

## INVESTORS' TRUST AND RISK PERCEPTION USING THE INVESTMENT PLATFORM: A GENDER PERSPECTIVE

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**Abstract:** The development of the technology in financial sector has become opportunities for online trading platform developers, especially in investment. This is a form of encouragement from manual transactions transformation towards digital. The Financial Services Authority stated that of many websites and online investment platforms did not get permission from the them. This will has impacts on the risks that will be carried by the people who use it. On the other hand, as the development of online investment platforms grows because of COVID, the impact is that more people carry out online investment transactions to earn profits that is now mainly dominated by male society. Many perspectives associating the gender gap, such as the risky decision-making level and the perspective of women's trust level in using low investment platforms. Therefore, this study aims to test out perceived trust and risk of using online investment platforms from gender perspective. Thus, this research can be a review from educational institutions or the investor community in Indonesia to encourage women's participation in improving the economy in Indonesia through trading. This research uses clause method by looking at the causality of independent and dependent variable. The data collection technique uses survey by sending google form links to investors' communities on social media. The results of the survey were checked for reliability and validity prior to multigroup analysis using SmartPLS. The results showed that gender was not able to moderate the effect of perceived trust and perceived risk on the intention to use online investment platforms.

**Keywords:** Gender, Invest, Perceived Risk, Perceived Trust, TPB.

### INTRODUCTION

In current business environment, individuals tend to invest their money using online trading platforms (Brad M. Barber & Odean, 2011). This is because investors see that by using online trading platforms there will come many advantages, such as faster trading speed, better data transparency, and lower costs (Khan et al., 2020).

Nevertheless, the Financial Services Authority in Indonesia as the organizer of an integrated supervisory and regulatory system for all activities in financial services sector, asks the public to be more careful in conducting investment transactions using such platforms. As of October 2020, 868 investment businesses were recorded to not have permissions from Financial Services Authority (OJK, 2020). The development of technology in financial sector

that provides simplicity for investors is proportional to the development of the number of investors in Indonesia.

Big-scale social restrictions due to COVID-19 pandemic have many impacts on people's jobs and businesses. Hence, many seek alternative income by doing online transactions in capital market using various platforms (Brad M. Barber & Odean, 2011; Wareza, 2020). In 2018, there were 1.6 million investors and at the end of 2019, it rose up to 2.4 million. From that number, 98 percent are local investors (Putra, 2019). In August 2020, the number of investors increased to 17.8 percent, which roughly equal to more than 3 million.

Although the growth is quite big, only 58.42 percent of local investors are dominated by men (Wareza, 2020). (Tauni et al., 2017) stated that men are more active in doing investment than women. This is related to different decision-making between men and women (Brad M. Barber & Odean, 2011; Duan et al., 2010; Hidayah, 2018; Pompian & Longo, 2004). This is all because women tend to avoid high risks (Pak & Mahmood, 2015). Not much different from online buying and selling transactions using applications, (Garbarino & Strahilevitz, 2004) found that women tend to have the perception that online transactions have much more risks. This is associated with the experience of using the internet and the consequence of losing personal data.

Theory of Planned Behaviour explains that when individuals intend to use a platform to invest, they will be influenced by attitudes, norms, and behavioral control. The role of behavioral control refers to self-efficacy and controllability. Self-efficacy describes the beliefs that the individuals have from their behavior. While controllability refers to their ability to control their behavior (Ajzen, 1991).

In the context of gender acceptance in using online investment platforms, their form of control is how trusting and risky the platform is to use. Perceived trust in online context refers to individual's willingness to accept the vulnerability of investment platforms, and the belief that investment platform development companies will fulfill their promises and will not exploit these vulnerabilities for their own benefits (Martín & Jiménez, 2011). Lack of trust is a major barrier to online transactions which has impacts on trust or emotional safety felt by individuals. Especially online transactions using personal data that require credit card data which will cause personal trust to be low (Mahliza, 2020; Noprisson & Ani, 2018). As it is known in Spain that half of the internet users have small level of trusts as well as online exchange transactions (INE, 2009 in (Martín & Jiménez, 2011), in the context of gender beliefs (Dwyer et al., 2002; Garbarino & Strahilevitz, 2004) stated that women's perception of risk in online transactions had significant effects. (Busch, 1995) on the contrary stated that there was no significant gender difference in terms of using simple IT, but in complex IT there were significant differences. Online investment transactions using platforms require high security to protect personal data and property.

