EKONOMICKÉ ROZHĽADY – ECONOMIC REVIEW, 2023, 52(2), 104 ─ 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123

HOW DO PERSONALITY TRAITS OF YOUNG ADULTS AFFECT THEIR ATTITUDES TO RISK AND INVESTMENT DECISIONS?

ESTERA SZAKADATOVA[1]

Abstract: *This paper examines the relationship between the Big five personality traits, socio-economic characteristics, and the investment decisions of individuals, with a focus on the decision-making of young adults. The empirical analysis was carried out using data obtained from a survey which identified the young adults' personality traits, degree of risk aversion and preferred investment strategy. The estimation results show that individuals who are more agreeable have a higher degree of risk aversion. However, men and individuals with higher income are less risk averse, while older individuals in our sample tend to have a higher degree of risk aversion. The estimation results also show that certain personality traits and socio-demographic characteristics significantly affect the choice of individuals' choice of preferred investment strategy. More extroverted individuals in our sample were identified as more likely to diversify their investment portfolio. However, we find that individuals more open to new experiences are more conservative in their investment decisions and diversify their investment with a lower probability. Considering individual socio-economic characteristics, men are more likely to diversity their investment portfolio and choose a less conservative investment strategy than women. Furthermore, marital and employment status were found to be significantly related to a preference towards a conservative investment strategy.*

Keywords: *Personality traits, Investment decisions, Behavioural finance*

JEL Classification: D91, D14, D81, G11

[1] Ing. Estera Szakadatova, University of Economics in Bratislava, Slovak Republic,
e-mail: estera.szakadatova@euba.sk, https://orcid.org/0000-0003-4979-8773

1 Introduction

According to behavioural economics, individuals do not always act optimally, and their choices and decisions often deviate from rationality. This may be due to several reasons – people do not have access to all relevant information, they can make decisions that are normatively unacceptable and are subject to behavioural biases, which can lead them to making sob-optimal decisions. The behavioural approach points out that these irrational decisions are not random but systematic (i.e., the heterogeneity in their behaviour may be due to, for example, genetic predisposition, previous experience and the like). The behavioural approach is essentially an interdisciplinary approach which has penetrated several areas of economics and other social sciences, and has attracted significant attention in finance, where it contributed to the origin and rise of behavioural finance. Behavioural finance studies the psychological factors that affect investment decisions of individual as well as institutional investors. In addition, behavioural finance studies behavioural biases and factors that affect investment decisions and subsequent investment returns.

The behavioural approach also focuses on studying and analysing the behaviour of individual investors on the financial market. Individual investors often act under the influence of behavioural biases that can lead them to make investment mistakes. In a situation where more and more individuals are investing in companies' equity and on the stock market, it is very important to understand their behaviour and actions. The transaction costs associated with investing are lower than ever before, and because information is freely available online, trading in assets is very simple and attractive. As the cost of entering the stock market has decreased in recent years and the number of individuals investing in equities has increased, many individuals take the opportunity to actively trade with a low collateral requirement.

Retirement savings are also a global trend (e.g., the second pillar savings in Slovakia or the so-called 401-plan in the USA). This type of investment is often carried out in cooperation with the employer, when the employer sets up accounts for each employee. The future returns on this investment then vary depending on the amount of the investment, but also on how investors manage their portfolio. However, individual portfolios are often not efficient enough, which then causes a problem in terms of the final pension and the amount saved for retirement.

EKONOMICKÉ ROZHĽADY – ECONOMIC REVIEW, 2023, 52(2), 104 ─ 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123

Individual investors can choose to invest themselves or delegate their investments to external asset managers. In the case of delegation, it is also possible to speak of double delegation, where firstly individual investors (i.e., pension savers) delegate their investment decisions to pension fund managers and then the managers of these funds either invest directly or delegate the investment to external managers. Research shows (e.g., Zahera and Bansal, 2018) that not only individual investors, but also institutional investors, financial advisors as well as intermediaries are subject to behavioural biases, which affect their investment decisions and the investment returns.

However, individual investors are often unexperienced and factors such as individual characteristics or external factors influence their investment decisions. Oehler et al. (2017) highlighted the irrationality in investment decisions stemming from personality traits. The authors showed for instance that more extraverted individuals purchase more overpriced assets than less extraverted investors, while also noting that gender differences play a significant role in explaining investment behaviour.

