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**The Difference in Perceived Risk by Gender Among
Novice Investors: before and during Covid-19
Pandemic**

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Abstract: Understanding of risk is very important for investors, especially for novice investors. Their perception about risk, whether for male or female novice investor is interesting to study. Likewise, in the current Covid-19 pandemic situation, analyzing the differences in the perceived risk between the two is interesting also to do, since it determines their investment behavior. At the end, their investment behavior will affect the economic condition. This quantitative study aims to know whether there are any differences in perception of investment risk between male and female novice investors, both before and during the Covid-19 pandemic. Beside that, this study also examines the interaction between gender and other demographic factors (age, education, occupation and income) to differentiate perceived risk, both before and during Covid-19 pandemic. The perceived risk variable used in this study was measured using five statement indicators. Data were obtained from 299 novice investor respondents in the Indonesian Stock Exchange in 2020, then processed and analyzed using the paired t-test for the mean difference method. The results showed that there were differences in perceived risk between male and female investors in the period before the Covid-19 pandemic. Meanwhile, during the Covid-19 pandemic, there was no difference between the two. Beside that there was a difference in perceived risk of male/female between before and during the Covid-19 pandemic. Meanwhile, age and occupation were the factors that differentiate perceived risk, especially before Covid-19 pandemics, while education, and income were not.

Keywords: Perceived Risk; Novice Investor; Gender; Covid-19 Pandemic

Introduction

In the investment sector, risk is a very important factor to be taken into account. Since the discussion of risk has a strong relationship with the discussion of investment, risk is always used as the main barometer to be analyzed if an investment decision is made. This is very important to be considered that an investor's decision to invest heavily depends on how their perception to the investment risk, as mentioned by Nofsinger (2017) that an investor's perspective on risk can influence his investment decisions.

There have been many studies on investors' perceptions of investment risk, especially according to gender perspective. A lot of empirical evidence shows that female are more risks averse than men as mentioned by Gonzalez-Igual, Santamaria and Vieites (2021) that female investors viewed by themselves as more risk-averse than men. In other study showed that there was an impact between the gender and risk aversion behavior in determining investment decisions (Situngkir, Nugraha, Disma & Supriyatna, 2022). While, Huang (2018) also said that gender differences influence actions over the risks faced in determining investment decisions. However, based on the results of his research, Hillesland (2019) concluded that there are differences between countries regarding gender in terms of risk. In developed countries, women tend to be more risk averse, while in developing countries, there is no significant difference regarding the investment risk between women and men. This is in line with the results of research conducted by Marinelli, Mazzoli, and Palmucci (2017) which states that males are more risk tolerant compared to females are not commonly accepted.

Currently, the world is facing the Covid-19 pandemic which is causing problems and uncertainty in all areas of life, including investment. In Indonesia, the Covid-19 pandemic had a negative impact on the capital market and affected investors in making investment decisions (Pitaloka, 2020). Overall the capital market experienced a decline, the Composite Stock Price Index (IHSG) fell in all industrial sectors, especially at the early of the Covid-19 pandemic, and made the capital market unstable (Saragih, Nurhaida, Sinaga, Ilham, & Faisal, 2021). Making investment-related decisions in uncertain conditions, especially decisions related to stocks, is very difficult (Grable, 2017).

It is very interesting to see how investors perceive the investment risk during the uncertainty condition. Are there any differences in risk perceptions between male and female during the pandemic? Are there any differences in perceived risk before and during the pandemic, for both male and female investors? Are there any influences of age, education, and occupation toward the perceived risk? To answer these questions, the researcher conducted this study with the title "Differences in Investment Risk Perceptions by Gender among Novice Investors: Before and During the Covid-19 Pandemic".

This quantitative study aims to know whether there are any differences in perception of investment risk between male and female novice investors, both before and during the Covid-19 pandemic. Beside that, this study also examines the interaction between gender and other demographic factors (age, education, occupation and income) to differentiate perceived risk, both before and during Covid-19 pandemic. In times full of uncertainty due to the Covid-19 pandemic, perceptions of investment risk may change, which in turn will have an impact on differences in investment decision making. The results of this study are expected to provide advice in encouraging investment amidst the uncertainty of the investment

climate, especially in anticipating anomalies that occur due to changes in perceptions of investment risk among males and females.

