Differences in Drives of Online Shopping Intention Between Young and Middle-Aged Adult Through The Application of UTAUT Model and Gender as a Moderation Variable

1) *Femmy**,2) *Yudin Wahyudin*,3) *Dudi Awalludin*, 4) *Darya*
1) STMIK ROSMA, Karawang, 2) STMIK ROSMA, Karawang,3) STMIK ROSMA,Karawang, 4)STMIK ROSMA, Karawang
1) femmy.effendy@dosen.rosma@ac.id , 2) yudin.@dosen.rosma.ac.id , 3) dudi@dosen.rosma.ac.id , 4) darya@dosen.rosma.ac.id

Abstract

The use of the internet by middle-aged people has recently shown a substantial and massive increase thus brewing an interest in middle-aged internet users to be considered as a potential market in the era of trade that utilizes technology. However, there are hardly any research that focuses on consumers in this age range; researchers still prioritize the market of young adult as they are considered as the most active and engaged internet users. Based on this explanation, this research was conducted to examine and understand the driving factors that affect the intention of middle-aged consumers to shop online and to bridge the gap between researches available and the market's interest in middle-aged people as online consumers. This research integrates the Unified Theory of Acceptance and Use of Technology (UTAUT) as a drive factor by comparing young to middle-aged consumers and gender moderation. Through the use of Partial Least Squares-Structural Equation Modeling, the findings show that the main factor that drives middle-aged people's intention in shopping online is Social Influence while among young adults, the drive is coming from Performance Expectation. The findings also show that gender difference does not affect the driving factors in the two groups.

Keywords: Online Shopping, UTAUT, Middle-Aged

1. INTRODUCTION

In the last two decades, online shopping has become one of the most widely used choices in transactions, ranging from purchasing fashion products, household appliances, electronics, flight tickets, and others. The large selection of online stores or market places such as Amazon and Alibaba in the global market or Tokopedia and Bukalapak in the Indonesian domestic market makes online transactions grow rapidly.

The development of the internet and its subsequent easy access to information about product or service through wifi or other devices, changes in consumer behavior, untroublesome transactions, and also comfort and trust in the price offered is their own attraction the buyers.

The growth of online shopping in Indonesia can be seen from the increase in e-commerce sales growth below, Figure 1.1. to show e-commerce sales growth in Indonesia compared to India and globally.

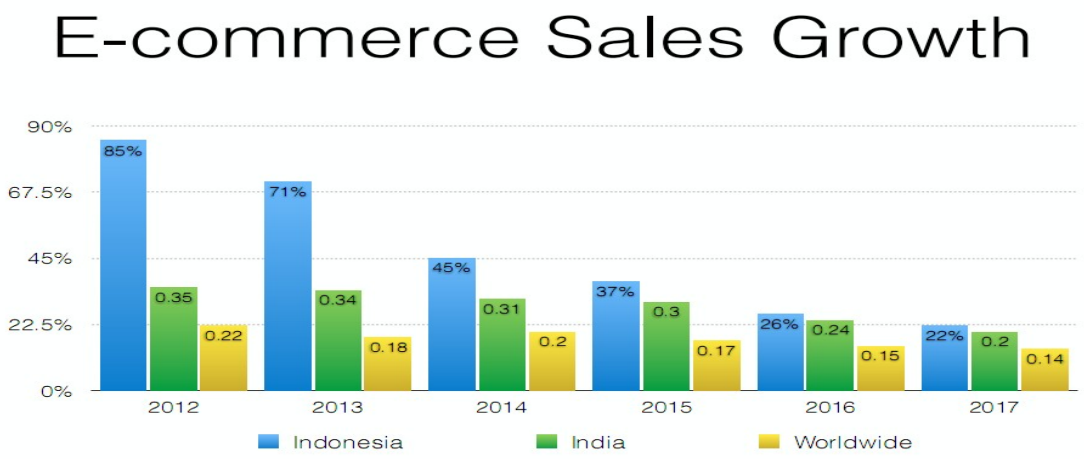

Figure 1.1. Predictions of growth in e-commerce sales in Indonesia - India – Global

Seeing the huge growth in sales through online shopping, online businesses try to make it easier for users to transact by creating websites that are easy to use for all people (user friendly).

