructs by looking at whether there is a relationship or influence between the constructs. The consequence of the use of PLS-SEM is that the test can be carried out without a solid theoretical basis, ignoring some assumptions and parameters of the accuracy of the prediction model judging from the value of the coefficient of determination (R-Square) [14], for which reason the use of PLS-SEM is very appropriate in this study aimed at developing a theory. The estimation of parameters obtained with PLS can be categorized into three [15].The first category, is the reflective measurement model, which is the weighting estimate used to create the latent variable score, then the second category of formative measurement models reflects the estimated path connecting the latent variable and between the latent variable and its indicator block (charge). Further, the third category is structural models relating to the average variance and location of parameters (regression constant values) for indicators and latent variables. A summary of the data analysis index criteria can be seen in Table 1.

**Table 1.** Data analysis index criteria

| Kind | Index | Recommendation Value |
|---|---|---|
| | Indicator Load | > 0,708 |
| Reflective | Composite Reliability | > 0,70 |
| Measurement Model | Convergent Validity | AVE ≥ 0,5 |
| | Validity of Discriminants | HTMT < 0.90 |
| Formative | Statistical Significance | P-value < 0,50 (bootstrap) |
| Measurement Model | Statistical Relevance of Indicator Weights | Charge ≥ 0.50 |
| | Kolineritas (VIF) | < 0,3 |
| Structural Model | R square | 0.75 (good); 0.50 (moderate); and 0.25 (weak) |
| | Q square | weak (0); medium (0.25); large (0.50) |

Source: Ref. [16].

## C. Hypothesis Testing Procedure

Hypothesis testing in this study aims to measure the influence of free variables on bound variables. Cooper & Schindler, (2014) there are two types of hypotheses used in classical significance tests, namely the null hypothesis (H0) and the alternative hypothesis (Ha). Ho is a hypothesis that negates a research hypothesis, while Ha is a research hypothesis. Hypothesis testing in this study aims to measure the influence of independent variables on dependent variables. The general hypothesis testing procedure is as follows:

H0 = Independent variables have no positive effect on dependent variables, the statistical form of the null hypothesis is H0: $\beta = 0$.

Ha = Independent variables have a positive effect on dependent variables, the statistical form of alternative hypothesis is Ha: $b \neq 0$.

Test criteria: H0 is not supported if the critical ratio value is significant, greater than or equal to 1.96.

## Result

### A. Data Description

Data collection was carried out by distributing questionnaires to respondents through online dissemination using google forms and through whatsapp grub to reach a wider scope of respondents. The distribution of the questionnaire began on November 6, 2021 and ended on November 27, 2021. Of the total number of respondents obtained as many as 319, only 273 respondents' answers could be processed. The number of these 273 respondents has met the minimum requirements in determining the sample size in the structural equation model with 7 constructs in it, namely the minimum sample size is 137 respondents. The demographic characteristics of the study respondents are shown in Table 2.

**Table 2.** Characteristics of respondents

| Demography | Category | Frequency | (%) |
|---|---|---|---|
| Gender | Woman | 180 | 65. 9 |
|  | Man | 93 | 34. 1 |
| Age | < 18 | 14 | 5. 1 |
|  | 19-27 | 238 | 87.2 |
|  | 28-35 | 12 | 4.4 |
|  | > 35 | 9 | 3.3 |
| Education | High School | 42 | 15. 4 |
|  | Loss 1 (S1) | 212 | 77. 7 |
|  | Loss 2 (S2) | 18 | 6.6 |
|  | Loss 3 (S3) | 1 | 0.3 |
| Domicile | Jawa East | 44 | 16. 1 |
|  | West Java | 34 | 12. 5 |
|  | Central Java | 109 | 39. 9 |
|  | Jakarta | 17 | 6.2 |
|  | Yogyakarta Special Region | 64 | 23.4 |
|  | Banten | 4 | 1.5 |
|  | Bali | 1 | 0.4 |
| Income | Under Rp 1.000.000,- | 112 | 41.0 |
|  | IDR 1.000.000,- up to IDR 3.000.000,- | 97 | 35.5 |
|  |  | 34 | 12.5 |
|  | IDR 3.000.001,- up to IDR 5.000.000,- | 30 | 11.0 |
|  | Above Rp 5.000.000,- |  |  |
| Work | Professional | 8 | 2.9 |
|  | ASN/TNI/POLRI | 8 | 2.9 |
|  | Private Employees | 59 | 21.6 |
|  | Self employed | 6 | 2.2 |
|  | Businessman | 10 | 3.7 |
|  | Miscellaneous | 182 | 66.7 |