Literature Review

According to the Merriam-Webster Dictionary (2022), risk is the chance that an investment (such as a stock or commodity) will lose value. Meanwhile the word perceive means to understand or think of somebody/something in a particular way (Oxford Learner's Dictionary, 2022). Perceived or perception is an aspect of the mind process through the senses such as seeing, hearing, and feeling, influenced by information, and then these senses influence judgment. Someone who receives information can use it to develop a picture of the results of that information (Rogers, 2017). Risk perception describes how an individual interprets and develops a picture from the received information. This is normally different from reality, thoughts, and estimates (Ainia & Lutfi, 2019). Thus, it can simply be said that perceived risk is how someone understands risk.

Meanwhile, Zhao (2017) considers perceived risk as an investor's perception of the possible negative consequences he will receive or the extent to which investors feel a loss for the investment actions that have been taken. Meanwhile, Meyliana and Fernando (2019) stated that perceived risk can be interpreted as investors' expectations of losses that will occur when investors invest in the stock market. Perceived Risk can be measured by several factors, they are: the level of risk, the probability of loss, the uncomfotability in investing, the return of investment, and the financial losses (Yang, 2019).

Gender differences influence actions over the risks faced in determining investment decisions (Huang, 2018). Gender differences also indicate different overconfidence behaviors in determining investment decisions (Hokky, 2018). While Gonzalez-Igual, et al. (2021) stated that female investors viewed themselves as more risk-averse than men. The difference in risk tolerance of investors by gender can also be seen from the satisfaction with their life status. The more unsatisfied investors with their life the less likely they will be to take on high-risk investments. Male investors had higher life satisfaction compared to female investors. Female investors were only willing to tolerate high risk when experiencing extremely low life satisfaction or extremely high life satisfaction stages (Dickason-Koekemoer & Ferreira, 2019).

On the contrary, the results of research conducted by Altowairqi, Tayachi and Javed (2021) showed that there was no influence of gender on financial risk attitude between professionals in Saudi Arabia. Similar results were also shown by Bairagi and Chakraborty (2018) from their research that in terms of gender, there was no significant difference in risk perception of male and female in investment decisions.

The research conducted by Su, Liu, Lee and Quy (2022) shows that there was an influence of the effect of demographic characteristics, especially the age, on risk perception and investment decision. Younger investors tend to disagree with the risk perception. The younger ones were new in the field of investment and tend to be more cautious, compared to older ones. The result also showed that the higher the age of the investor, the more daring investors are in taking risks.

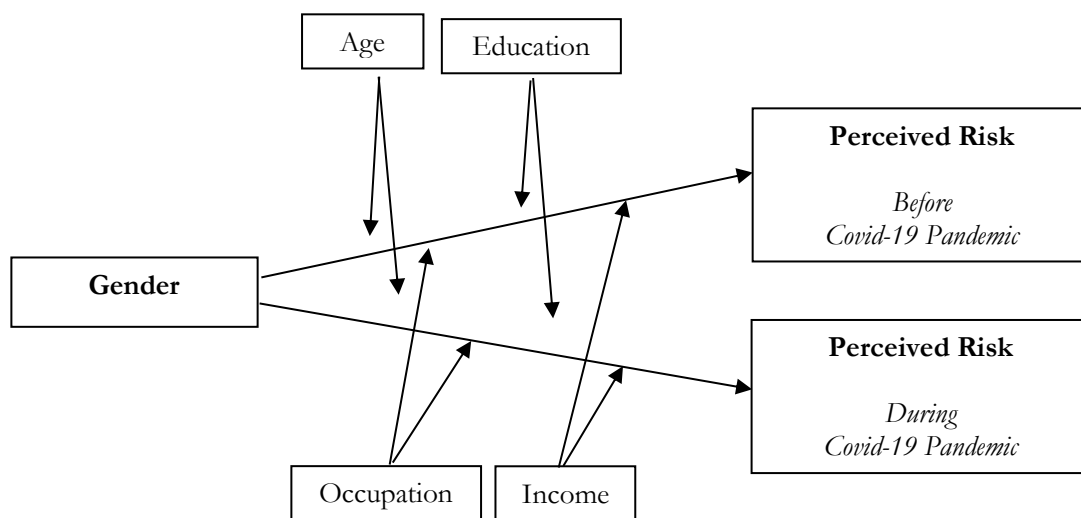
From the aspect of education, individual with a postgraduate degree was more likely to be high risk tolerant compared to an individual with a lower level of education. Individuals who had some level of schooling were more likely to be risk adverse (Koekemoer, 2019). While Baihaqqy, Disman, Nugraha and Sari (2020) found that the higher the level of education, the greater the level of understanding of financial literacy. This is in line with the opinion of Tanusdjaja (2018), who stated that investors with higher education have more knowledge about stock movements and are more willing to take risks so that decision-making in investing is more complex when compared with investors whose education is lower. Meanwhile, Arianti (2018) argued that investment decisions were not influenced by financial literacy, but financial behavior and income had a significant impact on investment decisions.