So far young people are considered the main market for the use of Information and Communication Technology (ICT) (Selwyn, 2004). Many studies relating to the use of ICT focus only on young people. Likewise, the reasearches on the use of technology to do online shopping also mainly focus on young people. Meanwhile, research that is oriented towards adult technology users, is rarely done, even though economically, this age has the most potential regarding market share, given the age of adulthood is the age group that has the most income compared to the age group above it that is already full of work or below whose income tends to be less. Although young people are more active online than their older counterparts, the online skills of older adults are becoming

more and more sophisticated, even reaching the same level of ability of young people. In other words, older adults are likely to be more active online in the future.

From various models of user acceptance of existing technology, the Technological Acceptance Model (TAM) model is the most commonly used model (Shin, 2009; Lee, et al, 2010). According to Malhotra and Galletta (1999), TAM is incomplete because it does not consider one important factor, namely social influence in the use and utilization of new technology. TAM also does not consider obstacles that prevent individuals from using the particular system that they actually want to use (Mathieson et al. 2001). The development that emerges after TAM is the Unified Theory of Acceptance and Utilization of Technology (UTAUT). UTAUT was built by Venkatesh, et al (2003) as a unified of eight existing and published revenue models, namely Theory of Reason Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), Combined TAM and TPB (C-TAM-TPB), Innovation Diffusion Theory (IDT), Social Cognitive Theory (SCT), Motivational Model (MM), and Model of PC Utilization (MPCU).

2. METHODOLOGY/RESEARCH METHODS

The analysis model in this study can be seen in Figure 2.1, where there is one dependent variable, namely Online Shopping Intention. There are also four independent variables, namely performance expectancy, effort expectancy, social influence and facilitating conditions as drivers factors and gender as moderating variable, of which is described in the form of relationships to be analyzed. Whereas the measurement scale used in the study is Item measurement for online shopping intentions developed by Venkatesh et al. (2003). All measurements use a five-point Likert scale varying from 1 (strongly disagree) to 5 (strongly agree). Higher values indicate higher driving force and lower resistance.

In addition, each variable is labeled and abbreviated as follows: performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC), as drivers.

Table 2.1 Research Instrument

Dimensi	Variabel	Quiz	Sumber

on			
Driver	Performance expectancy	3 4	Venkatesh et Venkatesh et al. (2003)
	Effort expectancy	3	Venkatesh et Venkatesh et al. (2003)
	Social influence	4	Venkatesh et Venkatesh et al. (2003)
	Facilitating conditions		
Intention	Online Shopping Intention	3	Venkatesh et Venkatesh et al. (2003)

This study uses a model as a theoretical framework, namely UTAUT and Innovation resistance theory. In this study the model used is modified in such a way, with the aim to strengthen research that has been done before, modification of the research model as shown in fig 2.1

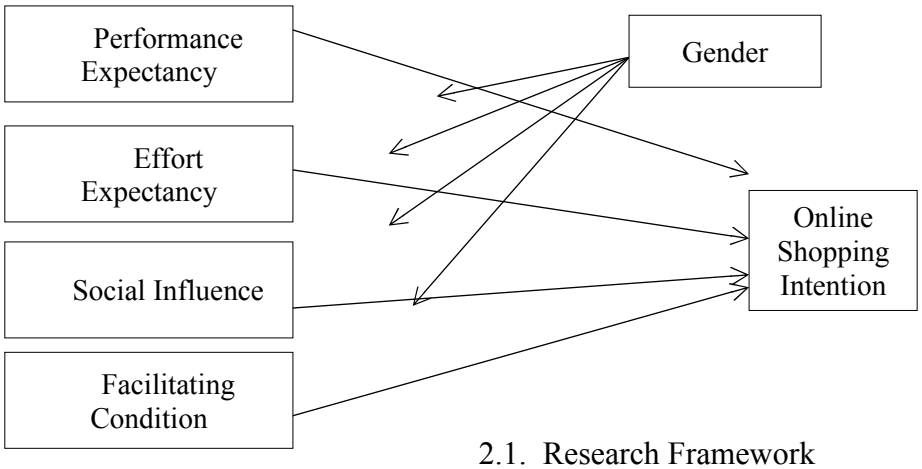

Figure 2.1. Research Framework

The research model illustrates that in the two groups analyzed there are influences from a number of factors such as performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) that act as drivers for Online Shopping Intention (OSI) with Gender as a moderator variable which will then be analyzed using SEM PLS analysis tools. This research was conducted in a period of less than 6 months, so this study used a cross sectional method, which is a research method by studying objects in a certain period of time (not sustainable in the long term), according to Creswell (2012: 217). The sampling technique used in this research is purposive sampling. According to Sugiyono (2010), purposive sampling is a technique for determining research samples with certain considerations aimed at making the data obtained later more representative.