This research adopts the research from (Maziriri et al., 2019) and is adapted to the context of the situation in Indonesia, which is still lacking in analyzing individual perceived trust and risk on investment platforms. Therefore, this study examines the perceived trust and risk of using online investment platforms from gender perspective.

## LITERATURE REVIEW

### Intention dan Theory of Planned Behavior

Behavioral intention is a proxy for the theory of planned behavior which has dimensions of attitudes, norms, and behavioral control. Attitude dimension describes the belief and self-

evaluation towards something that has potentials, if the individual believes in something that provides benefits, they will behave positively; norms explain the connection in individuals' environment; while behavioral control is the form of belief and self-control over behavior. These three dimensions will provide a form of behavior whether the individual will accept or reject what they face (Ajzen, 1991). In the context of online investment platforms, investors will play the role of trust, environment and self-control whether the platform will provide benefits, safe and risk-free.

### **Perceived Risk, Perceived Trust dan Gender**

Risk is a situation faced by decision-makers who have prior knowledge about the consequences of alternatives and the possibility of it happening. On the other hands, perceived risk has a closer connection with the concept of partial ignorance, be it the consequences of alternatives and the possibilities that arise are not known accurately (Dowling, 1986). Perceived risk itself has dimensions of losses such as performance, social, physical, financial, psychological, psychosocial, time, stress, and others.

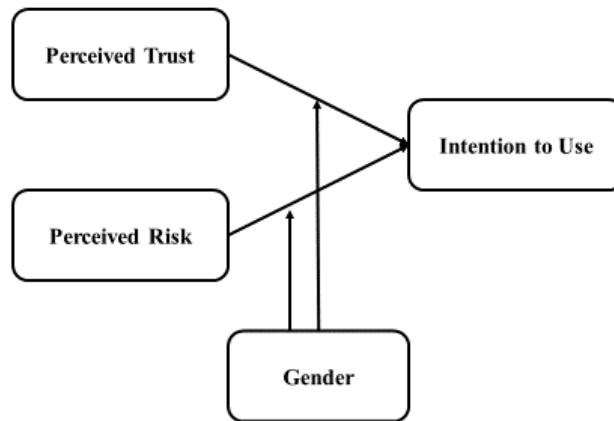
Perceived trust is a psychological state that guarantees the individuals that under normal circumstances it will be profitable to do the transactions and the sellers does not act fraudulently (Wang et al., 2015). As follows, the buyers will be happy to share individual information (Hanafizadeh & Khedmatgozar, 2012). Furthermore, (Oliveira et al., 2017) explains that individual trust in online transactions lies in the honesty of the vendors, if they are reliable then customers will trust them and influences their goals to be able to use the platforms.

Privacy and the safety of investment transactions are important factors when it comes to investing in online investment platforms, especially towards trust. When investors have confidence that there will be high safety risks and financial risks of investment platforms, they will refrain from using these platforms (Maziriri et al., 2019).

Looking at the usage perspective of online transactions, there are attitudes, behavior, and skills imbalances between women and men (Hashim, 2008). (Kolsaker & Payne, 2002) stated that in online transactions women tend to be more careful regarding safety, confidentiality, and integrity than men. The perception of men's trust in the usage of mobile banking is higher than that of women. This is because men have more ICT knowledge and skills than women. Therefore, women tend to have a higher perceived risk than men, so they are less likely to adopt online investment platforms (Goh & Sun, 2014). Whereas men with high confidence in technology will be more interested in adopting online investment platforms. Based on the framework below, conclusions can be drawn against the following hypothesis:

H1: The influence of men's perceived trust on the intentions to use investment platforms is bigger than women's

