

# The Effect of Demographic Factors on Risk Tolerance and Investment Instrument Choice: Evidence From Indonesian Investors

T Muhammad Jumeil<sup>1</sup>, Desy Asmara<sup>2</sup>

<sup>1</sup> Sekolah Tinggi Ilmu Ekonomi Sabang, Banda Aceh, Indonesia

<sup>2</sup> Pusat Pembelajaran dan Strategi Kebijakan Manajemen Kinerja Lembaga Administrasi Negara Republik Indonesia, Aceh

---

## ARTICLE INFO

### Keywords:

Behavioral Finance;  
Risk Tolerance;  
Investment Instrument Choice;  
Demographic Factors

---

### Article history:

Received 2025-12-25  
Revised 2026-01-23  
Accepted 2026-02-21

---

## ABSTRACT

Traditional economics portrays investors as rational decision-makers, but this assumption doesn't always true. Investment decisions are shaped by various factors, one of which is the investor's demographic profile. This study aimed to ascertain whether differences exist in risk tolerance levels and the selection of investment instruments among investors based on demographic variables. Data were gathered through an online questionnaire. The findings reveal significant differences in risk tolerance levels correlated with the demographic variables of age and marital status. Additionally, the results indicate variations in the selection of investment instruments based on the demographic factors of gender, education, and income.

*This is an open access article under the [CC BY](#) license.*



---

## Corresponding Author:

T Muhammad Jumeil

Sekolah Tinggi Ilmu Ekonomi Sabang, Banda Aceh, Indonesia; [muhammadjumeil@gmail.com](mailto:muhammadjumeil@gmail.com)

---

## 1. INTRODUCTION

Conventional financial theory asserts that investors make rational decisions based on publicly accessible information. In contrast, behavioral finance theory challenges this assumption by suggesting that individuals are not always rational and can make emotional and cognitive mistakes when making decisions. Lead theory has gained significant attention in behavioral finance. This hypothesis suggests that individuals view rewards and losses differently, and the way in which a situation is presented affects an individual's risk tolerance. (Fame, 1970) (Kahneman & Tversky, 2000)

Over the past two decades, research on the impact of risk tolerance on individual investment decisions has gained significant traction. Academics and practitioners in finance, psychology, economics, and management have paid considerable attention to the relationship between risk tolerance and investment decisions. However, due to its complex nature, measuring risk tolerance has proven to be challenging. Research shows that investors' risk tolerance capacity can be estimated by analyzing their demographic characteristics (Lathief and al., 2024) (Srivastava and al., 2025) (Lippi et al., 2022).

Demographic factors, such as gender, significantly influence investment decisions. A number of studies have shown that male investors show greater risk tolerance compared to female investors. In contrast, an investor's risk-taking capacity is inversely correlated with their age. However, it is

important to note that their income and investment experience are positively correlated with their risk tolerance capacity. Financial literacy emerged as another influential factor in assessing risk. Individuals with higher financial literacy show a high tolerance for risk. (Brooks and al., 2019) (Salem, 2019) (Grable, 2000) (Ahmad, 2020; Salman and al. , 2021)

The findings of previous research have provided insights into demographic factors, risk tolerance, and investment decisions. However, a comprehensive analysis of all significant determinants of risk tolerance and their impact on investment decisions is still indispensable. Numerous studies have been conducted to determine the influence of demographic factors on investment decisions, but they still produce conflicting findings in different countries and regions. This study sought to investigate the extent to which demographic factors influence investors' risk tolerance attitudes during decision-making, with a particular focus on Indonesia. Indonesia's unique context as a substantial emerging market economy provides an ideal environment to study the relationship between demographics and risk tolerance and investment decisions. Rapid financial modernization and deep socio-cultural and regional diversity make it an optimal setting for behavioral finance research. (Srivastava and al., 2025)

A number of studies have been conducted to investigate the impact of demographic factors on investors' risk tolerance during investment decision-making. Individuals with different genders, ages, knowledge, marital status, and income levels exhibit different attitudes toward decision-making, some daring to take risks, while others are risk-averse. The level of risk tolerance that a person has will have an impact on the type of investment he or she will choose. Everyone's risk tolerance level varies. According to the RBS Morgan: *Risk Profile Questionnaire*, the level of risk tolerance of an investor is divided into 5 (five) levels, namely: *conservative, moderately conservative, marital status, education, income* (Stockbroking).