In our study, we analyse, whether the personality traits – extraversion, agreeableness, conscientiousness, nervousness, and openness to experiences – socio-economic characteristics affect risk aversion of young adults in our sample and whether their personality traits, socio-economic characteristics and risk-aversion affect their investment decisions. Young adults have a long investment horizon in front of them, therefore it is important that they manage their finances and investments correctly, so that they do not forego gains for their future pensions. We carry out the analysis using the data from a survey carried out among a sample of young adults which measures the individual personality traits, risk aversion, collects information on respondents' socio-economic characteristics and investment decisions.

The paper is structured as follows: first, we review the relevant literature; then, we discuss the data and the methodological approach used to estimate the relationship between studied variables and risk aversion and investment decisions of individuals. In the following section, we present and evaluate the results of the data analysis. Finally, we discuss the results and conclude the paper.

2 Literature review

Behavioural finance highlights that individuals do not always act optimally, and their choices often deviate from rationality. According to the behavioural approach, this is for several reasons, e.g., because people do not take into account all available information, they make decisions that are normative and socially acceptable, even if they are not in their best interests. In this regard, significant attention is paid to the attitudes of individuals towards risk and the factors that affect it. In their work Tversky and Kahneman (1991) showed that individuals are loss averse. They showed that people feel a loss about twice as much as a return of the same value, as higher investment risk is associated with a higher probability of loss. Therefore, much of the research in behavioural finance focuses on analysing the factors that influence individuals' attitudes to risk.

Similarly, myopic loss aversion occurs when an investor feels more hurt by the losses than profits and tends to frequently evaluate and monitor his or her investment results. Based on an experimental approach, Thaler et al. (1997) concluded that investors who received more frequent feedback on the performance of their investments were less likely to take risks and therefore forgo an appreciation in the value of their investments. The aversion to short-term losses suggests that excessive information and performance monitoring of an investment portfolio is associated with higher risk aversion and lower portfolio performance.

The behaviour and decisions of individuals are also influenced by the ways in which the available options are presented to them (so-called framing). The concept introduced by Kahneman and Tversky (1979) into behavioural economics has gained great acclaim in their work on prospect theory which has found widespread application in practice. Framing has been used in various situations (e.g., when designing retirement savings investment strategies) and it has led to positive outcomes in various areas (e.g., in improving the tax collection, when letters with information highlighting that most people pay taxes has been sent to taxpayers). An important finding is also the aversion to loss, which documents that people consider loss to be more painful than a benefit of the same size, and therefore they will try to avoid such loss. Behavioural science also points to the influence of social norms on the behaviour and decision-making of individuals (Ariely, 2008). If members of a group, such as work teams, family or friends behave in a certain way or have a

EKONOMICKÉ ROZHĽADY – ECONOMIC REVIEW, 2023, 52(2), 104 ─ 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123

certain belief, their friends and family will behave similarly and have similar values.

The aim of behavioural economics is to improve predictions by forming more realistic assumptions about individuals' behaviour and also to specify how individuals' economic decisions can be improved. This effort is usually based on behavioural interventions and nudging. A better understanding of the causes of individuals' irrational behaviour and behavioural biases they are subject to, can help economic agents make better decisions.

Some studies (e.g., Benartzi and Thaler, 2001) show that individual investors often invest in the company in which they are employed or in the pension funds of this company. Both factors expose investors to idiosyncratic location risk, which is also likely to be correlated with their career prospects. This trend in the behaviour of individual investors can be explained by the aversion of individuals to the unknown and their inclination to the known. These studies show that many investors use investment strategies that are very simple, such as assigning 1/N savings to each of the N available investment options, regardless of the nature of the investment options (Benartzi and Thaler, 2001).

Behavioural finance also studies for instance the role of personality traits, demographic factors such as age, education, gender, income and marital status in investment decisions of individuals. Jaggia and Thosar (2000) examined the relationship between the investment horizon (the age of the investor) and the willingness to take risks. The results of the expected utility model simulation showed that the willingness to take risk decreases with the length of the investment horizon (i.e. with the age of the investor). In their study, Watson and McNaughton (2007) also pointed to a significant positive relationship between age and the level of risk aversion. Therefore, in the empirical analysis of risk aversion, the age of an individual is usually controlled for.

Eckel and Grossman (2008) showed that women's and men's investment behaviour shows systematic differences in risk attitudes – the authors showed that women have a greater risk aversion than men. Eckel and Grossman (2008) argue that it is important whether men and women systematically differ in their risk preferences. If women are more sensitive to changes in risk than men, this attitude should influence all aspects of their decision-making, including career choices and investment decisions.