H2: The influence of men's perceived risk on intention to use investment platforms is smaller than women's



Picture 1 Conceptual Framework

**RESEARCH METHODS**

This research is a quantitative research with survey-research design. The type of data used is cross-sectional to capture phenomena at a certain time. The sampling technique of this research uses convenience sampling method, that is investors in Java Island who have investments in various online trading platforms. As informed by (Wareza, 2020) that 73% of investors in Indonesia are domiciled in Java Island. The method of data collection is using internet-based self-administered survey using google form. The google form links are distributed through Whatsapp groups with investors who use investment applications who live in DKI Jakarta. But the responses of the people who came in are only within twenty days.

Data were analyzed using Structural Equation Model (SEM) based on components with PLS program. Component-based SEM is able to analyze latent variables, indicators and measurement errors directly. The path analysis model for all latent variables in PLS consists of three sets of correlations, namely 1) outer model that specifies the connection between latent variables and indicators; 2) inner model that specifies the connection between latent variables; and 3) weight relation, or in other words the value of the variable, can be estimated. Outer model analysis is carried out to ensure that the measurements used are worthy to be used as measurements (valid and reliable). Inner model is sometimes called inner relation, structural model and substantive theory which describes the connection between latent variables based on substantive theory. The inner model was evaluated using R-square for the dependent construct, stone-Geisser Q-square test for predictive relevance and t-test for the significance of the coefficients of structural path parameters. This research tests out the moderating effect, like the interaction between exogenous variables and moderator variables in influencing endogenous variables. The moderating variable in this study is gender, hypothesis test with moderating effect using multigroup analysis.

**Measurement**

The questionnaire used consists of two parts, the first is demographic data, the second is questions about the indicator variables studied. The question items were adopted from previous research originally in English. After that, the questionnaire was translated into Indonesian language according to the research context with likert scale, 1 for the statement "strongly disagree" and 5 for "strongly agree".

Table 1 Operational Definition		
Variable	Definition	Adoption
Gender	The sex of a man and a woman	Dummy

Perceived Risk	The situation faced by investors having prior knowledge of the consequences of alternatives and the possibilities involved in adopting online investment platforms	(Damghanian et al., 2016; Dowling, 1986; Durmus et al., 2017; Gia-Shie Liu & Pham Tan Tai, 2016)
Perceived Trust	The willingness to use new services with sense of comfort, security, and acceptance of risk in using online investment platforms	(Damghanian et al., 2016; Durmus et al., 2017; Gia-Shie Liu & Pham Tan Tai, 2016; Pavlou, 2003)
Intention to Adoption	The possibility of investors adopting online investment platforms	(Ali, 2011; Maziriri et al., 2019; Shanmugam et al., 2014)

### Descriptive Statistic

There are 156 respondents' responses via google form links. However, not all of them can be analyzed because of the outliers, which are not in accordance with the criteria and because of the incomplete answers given in the forms. Based on the error rate, 5 percent of the total sample 114, have sufficient corresponding power of 0.80. Characteristics of the respondents include age, gender, last education, marital status, and employment status. Most of the respondents are between the ages of 21 and 30, which are equal to 70 percent. At the same time, the minority of the respondents are aged between 31 and 50 years and also above 51 years, which are 3 percent each with the gender ratio of 58 percent women and 42 percent men. The majority of the respondents' last education was high school and equivalent and is equal to 46 percent. As for the respondent who got bachelor's degree, there are 25 percent of them. Most of the respondents were single, as many as 75 percent. While for the rest of 25 percent are married.