The results of the calculation of the number of samples from the entire population were taken from the population of the Indonesian online shop facebook community with 665 members (11 November 2019), but there were only 205 active accounts registered in the admin so that by using the Slovin formula with a margin of error of 5%, the minimum number of samples collected was 133, and respondents who actually responded were 144.

$$n = \frac{N}{1 + Ne^2}$$

n: minimum number of samples
N: total population
e: error margin

This study uses SEM PLS which is a multivariate statistical technique that can handle multiple response variables and explanatory variables at the same time. This analysis is a good alternative to the method of multiple regression analysis and principal component regression, because this method is more robust and invulnerable. Robust means that the parameters of the model do not change much when new samples are taken from the total population (Geladi and Kowalski, 1986). Partial Least Square is a predictive technique that can handle many independent variables, even if they occur.

According to Wold, PLS is a powerful analysis method because it is not based on many assumptions or conditions, such as normality and multicollinearity tests. The method has its own advantages, among others: data does not have to have a multivariate normal distribution. Even indicators with a scale of data categories, ordinal, intervals to ratios can be used. Another advantage is the sample size does not have to be large.

This study uses two models, which are separated between the sample group of respondents aged under 40 years and aged 40 years and over, so that the hypothesis test is carried out twice and made a comparison table, while the data validity and discriminant tests are taken from the total available sample meanwhile the validity of data and discriminant is tested from all samples available.

2.1 Research Hypothesis

This study hypothesizes the relationship between independent variables consisting of performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC), as driving factors and online shopping intention as dependent variable that is based on the framework of thinking, by including the gender variable as a moderating variable pictured in Table 2.2

Table 2.2.Research Hypothesis

No	Hypothesis
H1a	Performance Expectancy has a positive and significant impact on online shopping Intention
H2a	Effort Expectation has a positive and significant effect on online shopping Intention
H3a	Social Influence has a positive and significant effect on online shopping Intention
H4a	Facilitating condition has a positive and significant effect on online shopping Intention
H1b	Performance expectation in middle age has a positive and significant effect on online shopping intention with gender moderators
H2b	Effort expectations in middle age have a positive and significant effect on online shopping intention with gender moderators
H3b	Social Influence in middle age has a positive and significant effect on online shopping intention with gender moderators

No	Hypothesis
H4b	Facilitating conditions in middle age have a positive and significant effect on online shopping intention with gender moderators
H5	Young People and Middle Age are different driving factors (drivers) to online shopping intention

3. LITERATURE REVIEW

3.1. *Unified Theory of Acceptance and Utilization of Technology* (UTAUT).

UTAUT is one of the latest technology acceptance models developed by Denktash, et al. UTAUT combines the successful features of eight leading technology acceptance theories into one theory. The eight leading theories united in the UTAUT are theory of reasoned action (TRA), technology acceptance model (TAM), motivational model (MM), theory of prohibited behavior (TPB), combined TAM and TPB, model of PC utilization (MPTU), innovation diffusion theory (IDT), and social cognitive theory (SCT). UTAUT proved to be more successful than the eight other theories in explaining up to 70 percent of user variants (Venkatesh, et al, 2003). After evaluating the eight models, Venkatesh et al. found seven constructs that appeared to be a significant direct determinant of behavioral intention or use behavior in one or more of each model. These constructs are performance expectancy, effort expectancy, social influence, facilitating conditions, attitude toward using technology, and self-efficacy. After that discovery, Venkatesh et al. also finds four main constructs that play important roles as direct determinants of behavioral intention and use behavior, namely performance expectancy, effort expectancy, social influence, and facilitating conditions. Others are not as significant so they are not considered direct determinants of behavioral intention. In addition there are also four moderators: gender, age, voluntariness, and experience. The moderators are positioned to moderate the impact of the four main constructs on behavioral intention and use behavior. Figure 3.1. shows the interrelationship between the determinants and moderator of this moderator.