Each investment instrument has a *different expected return* and risk level than other investment instruments. When choosing an investment instrument, an investor will be influenced by the level of risk tolerance he has. Investors with a low risk tolerance are more likely to choose safe investment instruments, such as deposits and government bonds. In contrast, investors with a high level of risk tolerance are likely to choose high-risk investment instruments such as stocks. There are several investment instruments that are quite well known by the Indonesian people, including stocks, bonds, government bonds, mutual funds, deposits, gold, property, and (Singh and al., 2022) (Aren & Nayman Hamamci , 2020) *peer to peer lending*. One of the factors that plays a role in determining investor behavior in making investment decisions is demographic factors. Based on previous research, demographic factors that will affect investment decisions include the following: gender, age, marital status, education and income.

Based on the explanation above, this study determined three factors that are expected to help answer the problem in this study, namely demographic factors, risk tolerance levels, and the selection of investment instruments. Based on this, there are two hypotheses in this study, which are as follows:

#### Hipotesis 1

H1a: there are significant differences in the level of risk tolerance by gender.

H1b: there is a significant difference in the level of risk tolerance by age.

H1c: there is a significant difference in the level of risk tolerance based on marital status.

H1d: there is a significant difference in the level of risk tolerance based on education.

H1e: there is a significant difference in the level of risk tolerance based on income.

#### Hipotesis 2

H2a: there are significant differences in the selection of investment instruments by gender.

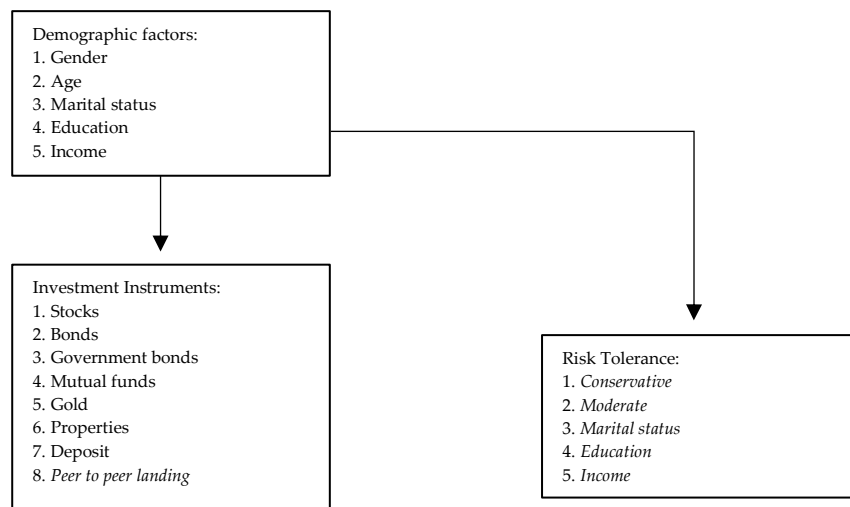
H2b: there are significant differences in the selection of investment instruments based on age.

H2c: there is a significant difference in the selection of investment instruments based on marital status.

H2d: there are significant differences in the selection of investment instruments based on education.

H2e: there is a significant difference in the selection of investment instruments based on income.

Based on the hypothesis that has been developed in this study, the conceptual framework in this study is as shown by Figure 1.



**Figure 1.** Conceptual Framework

## 2. METHODS

The population in this study is Indonesian investors which is divided based on several demographic factors such as gender, age, marital status, income, and education, as well as risk profile. Sampling was done using the *non-probability sampling* method. The type of *non-probability sampling* used is *purposive sampling*, which is a sample determination technique by *judgmental sampling*. The sample in this study is Indonesian investors who have at least one of the eight investment instruments studied in this study. Samples were obtained by distributing questionnaires online to several investor groups, such as mutual fund investor groups, stocks, gold, property, and others. There were as many as 100 investors used as a sample in this study.

This study uses the RBS Morgans: *Risk Profile Questionnaire* which has been published internationally for the public. In the questionnaire distributed, there were also questions to sort investors' preferences for several investment instruments. The data used in this study do not require validity and reliability retesting. This is because the research instrument used is the *Risk Profile Questionnaire* (Stockbroking, n.a.) developed by RBS Morgan, which has gone through a comprehensive validity and reliability testing process and is widely used in various international studies and practices to measure investor risk profiles.

