

Path Analysis Method to Identify Factors Affecting Consumer Interest on Online Shopping

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Abstract— Current research indicates that a novelty, exciting and engaging shopping experience can positively affect consumer buying behavior. Identifying factors that influence the consumer behavior on use a virtual world for shopping will help retailers to create and maintain a presence in a virtual world, while positive impacting purchases and returns intentions. Therefore, the objectives of this study are to understand what factors affect consumer intention to shop in a virtual world and to analyze the relationships among these factors. Particularly, this study explores consumer innovativeness (consumer novelty seeking and consumer independent judgment making) as an external variable that influences consumer intention indirectly through its effects on consumer experiences with the virtual world application (ease of use, control, concentration, and enjoyment). Path analysis method is used to identify the variable given significant influence to consumer intention to shop. The finding indicates that independent variables Consumer Novelty Seeking and Consumer Independent Judgment Making have influence to Perceived concentration, Perceived enjoyment, and Ease of Use. These three variables give significant influence to consumer intention to shop.

Keywords— *intention to shop; online shop; path analysis*

I. INTRODUCTION

The current technological developments bring many changes in the lifestyle such as use of gadgets in the virtual world on internet. Most frequently internet user activity is to access online shop. Someone uses online shop for buying and selling, marketing goods or services over electronic systems. Payments are done through a determined system and then goods will be shipped. Online shop began in 1990 when Berners-Lee team created a web browser (world wide web/www) which changed the telecommunication network into a global communications system, known as internet. First, use of the internet for commercial purposes is strictly prohibited by the National Science Foundation's (NSFNET) which is an internet backbone. At 1991 NSF remove the prohibition for commercial purposes and clearing the way for Electronic Commerce (e-Commerce) which has advantages in ease of service.

Indonesia has the highest percentage of internet users compared to other countries at Southeast Asia. Fig. 1 shows the

number of internet users across Southeast Asia. Indonesia has a large population, and the user of internet and mobile devices increase every year. At 2013, there were a total of 74.6 million internet users (netizen) in Indonesia. Indonesia's internet users have been growth at 20% per year. At 2016 the internet users will reach 102.8 million. This is due to the increasing spending power of the middle class [1].

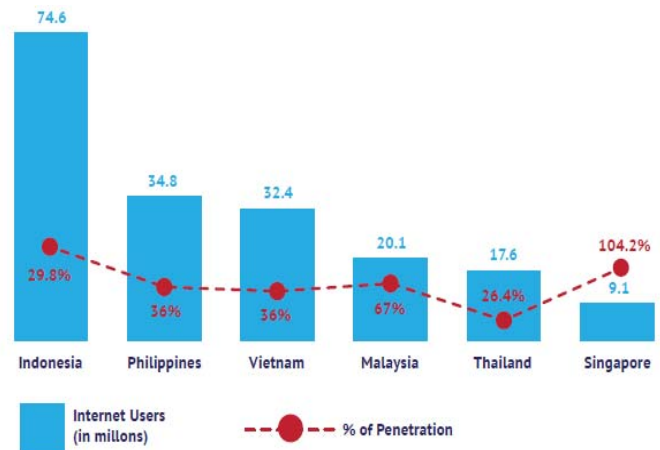


Fig. 1. Internet user across south East Asia 2013 [1]

Online shopping is more attractive for internet users because it is easy to use. Based on Mark plus Insight survey in 2013, number of netizens shop online reached 20%. This figure is greater than the previous year which only reached 15%. The majority of netizens who make transactions through the virtual world are women. A survey done by strategy and marketing consulting agency in Southeast Asia mentioned that women choose online shop for their activity. Most of the netizens who make transactions through e-commerce search for items such as clothes, shoes, and bags. Fig. 2 gives illustration about the percentage of popular online product categories. Most products are popular because a lot of product options, easy of transaction processing, and quick and easy delivery. Mark plus Insight explains that 80.7 % of respondents choose transfer between accounts as a method of payment, while those who choose the cash on delivery method reached 27.1%. This fact shows that the internet user confidence to do online shopping is increase.