Similarly, empirical studies by Watson and Robinson (2003) and Larsson and Säve-Söderbergh (2010) document that women have a higher risk aversion.

The higher risk aversion can be explained by the fact that women usually have a lower income than men and have longer life expectancy (Hersch, 1996). Other studies that have shown that women have a higher aversion to financial risk than men include Palvia, Vähämaa and Vähämaa (2015) and Hoang et al. (2019). Palvia, Vähämaa and Vähämaa (2015) examined gender differences in the context of US banking during the Great Recession. They found that banks with women in management positions assessed the risk that a given bank faced more conservatively. The departments led by them held a higher level of equity, which helped to reduce the likelihood of the bank bankruptcy during the financial crisis.

Mayfield, Perdue and Wooten (2008) examined the influence of personality characteristics (extraversion, agreeableness, conscientiousness, nervousness, and openness to experience) (Goldberg, 1992) on short-term and long-term investing. The authors found that more extroverted individuals tend to invest in the short term. On the other hand, individuals with higher nervousness were shown to avoid short term investments and instead invest in the long run. These results also suggest that individuals who are risk averse do not tend to invest in the long run, but rather prefer short term investments. Moreover, Mayfield, Perdue and Wooten (2008) showed that people who are more open to experience are more likely to focus on long-term investment activities (however, this personality trait was not statistically significant when it came to short-term investing).

In studying the determinants of financial risk tolerance by individuals in financial decision-making, Pinjisakikool (2018) used the Big five personality traits to examine their impact on household financial behaviour and their financial risk tolerance. The results of this study show that all five personality traits significantly predicted the degree of financial risk tolerance and at the same time, as instrumental variables, were able to indirectly predict the financial behaviour of households.

Aumeboonsuke and Caplanova (2021) investigated the determinants of financial risk tolerance in the financial decision making of individual investors, focusing on its determinants, especially on the influence of personality traits using Goldberg's personality model and mindfulness on individuals' risk aversion. This factor analysis shows that pleasant and emotionally stable people are less risk averse, while people characterized by conscientiousness and openness are significantly more risk averse. Analysis of the interaction

EKONOMICKÉ ROZHĽADY – ECONOMIC REVIEW, 2023, 52(2), 104 ─ 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123

between attention and risk aversion suggests that more susceptible individuals tend to be more risk averse. In addition, the attentive, mindful, state of mind has an important mediating role between personality traits and risk aversion. Although research suggests that emotional stability has a direct negative effect on risk aversion, on the other hand, it has a significant positive effect on mindfulness, which has a statistically significant positive effect on risk aversion. The authors also note that older people and women have a higher risk aversion, men and married individuals have a lower risk aversion.

3 Data and methodology

In this section, we outline the data, methodology and the empirical approach used to analyse the relationship between personality traits and socio-economic characteristics and risk aversion as well as investment decisions of young adults. In particular, we focus on studying the degree of risk aversion of young adults in our sample and whether they are more choose a conservative or a diversified, riskier, investment strategy.

3.1 Data

To obtain the data, we conducted research in the form of a questionnaire survey. The aim of the survey was to identify the personality trait, risk aversion and socio-demographic characteristics of the participants and their choice of investment strategy. The data was collected among university students, but also young adults not enrolled in university education. Young adults were approached directly and via social media. The data collection window was approximately one month.

The sample size is equal to 100 responses, most of them representing students and young adults. Table 1 provides an overview of the sample characteristics. The data shows that almost 61 percent of the survey participants are represented by women. The average age of the respondents is approximately 26 years, so the sample is represented mainly by young adults. Given the growing importance of investing at a young age, it is important to analyse and examine the investment decisions of this age group and to identify possible behavioural biases in their behaviour that may affect their investment decisions in general, but also in the context of retirement saving.

Table 1: Sample characteristics

	Col. 1 Proportion [in %]	Col. 2 Average/number
Gender		
Woman	60.8	
Man	39.2	
Marital status		
Single	80.4	
Married/living together/cohabitation	19.6	
Level of education attained		
NA	5.88	
Bachelor	31.4	
Master	49.0	
PhD	13.7	
Educational background		
NA	5.88	
Technical science	9.8	
Humanities	3.9	
Social science	76.5	
Natural science	3.92	
Employment status		
Unemployed	64.7	
Employed	35.3	
Average monthly income [in euro]		
NA	23.5	
Less than 500	29.4	
501-1000	23.5	
1001-2000	15.7	
2001-3000	3.92	
3001-5000	1.96	
More than 5000	19.6	
Average age		25.98
Number of students		94
Sample size, N	**100**	

Source: Author's own calculations.

