

# Application of the Utaut Model on the Effect of Risk Perception and Behavioral Intention to Use *E-Commerce* Shopee: The Moderation Role of Online Shopping Experience Post Covid

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## Abstract:

This study aims to determine the effect of performance expectancy, effort expectancy, Social Influencers on Perceived Risk, and the effect of Perceived Risk on Behavioral Intentions, as well as moderation of the online shopping experience. The population contained in this study are all online shopping consumers who have transacted on the platform Shopee e-commerce Indonesia. The criteria for selecting respondents used in this study were everyone who had made a purchase transaction at Shopee at least three times in the last month, namely in October 2022. The analysis used the Structural Equation Model (SEM) with the help of Amos 26. The results support all hypotheses.

**Keywords:** performance expectancy, effort expectancy, Social Influencer, Perceived Risk, Behavioral Intention

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## I. Introduction

Internet technology has developed rapidly in the last decade. This is evidenced by the number of global Internet users continuing to grow and has reached 4.95 billion users in 2022, reflecting a 4 percent increase compared to 2021 (Pahlevi, 2022). Based on the 2022 Katadata survey, Indonesia also recorded a significant increase of 54.2 percent from 2018 to 2022, where in 2022 the number of internet users in Indonesia reached 204.7 million with an Internet penetration rate of 77.02% (Annur, 2022). Advances in technology today have led to the use of the internet for commercial purposes (Mohd & Zaaba, 2019). Many industries are farsighted to see the unlimited potential in doing business by leveraging Internet technology. Therefore leading a new trend to build entrepreneurship with the concept of *e-commerce*, namely doing business using electronic intermediaries especially the Internet (Gunawardana 2006).

*E-commerce* seems to be a necessity to stay competitive in the global market and because of this, companies are increasingly adopting *e-commerce systems*. This is because there are several benefits of *e-commerce* compared to traditional trading that are relatively applicable to all companies. For example *e-commerce* leads to supply chain disintermediation, which means that companies can eliminate expensive sales agents and reduce costs; moreover *e-commerce* provides access to distant markets as it is said to blur international boundaries (Longenecker *et al.*, 2015). It seems a sensible decision for many companies to explore *e-commerce opportunities*, due to the globalization of markets and the increasing importance of doing business internationally. The availability of *e-commerce* software and supporting institutions is also a favorable factor for *e-commerce adoption*.

One country that has had a significant impact on improving *e-commerce technology* is Indonesia. As one of the countries with the largest *e-commerce users*, in 2019, the report noted that 91% of internet users in Indonesia had purchased products online at e-retailers (Globalwebindex, 2020). In this case, Indonesia has great potential for the development of *e-commerce*. In addition, *e-commerce customer users* in 2020 increased by 38.3% compared to 2019 (Tirto, 2020). Recently, reports show that Indonesia has the most internet users, where 87.1% of internet users have made online purchases in *e-commerce* (Kemp, 2021). Meanwhile, Shopee is the *e-commerce site* with the most visitors, with an average monthly visit of 129.3 million in the fourth quarter of 2020. In second, third and fourth positions, Tokopedia, Bukalapak and Lazada follow the average monthly visit. each of 114.62 million, 38.58 million and 36.26 million (Katadata, 2021). Based on these reasons, this research focuses more on Shopee as a research object.

Even though the increase in e-commerce transactions is a good signal for the future development of e-commerce in Indonesia, the process of purchasing transactions in e-commerce does not fully guarantee that consumers will be protected from fraud and unwanted things. harm consumers. Purchase transactions are

considered a greater risk in *e-commerce* because consumers cannot predict with certainty that the results obtained will be perfect and in accordance with what consumers expect (Chiou *et al.* , 2018).