The calculation model used in this study is a non-parametric statistical test. Before the statistical test was carried out, the data was first input and coded based on the groups on demographic factors and risk profiles.

**Table 1.** Demographic group codes

| No | Demographic Factors | Groups          | Code |
|----|---------------------|-----------------|------|
| 1  | Gender              | Male            | 1    |
|    |                     | Women           | 2    |
| 2  | Age                 | <20 years old   | 1    |
|    |                     | 21-30 years old | 2    |
|    |                     | 31-40 years old | 3    |
|    |                     | 41-50 years old | 4    |
|    |                     | >50 years old   | 5    |
| 3  | Marital Status      | Married         | 1    |
|    |                     | Unmarried       | 2    |

|   |                      |                         |   |
|---|----------------------|-------------------------|---|
| 4 | Education            | SMU                     | 1 |
|   |                      | Diploma                 | 2 |
|   |                      | Bachelor                | 3 |
|   |                      | Postgraduate            | 4 |
| 5 | Revenue              | <5 million              | 1 |
|   |                      | 5.1-10 million          | 2 |
|   |                      | 10.1-15 million         | 3 |
|   |                      | >15 million             | 4 |
| 6 | Risk Tolerance Level | Conservative            | 1 |
|   |                      | Moderately Conservative | 2 |
|   |                      | Balanced                | 3 |
|   |                      | Assertive               | 4 |
|   |                      | Aggressive              | 5 |

After the data is input and coded, a non-parametric statistical test is then carried out using SPSS. There are two models of non-parametric statistical tests used, namely the Mann-Whitney U test and the Kruskal Wallis test. The two tests were used to determine the difference in the level of risk tolerance and preference for the selection of investment instruments based on demographic factors.

### 3. FINDINGS AND DISCUSSION

The level of risk tolerance of investors consists of five levels, namely *conservative*, *moderately conservative*, *balanced*, *assertive*, and *aggressive*. Table 2 shows that based on gender factors, most male and female respondents have a balanced risk tolerance. There are 17% of male respondents who have an *assertive* risk tolerance while women are only 10%. In addition, there are 4% of male respondents who have an *aggressive* tolerance level, but no female respondents have a risk tolerance at this level.

Based on the age factor, all respondents in the age group <20 years and the age group of 41-50 years had a balanced risk tolerance level. There were 20% of respondents in the age group of 21-30 years who had an *assertive* risk tolerance, but there were no respondents in other age groups who had a tolerance level at this level. Based on marital status factors, most respondents have a balanced risk tolerance. There were 11% of married respondents who had a *moderately conservative* risk tolerance, but no unmarried respondents had a risk tolerance at this level. The percentage of unmarried respondents who have a greater tolerance for *assertive* and *aggressive* risk is greater than the percentage of married respondents.

Based on educational factors, most respondents have a balanced risk tolerance. There were 4% of respondents in the undergraduate education group who had a *moderately conservative* risk tolerance, but there were no respondents in other educational groups who had a risk tolerance at this level. In addition, the percentage of respondents in the diploma education group who had *assertive* risk tolerance was the largest compared to the percentage of respondents in other education groups, while for aggressive risk tolerance, the largest percentage was found in the postgraduate education group. Furthermore, based on income factors, most respondents have a balanced risk tolerance. The largest percentage of respondents who have a *moderately conservative* risk tolerance is in the income group of 10.1 million-15 million, while the largest percentage of *assertive* risk tolerance is respondents in the income group of <5 million.

