

# Differences in Drivers and Barriers of Online Shopping Intention between Young and Middle-Aged adults through the Application of Utaut Model and Innovation Resistance Theory: Gender as a Moderating Variable

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## Abstract:

This research was conducted to examine and understand the drivers and barriers affecting the intention to shop online of middle-aged consumers. This research integrates the Unified Theory of Acceptance and Use of Technology (UTAUT) as a drive factor and the Innovation Resistance Theory as a barrier by comparing young to middle-aged consumers and gender moderation. Through the use of Partial Least Squares-Structural Equation Modeling, the findings show that, first, the main factor that drives middle-aged people intention in shopping online is Social Influence while among young adults, the drive is coming from Performance Expectation. Second, the study found that barrier for middle-aged consumers is Tradition, while Image becomes the main barrier for young adult. In addition, the findings also show that gender difference does not affect the driving factors and barriers in the two groups.

**Keywords:** Innovation Resistance Theory, Middle-Aged, Online Shopping, Unified Theory of Acceptance and Use of Technology (UTAUT)

## INTRODUCTION

The use of the internet in various aspects of people's lives has become commonplace, as well as in online shopping. The development of the internet and followed by changes in consumer behavior, ease of accessing the internet either through wifi or other gadget devices that make it easier for people to access information about a product or service they are looking for and is also believed to be a form of convenience in transactions, besides convenience and trust in prices offered is the main attraction for buyers.

A wide range of online stores or marketplaces such as Amazon, Alibaba on the global market or Tokopedia to Bukalapak on the domestic market in Indonesia make online transactions grow faster, but unfortunately from a variety of studies relating to the

use of technology to do online shopping more focused on young people who are considered the most potential market, whereas economically, this age is the most potential market share, given the age of old adulthood is the age group that has the most income compared to the age group above that already after work or above which income tends to be less.

In other words, the findings of the current research as guides for academics and practitioners may not be sufficient to undertake future study in this field (Wagner et al., 2010).

Iglesias-

Pradas et al. (2013) further suggested that recognizing the obstacles and drivers for Business-to-

Consumer (B2C) users is crucial to the growth of e-commerce.

Finally, the Technological Acceptance Model (TAM) is the most widely used model from different user-acceptance models of existing technology (Shin, 2009; Lee, et al, 2010). According to Malhotra and Galletta (1999), TAM is incomplete because it does not recognize one important factor in the use and application of new technology, namely social impact.

Interestingly, TAM does not find barriers stopping individuals from using the program they really want to use (Mathieson et al. 2001). The theory that emerges after TAM is the UTAUT (Unified Theory of Technology Acceptance and Use). UTAUT was constructed by Venkatesh, et al (2003) as a unified of eight existing and published revenue models, namely Reason Action Theory

## LITERATURE REVIEW

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

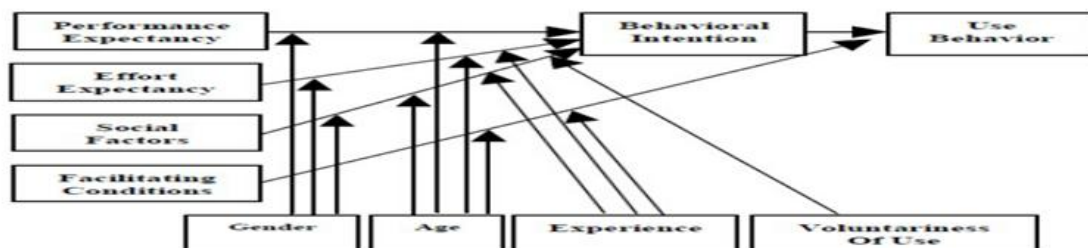
UTAUT is one of the newest technology acceptance models developed by Venkatesh, et al. UTAUT combines the successful features of eight leading theories of technology acceptance into one theory.