This study adopts the lens of the *Unified Theory of Acceptance and Use of Technology* (UTAUT) theory because this model can explain well the behavioral intentions of technology acceptance (Venkatesh, 2015). UTAUT theory proposes four core constructs including *Performance Expectancy* (PE), *Effort Expectancy* (EE), *Social Influence* (SI), and *Facilitating Condition* (FC). UTAUT was developed by Venkatesh (2015) combining eight theories of user acceptance and motivation. The concept of risk perception has been studied by many researchers (Damghanian *et al.*, 2016), not much research has focused on the *e-commerce context* to predict the effect of the *Unified Theory of Acceptance and Use of Technology* (UTAUT) model Venkatesh *et al.* (2015) on behavioral intentions directly through perceived risk. UTAUT exclusively addresses the various drivers of consumer acceptance and use of technology (Oliveira *et al.*, 2016). The direct effect of the UTAUT model on risk perception has also been examined in the literature previously (Daneshgadeh & Yildirim, 2014), however, there is scarce research in the *e-commerce context* that investigates the role of risk mediation in the relationship between the UTAUT model and behavioral intentions of technology acceptance. Thus, this study develops and empirically validates a research framework that examines the relationship between the UTAUT model and behavioral intention through risk perception. In addition, this study also includes moderation of the online shopping experience.

## II. Literature Review

### UTAUT model

These days, particularly in user acceptance and use of information technology, the UTAUT model (Venkatesh, 2015) advances on the premise of coordination developing in eight models that range from human behavior, to computer science. These models include *Theory of Reasoned Action* (TRA), *Technology Acceptance Model* (TAM) and (TAM2), *Motivational Model* (MM), *Theory of Planned Behavior* (TPB), *Model of PC Usage* (MPCU), *Innovation Diffusion Theory* (IDT), and *Social Cognitive Theory* (SCT).

From these studies, the *Technology Acceptance Model* (TAM) has an in-depth explanation in explaining information technology adoption behavior. TAM is used to determine the effect of external variables on internal beliefs, attitudes, and intentions. Based on TAM's belief, the main determinant of information technology adoption is usability and ease of use within organizations. These two determinants act as a basis for attitudes towards using a particular system, and then generate the actual usage behavior. Although, examining the adoption of IT/IS in business organizations is a function of the original TAM model. This model also predicts general individual acceptance, especially in higher education. UTAUT was developed by (Venkatesh, 2015) to incorporate previous TAM related studies. However, *Effort Expectations* in the UTAUT model can be significant in determining IT user acceptance, regarding ease of use may become unimportant over extended and excessive use. The use of a new technology can be perceived ease of use only at an early stage which can be expected to become more important and can provide positive feedback on the perceived usefulness of the technology.

### Online shopping experience

The customer's online shopping experience is a complex process that can be divided into sub-processes such as information search, product evaluation, decision making, carrying out transactions, shipping, returns and customer service (Oliver, 2014). The online shopping experience is a consumer perception that is formed as an implication of the accumulation of shopping experiences from the past to the present (Singh, 2019). Oliver (2014) suggested that the online shopping process consists of four phases, including the information phase, the deal phase, the fulfillment phase, and the after-sales phase. The online shopping experience describes the frequency of purchases, and the accumulation of all events experienced by customers in the purchasing process activities which include before, during and after purchase (Izogo & Jayawardhena, 2018). The online shopping experience is a collection of all the consumer's online buying activities that occurred in the past. This accumulation ultimately shapes the individual's online shopping experience, makes the individual more familiar with the online environment, and better understands the information about the product purchased. In addition, the online shopping experience can also determine whether consumers will trust e-retailers or not. The experience of positive and satisfying results in the past will be used as a basis for consumers to judge that e-retailers can fulfill their commitments and can be trusted (Vakulenko *et al.* , 2019).