Information		General	
		Total	Percentage
Age	under 20 years old	10	8,77
	20-30 years old	80	70,18
	31-40 years old	17	14,91
	41-50 years old	4	3,51
	above 50 years old	3	2,63
Gender	male	48	42,11
	female	66	57,89
Last Education	middle high school	0	0,00
	high school and equivalent	53	46,49
	associate degree	12	10,53
	bachelor's degree	28	24,56
	master's degree	17	14,91
	doctoral degree	4	3,51
Marital Status	single	86	75,44
	married	28	24,56
	divorce	0	0,00

Source: data procession using Excel

### Descriptive Statistic

The average behavioral intention of the respondents to the usage of online investment platforms ranges from 3.310 to 3.646 with the standard deviation of 1.073 to 1.153. This shows that the respondents' intention to use online investment platforms is not too high. The average respondent's perceived risk in the usage of online investment platforms ranges from 2.8323 to 3.257 with the standard deviation ranging from 1.145 to 1.196. This shows that the respondents consider that investing using online platforms is not too risky, which can be seen from the median value of respondents' perceptions which is 3. This can also be seen from the average value of respondents' perceived trust in online investment platforms ranging from 3.584 to 3.726 with the standard deviation ranging from 1.017 to 1.110, and resulted 4 for the median value. It can be interpreted that the respondents have enough confidence in investment platforms.

**Tabel 3 Descriptive Statistic**

	Mean	Median	Min	Max	Standard Deviation
BI1	3.646	4.000	1.000	5.000	1.128
BI2	3.478	3.000	1.000	5.000	1.073
BI3	3.310	3.000	1.000	5.000	1.153
PR1	3.124	3.000	1.000	5.000	1.145
PR2	2.823	3.000	1.000	5.000	1.184
PR3	3.257	3.000	1.000	5.000	1.196
T1	3.584	4.000	1.000	5.000	1.095
T2	3.593	4.000	1.000	5.000	1.110
T3	3.664	4.000	1.000	5.000	1.094
T4	3.717	4.000	1.000	5.000	1.017
T5	3.690	4.000	1.000	5.000	1.073
T6	3.611	4.000	1.000	5.000	1.017
T7	3.726	4.000	1.000	5.000	1.015

Source: data procession using SmartPLS 3.0

## RESULT AND DISCUSSION

### Outer Model Test

Validity consists of internal and external validity. External validity indicates that the results can be generalized to all objects, situations, and different times. As for internal validity, it shows the ability of the research instruments to measure what should be measured from a concept (Jogianto, 2011).

Internal validity consists of qualitative and construct validity. Qualitative validity consists of face and content validity. Content validity can be based on opinions and evaluations from a panel of experts or by others. This instrument has gone through a peer panel discussion process on grammar, translation from the adoption of the original instrument in English language.

On the other hand, construct validity shows how well the results obtained from the use of the measurements are in accordance with the theories used to define a construct. Construct validity can be measured by convergent validity and discriminant validity (Jogianto, 2011). Convergent validity relates to the principle that the measures of a construct should be highly correlated (Jogianto, 2011). Hair (in (Jogianto, 2011)) states that loading  $> 0.50$  is considered practically significant. However, the higher the loading factor value, the more important the

role of loading in representing the factor matrix. Therefore, the rule of thumb used in convergent validity is outer loading  $> 0.70$ .

Table 4 shows the results of convergent validity analysis of the loading factors for behavioral intention variables, perceived risk, and perceived trust. The outer loading values of both sexes of the respondents have the values above 0.70. Thus, the indicator variable can be declared as valid.

Discriminant validity test is done by comparing the AVE root of a construct that must be higher than the correlation between variables or by looking at the cross-loading value. Table 5 shows the results of the discriminant validity analysis based on the inter-correlation test and the AVE of the indicator variables of behavioral intention, perceived risk, and perceived trust in male and female respondents. The results of the analysis show that the inter-correlation score between constructs is higher than the correlation score of a construct with other lower score constructs. From here, it can be concluded that the data used have met the discriminant validity test.

Reliability test is helpful for measuring the internal consistency of the measuring instruments. Reliability shows accuracy, consistency, and accuracy of the measuring instruments in making measurements. Reliability is measured by two methods, they are cronbach's alpha and composite reliability. Cronbach's alpha measures the lower limit of the reliability value of a construct. Composite reliability measures the real value of construct reliability (Jogianto, 2011). Hair (in (Jogianto, 2011) states that cronbach's alpha rule of thumb and composite reliability must be greater than 0.7. Table 10 is the result of reliability analysis which shows cronbach's alpha and composite reliability scores. The results show that both cronbach's alpha and composite reliability in both male and female respondents have the values of more than 0.7. Thus, the measuring instruments used in this research has good accuracy, consistency, and accuracy in measurements.