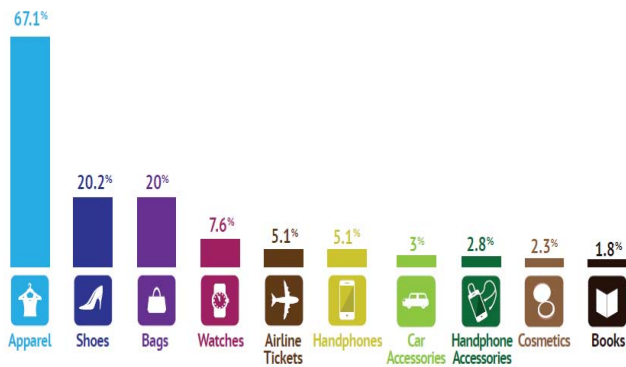


Fig. 2. Popular online product categories on 2013 for Indonesian consumer [1]

There are 70 million Internet users in Indonesia. The percentage of 20% netizen on online shopping enthusiasts still considered as a little [2]. Netizens are worried to transact via social media or online shop because they don't want to become the object of fraud. Mark plus Insight has recently published their latest research on Mark plus Netizen Insight Survey 2013, this market research obtains to explore technologies and the Internet market in Indonesia. Fig. 3 give a brief description about media used by consumer on online shopping.



Fig. 3. Percentage of Online Shopping Media

Fig. 3 shows that social media more popular for consumers than the e-Commerce site. Messenger Group and Social media (Facebook, Twitter, Instagram) are categorized as Social Commerce. This media is more popular than online shop. Research results said that Social Commerce is so popular because of its easy access. It can be found on Facebook, Twitter and others and no need to open a specific browser or type the specific URL of the online shop. All process and communication of a transaction are occurring within the social network sites. It is so much easy to use it for users who familiar on using social network sites. The trust factor and friendship on groups and social media largely determine the popularity of Social Commerce [3].

This research attempts to identify the factors that influence consumer interest in online shopping. The online shop as a case is Zalora online shop. Zalora is the largest and fastest growing online store in Southeast Asia [4]. The purpose of this study are (1) Identify the factors that affect consumer interest in online shopping, (2) Analyze the relationship between factors that influence consumer interest in online shopping, (3) Formulate recommendations for the online store Zalora to increase consumer interest. Current research indicates that a novel, exciting and engaging shopping experience can positively affect consumer buying behavior [5]. Consumer interest in virtual world has grown, and then academicians, companies and marketers have focused attention on consumers as they negotiate a virtual marketplace resulting in an active body of research.

II. RESEARCH METHOD

A. Conceptual Model

Research on determine or identify variables which gives influence to the consumer intention to shop is a part of psychology study. Intentions which perform behaviors of different kinds can be predicted with high accuracy from attitudes toward the behavior, subjective norms, perceived behavioral control. These intentions together with perceptions of behavioral control are account for considerable variance in actual behavior. Attitudes, subjective norms, and perceived behavioral control are shown to be related to appropriate sets of salient behavioral, normative, and control beliefs about the behavior, but the exact nature of these relations is still uncertain [6].

Online shopping is one way on using internet advantage. Present research develops and validates new scales for two specific variables, perceived usefulness and perceived ease of use, which are hypothesized to be fundamental determinants of user acceptance on information technology. Perceived usefulness is defined here as "the degree to which a person believes that using a particular system would enhance his or her job performance." This follows from the definition of the word useful: "capable of being used advantageously." Perceived ease of use, in contrast, refers to "the degree to which a person believes that using a particular system would be free of effort." This follows from the definition of "ease": "freedom from difficulty or great effort." Effort is a finite resource that a person may allocate to the various activities for which he or she is responsible. All else being equal, we claim, an application perceived to be easier to use than another is more likely to be accepted by users [7].

Consumer innovativeness, consumer novelty seeking, consumer independent judgment making are external variable that influences consumer intention indirectly through its effects on consumer experiences with the virtual world application (ease of use, control, concentration, enjoyment) [8]. Indicators of consumer interest on online shopping for this research are generate based on the Domina variables as an assessment tool for this research. Indicators are listed in Table I.

TABLE I. RESEARCH VARIABLES AND INDICATORS

Indicators of Consumer Novelty Seeking (CNS)	Code
Looking for new product information	CNS1
Visit the site to get new products	CNS2
Liking magazine that introduces new brands	CNS3
Looking for new products	CNS4
Looking for products in different sources	CNS5
Looking for a new product experience	CNS6
Trying to get more info early	CNS7
Indicators of Consumer Independent Judgment	Code
Consult with friends	CIJM1
Rarely ask for advice a friend	CIJM2
Do not rely on friends who have tried	CIJM3
Interested in using new products	CIJM4
Provide information about new products	CIJM5
Indicators of Perceived Concentration (PC)	Code
Interest in online stores display	PCt1
Interest in the goods sold	PCt2
Concentration in this activity	PCt3
Intensity visit online shops Zalora	PCt4
Indicators of Perceived Enjoyment	Code
The pleasure of shopping in the online store Zalora	PE1
Enthusiastic shopping at online stores Zalora	PE2
Shopping at the online store Zalora quite	PE3
Shopping at the online store Zalora quite	PE4
Shopping at the online store Zalora quite funny.	PE5
Indicators of Perceived Ease of Use	Code
Zalora online store site is easy to learn	PEoU1
Interaction in the online store Zalora is clear	PEoU2
Skills in using the Zalora online shop site	PEoU3
The purchasing process at Zalora online shop is	PEoU4
Indicators for Consumer Interest	Code
Recommend Online Store Zalora to friends	IS1
I will visit the Zalora Online Store again	IS2
The possibility of online shopping in Zalora stores	IS3