## B. Evaluation of Reflective Measurement Models

The SEM approach used in this study consists of three models, namely the reflective measurement model, the formative second-order measurement model , and the structural measurement model. Research using PLS-SEM is recommended to conduct an evaluation with the three models already mentioned. The first step in evaluating the results of PLS-SEM involves the examination of the reflective measurement model . The relevant criteria are different for reflective and formative constructions, if the measurement model meets all the required criteria, next the researcher needs to assess [15] the structural model [18].

In this study, the evaluation of the reflective measurement model consists of testing the validity and reliability of the indicators of each construct contained in the study. The construct validity test is carried out data processing with the help of the SmartPLS 3.0 program. In this study, there were two types of construct validity used, namely convergent validity and discriminant validity. After the two validity tests are met, then reliability testing is carried out for each research construct.

Based on the validity trial results previously described, there are several measurement items that have not met the minimum criteria for the validity test, but are still maintained for use because the AVE value in the validity trial results meets the criteria. After disseminating

data with a larger number of respondents, the authors decided to remove some measurement items whose validity values and AVE values did not meet the minimum criteria even though the number of respondents had been increased. Some measurement items that do not meet the criteria for validity are EUI4, EUI6, IP1, IP5. After deleting these items, a factor charge value is obtained that meets the convergent validity test criteria as stated in tabel 4. 2 with several indicators that have a factor charge value of less than 0.7, namely BFM_AGR2, BFM_CON1, BFM_CON2, BFM_NEU1, EUI5. According to in general, indicators with an external charge between 0.40 and 0.70 should be considered for removal from the scale by looking at the results of composite reliability or the extracted average variance (AVE) if it is above the recommended threshold value. Therefore, a validity test analysis is subsequently performed to see the results of the extracted average variance (AVE). The results of the first test validity test can be seen in [18] Table 3.

**Table 3.** The Extrasctioned Average Variance (AVE) Test

|  | Average Variance Extracted (AVE) |
|---|---|
| **Big Five Model** | 0.506 |
| **E-commerce Browsing** | 0.731 |
| **E-commerce Usage Intensity** | 0.601 |
| **E-commerce Impulse Purchase** | 0.647 |
| **Urge to Purchase** | 0.758 |

The result of the AVE value contained in Table 5 for all the constructs in this study, some have met the criteria, which is greater than 0.5. This means that the convergent validity test based on the factor charge and the AVE value has already been met, because on average the variance value described by each indicator present in each construct tested is greater than the error value on the construct, so that all existing indicators can explain its construct compared to other factors that are not measured in this measurement [19] .

**Table 4.** Calculation of Discriminant Validity

|  | BFM | ECB | EUI | IP | UP |
|---|---|---|---|---|---|
| **BFM** | **0.712** |  |  |  |  |
| **ECB** | 0.408 | **0.855** |  |  |  |
| **EUI** | -0.046 | -0.064 | **0.775** |  |  |
| **IP** | 0.409 | 0.777 | -0.048 | **0.804** |  |
| **UP** | -0.225 | -0.240 | 0.129 | -0.249 | **0.871** |

After conducting convergent validity testing, the next stage in the construct validity test is a discriminant validity test that aims to measure the extent to which a construct is completely different from one another. The high validity of discriminants provides evidence that a construct is unique and captures some phenomena that cannot be measured by any other

construct. The results of the calculation of convergent validity for each of the constructs contained in this study can be seen in Table 4.

Table 4 shows the result of the calculation of the validity of the discriminant by looking at the value of the Fornell-Larcker Criterion having a value greater than the value of the quadratic correlation between variables. A construct is said to have discriminant validity if the indicator has the highest loading value (AVE root) in its own construct group[15]. The value indicates that the validity of the discriminant has been fulfilled, so it can be concluded that each variable is able to explain something unique and different from one another.