### hypothesis

H1: *Performance expectancy* has a significant negative effect on perceived risk

H 2: *Effort expectancy* has a significant negative effect on perceived risk

H3: *Social influence* has a significant negative effect on perceived risk

H4: *Performance expectancy* has a significant positive effect on behavioral intention

- H5: *Effort expectancy* has a significant positive effect on behavioral intention
- H6: *Social influence* influences behavioral intention positively and significantly
- H7: Perceived risk has a significant negative effect on behavioral intention
- H8: Online shopping experience significantly moderates the effect of perceived risk on behavioral intention

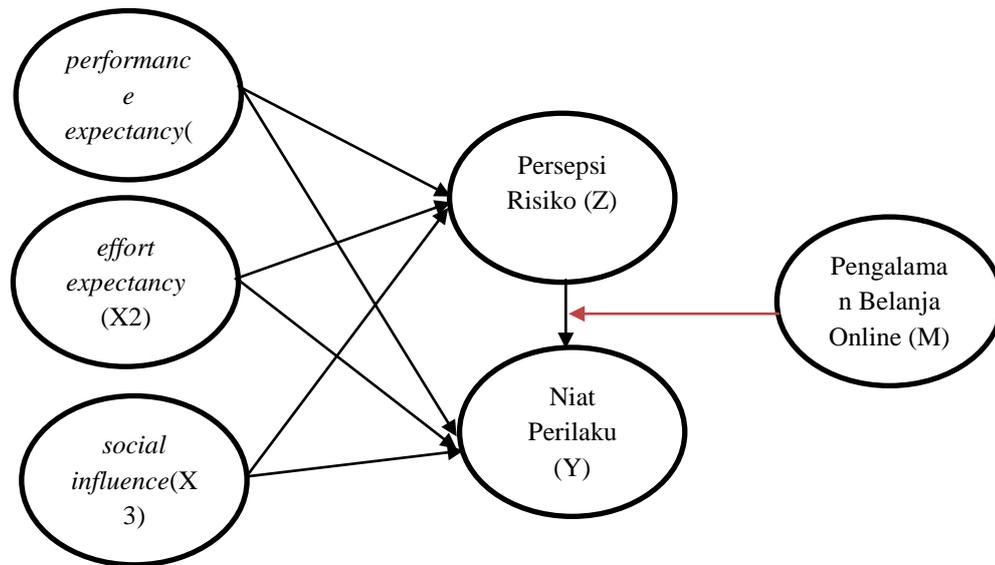


Figure 1. Conceptual Framework

**Method**

This research is *Explanatory Research*, which is research that is used to show the position of the variables studied and the influence of one variable on another (Sugiyono, 2012:21). This *Explanatory Research* study was used to test the UTAUT model (*performance expectancy, effort expectancy, social influence*) on behavioral intention through risk perception and its consequences on *e-commerce usage behavior* for online shopping. The population contained in this study are all online shopping consumers who have transacted on the platform Shopee *e-commerce* Indonesia. This study uses *non-probability sampling* with a *purposive sampling technique*, because *purposive sampling* is a sampling technique with certain considerations (Sugiyono, 2013). The criteria for selecting respondents used in this study were everyone who had made a purchase transaction at Shopee at least three times in the past month, namely in October 2022. The data collection technique in this study was to use a questionnaire (*Google Form*).

This study uses Structural Equation Modeling (SEM), while developing and testing hypotheses using AMOS Statistics 24.0. The research analysis technique uses confirmatory factor analysis and the regression weight approach, while the constructs in this study use exogenous, endogenous, and moderation constructs.

**Research result**

**Table 1. Characteristics of Respondents**

Gender	Number of people	Percentage (%)
Man	66	28,7
Woman	164	71,3
Total	230	100,0
Age	Number of people	Percentage (%)
17 – 25 Years	209	90,9
26 – 32 Years	16	7
33 – 39 Years	5	2,2
> 40 Years	230	100
Total	209	90,9
Education	Number of people	Percentage (%)
SMA/SMK	87	37,8
Diploma 3 (D3)	4	1,7
Bachelor degree)	118	51,3
Postgraduate	21	9,1
Total	230	100
Occupation/Profession	Number of people	Percentage (%)
Student	100	43,5
Private sector employee	15	6,5