**Tabel 4 Validity and Reliability Test**

Variable	Indicator	Male			Female		
		Outer Loading	Cronbach's Alpha	Composite Reliability	Outer Loading	Cronbach's Alpha	Composite Reliability
<i>Behavioral Intention to Use</i>	BI1	0.905	0.919	0.949	0.917	0.926	0.953
	BI2	0.935			0.944		
	BI3	0.943			0.940		
<i>Perceived Risk</i>	PR1	0.920	0.905	0.938	0.819	0.761	0.862
	PR2	0.911			0.849		
	PR3	0.911			0.796		
<i>Perceived Trust</i>	T1	0.964	0.988	0.990	0.918	0.970	0.975
	T2	0.975			0.945		
	T3	0.976			0.924		
	T4	0.941			0.945		
	T5	0.975			0.921		
	T6	0.964			0.872		
	T7	0.973			0.924		

Source: data procession using SmartPLS 3.0

**Tabel 5 Output of Inter-Correlation Test and AVE Respondents of Male and Female**

	Male			Female		
	B Intention	P Risk	P. Trust	B Intention	P Risk	P. Trust
B Intention	<b>0.928</b>			<b>0.934</b>		
P Risk	0.370	<b>0.914</b>		0.418	<b>0.822</b>	
P. Trust	0.779	0.304	<b>0.967</b>	0.817	0.266	<b>0.922</b>

Source: data procession using SmartPLS 3.0

## Inner Model Test

### R square

The structural model was evaluated by using R<sup>2</sup> to measure the level of variation of the independent variable changes towards the dependent variable and t-value to test the significance between constructs in structural model (Jogianto, 2011). Table 11 shows the R square value of the research model, that is the connection between perceived risk and perceived trust in relation to the behavioral intention of the investors using investment platforms, which has the R square value of 0.627 for male respondent model and 0.711 for female respondent model. This means that the variability of behavioral intention to use an investment platform that can be explained by perceived risk and perceived trust is 62.7 percent in the model with male respondents and 71.1 percent in the model with female respondents. While the rest is explained by variables outside the proposed model.

**Tabel 6 R Square**

	R Square of Male Respondents	R Square of Female Respondents
B Intention	0.627	0.711

Source: data procession using SmartPLS 3.0

### Goodness Of Fit

Tandenhau in (Jogianto, 2011) states that *goodness of fit* can be measured by  $\sqrt{AVE \times R^2}$ . The calculation result from the goodness of fit for male respondents is  $\sqrt{0.877 \times 0.627} = 0.55$ . Meanwhile, the GOF of the female respondents  $\sqrt{0.798 \times 0.711} = 0.57$ . This shows that the models used in this study have considerable *goodness of fit*, meaning that the research samples can properly explain the models used in this research.

### Path Coefficient

Picture 2 describes the research measurement model, particularly the relationship between perceived trust and perceived risk on the behavioral intention of the investors in using the investment platforms moderated by gender. Tables 7 and 8 describe the parameter coefficient values for male and female respondents. The results of the analysis explain that perceived trust on female investors' intention to use investment platforms is 0.760 with p-value of 0.000 which is smaller than 0.05, therefore the impact of perceived trust on female using investment platforms is significant at 5 percent alpha. Same with women, the path coefficient value of perceived trust of male investors is 0.735 with a p-value of 0.000, significant at 5 percent alpha. This means that there is positive influence of received trust with behavioral intention. The higher the perceived trust of the investors, the higher the level of behavioral intention of the investors to use investment platforms for both male and female investors. However, when analyzed using multigroups, the difference in path coefficient perceived trust between male and female investors is 0.025 with a p-value of 0.814. Therefore, gender does



not moderate the effect of perceived trust on investment platforms usage intentions. In conclusion, H1 is not valid.