Table 2. Demographic factor group codes

| No | Demographic Factors |                 | <i>with</i> | <i>Mod</i> | <i>ball</i> | <i>On the other hand</i> | <i>agg</i> | Total |
|----|---------------------|-----------------|-------------|------------|-------------|--------------------------|------------|-------|
| 1  | Gender              | Male            | 0%          | 4%         | 75%         | 17%                      | 4%         | 100%  |
|    |                     | Women           | 0%          | 0%         | 90%         | 10%                      | 0%         | 100%  |
| 2  | Age                 | <20 years old   | 0%          | 0%         | 100%        | 0%                       | 0%         | 100%  |
|    |                     | 21-30 years old | 0%          | 0%         | 77%         | 20%                      | 3%         | 100%  |
|    |                     | 31-40 years old | 0%          | 15%        | 85%         | 0%                       | 0%         | 100%  |
|    |                     | 41-50 years old | 0%          | 0%         | 100%        | 0%                       | 0%         | 100%  |
|    |                     | >50 years old   | 0%          | 25%        | 75%         | 0%                       | 0%         | 100%  |
| 3  | Marital Status      | Married         | 0%          | 11%        | 79%         | 10%                      | 0%         | 100%  |
|    |                     | Unmarried       | 0%          | 0%         | 80%         | 17%                      | 3%         | 100%  |
| 4  | Education           | SMU             | 0%          | 0%         | 86%         | 14%                      | 0%         | 100%  |
|    |                     | Diploma         | 0%          | 0%         | 80%         | 20%                      | 0%         | 100%  |
|    |                     | Bachelor        | 0%          | 4%         | 81%         | 14%                      | 1%         | 100%  |
| 5  | Revenue             | <5 million      | 0%          | 0%         | 79%         | 19%                      | 2%         | 100%  |
|    |                     | 5.1-10 million  | 0%          | 5%         | 90%         | 5%                       | 0%         | 100%  |
|    |                     | 10.1-15 million | 0%          | 14%        | 71%         | 0%                       | 15%        | 100%  |
|    |                     | >15 million     | 0%          | 11%        | 67%         | 22%                      | 0%         | 100%  |

Source: Statistical analysis conservative (con), moderately conservative (mod), balanced (bal), assertive (ass), aggressive (agg)

Based on Table 2 of the educational factors, most respondents have a balanced risk tolerance. There were 4% of respondents in the undergraduate education group who had a *moderately conservative* risk tolerance, but there were no 41 respondents in the other education group who had a risk tolerance at this level. In addition, the percentage of respondents in the diploma education group who had *assertive* risk tolerance was the largest compared to the percentage of respondents in other education groups, while for aggressive risk tolerance, the largest percentage was found in the postgraduate education group. Furthermore, based on income factors, most respondents have a balanced risk tolerance. The largest percentage of respondents who had *moderately convergent* risk tolerance were in the income group of 10.1 million-15 million, while the largest percentage of *assertive* risk tolerance was respondents in the income group of <5 million. Information about the choice of investment instruments by investors was obtained by asking respondents to rank the eight investment instruments that had been provided based on their preferences. The rankings consist of ranks one to eight, where rank one indicates the most preferred instrument and rank eight indicates the least preferred instrument. Table 3 shows descriptive statistics regarding the choice of investment instruments by investors. The table shows that in general, investors prefer stock investment instruments. Then followed by gold and property investment instruments. In general, the investment instrument that investors dislike the least is *peer to peer lending*. This may happen because *peer to peer lending* investment instruments are not so familiar to some Indonesians, so they do not really understand this investment instrument.

**Table 3. Descriptive statistics**

|                      | N   | Minimum | Maximum | Mean | Ranking |
|----------------------|-----|---------|---------|------|---------|
| Stock                | 100 | 1       | 8       | 3.33 | 1       |
| Bonds                | 100 | 1       | 8       | 4.78 | 7       |
| Government Bonds     | 100 | 1       | 8       | 4.79 | 6       |
| Mutual Funds         | 100 | 1       | 8       | 4.29 | 4       |
| Deposit              | 100 | 1       | 8       | 4.77 | 5       |
| Gold                 | 100 | 1       | 8       | 3.88 | 2       |
| Properties           | 100 | 1       | 8       | 3.97 | 3       |
| Peer to Peer Lending | 100 | 1       | 8       | 6.20 | 8       |

**Source: Statistical analysis**

The results of hypothesis test I were obtained using the non-parametric Mann-Whitney U and Kruskal Wallis tests. The results of the hypothesis test I as a whole are shown by Table 4 and Table 5 as follows:

**Table 4. Results of risk tolerance test based on demographic factors**

| Demographic Factors | Asymp. Sig |
|---------------------|------------|
| Gender              | 0.425      |
| Age                 | 0.014      |
| Marital Status      | 0.050      |
| Education           | 0.671      |
| Revenue             | 0.251      |