## C. Reliability Test Results

After testing the validity of the construct, the construct reliability test is then carried out. Reliability tests are carried out to find out the extent to which the measuring instruments (instruments) used in research are consistent in measuring [17]. Composite reliability is considered to have reliability in presenting a measure of reliability in research using structural equation models. A construct can be said to have a good reliability value if it has a value greater than 0.7 [15]. The Reliability Test in this study was carried out using the help of the SmartPLS 3.0 analysis tool. Detailed data on the calculation of composite reliability shoewed that all constructs in this study have a composite reliability value of > 0.7 which indicates that all proposed constructs have good reliability.

## D. Formative Measurement Model Evaluation

The second step in evaluating the results of PLS-SEM involves the examination of the formative measurement model [15]. For constructs measured formatively, convergent validity is assessed by the correlation of the construct with alternative measures of the same concept and is already described in the evaluation of reflective measurement models.

At the testing stage of the formative measurement model, there is an evaluation based on the cholinearity of indicators using the variance inflation factor (VIF). According to the criteria of the VALUE OF VIF 5 or more indicates a problem of critical cholinearity among formatively measured constructive indicators. However, cholinearity problems can also occur at VIF values lower than 3. Ideally, the VIF value should be close to 3 and lower [15].

Result showed that overall the results of the VIF value in the study are below 5, so it can be concluded that the indicators in this study do not show critical cholinearity problems among the formative contrucive indicators of formatively measured BFM. Evaluation of reflective measurement models and formative second-order is important to do, since structural model testing cannot be carried out with poor measurement indicators. PLS-SEM has rules of thumb that serve as guidelines for evaluating model results. A good measurement model is essential

to provide an explanation of the construct being measured. The results of the estimation of the structural  model are presented in the form of a model chart on Fig. 2.
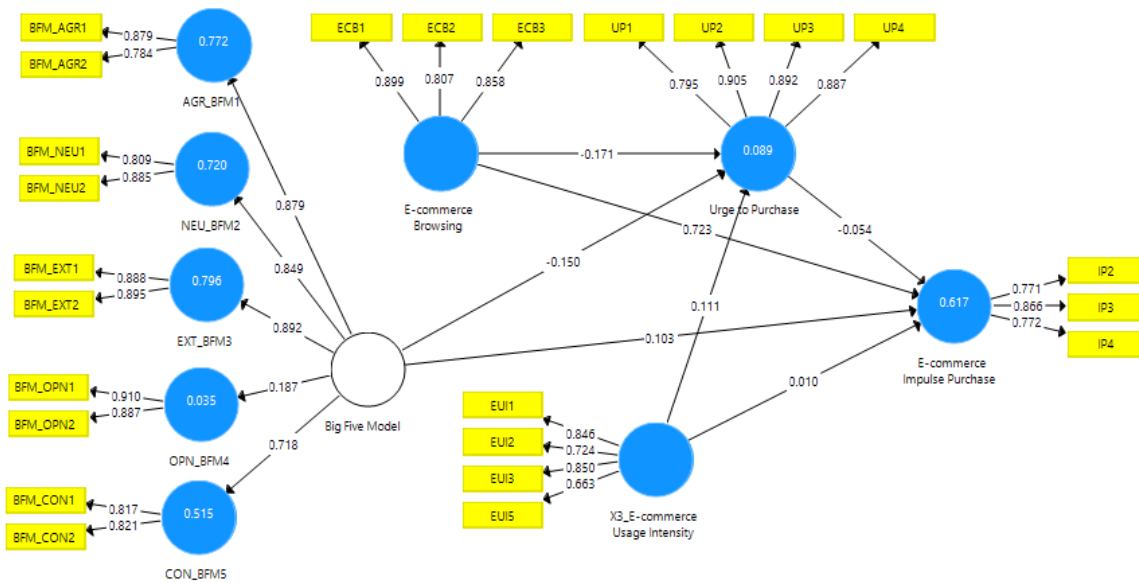


**Fig. 2.**  Outer Model

### E.  Structural Model Evaluation

Hypothesis testing in research using the PLS-SEM method is important to understand that adjusting the model to the sample data in order to get the best parameter estimates is by maximizing the variance described from endogenous latent variables [18].  There are stages that need to be carried out in the evaluation of structural models, namely the significance test of each path coefficient. Before carrying out these two stages, there are several assumptions in the structural equation model that must be met, including the following:

In general, the use of PLS-SEM has advantages for small sample sizes compared to other multivariate approaches related to the adequacy of sample validity and reliability of estimated results. The use of a sample size between 100 and 200 is considered to have met the requirements for applying the maximum likelihood estimation method. For a research model consisting of 5 constructs or less, the minimum recommended sample size is between 150 to 300 . The number of respondents in this study was 273 people, of which the number had met the recommended minimum sample size requirements related to the assumption of sample adequacy [16].