The eight leading theories united in the UTAUT are the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the

Motivation Model (MM), the Theory of Prohibited Behavior (TPB), the TAM and TPB combinations, the Model PC utilization (MPTU), innovation diffusion theory (IDT), and social cognitive theory (SCT). UTAUT proved to be more successful than the other eight theories in explaining up to 70% of user variants (Venkatesh, et al, 2003). After evaluating the eight models, Venkatesh et al. identified seven constructs that appeared to be a significant direct determinant of behavioral intent or behavioral use 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. Picture 1. shows the interrelationship between the determinants and moderator of this moderator.



Picture 1. Unified Theory of Acceptance and Use of Technology (UTAUT)  
Source: (Venkatesh et al., 2003).

## Innovation Resistance Theory

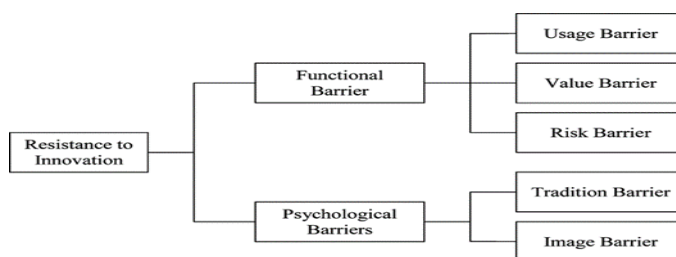
This theory uses the characteristics of innovation, user characteristics, and marketing

mechanisms to understand the reasons why users cannot accept innovation. In a later study, Ram and Sheth (1989) indicated that change caused conflict

between tradition and the results of innovation, Barriers to the adoption of innovation and resulted in the emergence of resistance to innovation. These barriers can be divided into two categories including functional and psychological. Functional barriers include usage, value and risk and psychological ones including tradition and image.

These barriers are explained in more detail as below:

- (1) Usage: If the use of innovative products is not consistent with past experience, values, and acceptance requirements of consumers, and is incompatible with work and habits, consumers will need more time to accept innovations
- (2) Value: When consumers try to assess the difference in value between innovative products and existing products, users will not want to accept changes unless the innovative product gives a higher value than the product
- (3) Risk: When users do not adequately understand innovative technology in new products, users cannot assess the risks and associated uncertainties that will arise after use. This situation will ultimately lead to the refusal to accept innovation.
- (4) Image: Users have an unfavorable impression of the country of origin, brand, industry, or side effects of innovation.
- (5) Tradition: Barriers to tradition come into force when innovation changes the culture of existing users and comes into conflict with it. The greater the conflict, the stronger the resistance

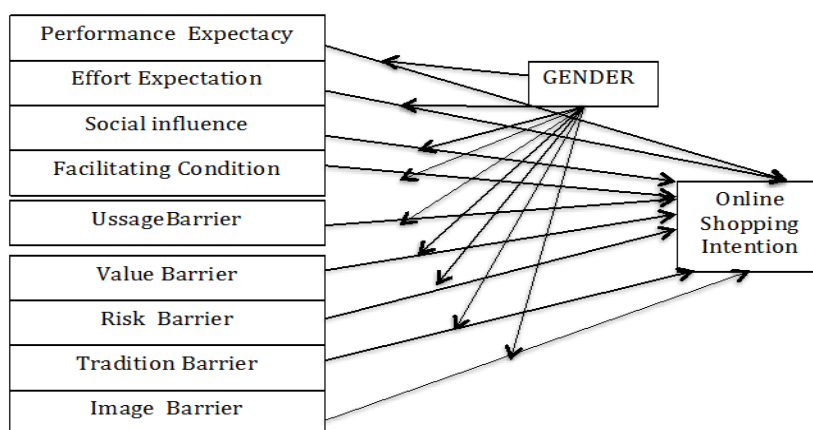


Picture 2. Innovation Resistance Theory Source: (Ram and Sheth (1989))

## RESEARCH METHODS

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 Picture 3.