EKONOMICKÉ ROZHĽADY – ECONOMIC REVIEW, 2023, 52(2), 104 ─ 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123

As can be seen from Table 1, 49 percent of respondents are master's degree students, while bachelor and doctoral students represent 31.4 percent and 13.7 percent of the sample respectively. About 6 percent of respondents noted that they were not enrolled in university studies.

Data also shows that the vast majority of respondents have an education in social sciences (e.g., economics, political science or psychology). Almost 10 percent of participants have an education in technical sciences, approximately 4 percent of respondents have academic background in humanities as well as in natural sciences.

35 percent of respondents stated that they were employed full time, which means that some students work full time while studying. The remaining 65 percent of respondents noted that they were unemployed, however, some of them noted that they were employed on a part-time basis.

Given that the majority of the sample was represented by students, it could be assumed that their income is limited. Data in Table 1 shows that 23.5 percent of respondents do not have an active source of income. Almost 30 percent of respondents had an average monthly income of less than 500 euros, however, more than 41 percent of respondents indicated to have an average monthly income of more than € 1,000, and more than 19 percent of survey participants noted that they earned more than € 5,000 per month. However, it is important to note that the sample includes respondents from several countries where the average income may be higher than in Slovakia.

It is important to also note that the data are not representative of the overall population of investor and pension savers, since students and young adults have the largest representation in the sample. There is also a dominant representation of women in the sample. However, the aim of the research was not to carry out a representative analysis, but to examine characteristics that influence young people's investment decisions.

3.2 Methodology

To identify and measure individual's personality traits we used the Goldberg's Big Five personality traits – i.e., conscientiousness, agreeableness, neuroticism, openness to experience, and extraversion (Goldberg, 1990; 1992). Since its development, the Goldberg's Big five personality concept has been widely used in research in psychology, but also in other social sciences (Gow et

al., 2005). Number of researchers have used it to examine the influence of personality traits on decision-making in both economic and non-economic areas. Examples of such studies are Aumeboonsuke and Caplanova (2021), Sahinidis et al. (2020), Müller and Schwieren (2020) and Pinjisakikool (2018).

The respondents of our survey were asked to evaluate the statements related to each of the personality traits on a scale from 1 to 5, with 1 being a very inaccurate statement and 5 a very accurate statement. In addition, we also measured the level of risk aversion by using a risk profile assessment consisting of 10 multiple-choice questions. The measurement of risk aversion was focused on attitudes towards alternative investments with different levels of risk. An investor who is not prone to risk would prefer a lower risk option (i.e., a more conservative, lower return investment strategy).

The methodology and empirical strategy used to estimate the causal relationship between personality traits and individuals' level of risk aversion and preferred investment strategy is based on the models specified below. To take into account the survey nature of the data, we analysed them using a relevant analytical tool (the so-called survey tool) in the STATA program.

To estimate the relationship between personality traits and risk aversion, we use a simple OLS regression:

$$Risk\ aversion_i = \alpha + \beta_1 E_i + \beta_2 C_i + \beta_3 A_i + \beta_4 N_i + \beta_5 O_i + \gamma \boldsymbol{X}_i + \varepsilon_i \quad (1)$$

Where is the dependent variable is individual i's aversion to risk, E_i is the measure of extraversion of individual i, C_i is the measure of conscientiousness, A_i is the measure of agreeableness, N_i is the measure of nervousness, and O_i is the measure of openness to experience. X_i is a vector of control variables including gender, age, marital status, respondents' average monthly income, and a binary variable with a value of 1 if the individual has a degree in the social sciences, 0 otherwise, ε_i is the standard error. We are interested in the influence of the 5 personality traits on risk aversion, but we assume that selected socio-demographic characteristics such as age or gender will also have a statistically significant influence on individual's level of risk aversion.