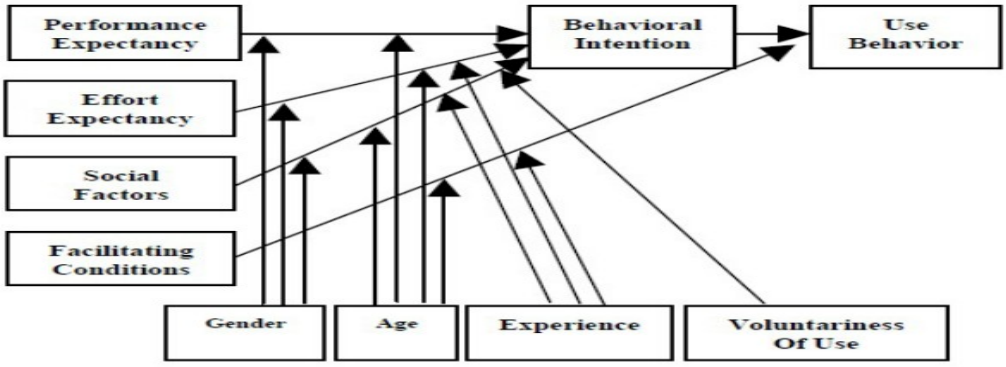

Figure 3.1.

Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003).

4. RESULTS AND DISCUSSION

4.1. Profile of Respondents

Data collection was carried out during November to December of 2019. Questionnaires made in the form of Google Form were distributed to the Karawang shop facebook online community with 665 members (11 November 2019), but only 205 members registered active accounts in the admin, so the population sample was determined as 133 respondents from the total population by referring to the sampling method with the Slovin formula for the testing method using SEM PLS. The results of the collected samples totaled 146 of the 133 expected, there were 2 samples that were not used. The sample data that is processed consists of 144 samples, with a total of 31 questionnaires distributed directly.

Characteristics of respondents can be seen from the two tables below:

Table4.1.

Distribution of respondents based on gender

Middle Aged (> 40)			Young Adult Age (<= 40	
Gender	Frequency	Percentage	Frequency	Percentage
Men	32	46.37%	28	37.33%
Women	37	53.63%	47	62.67%

Table4.2.

Distribution ofrespondent based on age

Age Range	Frequency	Percentage
18 years - 25 years	24	16.67%
26 years - 35 years	34	23.61%
36 Years - 40 years	17	11.80%
More than 40 years	69	58.28%

4.2. Validity and reliability

Because the measurements in this study were modified and/or narrowed from previous studies, validity and reliability were tested. The acceptable threshold for the cut of value reliability (CR) is> 0.7 and for the average variance extracted (AVE) is> 0.5. In addition, Nunnally (1978) shows that the minimum threshold for Cronbach is 0.5 or 0.6, therefore the threshold for Cronbach alpha in this study is> 0.6. In Table 5.3. Shows Cronbach alpha value> 0.05, so that all research instruments are considered valid and composite reliability values> 0.7 are all considered reliable.

Tabel 4.3. Validity dan Reliability

	Cronbach's Alpha	Factor Loading	Composite Reliability	Average Variance Extracted (AVE)	R2
PE	0.873	0.752-0.889	0,920	0,793	NA
EE	0.834	0.746-0.875	0,890	0,671	NA
SI	0,842	0.767-0.937	0,773	0,538	NA
FC	0.710	0.853-0.857	0,823	0,544	NA
OSI	0,690	0.849-0.904	0,865	0,762	0,412

4.3. Discriminant Validity

Table 4.4. shows the discriminant validity among the constructs used. Because the diagonal value is greater than other related values, the construct shows acceptable discriminant validity. Discriminant validity refers to the degree of discrepancy between attributes that should not be measured by the measuring instrument and theoretical concepts about the variable. Discriminant validity can also be calculated by comparing square root of average variance extracted (AVE) values. If the value of √AVE is higher than the correlation value among latent variables, then discriminant validity can be considered achieved. Discriminant validity can be said to be achieved if the AVE value is greater than 0.5.