Variables on consumer intention to shop model in online shopping are:

1. Consumer Novelty Seeking (CNS) is a consumer desire to try new things, buy new products and searching for new product information [9].
2. Consumer Independent Judgment Making (CIJM) is the ability and likelihood of consumers to make purchasing decisions independently or influenced from outside [9].
3. Perceived Concentration defined as the intensity of focus and attention given to the task at hand [10].
4. Perceived Enjoyment can be defined using the virtual world is considered fun despite the effects of their use [11], [12].
5. Perceived Ease of Use is business users while using technology. Perceived Ease of Use constitute individual differences based on knowledge, ability and prior experience [12].

Consumers who satisfy will recommend online store to their friends, also will visit the website again and again. Consumer's perceived enjoyment and control positively influenced consumer shopping intention while consumer novelty seeking had no significant effect on shopping intention [8]. This research tries to test the model on consumer of online shopping from Indonesian internet users.

Path analysis method used to analyze the data from questionnaire. Path analysis was used to analyze the relationships pattern between variables to determine the direct and indirect effects of a set of independent variables (exogenous) to the dependent variable (endogenous). Path analysis will find where the most appropriate path and which exogenous variables related to the endogenous variables.

B. Sampling Method and statistic test

This study uses a population of people who have ever shopped online at Online Stores Zalora. Samples from this study are some people who have shopped online in the online store Zalora. Data collected by used a simple random sampling technique. Questionnaire distribution and data collection was conducted from November 16, 2014 to December 8, 2014 and get 320 respondents. Collected data were tested by statistic test such as:

- validity test
- reliability test
- Kolmogorov-Smirnov test for normal distribution test.
- Multi co-linearity test
- Linearity test
- Auto correlation test

After past all tests, then begin to process the data on Path Analysis methods using regression analysis.

III. RESULT AND DISCUSSION

A. Validity Test of Research Questionnaire

Construct validity test is performed to determine whether the questions contained in the questionnaire good enough to measure the desired variables. Construct validity is determined by correlating between the value obtained from each of the questions with a total score. The total score is the sum of all scores of all questions. The correlation value then compared to the value of r table on degrees of freedom ($n-2$). If the value of r from the calculation is greater than r from table, it can be concluded that the questions are valid. Validity test result shows that r value of all variable are greater than r table (0.11). It can be concluded that the question item used in the study are valid.

B. Reliability Test

Reliability test was conducted to determine the consistency of the measurement results if the device (questionnaire) used by the same person in a different time or used by different people at the same time. Result of reliability test describe on Table II.

TABLE II. RELIABILITY TEST RESULT TABLE STYLES

Variable	Cronbach's Alpha
CNS	0.71
CIJM	0.63
PCt	0.64
PE	0.87
PEoU	0.71
IS	0.71

Reliability determined by Cronbach's Alpha value of each variable. The value will determine whether the variables used have a low, sufficient, or high reliability. Cronbach's Alpha value result of the research variables can be classified as reliable if the value is above 0.6 [13]. Table II shows that all Cronbach's Alpha value of variable is above 0.6. It can be concluded that the data used in the study reliable.

C. Regression Analysis

Regression analysis is used to analyze the relationship between variables - variables that affect Intention to shop. Value of significance from regression analysis determines whether or not a relationship. Significance < 0.05 means that there is a relation between two variables. Table III shows the results of the significant value of each variable.