**Source: Statistical analysis**

The first hypothesis in this study states that there is a difference in the level of individual risk tolerance based on demographic factors, namely there is a difference in the level of risk tolerance based on gender group. Table 4 shows that Asymp. Sig > 0.05 indicating no significant difference in risk tolerance levels was associated with gender, education and income. Therefore, it can also be concluded that men and women have the same level of risk tolerance. Investors with high school, diploma, undergraduate, and postgraduate education levels have the same level of risk tolerance. In addition, it can be concluded that there is no difference in the level of risk tolerance in the investor group with income of <5 million, 5.1-10 million, 10.1-15 million, and the investor group with income of >15 million.

Based on the results of the statistical test on the age and marital status factors in Table 4, it shows that Asymp. Sig < 0.05. This means that there are significant differences in the level of risk tolerance of investors based on age groups. If you look at the mean rank in Table 5, it can be seen that investors in the age group >50 years have the lowest level of risk tolerance. In addition, investors with married status have a relatively lower level of risk tolerance when compared to unmarried investors.

**Table 5. Mean rank risk tolerance level based on demographic factors**

|                |                 | N  | Mean Rank |
|----------------|-----------------|----|-----------|
| Gender         | Male            | 69 | 51,5      |
|                | Women           | 31 | 48,1      |
| Age            | <20 years old   | 4  | 43,5      |
|                | 21-30 years old | 75 | 54,4      |
|                | 31-40 years old | 13 | 37,1      |
|                | 41-50 years old | 4  | 43,5      |
|                | >50 years old   | 4  | 33,1      |
| Marital Status | Married         | 28 | 44,1      |

|           |                 |    |      |
|-----------|-----------------|----|------|
|           | Unmarried       | 72 | 52,9 |
| Education | SMU             | 7  | 50,2 |
|           | Diploma         | 5  | 53,0 |
|           | Bachelor        | 72 | 49,1 |
|           | Postgraduate    | 16 | 55,9 |
| Revenue   | <5 million      | 63 | 53,4 |
|           | 5.1-10 million  | 21 | 43,7 |
|           | 10.1-15 million | 7  | 45,5 |
|           | >15 million     | 9  | 49,4 |

Source: Statistical analysis

The results of hypothesis test II were obtained using the non-parametric test Mann-Whitney U and Kruskal Wallis. The results of the hypothesis II test as a whole are shown by Table 6 and Table 7 as follows:

**Table 6. The results of the investment instrument selection test based on demographic factors**

|                | Asymp. Sig |       |                  |              |         |       |            |       |
|----------------|------------|-------|------------------|--------------|---------|-------|------------|-------|
|                | Stock      | Bonds | Government Bonds | Mutual Funds | Deposit | Gold  | Properties | P2P   |
| Gender         | 0,663      | 0,222 | 0,821            | 0,190        | 0,598   | 0,409 | 0,684      | 0,590 |
| Age            | 0,068      | 0,087 | 0,325            | 0,897        | 0,235   | 0,174 | 0,057      | 0,431 |
| Marital Status | 0,018      | 0,021 | 0,765            | 0,488        | 0,196   | 0,249 | 0,240      | 0,099 |
| Education      | 0,329      | 0,274 | 0,160            | 0,022        | 0,518   | 0,751 | 0,330      | 0,661 |
| Revenue        | 0,104      | 0,974 | 0,214            | 0,804        | 0,173   | 0,701 | 0,964      | 0,854 |