Su et al. (2022) also stated that investors such as students tend to diversify their portfolio to reduce risk, and private and foreign company employees believe that the more familiar an investment, the less risky it was, compared to investors who run a business. The result also showed government employees tend to agree with the risk perception. The more money one has, the more investment risk one can take, compared to those who run their own business. This finding implied that if investors who work in government tend to take more risk in investing, they have more capital.

Based on their research result, Su et al.(2022) also showed that investors with higher income tend to agree with the risk perception. The investors who have higher income tend to believe that the more familiar an investment, the less risky it was, compared to those who have lower income. The result also showed that investors with lower income tend to be more cautious in their investment decisions, compared to the investors who have higher income. The finding implied that investors with lower income levels will be more cautious in making an investment decision because if the result of the investment is a loss that may destroy their life.

The theoretical framework used in this study can be described as follows:

Figure 1. **Theoretical Framework**



Based on the theoretical framework above, several hypotheses can be formulated as follows:

- H₁: There is a difference in perceived risk between male and female before the Covid-19 pandemic
- H₂: There is a difference in perceived risk between male and female during the Covid-19 pandemic
- H₃: There is a difference in perceived risk of male before and during the Covid-19 pandemic
- H₄: There is a difference in perceived risk of female before and during the Covid-19 pandemic
- H₅: Age is a factor that differentiates perceived risk before the Covid-19 pandemic
- H₆: Age is a factor that differentiates perceived risk during the Covid-19 pandemic
- H₇: There is an interaction between age and gender on perceived risk before the Covid-19 pandemic
- H₈: There is an interaction between age and gender on perceived risk during the Covid-19 pandemic
- H₉: Education is a factor that differentiates perceived risk before the Covid-19 pandemic
- H₁₀: Education is a factor that differentiates perceived risk during the Covid-19 pandemic
- H₁₁: There is an interaction between education and gender on perceived risk before the Covid-19 pandemic
- H₁₂: There is an interaction between education and gender on perceived risk during the Covid-19 pandemic
- H₁₃: Occupation is a factor that differentiates perceived risk before the Covid-19 pandemic
- H₁₄: Occupation is a factor that differentiates perceived risk during the Covid-19 pandemic
- H₁₅: There is an interaction between occupation and gender on perceived risk before the Covid-19 pandemic
- H₁₆: There is an interaction between occupation and gender on perceived risk during the Covid-19 pandemic
- H₁₇: Income is a factor that differentiates perceived risk before the Covid-19 pandemic
- H₁₈: Income is a factor that differentiates perceived risk during the Covid-19 pandemic
- H₁₉: There is an interaction between income and gender on perceived risk before the Covid-19 pandemic
- H₂₀: There is an interaction between income and gender on perceived risk during the Covid-19 pandemic

Methods

This study was a quantitative study using primary data derived from a survey of novice investors on the Indonesia Stock Exchange (IDX). The survey was conducted by asking 299 respondents who were selected by purposive sampling through a questionnaire sent online. The selected respondents must meet the following criteria: (1) respondents were investors in IDX and have never invested in stocks before; (2) invest in the Indonesia Stock Exchange

for no more than three years until April 2020 (investing in stocks before and during the Covid-19 pandemic); (3) respondents were retail investors.

The variables used in this study include demographic and non-demographic variables. Demographic variables consists of gender, age, occupation, last education and income. While the non-demographic variable was perceived risk, which was measured using five statements about: level of risk, probability of loss, uncomfortable in investment, return of investment, and financial losses (adopted from Yang, 2019). Each statement was answered with a Likert scale, from 1 to 7, where 1 is strongly disagree, 2 is disagree, 3 is slightly disagree, 4 is neutral, 5 is slightly agree, 6 is agree, and 7 is strongly agree.