TABLE III. REGRESSION ANALYSIS RESULTS OF INDEPENDENT VARIABLE TO MEDIATOR VARIABLES

Variable	Concentration	Enjoyment	Ease of Use
CNS	0.000	0.000	0.000
CIJM	0.000	0.004	0.022

Table III shows that the independent variables influence the mediator variable because the value of significance greater than 0.05. The regression analysis results show that independent variables Consumer Novelty Seeking and Consumer Independent Judgment Making (CIJM) have influence to some mediator variables because it has sig. value 0.000 less than 0.05. Mediator variable which influenced by CNS are:

- Perceived concentration
- Perceived enjoyment
- Ease of Use

Table IV shows that the all mediator variables (Concentration, Enjoyment, Ease of Use) have affect the intention to shop variable for sig. < 0.05. Regression analysis also gives r value. The model's hypothesis on consumer's intention to shop and r value for each variable are described in Fig. 4. Fig. 4 describes that independent variable gives influence to mediating variable. Mediating variables have influence to consumer shopping intention.

TABLE IV. REGRESSION ANALYSIS RESULTS OF MEDIATOR VARIABLE TO THE DEPENDENT VARIABLE

Variable	Intention to Shop
Concentration	0.014
Enjoyment	0.000
Ease of Use	0.000

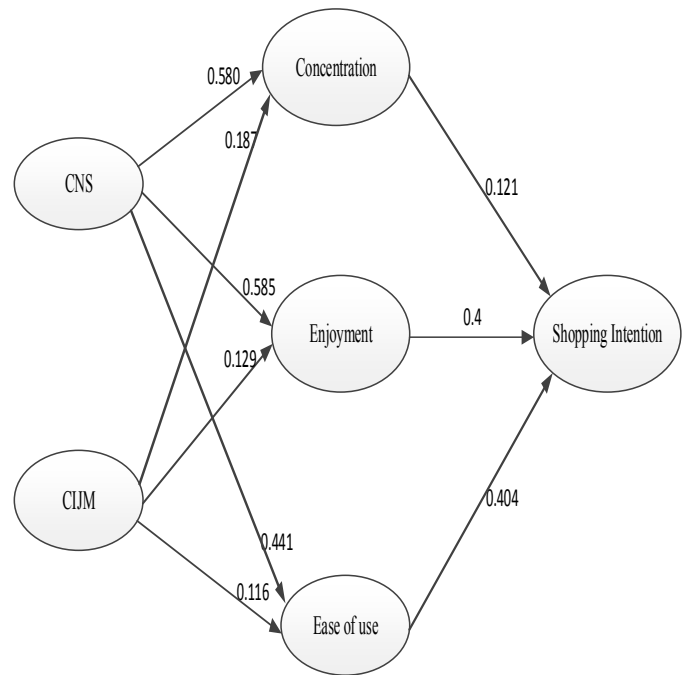


Fig. 4. The Model of Consumer Intention to Shop

D. Sobel Test

Sobel test can be used to determine the presence or absence of a mediating influence the mediator variable Perceived Concentration. Sobel Test is conducted to determine the effect of a mediator variable. Sobel test is done by testing the strength of the indirect influence independent variable X to the dependent variable Y through a mediating variable M. The indirect effect of X to Y through M is calculated by multiplying the path X → M (a) with lane M → Y (b) or ab.

Standard error for coefficients a and coefficient b is written with Sa and Sb. Standard error of the magnitude of indirect effect Sab calculated using (1).

$$Sab = \sqrt{b^2Sa^2 + a^2Sb^2 + Sa^2Sb^2} \tag{1}$$

To test the significant indirect effect then calculates the value of the coefficient t ab using (2).

$$t = ab / Sat \tag{2}$$

Then, t value compared to the value of t table (less or equal to 1.96). If the value of t is greater than t table, it can be concluded that an effect of mediation variable take place.

1) Sobel Test Result of Perceived Concentration

Sobel test results for Perceived Concentration presented in Table V.

TABLE V. RESULTS RECAP VARIABLE INDIRECT INFLUENCE PERCEIVED CONCENTRATION

Variable	t value	t table (sig 0,05)
CNS	9.14	1.96
CIJM	4.16	1.96

Table V shows that variable Consumer Novelty seeking and Consumer Independent Judgment Making variables are mediated by perceived concentration, because the results of Sobel Test t value for each variable are 9.14 and 4.16 (greater value than t table).

2) Sobel Test of Perceived Enjoyment

Sobel Test can be used to determine the presence or absence of a mediating influence the mediator variable Perceived Enjoyment. Sobel test calculation results presents in Table VI.

TABLE VI. VARIABLES GIVE INDIRECT INFLUENCE TO PERCEIVED ENJOYMENT

Variable	t value	t table (sig 0,05)
CNS	10.79	1.96
CIJM	2.64	1.96

Table VI shows that variable Consumer Novelty Seeking and Consumer Independent Judgment Making mediated by variable Perceived Enjoyment, because of Sobel test results obtained t value for each variable at 10.793 and 2.64 (greater value than t table).