Table 4.4. Diskriminant Validity Fornell-Larcker Criterion

Discriminant Validity Fornell-Larcker Criterion

	PE	EE	SI	FC	OSI
PE1	0.752				
PE2	0.876				
PE3	0.889				
EC1		0.857			
EC2		0.778			
EC3		0.746			
EC4		0.823			
SI1			0.874		
SI2			0.937		
SI3			0.767		
FC1				0.853	
FC2				0.855	
FC3				0.857	
FC4				0.856	
OSI1					0.904
OSI2					0.849
OS3					0.826

4.4. Hypothesis Test

To test the proposed hypothesis, two partial partial squares (PLS) models (Ringle, Wende, & Will, 2005) were analyzed to verify the research hypothesis. Data from the age group of 40 years old and above are made in Model 1 and data from younger age groups is used in Model 2. The results of the hypothesis test are illustrated in Table 4.5.

Table4.5 Analysis of Hypothesis Tests

No	Hypothesis	Middle-Aged (R^2 = 0.543)			YOUNG (R^2 = 0.558)		
		p value	t	Influence	**p value**	t	Influence
H1a	*Performance Expectancy - online shopping Intention*	0.018	0.628	NO	0.026	2.233	YES
H2a	*Effort Expectation - online shopping Intention*	*0.589*	*0.541*	NO	0.369	0.900	NO
H3a	*Social Influence - online shopping Intention*	*0.018*	*2.336*	*YES*	0.624	0.546	NO
H4a	*Facilitating Condition -online shopping Intention*	*0.320*	*0.749*	*NO*	0.728	0.348	NO
H1b	*Performance expectation -online shopping intention (moderating)*	*0.679*	*0.414*	*NO*	*0.679*	*0.414*	*NO*
H2b	*Effort Expectation - online shopping Intention(moderating)*	*0.788*	*0.270*	*NO*	*0.458*	*0.370*	*NO*
H3b	*Social Influence - online shopping intention (moderating)*	*0.733*	*0.342*	*NO*	*0.763*	*0.442*	*NO*
H4a	*Facilitating Condition -online shopping Intention(moderating)*	*0.840*	*0.076*	*NO*	*0.940*	*0.084*	*NO*

P <0 .05 (influential and signficant)

Table 4.6.Drivers and barriers between two age groups

Middle age	Young Adult
Driver (1) Social influence	Driver (1) Performance expectation

H5	There are differences in drivers in age differences	Proven

To understand age differences, an independent sample test was performed and the results of the analysis are shown in Table 5.6. From Model 1 we can find that the main driving factor (drivers) for middle age is Social Influence, whereas, for young adults, the main driving factor (drivers) is Performance Expectation. So it can be concluded that the driver factors in the two age groups studied have differences, as summarized in table 4.6. The findings also showed a moderating effect of different age, but it is not too significant in this study.

CONCLUSION

6.1. Findings and contributions

Nowadays in the era of rapid development of technology, middle-aged consumers become potential customers that are considered important for e-commerce. Ease of time and more income allows them to participate in various e-commerce activities, especially after entering retirement. For this reason, middle-aged consumers are increasingly involved in various online activities including online shopping, virtual communities, and online learning.

In the academic field itself, more and more research involving the age factor in research problems related to the use of technology keeps emerging.

Finally, the main contribution of this paper is to understand the drivers of middle-aged consumers in online shopping intentions. Therefore further research is expected to explore the perceptions and behavior of middle-aged consumers regarding e-commerce in more depth. For practitioners or businesses that want to successfully capture this segment of the market must try to design and develop online shopping websites that are

acceptable to this age group, are able to serve them, and not use the same criteria as younger consumers.

6.2. Implications and limitations

Three academic implications of this study are concluded. First of all, this research focuses on online shopping and shows driving forces in various groups. The study concluded that the drivers varied across different age groups. In addition, the moderating effect of gender differences is not so significant in this study which is different from the previous literature.

The main limitation of this study might be from our sample taken exclusively from members of the Facebook online shopping community in Karawang. These subjects already have a certain level of understanding about computers and Internet applications. Therefore, they cannot be generalized to represent all middle-aged consumers. Future research can expand the sample to cover all middle age conferences.

In addition, not all drivers for online shopping are included in this study. Future studies can include more variables to broaden the scope of studies in this field of study.

The conclusions are same as the summary and abstract also describe the results of the analysis of the study.

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