Evaluation of structural models can be done by looking at the co-efficiency of determination or R-square for dependent constructs and t-statistik  values of path coefficient testing. The higher the R-square value means the better the predictive model of the proposed research model. Coefficients are measurements of the prediction accuracy of the model and are calculated as a squared correlation between the actual value and the predictive value of a

particular endogenous variable [16]. The result of the coefficient of determination value in this study of 0.617 or equal to 61.7%, which means that the influence of the big five model, e-commerce browsing, e-commerce usage intensity and urge to purchase affects impulse purchase 61.7%. Therefore, the remaining 38.3% is explained by variables other than those in this study. Furthermore, the value of R Square of 0.089 or equal to 8.9% is the result of the influence of urge to purchase in explaining the variants of the big five model, e-commerce browsing, e-commerce usage intensity, in other words the variant of urge to purchase can be explained by other variables besides the three variables due to too weak a result.

The results of hypothesis analysis in the study can be known from the calculation of the model using PLS-SEM bootstrapping techniques. From the results of the bootstrapping calculation obtained the statistical t value of each relationship or path. Hypothesis testing with a significance level of 0.05. A hypothesis is acceptable if the statistical t-value is greater than 1.96. See Table 5 for the results.

**Table 5.** Path Coefficient Testing Results

|  | Original Sample (O) | T Statistics | P Values | Result |
|---|---|---|---|---|
| **ECB → UP** | -0.172 | 2.392 | 0.017 | Accepted |
| **EUI → UP** | 0.112 | 1.830 | 0.068 | Rejected |
| **BFM → UP** | -0.150 | 1.974 | 0.049 | Accepted |
| **UP → IP** | -0.052 | 1.258 | 0.209 | Rejected |
| **ECB → IP** | 0.728 | 21.876 | 0.000 | Accepted |
| **EUI → IP** | 0.009 | 0.185 | 0.853 | Rejected |
| **BFM → IP** | 0.100 | 2.350 | 0.019 | Accepted |
| **ECB→ UP → IP** | 0.009 | 0.997 | 0.319 | Rejected |
| **EUI → UP →IP** | -0.006 | 0.877 | 0.381 | Rejected |
| **BFM UP → IP** | 0.008 | 0.891 | 0.373 | Rejected |

Hypotheses 1. The results of data processing showed that the beta value obtained from hypothesis 1 testing was -0.172, with a critical ratio value of ≥ 1.96, which was 2,392. Based on these results, it can be concluded that Ho was rejected and Ha was accepted. Statistically, e-commerce browsing has a negative effect on the urge to purchase and is significant, so it can also be stated that H1 is supported by a p value < 0.05 or 0.017.

Hypothesis 2. The results of data processing show that the beta value obtained from hypothesis 2 testing is 0.112, with a critical ratio value of ≤ 1.96, which is 1,830. Based on these results, it can be concluded that Ho was accepted and Ha was rejected. Statistically, e-commerce usage intensity has a positive effect on the urge to purchase and is not significant, so it can also be stated that H2 is not supported by a p value > 0.05 or 0.068.

Hypothesis 3. The results of data processing show that the beta value obtained from hypothesis 3 testing is -0.150, with a critical ratio value of ≥ 1.96, which is 1,974. Based on these results, it can be concluded that Ho was rejected and Ha was accepted. Statistically, the big five models

have a negative effect on the urge to purchase and are significant, so it can also be stated that H3 is supported by a p value < 0.05 or 0.049.

Hypothesis 4. The results of data processing show that the beta value obtained from hypothesis 4 testing is -0.052, with a critical ratio value of ≤ 1.96, which is 1,258. Based on these results, it can be concluded that Ho was accepted and Ha was rejected. Statistically, urge to purchase has a negative effect on impulse purchases and is not significant, so it can also be stated that H4 is not supported by a p value > 0.05 or 0.209.