Below we specify the estimation method that we use to estimate the relationship between personality traits, socio-economic characteristics, risk aversion and individual's preferred investment strategy. Since the dependent variable is a binary variable that has a value of 1, if an individual chooses a conservative

EKONOMICKÉ ROZHĽADY – ECONOMIC REVIEW, 2023, 52(2), 104 ─ 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123

investment strategy, otherwise it is equal to 0, we analyse the empirical data using the probit regression method:

$$Pr(i\ conservative) = \delta + \theta_1 E_i + \theta_2 C_i + \theta_3 A_i + \theta_4 N_i + \theta_5 O_i + \theta_6 Risk_i + \sigma \mathbf{Z}_i + \epsilon_i \quad (2) \tag{2}$$

Where the dependent variable indicates whether individual i is a conservative investor, E_i is the measure of extraversion of individual i, C_i is the measure of conscientiousness, A_i is the measure of agreeables, N_i is the measure of nervousness and O_i is the measure of openness to experience and Risk_i is the measure of risk aversion of individual i. $\boldsymbol{Z}_i$ is a vector of control variables including gender, age, marital status, average monthly income, employment status, level of education attained, and binary variable that acquires a value of 1 if the individual has background in social science, and 0 otherwise. ϵ_i is the standard error.

Based on the existing studies in this area, we expect that some of the Big five personality traits will statistically significantly influence the investment decisions of individuals. For example, we expect extroverted people to be less inclined to invest conservatively. In addition, we assume that socio-economic characteristics will also statistically significantly affect the investment decisions of individuals in our sample.

4 Results

In this part we present the estimation results based on the methodology outlined in the previous section.

The reported results are based on a smaller sample size, since outliers in terms of age were excluded from the sample. However, by using the STATA survey tool to analyse the data, we were able to obtain reliable results. In addition, the correlation matrix shows that the variables used in the model are not correlated with each other, except for the variable indicating the individual's marital status and the variable indicating whether the respondent is a student (see Appendix 1). The correlation between these two variables was higher than 0.5, therefore we excluded the student variable from the estimation.

Table 2 below presents the estimation results of the relationship between personality traits and socio-economic characteristics and respondents' level

of risk aversion. The results show that respondents who are more agreeable have approximately 14 percent higher level of risk aversion. This result is statistically significant at the 10 percent significance level. The results of the analysis show that the other four personality traits (i.e., extraversion, conscientiousness, nervousness, and openness to experience) do not have a statistically significant effect on individuals' attitudes toward risk.

Table 2: The relationship between the Big Five personality traits and individual characteristics and risk aversion

Dependent variable – level of risk aversion	**Col 1.**
Extraversion	-0.0415
	(0.0592)
Conscientiousness	-0.00297
	(0.0754)
Agreeableness	0.139*
	(0.0722)
Nervousness	0.0829
	(0.0671)
Openness to new experiences	-0.0402
	(0.0631)
Gender (1=man)	-1.230**
	(0.580)
Age	0.0731***
	(0.0187)
Married/living together/cohabitation	-0.257
	(0.628)
Average monthly income	-0.658***
	(0.220)
Student of social science	0.713
	(0.626)
Constant	8.183**
	(3.106)
Sample size, N	**100**

Source: Author's own calculations.
Note: Standard errors are in parenthesis.
*, **, *** statistically significant at 10, 5 and 1 percent level of statistical significance.

EKONOMICKÉ ROZHĽADY – ECONOMIC REVIEW, 2023, 52(2), 104 ─ 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123

Considering the socioeconomic characteristics, the results show that men are less risk averse than women, and this estimate is statistically significant at the 5 percent level of significance. This finding is consistent with the existing literature and research which highlight that men are more likely to make risky investments than women, as women are more risk averse than men.

In addition, the results show that individual's level of risk aversion is also affected by age, with older individuals being more risk averse. An additional year of age increases the level of risk aversion among individuals in the sample by approximately 7.3 percent (it should however be noted that the sample consists of young adults and students). This estimate is highly statistically significant (at the 1 percent significance level). These results are also consistent with existing studies. Moreover, the increasing level of risk aversion with age is also consistent with the life-cycle investment strategies. These strategies suggest that older people should place their investments in more conservative portfolios, which also match better their risk preferences.

The average monthly income also significantly affects individual's risk attitudes (at the 1 percent significance level). In particular, individuals with higher income have are less risk averse. This finding is in line with our expectations since individuals with higher income can allocate more resources to their investments, and they can afford to take on more risk and suffer higher loss than people with lower income.

The estimation results show that higher level of agreeableness among individuals is related to higher level of risk aversion. We find that men are less risk averse than women as well as individuals with higher monthly income. In addition, the results show that older individuals are more risk averse than younger individuals in our sample.