Housewife	24	10,4
civil servants/asn	16	7
Businessman	69	30
Other	6	2,6
Total	230	100
<b>Income</b>	<b>Number of people</b>	<b>Percentage (%)</b>
< IDR 1,000,000	142	61,7
IDR 1,000,001 - IDR 2,000,000	8	3,5
IDR 2,000,001 - IDR 4,000,000	30	13
IDR 4,000,001 - IDR 6,000,000	15	6,5
> IDR 6,000,000	35	15,2
Total	230	100

Source: Processed data (2022)

**Structural Equation Model Analysis (SEM)**

At this stage, the model suitability test and causality significance test will be explained. The test results using the AMOS version 26 application explain the effect of the variables *performance expectancy*, *effort expectancy*, *Social Influencer* on Perceived Risk, and the effect of Perceived Risk on Behavioral Intentions. Testing on the SEM model aims to see the suitability of the model, the results of the model suitability test are presented in Fig2 following:

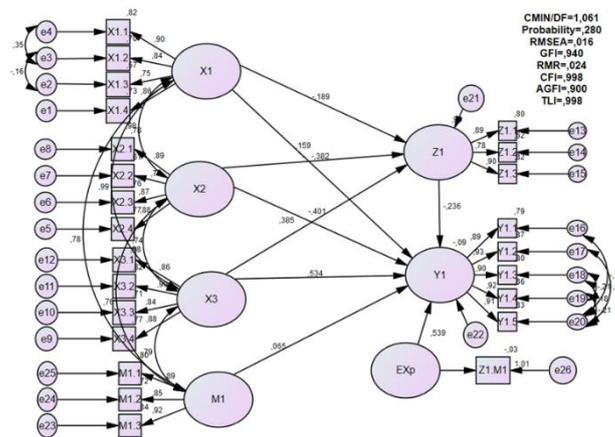


Figure 2. Model Test

Based on Figure 2. can is known that from eighth criteria there is seven criteria that have good criteria and one marginal . Ferdinand (2014) stated that based on the parsimony rule if it is partial criteria fit model well then the model has been declared fit.

After testing the suitability of the research model, the next step is to test the causality developed in this study. The causality test is used to test the effect of each of the proposed hypotheses, namely the effect of *performance expectancy*, *effort expectancy*, *Social Influencers* on Perceived Risk, and the effect of Perceived Risk on Behavioral Intentions . Detailed path coefficient testing is presented in table 2. below:

**Table 2. Results Testing causality**

			Estimates	SE	CR	P	Information
<b>Z1</b>	<---	X1	-,189	,270	-2,698	,002	Hypothesis accepted
<b>Z1</b>	<---	X2	-,382	,232	-2,647	,009	Hypothesis accepted
<b>Z1</b>	<---	X3	-,401	,437	-4,917	,000	Hypothesis accepted
<b>Y1</b>	<---	X1	,159	,215	4,741	,000	Hypothesis accepted
<b>Y1</b>	<---	X2	,385	,165	2,340	,019	Hypothesis accepted
<b>Y1</b>	<---	X3	,534	,304	2,758	,025	Hypothesis accepted
<b>Y1</b>	<---	Z1	-,236	,113	-2,095	,036	Hypothesis accepted
<b>Y1</b>	<---	Z1. M1	,539	,637	2,847	,027	Hypothesis accepted

Source: Processed data (2022)

**III. Discussion**

*Performance Expectancy* variable has a significant negative effect on Perceived Risk. Based on the results of the analysis, it can be concluded that the first hypothesis which states that *Performance Expectancy* has a significant negative effect on Perceived Risk is acceptable. The coefficient value shows a negative value, so it can be explained that the higher the *performance expectancy of e-commerce shopee*, the lower the consumer's Perception of Risk. Consistent research results prove that there is a negative and significant effect of

*performance expectancy* on Perceived Risk. These findings explain that consumers have perceived the performance expectations when shopping online at *e-commerce* shopee is good so that it will reduce the Perceived Risk. Thus, the better the *performance expectancy* of an *e-commerce platform*, the lower the risk perception. In addition, the results of this study are in line with previous research which also found a significant negative effect of *Performance Expectancy* on Perceived Risk (Namhoot & Jantasri (2022), Chang et al. (2016)).