Source: Statistical analysis

**Table 7. Mean rank for the selection of investment instruments based on demographic factors**

| Demographics   |                 | N  | Mean Rank |      |      |      |      |      |      |      |
|----------------|-----------------|----|-----------|------|------|------|------|------|------|------|
|                |                 |    | S         | O    | ON   | R    | D    | E    | P    | P2P  |
| Gender         | Male            | 69 | 49,7      | 52,8 | 50,9 | 47,9 | 51,5 | 52   | 49,7 | 49,5 |
|                | Women           | 31 | 52,2      | 45,2 | 49,5 | 56   | 48,2 | 46,9 | 52,2 | 52,6 |
| Age            | <20 years old   | 4  | 48        | 65,1 | 60,8 | 53,7 | 65,1 | 42,2 | 42,3 | 42,8 |
|                | 21-30 years old | 75 | 46,7      | 46,3 | 51,6 | 49,1 | 50,6 | 52,9 | 53,8 | 52,9 |
|                | 31-40 years old | 13 | 65,7      | 62,8 | 50,5 | 53   | 54,9 | 45,6 | 34,2 | 39,4 |
|                | 41-50 years old | 4  | 75,6      | 75,6 | 46,2 | 62,8 | 21,1 | 19,3 | 30,5 | 56   |
|                | >50 years old   | 4  | 48        | 48,7 | 22,1 | 51,8 | 49   | 59,5 | 69,2 | 42,6 |
| Marital Status | Married         | 28 | 60,8      | 61   | 49,1 | 53,6 | 44,5 | 45,2 | 45   | 43,5 |
|                | Unmarried       | 72 | 46,4      | 46,3 | 51   | 49,2 | 52,8 | 52,5 | 52,6 | 53,2 |
| Education      | SMU             | 7  | 54        | 62   | 64,2 | 57,7 | 40,2 | 44,6 | 43   | 47,2 |
|                | Diploma         | 5  | 33,3      | 66,5 | 64,3 | 25,9 | 40,5 | 62   | 49,3 | 55,9 |
|                | Bachelor        | 72 | 49,6      | 49,9 | 50,6 | 47,9 | 52,9 | 50,7 | 53,6 | 48,9 |
|                | Postgraduate    | 16 | 58,3      | 42,8 | 39,3 | 66,3 | 46,9 | 48,1 | 40,1 | 57,1 |
| Revenue        | <5 million      | 63 | 45,6      | 50,3 | 51,9 | 50,4 | 54   | 50,4 | 51,2 | 51,3 |
|                | 5.1-10 million  | 21 | 56,1      | 49,1 | 53   | 47   | 45,7 | 53,7 | 48,9 | 49,6 |
|                | 10.1-15 million | 7  | 56,9      | 54,9 | 28,4 | 50,8 | 55,4 | 53,9 | 46,2 | 53,7 |
|                | >15 million     | 9  | 66,2      | 51,2 | 51,4 | 58,3 | 33,2 | 40,6 | 51,9 | 43,8 |

Source: Statistical analysis, Stocks (S), Bonds (O), Government Bonds (OP), Mutual Funds (R), Deposits (D), Gold (E), Property (P), Peer to Peer (P2P)

The second hypothesis in this study states that there are differences in the preferences of investment instrument selection by investors based on demographic factors. The test results showed that there was no difference in the selection of investment instruments based on gender variables. In addition, there are differences in the selection of stock, bond, and property investment instruments based on age groups. However, the results also show that there are no significant differences in other investment instruments such as government bonds, mutual funds, deposits, gold, and *peer to peer lending* by age. (Lin & Lu, 2015)

Stocks are preferred by the unmarried investor group as compared to the married investor group. Bond investment instruments are also preferred by the unmarried investor group compared to the married investor group. Mutual funds are preferred by the diploma education group compared to the investor group with undergraduate and postgraduate education. However, there is no difference in the selection of investment instruments based on income level. (Haqqani et al., 2025)

#### 4. CONCLUSION

This study examines the difference in the level of risk tolerance and preference for the selection of investment instruments based on demographic factors in investors who already have at least one investment instrument. The results show that the majority of respondents have a level of risk tolerance in the *balanced* category and tend to choose stocks as the main investment instrument. Analysis of differences in risk tolerance based on demographic factors shows that age and marital status have a significant effect on the level of risk tolerance of investors. Younger and unmarried investors have a higher risk tolerance than older, married investors. In contrast, gender, income, and education showed no significant differences in risk tolerance levels. When it comes to investment instrument selection preferences, age, marital status, and education factors show significant differences in specific instruments. Stocks and bonds are more in demand by the 21–30 age group as well as unmarried investors, while property is more in demand by investors over 50. Mutual funds are more chosen by investors with a diploma education level than postgraduate. Meanwhile, gender and income did not show significant differences in the selection of investment instruments. Overall, these findings confirm that not all demographic factors affect investment behavior uniformly. Age and marital status variables are more consistent determinants in explaining variations in risk tolerance and preference of investment instruments over gender, income, and education. These findings provide practical implications for financial institutions and investment planners in designing more targeted investor segmentation and education strategies. (Corter & Chen, 2006)