Data were collected using questionnaires that sent to respondents via electronic media. The collected data was then processed by computer using statistical software. Prior to processing, the data was tested, which included: instrument validity and reliability tests and normality and homogeneity tests of data variance. After passing these tests, the data were analyzed using the paired sample t-test and independent sample t-test methods to see the differences in perceived risk by gender and investment period. While the Anova (Analysis of Variance) method was used to analyze whether there was an influence/interaction of demographic factors (age, education, occupation and income) and gender variables on perceived risk.

Findings

The results of the instrument validity test show that the perceived risk variable is valid. This can be seen from the value of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of the perceived risk variable which are worth 0.707 (more than 0.05) and 0.000 (sig. value, respectively). Meanwhile, the five statements used to measure perceived risk are also valid, as can be seen from the value of the Measures of Sampling Adequacy (MSA) from statements about the level of risk, probability of loss, uncomfortable in investment, return of investment, and financial losses, each of which values above 0.5, namely 0.558, 0.658, 0.766, 0.727, and 0.731 respectively. The reliability of measurement can be seen from the value of Cronbach's Alpha, that is 0.767. Since the value is higher than 0.05, then the variable Perceived Risk (PR) is reliable.

Based on the results of the normality test, it can be concluded that the data used in this study were normally distributed. This can be seen from the results of the data normality test using the Monte Carlo method, both for data before and during the Covid-10 pandemic. The value of the test results of Monte Carlo Sig. (2-tailed) before the pandemic and during the pandemic were 0.914 and 0.315, respectively. Both values are greater than 0.05, which means that both groups of data are normally distributed. Meanwhile, the results of the homogeneity test of variance using Levene's Test of Equality of Variance show that the data variance before and during the pandemic is homogeneous, with significant values of Levene's Test of Equality of Variance of 0.316 and 0.612, respectively (both values are greater than 0.05).

The results of data processing on the respondent's profile showed in Table 1. There were 191 male respondents (64%) and 108 female respondents (36%). When viewed by age group, the majority of respondents came from the age group 21-25 years (49%), followed by the age group 26-30 years (22%), less than 20 years (15%), 31-35 years (8%) and more than 35 years (6%). Respondents from the employee and student groups are the two largest groups of respondents in terms of type of work, with a percentage of 44% and 43%, respectively,

followed by entrepreneurs (8%) and others (5%). In terms of education, respondents with Bachelor's education are the most (48%), followed by Senior/Vocational High School (39%), Diploma (7%) and master degree and above (6%). In terms of income, the majority of respondents came from the income group of less than Rp 3,500,000 (40%), followed by groups with income more than Rp 6,500,000 (32%), Rp 4,500,001 – Rp 5,500,000 (11%), Rp 3,500,001 – Rp 4,500,000 (10 %) and Rp 5,500,001 – Rp 6,500,000 (7%).

Table 1. **Number of Respondent by Demographic Characteristics**

No.	Demographic Characteristics	Percentage
1.	Gender:	
	Male	64%
	Female	36%
2.	Age (Year):	
	≤ 20	15%
	21 – 25	49%
	26 – 30	22%
	31 – 35	8%
	> 35	6%
3.	Occupation:	
	Student	43%
	Employee	44%
	Entrepreneur	8%
	Others	5%
4.	Education:	
	Senior/Vocational High School	39%
	Diploma	7%
	Bachelor	48%
	Master Degree +	6%
5.	Income (Rp):	
	≤ 3,500,000	40%
	3,500,001 – 4,500,000	10%
	4,500,001 – 5,500,000	11%
	5,500,001 – 6,500,000	7%
	> 6,500,000	32%

Note: Total of respondents = 299 respondents.

Table 2 shows the average perceived risk of male and female before the pandemic of 4.36 and 4.03, respectively. Meanwhile, during the pandemic, the perceived risk of male and female increased to 4.70 and 4.54, respectively.

Table 3 showed the result of Independent Sample t-Test on the situation before and during the Covid-19 pandemic. In the situation before the pandemic, the results obtained that the value of sig. (2 tailed) of 0.019. Because the value is smaller than 0.05 (significance level), the first hypothesis is accepted, which means that there is a difference in perceived risk between male (4.026) and female (4.357) before the Covid-19 pandemic. The average perceived risk

for male (4,026) which is lower than the perceived risk for female (4.357) indicates that male are more willing to take risks than female.