Table 3 summarises the estimated results of the relationship between personality traits, individual characteristics, risk aversion and the individual's investment strategy, i.e., whether they choose a conservative or riskier, more diversified, investment strategy.

As can be seen from Table 3, individuals who are more extroverted are less likely to engage in a conservative investment strategy and are more likely to diversify their investment portfolio and invest in more risky assets. However, this estimate is weakly significant at the 10 percent level of significance. Openness to experience statistically significantly influences respondents'

choice of investment strategy. People who are more open to new experiences are more likely to prefer a conservative investment strategy, while this relationship is significant at the 10 percent level of statistical significance.

Table 3: The impact of the Big five personality traits and individual characteristics on the choice of preferred investment strategy

Dependent variable – preferred investment strategy (conservative investment strategy)	**Col. 1**
Extraversion	-0.0928*
	(0.0491)
Conscientiousness	0.110
	(0.0993)
Agreeableness	-0.0166
	(0.0590)
Nervousness	-0.0858
	(0.0738)
Openness to new experiences	0.141*
	(0.0739)
Risk aversion	0.130
	(0.136)
Gender (1=man)	-1.619***
	(0.534)
Age	-0.00941
	(0.0229)
Married/living together/cohabitation	1.049*
	(0.599)
Education degree	-0.477
	(0.305)
Employed	1.024*
	(0.535)
Average monthly income	-0.356
	(0.238)
Student of social science	0.502
	(0.589)

EKONOMICKÉ ROZHĽADY – ECONOMIC REVIEW, 2023, 52(2), 104 ─ 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123

Constant	-2.211
	(3.201)
Sample size, N	100

Source: author's own calculations.
Note: Standard errors are in parenthesis.
*, **, *** statistically significant at 10, 5 and 1 percent level of statistical significance.

The results in Table 3 show that gender is statistically significant at the 1 percent level. In particular, the results show that men are less likely to engage in a conservative investment strategy than women. Men are more likely to keep their funds in a diversified portfolio than women, which is also in line with the findings of the existing research and trends observed in investment strategies of men and women.

The results also show that respondents living in a marriage or living in a household with other people are more likely to invest conservatively, however, this estimate is statistically significant at 10 percent level of statistical significance. This may be due to the fact that married people have to think not only about their income or loss, but also about their family and household members. Therefore, in order to prevent or mitigate the financial losses that could arise from a risky investment allocation, they prefer to choose a conservative investment strategy to minimise the exposure to stock market volatilities.

Individuals who are employed are also shown to be more likely to engage in a conservative investment strategy than unemployed individuals (this estimate is significant at the 10 percent level of significance). This finding is not in line with our expectations, therefore the reasons for this conclusion need to be analysed in more detail in future studies.

Overall, in line with our expectations, we found that certain personality traits statistically significantly affect young adults' investment decisions. In addition, we found that socio-economic characteristics influence individual's preferred investment strategies, i.e., whether they choose to invest conservatively or whether they choose to diversify their portfolio in more risky assets.

5 Discussion and conclusion

The research showed that individuals are influenced by personality characteristics and socio-demographic variables in relation to their attitude towards risk and their preferred investment strategy.

The results of the analysis show that individuals who are more agreeable, i.e., they tend to have a more positive and altruistic orientation, are also more risk averse. Other personality traits do not significantly affect individual's degree of risk aversion. Considering the socio-demographic characteristics, we find that men are less risk averse than women. This finding is in line with the existing literature as well as investment preferences of men and women (see e.g., Borghans et al., 2009; Jianakoplos and Bernasek, 1998). The results also show that individuals with higher monthly income are less risk averse. In addition, the results show that older individuals are more risk averse than younger individuals in our sample, however, it has to be noted that our sample is not representative for the entire population, but focuses on the population of young adults.

When making investment decisions, we found that extraversion and openness to new experiences influence the choice of investors' portfolio statistically significantly. More extraverted people are less likely to invest in a conservative portfolio and are more likely to diversify their investments. On the other hand, people who are more open to new experiences are more conservative when it comes to investment decisions.

Considering socio-demographic characteristics, the results show that men are less likely to choose a conservative investment strategy than women, which is in line with existing empirical research (e.g., Watson and McNaughton, 2007). Family and employment status also statistically significantly and positively effect individual's preference over a conservative investment strategy.