The research model illustrates that in the two groups analyzed there are influences of a number of factors from performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC), as driving factors (Drivers) and usage (US), value (VE), risk (RI), tradition (TR) and Image (IM) as Barriers to Online Shopping Intention (OSI) with Gender as a moderator variable.



Picture 3. Research Model

The measurement scale used in the study is from 1 (strongly disagree) to 5 (strongly agree). Item measurement for online shopping intentions developed by Venkatesh et al. (2003). All measurements use a five-point Likert scale varying

Table 1. Measurement

Dimension	Variable	Quisior	Sources
Driver	Performance expectancy	3	Venkatesh et Venkatesh et al. (2003)
	Effort expectancy	4	
	Social influence	3	
	Facilitating conditions	4	
Barrier	Usage	5	Venkatesh et Venkatesh et al. (2003)
	Value	2	
	Risk	3	
	Tradition	2	
	Image	2	
Intention	Online Shopping Intention	3	Laukkanen et al. (2008)
			Laukkanen et al. (2008)
			Laukkanen et al. (2008)
			Laukkanen et al. (2008)
			Venkatesh et Venkatesh et al. (2003)

### 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.

Tabel 2. Research Hypothesis

No	Hipotesis
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

No	Hipotesis
H5a	Ussage has a positive and significant effect on online shopping Intention
H6a	Value has a negatifyly and significant effect on online shopping Intention
H7a	Risk has a negatifyly and significant effect on online shopping Intention
H8a	Tradition has a negatifyly and significant effect on online shopping Intention
H9a	Image has a negatifyly 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
H4b	Facilitating conditions in middle age have a positive and significant effect on online shopping intention with gender moderators
H5b	Usage in middle age has a positive and significant effect on online shopping intention with gender moderators
H6b	Value in middle age has a positive and significant effect on online shopping intention with gender moderators
H7b	Risk in middle age has a positive and significant effect on online shopping intention with gender moderators
H8b	Tradition in middle age has a positive and significant effect on online shopping intention with gender moderators
H9b	Image in middle age has a positive and significant effect on online shopping intention with gender moderators
H10	Young People and Middle Age are different driving factors (drivers) to online shopping intention
H11	Young People and Middle Age are different Barries factors (Barriers) to online shopping intention

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, is a tehnique 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.

This study uses SEM PLS, partial least square 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 or 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 be 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 from the sample group of respondents aged under 40 years and aged 40 years and over, so that the hypothesis test is performed twice and a comparison table is made, while the data validity and discriminant tests are taken from the total available sample.

## FINDINGS AND DISCUSSION

### Profile of Respondents

Data collection was carried out during November to December the first week of 2019. Questionnaires made in the form of Google Form were distributed to the Karawang shopp facebook online community with 665 members (November, 11, 2019), but only 205 members registered active accounts in the admin, so the sample The population 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 two samples that were not used, so that

the sample data that could be processed were 144 samples, with a total of 31 questionnaires distributed directly. Characteristics of respondents can be seen from the two tables below:

Table 3. 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%

Table 4. Distribution of respondent 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%

### 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. Shows Cronbach alpha value > 0.05, so that all research instruments are considered valid and composite reliability values > 0.7 are all considered reliable.

Table 5. Validity dan Reliability

	Cronbach's Alpha	Factor Loading	Composite Reliability	Average Variance Extracted (AVE)	R <sup>2</sup>
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
US	0,698	0.798-0.855	0,790	0,668	NA
VA	0,895	0.851-0.894	0,922	0,704	NA
RI	0,787	0.675-0.891	0,874	0,698	NA
TR	0,868	0.583-0.998	0,916	0,785	NA
IM	0.760	0.799-0.965	0,878	0,785	NA
OSI	0,690	0.849-0.904	0,865	0,762	0,412

### Discriminant Validity

Table 6. 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  $\sqrt{AVE}$  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 6. Diskriminant Validity Fornell-Larcker Criterion