However, different results are shown by Bairagi and Chakraborty (2018). Based on the results of their research, they concluded that there was no significant difference in risk perception of male and female in investment decisions. This was in line with the results of research conducted by Altowairqi et al. (2021) that showed that there was no influence of gender on financial risk attitude between professionals in Saudi Arabia. This difference may be due to different groups of respondents. In this study, about 40% of the respondents are students who are novice investors. While the respondents of Altowairqi, et al. (2021) are professionals who have better education and knowledge. The differences in education will affect the risk perception of investment. Differences in results like this are very possible, given the many factors that influence the investment decision-making process. Not only influenced by socio-cultural factors and customs, or psychological factors, but also other factors that cannot be explained with certainty.

Table 2. Perceived Risk by Gender and Pandemic Situation

Situation	Gender	N	Perceived Risk Mean	Std. Deviation	Std. Error Mean
Before Covid-19 Pandemic	Female	108	4.357	1.110	0.107
	Male	191	4.026	1.201	0.087
During Covid-19 Pandemic	Female	108	4.698	1.327	0.128
	Male	191	4.538	1.372	0.099

Meanwhile, the results of the Independent Sample t-Test on the situation during the Covid-19 pandemic, is that the sig. (2 tailed) value is 0.328. Because the value of sig.(2 tailed) is greater than 0.05 (significance level), the second hypothesis which states there is a difference in perceived risk between male and female during the Covid-19 pandemic is rejected. This means that there is no difference in perceived risk between male and female during Covid-19 (see Table 3).

The absence of differences in perceived risk between male and female during the Covid-19 pandemic can be explained as follows. In normal situations (before the pandemic) investor behavior will also follow applicable rules or in accordance with applicable theory, namely male investors will be more willing to take risks than female investors. The consideration is that if the male investor fails under normal circumstances, he hopes to bounce back to restore the situation as long as other factors are under control and the economy is normal (without turmoil) and there is still a chance to turn things around. However, the world is currently faced with a situation full of uncertainty due to the outbreak of the Covid-19 pandemic. The Covid-19 pandemic affects all community activities, not only in the economic field, but also in the social, cultural, health, education and many other fields, where the impact is very large. What's even worse is that no expert knows when this pandemic will end. In a situation full of uncertainty, investors will certainly think about taking actions that are safe for themselves. The easiest thing to do is to refrain by avoiding risk. Therefore, male investors who during

normal conditions are more willing to take risks, during the pandemic will become less risk takers, just like female investors.

Table 3. **Result of Independent Sample t-Test**

Condition of Perceived Risk	Sig. (2-tailed)	Decision/Conclusion
Before Covid-19 pandemic	0.019	Accept hypothesis 1/ There is a difference on perceived risk between male and female before Covid-19 pandemic
During Covid-19 pandemic	0.328	Reject hypothesis 2/ There is no difference of perceived risk between male and female during Covid-19 pandemic

Table 4 shows that the mean of perceived risk for male and female before and during the pandemic. Male's perceived risk increased from 4,357 before the pandemic to 4.698 during the pandemic. Likewise for female, the mean of perceived risk increased from 4.026 before the pandemic to 4.538 during the pandemic. To find out whether there is a difference in perceived risk between before the pandemic and during the pandemic, for both male and female, a Paired Sample t-Test was carried out. The test results can be seen in Table 5.

Table 4. **Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PR_FB	4.3574	108	1,10970	0,10678
	PR_FD	4.6981	108	1,32735	0,12772
Pair 2	PR_MB	4.0262	191	1,20138	0,08693
	PR_MD	4.5382	191	1,37165	0,09925

Note:

PR_FB = Perceived Risk of Female before Covid-19 pandemic

PR_FD = Perceived Risk of Female during Covid-19 pandemic

PR_MB = Perceived Risk of Male before Covid-19 pandemic

PR_MD = Perceived Risk of Male during Covid-19 pandemic

The significance value (2-tailed) in Table 5, for pair 1 (female) and pair 2 (male) it is 0.003 and 0.000, respectively. Because the value is less than 0.05, then hypothesis 3 and hypothesis 4 are accepted. This means that there is a difference in perceived risk between before and during the pandemic, for both female and male. In both pairs (male and female) it can be seen that there was a significant increase in perceived risk, where the perceived risk during the pandemic was higher than the perceived risk before the pandemic. In other words, during the pandemic both male and female act more sensitive to risk or take actions that reduce risk in investing, especially investing in stocks.