Hypothesis 5. The results of data processing show that the beta value obtained from hypothesis testing 5 is 0.728, with a critical ratio value of ≥ 1.96, which is 21,876. Based on these results, it can be concluded that Ho was rejected and Ha was accepted. Statistically, e-commerce browsing has a positive effect on impulse purchases and is significant, so it can also be stated that H5 is supported by a p value < 0.05 or 0.000.

Hypothesis 6. The results of data processing showed that the beta value obtained from hypothesis testing 6 was 0.009, with a critical ratio value of ≤ 1.96, which was 0.185. Based on these results, it can be concluded that Ho was accepted and Ha was rejected. Statistically, e-commerce usage intensity has a positive effect on impulse purchases and is not significant, so it can also be stated that H6 is not supported by a p value > 0.05 or 0.853.

Hypothesis 7. The results of data processing show that the beta value obtained from hypothesis testing 7 is 0.100, with a critical ratio value of ≥ 1.96, which is 2,350. Based on these results, it can be concluded that Ho was rejected and Ha was accepted. Statistically, the big five models have a positive effect on impulse purchases and are significant, so it can also be stated that H7 is supported by a p value < 0.05 or 0.019.

Hypothesis 8. The results of data processing show that the beta value obtained from hypothesis testing 8 is 0.009, with a critical ratio value of ≤ 1.96, which is 0.997. Based on these results, it can be concluded that Ho was accepted and Ha was rejected. Statistically, e-commerce browsing of impulse purchases through urge to purchase is positive and insignificant, so it can also be stated that H8 is not supported with a p value > 0.05 or 0.319.

Hypothesis 9. The results of data processing show that the beta value obtained from hypothesis testing 9 is -0.006, with a critical ratio value of ≤ 1.96, which is 0.877. Based on these results, it can be concluded that Ho was accepted and Ha was rejected. Statistically, the e-commerce usage intensity of impulse purchases through urge to purchase is negative and insignificant, so it can also be stated that H9 is not supported by a p value > 0.05 or 0.381.

Hypothesis 10. The results of data processing show that the beta value obtained from testing the hypothesis 10 is 0.008, with a critical ratio value of ≤ 1.96, which is 0.891. Based on these results, it can be concluded that Ho was accepted and Ha was rejected. Statistically, the big five

models against impulse purchase through urge to purchase are positive and insignificant, so it can also be stated that H10 is not supported by a p value > 0.05 or 0.373.

**Discussion**

The results of this study prove that e-commerce browsing has a significant effect on the urge to purchase. The results of the study are in line with those carried out by Ref. [12], show that there is a significant influence of browsing on the urge to purchase. Through browsing, one of them with the platform becomes a situational factor that can encourage impulsive purchases by consumers. This situation is caused because the internet has facilities in browsing for all circles of society [13]. So that it encourages people to shop anytime and anywhere. The more often consumers search for information (browsing) on online media, it affects the level of purchases impulsively in online stores. This is because consumers sometimes search for information on online media to add shopping references so that the possibility of a purchase impulse when the consumer is browsing relatif is high.

The results of this study prove that e-commerce usage intensity has an insignificant effect on the urge to purchase. The results of the study are different from previous studies conducted by Ref. [2] shows there is a significant positive influence between [20] usage intensity and urge to purchase. This result explains that if the higher the intensity of e-commerce use, it is likely that there will not be a strong impulse from within to make purchases on e-commerce shopping sites. This can be caused because with the low intensity of using e-commerce, users will look around the user's home page more often. With this, it can be predicted that the post or store in the e-commerce that is shared does not have a big influence on users in providing encouragement to make purchases.

The results of this study prove that the big five models have a significant effect on the urge to purchase. There is correlation between consumer response to product design and openness to experience does exist. The degree at which an individual feels an urge to acquire things that have an attractive design is how the "Response" scale is measured. The results of the study in line with those conducted by Ref. [12] show that there is a significant influence of the big five model factor on the urge to purchase. Through the picture of consumer personality as measured through the dimensions of the big five models, consumers get the impetus to make purchases of an object in the e-commerce environment.