	PE	EE	SI	FC	US	VE	RI	TR	IM	OSI
PE	0.836									
EE	0,714	0.819								
SI	0,567	0,580	0.886							
FC	0,641	0.772	0.519	0.738						
US	0,746	0.821	0.648	0.821	0.839					
VE	0,652	0.647	0.462	0.601	0.705	0.873				
RI	0,100	0.165	0.232	0.100	0.109	0.121	0.752			
TR	- 0,347	- 0.377	- 0.290	- 0.260	- 0.373	- 0.229	- 0.315	0.818		
IM	- 0,031	- 0.107	- 0.012	- 0.151	- 0.158	- 0.097	0.083	0.382	0.886	
OSI	0,556	0.549	0.410	0.503	0.588	0.438	0.154	0.382	- 0.012	0.890

### Hypothesis Test

To test the proposed hypothesis, two 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 7

Table 7. Analysis of Hypothesis Tests

No	Hipotesis	ADULT( $R^2=0.543$ )			YOUNG( $R^2=0.558$ )		
		p value	t	Influence	p value	t	Influence
H1a	<i>Performance Expectancy - online shopping Intention</i>	0.018	0.628	NO	0.026	2.233	YES
H2a	<i>Effort Expectation -online shopping Intention</i>	0.589	0.541	NO	0.369	0.900	NO
H3a	<i>Social Influence -online shopping Intention</i>	0.018	2.336	YES	0.624	0.546	NO
H4a	<i>Facilitating Condition - online shopping Intention</i>	0.320	0.749	NO	0.728	0.348	NO
H5a	<i>Usage - online shopping Intention</i>	0.118	1.566	NO	0.931	0.086	NO
H6a	<i>Value - online shopping Intention</i>	0.632	0.479	NO	0.078	1.384	NO
H7a	<i>Risk - online shopping Intention</i>	0.104	1.627	NO	0.802	0.251	NO
H8a	<i>Tradition - online shopping Intention</i>	0.749	2.384	YES	0.018	0.320	NO
H9a	<i>Image - online shopping Intention</i>	0.043	1.380	NO	1.707	2.033	YES
H1b	<i>Performance expectation - online shopping intention (moderating)</i>	0.679	0.414	NO	0.679	0.414	NO
H2b	<i>Effort Expectation -online shopping Intention(moderating)</i>	0.788	0.270	NO	0.458	0.370	NO
H3b	<i>Social Influence -online shopping intention (moderating)</i>	0.733	0.342	NO	0.763	0.442	NO
H4a	<i>Facilitating Condition - online shopping Intention(moderating)</i>	0.840	0.076	NO	0.940	0.084	NO
H5a	<i>Usage - online shopping Intention(moderating)</i>	0.988	0.015	NO	0.768	0.245	NO
H6b	<i>Value -online shopping intention (moderator)</i>	0.728	0.347	NO	0.526	0.546	NO
H7c	<i>Risk -online shopping intention (moderator)</i>	0.840	0.076	NO	0.650	0.176	NO
H8b	<i>Tradition - online shopping Intention</i>	0.988	0.015	NO	0.901	0.025	NO
H9a	<i>Image - online shopping</i>	0.728	0.347	NO	0.523	0.459	NO



No	Hipotesis	ADULT( $R^2=0.543$ )			YOUNG( $R^2=0.558$ )		
		p value	t	Influence	p value	t	Influence
	Intention						

$P < 0.05$  (influential and significant)

Table 8. Drivers and Barriers between two age groups

Middle age	Young Adult
Driver Social Influence Barriers (1) Tradition	Driver (1) Performance Expectation Barriers (1) Image
H10 (Proven)	There are differences in drivers in age differences
H11 (Proven)	There are differences in barriers in age differences

To understand age and gender differences, an independent sample t test was performed and the results of the analysis are shown in Table 8. We can find that the main driving factor (drivers) for middle age is Social Influence, and the main obstacle (barriers) is tradition. Meanwhile, for young adults, the main driving factor (drivers) is Performance Expectation while the main obstacle (barriers) is Image. So it can be concluded that the drivers and barrier factors in the two age groups studied have differences. The findings also showed a moderating effect of different gender, it was not too significant in this study.