#### REFERENCES

- Ahmad, F. (2020). Personality traits as predictor of cognitive biases: moderating role of risk-attitude. *Qualitative Research in Financial Markets*, 12(4), 465–484. <https://doi.org/10.1108/QRFM-10-2019-0123>
- Aren, S., & Nayman Hamamci, H. (2020). Relationship between risk aversion, risky investment intention, investment choices: Impact of personality traits and emotion. *Kybernetes*, 49(11), 2651–2682. <https://doi.org/10.1108/K-07-2019-0455>
- Brooks, C., Sangiorgi, I., Hillenbrand, C., & Money, K. (2019). Experience wears the trousers: Exploring gender and attitude to financial risk. *Journal of Economic Behavior & Organization*, 163, 483–515. <https://doi.org/10.1016/J.JEBO.2019.04.026>
- Corter, J. E., & Chen, Y. J. (2006). Do investment risk tolerance attitudes predict portfolio risk? *Journal of Business and Psychology*, 20(3), 369–381. <https://doi.org/10.1007/S10869-005-9010-5/TABLES/2>
- Fama, E. F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance*, 25(2), 383. <https://doi.org/10.2307/2325486>
- Grable, J. E. (2000). Financial Risk Tolerance and Additional Factors that Affect Risk Taking in Everyday Money Matters. *Journal of Business and Psychology*, 14(4), 625–630. <https://doi.org/10.1023/A:1022994314982/METRICS>

- Haqqani, K., Aleem, M., Mahmood, S., Iqbal, A., El-kenawy, E. S. M., & Alharbi, A. H. (2025). Examining the mediating role of risk aversion and the moderating role of demographics in the relationship between personality traits and investment decisions. *Acta Psychologica*, 259, 105411. <https://doi.org/10.1016/J.ACTPSY.2025.105411>
- Kahneman, D., & Tversky, A. (2000). Choices, Values, and Frames. *Choices, Values, and Frames*, 1–840. <https://doi.org/10.1017/CBO9780511803475>
- Lathief, J. T. A., Kumaravel, S. C., Velnadar, R., Vijayan, R. V., & Parayitam, S. (2024). Quantifying Risk in Investment Decision-Making. *Journal of Risk and Financial Management* 2024, Vol. 17, Page 82, 17(2), 82. <https://doi.org/10.3390/JRFM17020082>
- Lin, H. W., & Lu, H. F. (2015). Elucidating the association of sports lottery bettors' socio-demographics, personality traits, risk tolerance and behavioural biases. *Personality and Individual Differences*, 73, 118–126. <https://doi.org/10.1016/J.PAID.2014.09.024>
- Lippi, A., Rossi, S., & Soana, M. G. (2022). Status Quo Bias and Risk Tolerance in Asset Allocation Decision-Making. *Journal of Neuroscience, Psychology, and Economics*, 15(4), 195–209. <https://doi.org/10.1037/NPE0000166>
- Salem, R. (2019). Examining the investment behavior of Arab women in the stock market. *Journal of Behavioral and Experimental Finance*, 22, 151–160. <https://doi.org/10.1016/J.JBEF.2019.03.001>
- Salman, M., Khan, B., Khan, S. Z., & Khan, R. U. (2021). The impact of heuristic availability bias on investment decision-making: Moderated mediation model. *Business Strategy & Development*, 4(3), 246–257. <https://doi.org/10.1002/BSD2.148>
- Singh, Y., Adil, M., & Haque, S. M. I. (2022). Personality traits and behaviour biases: the moderating role of risk-tolerance. *Quality & Quantity* 2022 57:4, 57(4), 3549–3573. <https://doi.org/10.1007/S11135-022-01516-4>
- Srivastava, H., Moid, S., & Rushdi, N. J. (2025). Risk Tolerance and Stock Market Investment Decisions: A Bibliometric Analysis. *Metamorphosis: A Journal of Management Research*. <https://doi.org/10.1177/09726225251348128>
- Stockbroking. (n.d.). *Wealth Management Risk Profile Questionnaire Confidential document*.