3) Sobel Test Result of Perceived Ease of Use

Sobel Test the mediator variable Perceived Ease of use calculation results presented in Table VII.

TABLE VII. RESULTS SOBEL TEST FOR VARIABLE *PERCEIVED EASE OF USE*

Variable	t value	t table (sig 0.05)
CNS	8	1.96
CIJM	2.3	1.96

Table VII shows that variable Consumer Novelty Seeking and independent variables Judgment Making mediated by Perceived Ease of Use, because of Sobel test results obtained t value for each variable by 8 and 2.3 whose value is greater than t table.

E. Recommendation for Zalora Online Store

Identifying factors that influence use of a virtual world for shopping will help retailers create and maintain a presence in a virtual world, while positively impacting purchase and return intentions. Therefore, the objectives of this study were to understand what factors affect consumer intention to shop in a virtual world and to analyze the relationships among these factors.

Statistic descriptive data can be used to identify which indicators have low value. Low value indicates that this indicator need to be improve to increase consumer intention to shop. Table VIII shows the result of mean and deviation from standard for indicators and for variables. All indicators have a value under 3 of 5 scale. This values mean that consumers perceived on these indicators is not good. Perceived concentration has the lowest mean value among all variables.

Indicator has the lowest mean value is concentration in this activity and visit intensity to online shops Zalora.

TABLE VIII. MEAN AND DEVIATION STANDARD OF INDICATORS

Var	Code	Mean	Std. Deviation	Sign
Perceived Concentration Mean 2.67	PCt2	2.95	0.54	0.012
	PCt1	2.8	0.57	
	PCt3	2.46	0.75	
	PCt4	2.34	0.76	
Perceived Enjoyment Mean 2.72	PE4	2.86	0.62	0.000
	PE5	2.78	0.62	
	PE3	2.77	0.65	
	PE1	2.67	0.69	
	PE2	2.53	0.68	
Perceived Easy for Use Mean 2.84	PEoU4	2.96	0.63	0.000
	PEoU2	2.92	0.63	
	PEoU1	2.87	0.64	
	PEoU3	2.61	0.71	

Table VIII also shows that all variables give influence to consumer Intention to shop. The averages of customer perception on all variables are less than 3, categorize as low. Recommendation for Zalora shop to increase consumer concentration on exploring Zalora shop is to give a space in a website which profitable for customers, such as simple games or quizzes with prizes. While consumers in the process of finding, selecting, and pay of the purchase of the product, they should play that game. This makes the customer comfortable when exploring the Zalora's site. Second recommendation gives to increase consumer intensity visit the online shops website, the online shop should give discount rate periodically or on certain period known by consumer. The online shop also recommends publishing a new product periodically on certain time known by consumer. This activity will make consumer visit the website more often.

Recent research has provided more insight in to user acceptance of internet services, one of the models is "intention based model". Intention based model construct of Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB) [14]. TAM specifies two variables, perceived ease of use and perceived usefulness as determinants of attitude towards behavioral intention [7]. This research also finds that perceived ease of use gives influence to consumer intention.

Consumer's attitude analysis on internet based e-shopping shows that some variables have significant effect to willingness to e-shop on the internet for of Singapore consumers. These variables are (1) the life content of products, (2) transactions security, (3) product price, (4) vendor quality, (5) IT education and (6) internet usage [15]. This technical and operational variable will be interesting for future research to complete the model of consumer intention to shop on online shopping.

IV. CONCLUSION

Research result found that factors affect to consumer interest in Zalora online shopping are (1) Perceived Concentration, (2) Perceived Enjoyment and (3) Perceived Ease of Use. Variables that have the greatest influence to the consumers to shop online are Perceived Ease of Use and Perceived Enjoyment. Perceived Ease of Use, Perceived Enjoyment and Perceived Concentration become a mediator variable between Consumer Novelty Seeking and Consumer Independent Judgment Making.

Recommendations are given to increase consumer interest in online shopping. Recommendations to increase Perceived Concentration: goods displayed on web are the real condition of the good; the website is simple, a lot of discounts and promos. Recommendations to increase Perceived Enjoyment: products offered is the latest product, the price offered in accordance with the quality of the goods, the appearance of the color display and fonts or forms the column should be regularly upgraded or renewed, the booking procedure is Cash on Delivery (COD) which are goods directly given to the consumers address. Recommendations to increase Perceived Ease of Use: reservations may be easier with a few click assessed and no need for additional applications such as shipping verification through SMS. Customers also expect the format shown is not difficult to be assessed.

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