Understanding the impact of personality traits and individual characteristics on risk preferences and investment decisions can help us to understand the reasons why individuals often do not make optimal investment choices. This can help policy makers in identifying appropriate behavioural nudges and interventions that could be used to make individuals behave more rationally, for example, in the context of pension savings. Given that the vast majority of developed countries are facing or already experiencing population aging,

EKONOMICKÉ ROZHĽADY – ECONOMIC REVIEW, 2023, 52(2), 104 ─ 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123

improving pension investment decisions of individuals can enable individuals to have higher investment returns as well as to lower the long-run burden of its impacts on public finances.

REFERENCES

[1] Ariely, D., Jones, S. (2008). Predictably irrational (pp. 278 ─ 9). New York: HarperCollins.

[2] Aumeboonsuke, V., & Caplanova, A. (2021). An analysis of impact of personality traits and mindfulness on risk aversion of individual investors. Current Psychology, 1 ─ 18. https://doi.org/10.1007/s12144-021-02015-9

[3] Benartzi, S., & Thaler, R. H. (2001). Naive diversification strategies in defined contribution saving plans. American Economic Review, 91(1), 79 ─ 98. https://doi.org/10.1257/aer.91.1.79

[4] Borghans, L., Heckman, J. J., Golsteyn, B. H., & Meijers, H. (2009). Gender differences in risk aversion and ambiguity aversion. Journal of the European Economic Association, 7(2-3), 649 ─ 658. https://doi.org/10.1162/JEEA.2009.7.2-3.649

[5] Eckel, C. C., & Grossman, P. J. (2008). Men, women and risk aversion: Experimental evidence. Handbook of Experimental Economics Results, 1, 1061 ─ 1073. https://doi.org/10.1016/S1574-0722(07)00113-8

[6] Goldberg, L. R. (1990). An alternative "description of personality": the big-five factor structure. Journal of Personality and Social Psychology, 59(6), 1216. https://doi.org/10.1037/0022-3514.59.6.1216

[7] Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. Psychological Assessment 4(1), 26. https://doi.org/10.1037/1040-3590.4.1.26

[8] Gow, A. J., Whiteman, M. C., Pattie, A., & Deary, I. J. (2005). Goldberg's 'IPIP'Big-Five factor markers: Internal consistency and concurrent validation in Scotland. Personality and Individual Differences, 39(2), 317 ─ 329. https://doi.org/10.1016/j.paid.2005.01.011

[9] Hersch, J. (1996). Smoking, seat belts, and other risky consumer decisions: Differences by gender and race. Managerial and Decision Economics, 17(5), 471 ─ 481. https://doi.org/10.1002/(SICI)1099-1468(199609)17:5%3C471::AID-MDE789%3E3.0.CO;2-W

[10] Hoang, W. T. T., Nguyen, C. V., & Van Tran, H. T. (2019). Are female CEOs more risk averse than male counterparts? Evidence from Vietnam. Economic Analysis and Policy, 63, 57-74. https://doi.org/10.1016/j.eap.2019.05.001

[11] Jaggia, S., & Thosar, S. (2000). Risk aversion and the investment horizon: A new perspective on the time diversification debate. The Journal of Psychology and Financial Markets, 1(3-4), 211 ─ 215. https://doi.org/10.1207/S15327760JPFM0134_6

[12] Jianakoplos, N. A., & Bernasek, A. (1998). Are women more risk averse?. Economic inquiry, 36(4), 620 ─ 630. https://doi.org/10.1111/j.1465-7295.1998.tb01740.x

[13] Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica, 47, 263 ─ 291. https://doi.org/10.2307/1914185

[14] Larsson, B., & Säve-Söderbergh, J. (2010). Targeting Risk Lovers? Incentives for Voluntary Pension Savings with Heterogeneous Risk Preferences. In: 14th International conference on Macroeconomic analysis and international finance.

[15] Mayfield, C., Perdue, G., & Wooten, K. (2008). Investment management and personality type. Financial Services Review, 17(3), 219 ─ 236.