*Effort Expectancy* variable has a significant negative effect on Perceived Risk. Based on the results of the analysis, it can be concluded that the second hypothesis which states that *Effort Expectancy* has a significant negative effect on Perceived Risk is acceptable. The coefficient value shows a negative value, so it can be explained that the higher the *effort expectancy*, the lower the perceived risk of *e-commerce* shopee. Consistent research results prove that there is a negative and significant effect on *effort expectancy* on Perceived Risk. This finding explains that consumers have perceived that *e-commerce* shopee is easy to use so that the perception of risk can be reduced. Thus, based on the results of this study, it is stated that efforts to hope for *e-commerce* shopee can reduce the perception of risk in consumers. In addition, the results of this study support previous research which also found a significant negative effect of *Effort Expectancy* on Perceived Risk (Namahoot & Jantasri, 2022).

*Social Influencer* variable has a significant negative effect on Perceived Risk. Based on the results of the analysis, it can be concluded that the third hypothesis which states that *Social Influencer* has a significant negative effect on Perceived Risk is acceptable. The coefficient value shows a negative value, so it can be explained that the higher the *Social Influence* that affects someone using *e-commerce* shopee, the lower the Perception of Risk. Consistent research results prove that there is a negative and significant influence of *Social Influence* on Perceived Risk. This finding explains that the better one's social influence is to encourage online shopping at *e-commerce* shopee, the less risk perception can be. This is in line with the findings of several previous studies which stated that *Social Influencers* have a significant negative effect on Perceived Risk (Namhoot & Jantasri (2022); Kesharwani & Bisht (2011)).

*Performance Expectancy* variable has a significant negative effect on behavioral intentions. Based on the results of the analysis, it can be concluded that the fourth hypothesis which states that *Performance Expectancy* has a significant effect on Behavioral Intentions is acceptable. The coefficient value shows a positive value, so it can be explained that the higher the *performance expectancy* *e-commerce* shopee will increase consumer behavioral intentions to shop at *e-commerce* shopee. Consistent research results prove that there is a positive and significant effect of *Performance Expectancy* on Behavioral Intentions. These findings explain that consumers have perceived the performance of *e-commerce* shopee as good so that they can increase behavioral intentions to shop online at *e-commerce* shopee. The results of this study are in line with previous studies which also found a significant effect on *Performance Expectancy* on Behavioral Intentions (Kaor & Arora (2021), Shiferaw & Mehari (2019), Abed (2018), Chan & Zhao (2022), Farah et al. (2018)).

*Effort Expectancy* variable has a significant influence on behavioral intention. Based on the results of the analysis, it can be concluded that the fifth hypothesis which states that *Effort Expectancy* has a significant effect on Behavioral Intentions is acceptable. The coefficient value shows a positive value, so it can be explained that the higher the *Effort Expectancy* in *e-commerce* shopee, the higher the behavioral intention of consumers to shop at shopee. Consistent research results prove that there is a positive and significant effect of *effort expectancy* on behavioral intention. These findings explain that consumers have perceived that shopping at *e-commerce* shopee is easy so that it will increase behavioral intentions. Thus, based on the results of this study, it states that *effort expectancy* can increase the behavioral intention to shop at Shopee. In addition, the results of this study support previous research which also found a significant effect of *Effort Expectancy* on Behavioral Intentions (Chaouali et al., 2016; Tarhini et al., 2016).