The path coefficient value of the impact of perceived risk with behavioral intention on male respondents is 0.147 with p-value of 0.107 which is greater than 0.05. While for women's, the result is 0.216 with p-value of 0.044 which is smaller than 0.05. This means that the lower the perceived risk, the higher the behavioral intention of the investors to use the investment platforms. However, this is significant only for female investors and not for male investors. Based on multigroup analysis, the impact of perceived risk on behavioral intention has a path coefficient difference of 0.070 with a p-value <0.05, which is 0.622. Therefore, gender does not moderate the effect of perceived risk on behavioral intention. With this, it can be concluded that H2 is not valid.

**Tabel 7 Path Coefficient of Male Respondents**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
P Risk -> B Intention	0.147	0.155	0.091	1.616	0.107
P. Trust -> B Intention	0.735	0.731	0.063	11.632	0.000

Source: data procession using SmartPLS 3.0

**Tabel 8 Path Coefficient of Female Respondents**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
P Risk -> B Intention	0.216	0.222	0.107	2.022	0.044
P Trust -> B Intention	0.760	0.761	0.078	9.799	0.000

Source: data procession using SmartPLS 3.0

**Tabel 9 Results of Gender Multigroup Analysis**

	Path Coefficients-diff (Female - male)	p-Value original 1-tailed (Female vs male)	p-Value new (Female vs male)
P. Trust -> BI	0.025	0.407	0.814
P.Risk -> BI	0.070	0.311	0.622