Table 5. **Result of Paired Sample Test (Summary)**

		Sig. (2-tailed)	Decision/Conclusion
Pair 1	Perceived Risk Before- During Covid-19 pandemic - Female	0.003	Accept hypothesis 3 /There is a difference of perceived risk of female between before and during pandemic
Pair 2	Perceived Risk Before- During Covid-19 pandemic - Male	0.000	Accept hypothesis 4 /There is a difference of perceived risk of male between before and during pandemic

These results are in line with the results of research conducted by Komalasari, Manik and Ganiarto (2020). In their research, they concluded that there is a significant difference in investors' perceived risk before and during the Covid-19 pandemic, where investors considered risk (reducing risk) during the pandemic compared to before the pandemic.

The effect of demographic characteristics (age, education, occupation, and income) on perceived risk can be seen in Table 6. The results of the Anova - Tests of Between-Subject Effects analysis show that age is a factor that distinguishes perceived risk, both before and during the pandemic. This can be seen from the significance value, which is 0.003 (before the pandemic) and 0.018 (during the pandemic, respectively). Because the two significance values are less than 0.05, then hypothesis 5 and hypothesis 6 are accepted. That is, age is a factor that distinguishes perceived risk, both before and during the pandemic.

In the pre-pandemic period, the age groups that differentiated perceived risk are the age group less than or equal 20 years (the youngest age group) and the age group more than 35 years (the oldest age group). Meanwhile, during the pandemic, there are differences in perceived risk between the age group less than or equal 20 years with the age group 21-25 years, 26-30 years, and the age group more than 35 years. There is a tendency that the older the investor, the more daring they are to take risks. This result is in line with the research results of Su et al. (2022) that conclude that younger ones are new in the field of investment and tend to be more cautious to take risk compared to older ones.

From Table 6, it can also be seen that there was no interaction (relation) between gender and age on perceived risk, both before and during the pandemic. This can be seen from the value of sig. (significance) respectively, which are 0.217 (before the pandemic) and 0.371 (during the pandemic). Thus, hypotheses 7 and 8 are rejected.

In this study, education is also not a factor that distinguishes perceived risk, both before and during the pandemic. This can be seen from the value of sig. respectively, which are 0.494 (before the pandemic) and 0.106 (during the pandemic), where both values are greater than 0.05, so that hypothesis 9 and hypothesis 10 are rejected (see Table 6). This result is different from the research results of Tanusdjaja (2018), who states that investors with higher education have more knowledge about stock movements and are more willing to take risks than the one who has lower education.

In Table 6 it can also be seen that there is no interaction (link) between gender and education on perceived risk. This can be seen from the significance value of the interaction of gender

and education which is worth more than 0.05, namely 0.657 (before the pandemic) and 0.944 (during the pandemic), so that hypothesis 11 and hypothesis 12 are rejected.

In contrast to education, occupation is a factor that differentiates perceived risk, especially before the pandemic. With the value of sig. is 0.008, then hypothesis 13 is accepted (see Table 6). In this study, it was found that the student's perceived risk was greater than the employee's perceived risk. This means that employees are more willing to take risks than students. This is understandable considering that employees have greater income than students. Thus, employees have more funds than students, so employees are more willing to take risks. These results are in line with the research of Su et al. (2022) who showed differences in occupations led to differences in perceived risk.

On the other hand, during a pandemic, occupation it is not a factor that differentiates perceived risk (sig. 0.160), so hypothesis 14 is rejected. This is understandable considering that during the pandemic, all parties are more careful in investing, considering that everyone faces the same situation, namely a situation of uncertainty, which no one knows how long it will end so that all parties do the same things.

Furthermore, from Table 6 it can also be seen that there is a relationship between gender and occupation on perceived risk before the pandemic, with a sig. is 0.037, so hypothesis 15 is accepted. This can be seen from the difference in perceived risk between male and female in the employee and student groups. Employee investors seem to be more willing to take risks than student investors, both for male and female. Meanwhile, male entrepreneur investors are the most daring to take risks compared to male investors from the employee and student groups. Meanwhile, female entrepreneur investors tend to be risk sensitive compared to female employee investors and others, except for female student investors.

During the pandemic, there is no link/interaction between gender and occupation. This can be seen from the significance value which is 0.940 (more than 0.05), so that hypothesis 16 is rejected.