## CONCLUSION AND SUGESTION

Nowadays, in the age of information technology, middle-aged consumers are important potential customers for e-commerce. The time and money facility allows them to take part in various e-commerce activities, especially after retirement. Previous studies have also shown that the use of information technology can boost older people's quality of life (Hough & Kobylanski, 2009). That's why For this reason, middle-aged consumers are increasingly involved in online activities including

online shopping, virtual communities, and online learning.

More and more researchers are interested in this research topic in the academic field. Based on the UTAUT model, Heerink et al. (2010) found that this model could be used to consider the technical acceptance of older adults. Nagle and Schmidt (2012) also use this model to explain the acceptance of technology in older adults. Although many studies have contributed to this area of research, limitations have arisen in previous studies. First of all, most of them use a single theory rather than a composite theory. Wagner et al. (2010) prove that computer users of older adults are a kind of multidisciplinary phenomenon Chen and Chan (2011) also show that while the TAM model is useful for understanding adult acceptance of information technology, additional variables are needed to better understand this problem.

The second limitation of previous research is that most of them focus on driving factors instead of obstacles. Although, Iglesias-Pradas et al. (2013) emphasize the importance of barriers and drivers for electronic commerce of B2C, but middle-aged Kaun is not the focus of this study.

Therefore, a study that integrates perspective differences is needed to understand the acceptance of online shopping by middle-aged consumers. Unlike previous research, this research integrates the UTAUT model and innovation resistance theory to look at middle-aged drivers and barriers to online shopping.

An empirical study was carried out and the following main contributions and findings can be made.

(1) For middle-aged consumers, the main driving force (drivers) of online shopping is social influence (social influence)

(2) For middle-aged consumers, the main obstacle to online shopping is tradition.

(3) The moderating effect of gender differences is not significant in this study.

Finally, the main contribution of this paper is to propose an integrated model for understanding drivers and barriers for middle-aged consumers in the context of online shopping. Therefore future research may be needed to explore the perceptions and behavior of middle-aged consumers regarding e-commerce more deeply than merely concluding them based on the results of previous studies on the perceptions and behavior of younger consumers. For practitioners, businesses who want to successfully capture this segment of the market should try to design and develop online shopping websites that serve them rather than using the same criteria by which they design their products and services for younger consumers. Implications and limitations

Three academic implications of this study are concluded. First of all, this research focuses on online shopping and shows the drivers and obstacles in various groups. This study concludes that drivers and obstacles vary across different age groups. If these findings will be the same in different online contexts, we suggest that future research can focus on understanding middle-aged consumer acceptance of e-government or cellular commerce for further studies and comparing differences between various online services. In addition, the findings show that UTAUT and innovation resistance theory have

around 50% explanatory power to understand user behavior towards EC activity. Therefore, if there are other factors that influence middle-aged consumers to reject new technology or other moderators and the transit variables exist among these relationships are needed for future research. In addition, the moderating effect of gender differences is not so significant in this study, this is different from the previous literature.

Second, one specific finding in this research that requires further study and discussion is the role of risk barrier. Our survey findings indicate that this variable is significant but has a negative relationship. In addition, in the follow-up interviews of the three cases it was revealed that their risk perceptions of online shopping varied. Therefore, future studies can be conducted to seek further understanding of this problem from various dimensions of perceived risk such as facilitation risk, financial risk, physical risk, psychosocial risk, performance risk, social risk, and time risk (Pi & Sangruang, 2011).

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 and barriers to online shopping are included in this study. Future studies can include more variables to broaden the scope of studies in this field of study.

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