[16] Müller, J., & Schwieren, C. (2020). Big five personality factors in the trust game. Journal of Business Economics, 90(1), 37 ─ 55.
https://doi.org/10.1007/s11573-019-00928-3

[17] Oehler, A., Wendt, S., Wedlich, F., & Horn, M. (2017). Investors' personality influences investment decisions: Experimental evidence on extraversion and neuroticism. Journal of Behavioral Finance, 19(1), 30 ─ 48.
https://doi.org/10.1080/15427560.2017.1366495

[18] Palvia, A., Vähämaa, E., Vähämaa, S. (2015). Are female CEOs and chairwomen more conservative and risk averse? Evidence from the banking industry during the financial crisis. Journal of Business Ethics, 131(3), 577 ─ 594.
https://doi.org/10.1007/s10551-014-2288-3

[19] Pinjisakikool, T. (2018). The influence of personality traits on households' financial risk tolerance and financial behaviour. Journal of Interdisciplinary Economics, 30(1), 32 ─ 54. https://doi.org/10.1177/0260107917731034

[20] Sahinidis, A. G., Tsaknis, P. A., Gkika, E., & Stavroulakis, D. (2020). The influence 20 of the big five personality traits and risk aversion on entrepreneurial intention. In Strategic Innovative Marketing and Tourism: 8th ICSIMAT, Northern Aegean, Greece, 2019 (pp. 215 ─ 224). Springer International Publishing.
https://doi.org/10.1007/978-3-030-36126-6_24

[21] Thaler, R. H., Tversky, A., Kahneman, D., & Schwartz, A. (1997). The effect of myopia and loss aversion on risk taking: An experimental test. The Quarterly Journal of Economics, 112(2), 647 ─ 661. https://doi.org/10.1162/003355397555226

[22] Tversky, A., & Kahneman, D. (1991). Loss aversion in riskless choice: A reference-dependent model. The Quarterly Journal of Economics, 106(4), 1039 ─ 1061.
https://doi.org/10.2307/2937956

[23] Zahera, S. A., & Bansal, R. (2018). Do investors exhibit behavioral biases in investment

EKONOMICKÉ ROZHĽADY – ECONOMIC REVIEW, 2023, 52(2), 104 ─ 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123

decision making? A systematic review. Qualitative Research in Financial Markets, 10(2), 210 ─ 251. https://doi.org/10.1108/QRFM-04-2017-0028

[24] Watson, J., & McNaughton, M. (2007). Gender differences in risk aversion and expected retirement benefits. Financial Analysts Journal, 63(4), 52 ─ 62. https://doi.org/10.2469/faj.v63.n4.4749

[25] Watson, J., & Robinson, S. (2003). Adjusting for risk in comparing the performances of male- and female-controlled SMEs. Journal of business Venturing, 18(6), 773 ─ 788. https://doi.org/10.1016/S0883-9026(02)00128-3

Appendix 1: Correlation matrix

	Extraversion	*Agreeableness*	*Conscientiousness*	*Nervous-ness*	*Open-ness*	*Risk aversion*	*Gender*	*Age*	*Married/ cohab*	*Educ. degree*	*Employed*	*Av. mo. Inc.*	*Cons. strategy*	*Soc. science*	*Student*
Extraversion	1														
Agreeableness	0.230	1													
Conscientiousness	-0.303	0.0760	1												
Nervousness	0.344	0.146	0.0237	1											
Openness	-0.188	0.378	0.380	0.138	1										
Risk aversion	0.295	0.201	-0.0562	0.186	-0.113	1									
Gender	-0.355	-0.0919	0.171	-0.0326	0.306	-0.307	1								
Age	0.0851	0.0696	0.137	0.290	0.0566	0.220	0.0303	1							
Married/ cohab	-0.0772	-0.155	-0.254	-0.0036	-0.0489	-0.0285	0.109	0.232	1						
Educ. degree	-0.213	0.0536	0.0082	-0.187	0.0737	-0.161	-0.0061	-0.146	-0.195	1					
Employed	-0.252	-0.0058	-0.0860	-0.0902	-0.0200	-0.182	0.0791	0.053	0.152	0.122	1				
Av. mo. income	-0.417	-0.0758	0.204	0.0068	0.162	-0.304	0.0832	0.336	0.0331	0.279	0.510	1			
Cons. strategy	-0.101	0.153	-0.0741	-0.138	0.0771	0.208	-0.264	-0.113	0.189	-0.145	0.132	-0.138	1		
Social sciences	-0.0906	-0.199	0.00273	-0.231	-0.0049	-0.102	0.162	-0.300	-0.0753	0.207	0.0228	0.0772	-0.0055	1	
Student	-0.244	-0.131	0.189	-0.257	0.0788	0.0269	-0.141	-0.368	-0.506	0.551	-0.164	-0.132	-0.129	0.0578	1

Source: Author's own calculations

EKONOMICKÉ ROZHLADY – ECONOMIC REVIEW, 2023, 52(2), 104 – 123
https://doi.org/10.53465/ER.2644-7185.2023.2.104-123