Just like the education variable, income is also not a factor that differentiates perceived risk, both before and during the pandemic. The interaction between gender and income also has no effect on perceived risk (see Table 6). In other words, hypotheses 17, 18, 19 and 20 are rejected. This result is different from the research result of Su et al. (2022) which state that differences in income cause differences in perceived risk. This may be due to the fact that there are many student investors (43%) and many investors who "earn" less than Rp. 3,500,000 (40%), which can be ascertained that they are also from the student group. Things like this certainly reflect the unreal situation, especially when viewed from the concept of income for student respondents.

Table 6. Tests of Between-Subject Effects (Summary)

Source	Before Covid-19 pandemic		During Covid-19 pandemic	
	Sig.	Decision/Conclusion	Sig.	Decision/Conclusion
1. Age	0.003	Accept hypothesis 5/ Age is a factor that differentiates perceived risk before the Covid-19 pandemic	0.018	Accept hypothesis 6/ Age is a factor that differentiates perceived risk during the Covid-19 pandemic
Gender*Age	0.217	Reject hypothesis 7/ There is no interaction between age and gender on perceived risk before the Covid-19 pandemic	0.371	Reject hypothesis 8/ There is no interaction between age and gender on perceived risk during the Covid-19 pandemic
2. Education	0.494	Reject hypothesis 9/ Education is not a factor that differentiates perceived risk before the Covid-19 pandemic	0.106	Reject hypothesis 10/ Education is not a factor that differentiates perceived risk during the Covid-19 pandemic
Gender*Education	0.657	Reject hypothesis 11/ There is no interaction between education and gender on perceived risk before the Covid-19 pandemic	0.944	Reject hypothesis 12/ There is no interaction between education and gender on perceived risk during the Covid-19 pandemic
3. Occupation	0.008	Accept hypothesis 13/ Occupation is a factor that differentiates perceived risk before the Covid-19 pandemic	0.160	Reject hypothesis 14/ Occupation is a factor that differentiates perceived risk during the Covid-19 pandemic
Gender*Occupation	0.037	Accept hypothesis 15/ There is an interaction between occupation and gender on perceived risk before the Covid-19 pandemic	0.940	Reject hypothesis 16/ There is no interaction between occupation and gender on perceived risk during the Covid-19 pandemic
4. Income	0.119	Reject hypothesis 17/ Income is not a factor that differentiates perceived risk before the Covid-19 pandemic	0.678	Reject hypothesis 18/ Income is not a factor that differentiates perceived risk during the Covid-19 pandemic
Gender*Income	0.696	Reject hypothesis 19/ There is no interaction between income and gender on perceived risk before the Covid-19 pandemic	0.408	Reject hypothesis 20/ There is no interaction between income and gender on perceived risk during the Covid-19 pandemic

Conclusion

Based on the discussion in the previous section, it can be concluded several things as follows: (1) there is a difference in the perceived risk between male and female before the Covid-19 pandemic, where the perceived risk for male is lower than the perceived risk for female; (2) during the Covid-19 pandemic, there was no difference in perceived risk between male and female; (3) there is a significant increase in perceived risk, where the perceived risk during the pandemic was higher than the perceived risk before the pandemic; (4) Age is a factor that distinguishes perceived risk, both before and during the Covid-19 pandemic. There is a tendency that the older the investor, the more daring they are to take risks; (5) there is no association/interaction between age and gender on perceived risk, both before and during the pandemic; (6) both education and income factors, are also not factors that distinguish perceived risk, both before and during the pandemic; (7) the two factors – education and income – also do not show any relationship/interaction with gender, so they can distinguish perceived risk; (8) occupation is included as a factor that distinguishes perceived risk in the pre (before) pandemic period. But not during the pandemic; (9) occupation also has a relationship/interaction with gender in explaining differences in perceived risk; (10) during the pandemic, occupation is not a factor that differentiates perceived risk; (11) the interaction with gender, occupation is not related/no interaction with gender in differentiating perceived risk.

The absence of differences in perceived risk between male and female during the Covid-19 pandemic is a good sign for novice investors, so that investors are more careful in managing investment risk, especially during difficult and uncertain period such as the Covid-19 pandemic. Thus, male investors must refrain from making investment decisions in order to avoid losses in this uncertain situation (Covid-19 pandemic). It is hoped that this kind of study can be refined in the future so that the results are more reflective or closer to the actual situation. What needs to be done, among others, is to expand the scope of respondents, so that they are not concentrated in the Greater Jakarta area (Jakarta, Bogor, Depok, Tangerang and Bekasi). In addition, reducing the bias of respondents who tend to choose student respondents can be overcome by using a better sampling method.

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