Source: data procession using SmartPLS 3.0

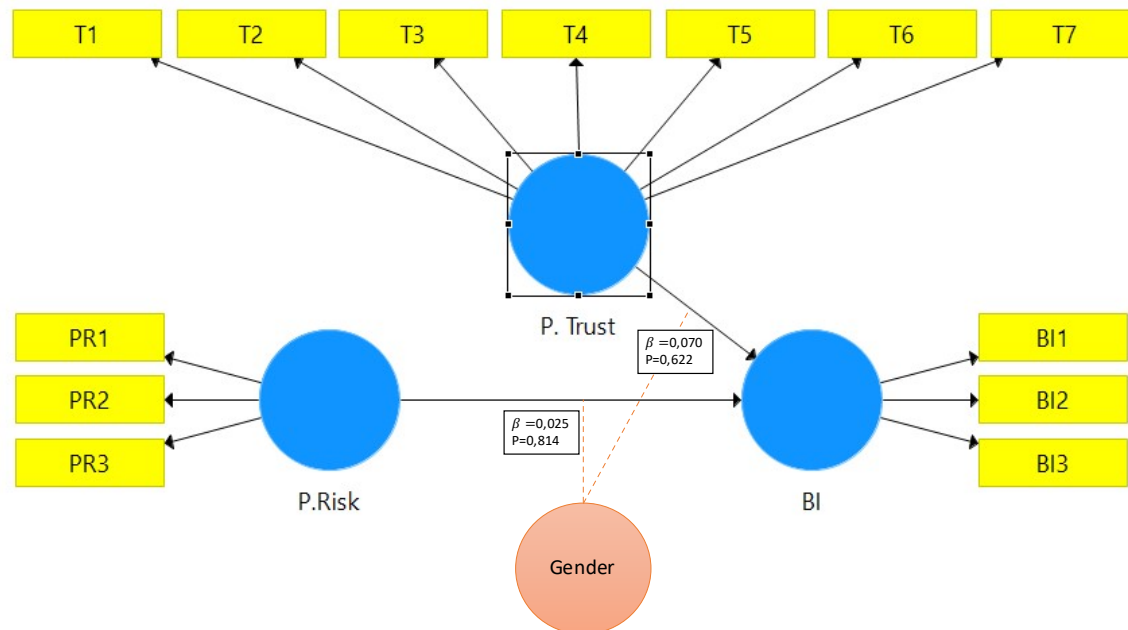


Image 2 Research Model: Gender as Moderating Variable

## Discussion

This research tests out the impact of perceived risk and investors' trust on the intention to use investment platforms moderated by gender. The number of respondents in this study amounted to 114 respondents, consisting of 58 percent of women and 42 percent of men. The results of the analysis explain that the difference in path coefficient of perceived trust on the intention to use investment platforms among female and male investors is 0.025 with p-value of 0.818. This means that gender is not able to moderate the impact of perceived trust of the investors on the intention to use investment platforms. This indicates that neither women nor men can increase or decrease the effect of perceived trust on investment platforms they use. From the analysis result for each gender, both the perceived trusts between women and men have significant influences on the intention to use investment platforms. Thus, the trust in investment platforms will increase the intention to use the platform for potential investors. Atkinson (2003) explains that the differences between women and men may be related to investment knowledge, in addition (B M Barber & Odean, 2001) stated that the main difference between women and men is the level of confidence in making investment decisions.

Different from perceived trust, perception of risk has an average value that is not much different from perceived trust and behavioral intention, namely PR1 3.12; PR2 2.823; PR3 3.257. This makes the result of the analysis being directly proportional, meaning that the perceived risk of the investors is not so great that the intention to use the investment platforms is high. However, the results of the analysis show that the impact of perceived risk on the intention to use the investment platforms for male investors is not significant. Meanwhile, the risk perception of female investors on the intention to use investment platforms has a significant impact. This shows that although their perceived risk value is quite high, women tend to be cautious when taking risks that impact their data and finances, as stated by (Goh & Sun, 2014; Kolsaker & Payne, 2002). Based on multigroup analysis, path coefficient's difference between women's and men's perceived risk on the intention to use investment platforms is 0.070 with p-value of 0.6122. This shows that gender can not moderate the effect of perceived risk on the intention to use investment platforms. This means that neither women nor men can increase or decrease their influences. This does not support the data of (Goh & Sun, 2014).

These data implies that current technological developments do not limit the access of understanding between men and women. Platforms that are easily accepted by potential investors are those that can be trusted that their data is safe to store on the platform and is free of risk from financial and social psychological losses. Although the study showed no significant difference between women's and men's perceived risk, the findings suggest that women have cautious, risk-averse attitude. This shows that it is still necessary to educate women about the risks of the trustworthy platforms. In addition, although men have the tendency to be aggressive when investing, the level of prudence needs to be considered with the information delivered by FSA regarding investment platforms that need to be watched out for.

The development of digital finance will be even greater, this can be considered by the government that it is really necessary to renew the regulations related to investment using the platforms. So that the development of the platform continues to be monitored from corruption, such as selling the investors' data.

## CONCLUSION

The development of the technology in financial sector has become opportunities for online trading platform developers, especially in investment. This is a form of encouragement from manual transactions transformation towards digital. The Financial Services Authority stated that of many websites and online investment platforms did not get permission from the them. This will has impacts on the risks that will be carried by the people who use it. On the other hand, as the development of online investment platforms grows because of COVID, the impact is that more people carry out online investment transactions to earn profits that is now mainly dominated by male society. Many perspectives associating the gender gap, such as the risky decision-making level and the perspective of women's trust level in using low investment platforms. Therefore, this study aims to test out perceived trust and risk of using online investment platforms from gender perspective. The results showed that both men and women's trusts have significant impacts on the intention to use investment platforms. However, gender can not moderate the impact. Similar to perceived risk, although women's perceived risk has significant impacts on the intention to use investment platforms, gender does not moderate the impacts. Thus, this research does not support the idea that there is a gender-impact difference on the connection between perceived risk and trust and the intention to use investment platforms.

## Suggestion

This research still has lack of references that support related research, the previous research has discussed more about performance in investment, investors' personalities, and the usage of the latest investment platforms studied by (Maziriri et al., 2019). Meanwhile, there is not much study about the usage of the platforms from gender perspective, and so in the future there are many opportunities to deepen this discussion. Respondents' participation is still not open, therefore for further research hopefully everyone will be able to work together with related communities or platforms' developers in order to meet the of data target achievement. The model studied is still very limited, so further research can use other variables to test out more factors that may be seen from gender perspective, such as ICT.

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