*Social Influencer* variable has a significant positive influence on Behavioral Intentions. Based on the results of the analysis, it can be concluded that the sixth hypothesis which states that *Social Influencers* have a significant positive effect on Behavioral Intentions is acceptable. The coefficient value shows a positive value, so it can be explained that the higher the *Social Influence* that affects someone using *e-commerce* shopee, the higher the behavioral intention. Consistent research results prove that there is a positive and significant effect of *Social Influence* on Behavioral Intentions. This finding explains that the better a person's social influence to encourage online shopping at *e-commerce* shopee, the behavioral intention will increase. This is in line with the findings of several previous studies which stated that *Social Influencers* have a significant positive effect on behavioral intention (Zhou et al., (2010) and Chaouali et al. (2016)).

The results of data analysis show that the Risk Perceived variable has a significant negative effect on Behavioral Intentions. Based on the results of the analysis, it can be concluded that the seventh hypothesis which states that *Social Influencers* have a significant negative effect on Behavioral Intentions is acceptable. The coefficient value shows a negative value, so it can be explained that the higher the Perceived Risk that is owned by consumers, the lower the behavioral intention to shop at *e-commerce* shopee. Perception of risk in this

study was measured using three indicators. The first indicator explains that if there is a high risk of loss in making online purchases through e-commerce Shopee, it will reduce behavioral intention. The second indicator explains that if there is a big risk involved in making purchases through e-commerce Shopee, it will reduce behavioral intention. The third indicator explains that purchasing products through Shopee e-commerce is risky, it will reduce behavioral intention.

The results of testing the path coefficient of the moderating influence of online shopping experience on the effect of perceived risk on behavioral intentions show significant results, so it can be stated that the online shopping experience can moderate the effect of perceived risk on consumer behavior intentions on the Shopee *e-commerce platform*. So it can be explained if the online shopping experience can strengthen the effect of perceived risk on behavioral intention. The size of the risk felt by shopee consumers to intend to shop can pay attention to the consumer's online shopping experience. Thus the online shopping experience plays an important role in moderating the relationship between perceived risk and purchase intention. The higher the consumer's online shopping experience, the stronger the relationship between perceived risk and purchase intention. The results of this study then support the research of Amarullah *et al.* (2022), namely the experience of online shopping moderates the effect of perceived risk on behavioral intentions.

#### IV. Conclusion

Based on the objectives, results of the analysis and discussion in this study, it can be concluded that *Performance expectancy* has a significant negative effect on perceived risk among *e-commerce shopee* consumers. These results explain that the higher the *performance expectancy*, the lower the risk perception. These results then support the first hypothesis. *Effort expectancy* has a significant negative effect on risk perception among *e-commerce shopee* consumers. These results explain that the higher the *effort expectancy*, the lower the risk perception. These results then support the second hypothesis. *Social influence* has a significant negative effect on risk perception among *e-commerce shopee* consumers. These results explain that the higher the *social influence*, the lower the risk perception. These results then support the third hypothesis. *Performance expectancy* influences behavioral intention positively and significantly among *e-commerce shopee* consumers. These results explain that the higher the *performance expectancy* will increase the behavioral intention. These results then support the fourth hypothesis. *Effort expectancy* has a significant positive effect on behavioral intentions for *Shopee e-commerce consumers*. These results explain that the higher the *effort expectancy* will increase the behavioral intention. These results then support the fifth hypothesis. *Social influence* influences behavioral intention in a significantly positive way among *e-commerce shopee* consumers. These results explain that the higher the *social influence* will increase the behavioral intention. These results then support the sixth hypothesis. Perceived risk influences behavioral intention in a significant negative way among *e-commerce shopee* consumers. These results explain that the higher the perceived risk, the lower the behavioral intention. These results then support the seventh hypothesis. Online shopping experience moderates the effect of perceived risk on behavioral intention. These results explain that the higher the consumer's online shopping experience, the stronger the relationship between perceived risk and purchase intention. These results then support the eighth hypothesis.

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