The results of this study prove that urge to purchase has an insignificant effect on e-commerce impulse purchases. The results of the study have an inequality of the research carried out by Ref. [2] showed that urge to purchase has a significant positive effect on impulse purchases. This explains that consumers with a low drive to buy have no tendency to make a purchase compared to consumers whose level of drive to buy it is higher. The impulse to buy

becomes a variable that precedes the variability of impulse buying behavior. Based on the results of this research, it shows that e-commerce activities still do not have a big influence in providing encouragement to make purchases. This can be caused because the quality of information and also images of the content of each product is still unable to provide interest to users.

The results of this study prove that e-commerce browsing has a significant effect on e-commerce impulse purchases. The results of the study in line with those conducted by Ref. [12] showed that there was a significant influence of browsing on impulse purchases. This shows that when consumers on e-commerce platforms browse (search for information), there will be impulsive purchases. That is, the higher their level of information search, the higher the impulsive purchase rate will be. This happens because when someone is happy with looking through the content of the website, comparing products, looking for information, then without realizing it, the urge of the heart to buy arises by itself so that the possibility of an impulse purchase will also be higher. This happens because some Indonesian e-commerce platforms provide very large discounts.

The results of this study prove that e-commerce usage intensity has an insignificant effect on e-commerce impulse purchases. The results of the study have an inequality of the research carried out by Ref. [2] showed that there was a significant positive influence between usage intensity and impulse purchase. Where the development of technology makes consumers faster to shop online, because they no longer spend time on the way to the store, but simply via cellphone, and online purchases can be made anywhere and anytime. But online purchases can not always encourage someone to make purchases impulsively, because in online shopping, it could be that buyers think they cannot see and touch the goods directly to assess the quality of the goods and refuse to make purchases. This can be caused because with the low intensity of using an e-commerce platform, users will more often see products that are not in demand on the user's home page.

The results of this study prove that the big five models have a significant effect on e-commerce impulse purchases. These results are in line with the research of Ref. [12], showing that there is a significant influence of the big five model factor on impulse purchases. Personality is one of the factors that causes a person to make purchases unplanned. There are personality traits that explain individual differences. They will get low or high marks on certain dimensions. There is a personality influence on impulse purchases. Especially openness to change has a positive effect.

The results of this study prove that e-commerce browsing, e-commerce usage intensity, and the big five models have an insignificant effect on e-commerce impulse purchases through urge to purchase. The results of this study are different from previous studies [2] who

explained that there is a relationship between browsing, usage intensity and the big five personality model factor to impulse purchase. Urge to purchase is a strong desire to make a purchase that arises when facing an object and this desire is a condition that occurs before an impulsive purchase is made, but for e-commerce users who see a product continuously do not experience impulsive impulses. Highinformation searches affect impulsive purchase rates in certain situations. This is because consumers sometimes search for information on online media to add shopping references. One of the differences in these results is influenced by demographic factors. Age has a negative influence on impulse buying behavior, meaning that the older a person is, the lower the tendency to impulsive purchases. Another demographic factor that decreases purchasing behavior is income. Consumers who have higher incomes are shown to have more tendency to have impulsive purchasing behavior compared to those with low incomes. Low-income individuals tend to use Ecommerce not for purchases, but just to look at it or just to add shopping references. Facts have proved that a low-income individual is less likely to manage to buy all the goods he wants.

## Conclusion

The purpose of this study is to determine the factors that influence impulse purchase behavior in e-commerce users. Some of the new findings have been validated in the context of e-commerce. The results of the study found that e-commerce browsing and the big five models had a significant effect on the urge to purchase and impulse purchase. E-commerce usage intensity and urge to purchase have no effect on impulse purchase. In addition, there is no significant influence of the role of urgent to purchase mediation in e-commerce browsing, e-commerce usage intensity, and the big five model on impulse purchases. In summary, the findings of this study will allow practitioners to gain more insight and understanding of e-commerce while providing useful advice to e-commerce players in the drive to buy and impulse purchases among e-commerce consumers. For future research can add external factors such as situational factors. In addition, future research needs to add other variables such as lifestyle, seeing the existence of increasingly developing technology that encourages individuals to compete to show their social class.

## Conflict of Interest

Authors declare that there is no conflict of interest.

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