

# Responsible Financial Behavior: Similarities and Differences between Youth in Türkiye and Lithuania

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**Abstract:** *This research compares the financial behaviors of university students in Lithuania and Türkiye, focusing on each financial behavior individually. The study also examines how gender and income levels affect responsible financial behaviors. The results indicate that Lithuanian students demonstrate more responsible financial behaviors than their Turkish counterparts. Gender does not appear to significantly impact responsible financial behaviors for students in either country; however, a correlation exists between higher income levels and responsible financial behaviors. While Turkish students show more responsible behaviors in terms of budget planning, Lithuanian students excel in responsible savings behavior. Furthermore, Lithuanian students tend to have a more optimistic outlook on their financial futures, whereas Turkish students have lower expectations compared to Lithuanian students. These findings provide valuable insights for educational authorities seeking to improve students' financial knowledge and promote responsible financial behaviors. The results suggest that tailored financial education programs could be developed based on this research.*

**Keywords:** *responsible financial behavior; financial literacy; financial decision.*

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## Introduction

Responsible financial behaviors lead to happiness, peace of mind, and well-being. Many people have low financial literacy due to limited knowledge and skills, which often leads to personal finance mistakes. For example, one of these behaviors is not saving for retirement. The goal of responsible financial behavior is primarily to enhance personal financial well-being, which refers to a state of security and confidence that one's financial affairs are organized and effective in helping the individual or household achieve their objectives. For this, it is necessary to have responsible financial behaviors such as spending based on income, making conscious purchasing decisions, choosing appropriate financial products, getting help from financial experts in case of lack of personal knowledge and skills, saving for unforeseen situations, taking controllable and calculated risks in using credit and taking into account the possibility of a decrease in income in the future (van Raaij, 2016). Many variables will affect individuals' decisions and behaviors on these issues. Although financial education can impact financial behavior, what is important is whether financial literacy is sufficient for responsible financial behavior. Financial knowledge alone is not sufficient; attitudes are more effective (Barbić et al., 2019). Having objective financial knowledge positively influences participation in financial markets. In addition, personal characteristics other than financial knowledge also impact financial behavior. For example, overconfident people tend to make risky investments and are more inclined to invest in financial assets. Besides, being more organized and less anxious can be important elements for self-control in health and financial management (Hoffmann & Risse, 2020). Financial behavior is also affected by social issues. For example, consumer investment is not based solely on profit maximization. Instead, responsible investors take into account environmental and social issues when making decision on investments (Nilsson, 2008). Although financial knowledge significantly impacts responsible financial behavior, Robb and Woodyard (2011) concluded that income, financial satisfaction, and financial self-confidence are more effective in influencing financial behavior than financial knowledge. They also suggested that knowledge alone is not sufficient to ensure better financial behavior and is rather an important component in financial decision-making. On the other hand, Chen et al. (2024) reached a conclusion that financial knowledge enhances responsible credit card usage and that the effects on responsible financial behavior are more substantial among consumers who are risk averse and in areas where digital access is readily available.

However, individuals often exhibit cognitive biases that hinder responsible financial behaviors and influence their financial decisions. People

are not completely rational in their economic decisions. In this context, Nudge theory explores the various factors that influence human decision-making, while behavioral economics focuses on the examination of individuals' economic behaviors and the consequences of those behaviors (Tomer, 2007). People often struggle to process information rationally due to cognitive biases. Key factors such as overconfidence and loss aversion significantly hinder individuals' ability to make rational decisions (Posner, 1997). As a result of these irrational behaviors, people's decisions can be unpredictable (Platz & Veres, 2014). Overconfidence can lead to overly optimistic expectations. Subjective judgments play a crucial role because people often base their actions on their beliefs about specific events. For instance, whether someone decides to buy a particular stock typically depends on how much they believe that stock will increase in value (Kahneman & Tversky, 1996). Additionally, individuals value their gains differently than their losses—the more certain the gains, the greater their tendency to avoid uncertainty. Generally, individuals prefer to take risks in the event of a loss and avoid risks in the event of a gain (Thaler, 1980). For example, if the price of one stock falls and the other rises among two owned by an individual, individuals generally sell the one with the lower price. Mental accounting, on the other hand, attributes different meanings to money, leading to irrational decisions. Mental accounting violates the economic concept of fungibility because individuals view the money in their account as a substitute for the money in their mind and simultaneously assign it a different value (Thaler, 1999). In this context, cognitive biases — particularly overconfidence, loss aversion, and mental accounting — significantly influence individuals' financial decisions, often leading to irrational financial decisions.

Apart from measuring financial behaviors and identifying their determinants, some financial education initiatives have necessitated individuals to adopt responsible financial behaviors and increase their savings rates both in the short and long term. However, Dolan et al. (2012) argue that although traditional initiatives aimed at changing individuals' financial behaviors have the potential to improve financial capacity, this has not yet produced a clear outcome, and this situation may hinder the success of policies that encourage individuals to take responsibility for financial matters. Mandell and Klein (2009) conducted a study that provides an idea about the success of traditional initiatives in financial education. The study, conducted on high school students, found no significant results in terms of financial literacy level for those who took the financial education course. Those who received financial education did not see themselves as more savings oriented and did not exhibit improved financial behavior. Similar studies show that

education initiatives have generally produced rather disappointing results. In this respect, the capacity to improve the quality of financial behavior has been limited. Therefore, programs need to be more effective to increase individuals' financial literacy levels (Stolper & Walter, 2017). Financial education can be effective, but designing programs for educational interventions requires careful study due to the differences between types of financial education programs and individual studies in this area (Kaiser & Menkhoff, 2017).

This study aims to investigate the responsible financial behavior differences between Lithuanian and Turkish university students, and the hypotheses related to the research are determined as follows:

There is a significant association between nationalities and paying bills on time (H<sub>1</sub>), having retirement account (H<sub>2</sub>), saving for emergencies (H<sub>3</sub>), having monthly budget plan (H<sub>4</sub>), having saving account (H<sub>5</sub>), comparing prices (H<sub>6</sub>), saving for long-term (H<sub>7</sub>), having monthly written budget plan (H<sub>8</sub>), spending according to personal budget (H<sub>9</sub>), setting future financial goals (H<sub>10</sub>), reading for personal financial issues (H<sub>11</sub>), and having good financial expectations (H<sub>12</sub>).

This article adds to the literature by assessing responsible financial behavior among students in universities from Lithuania and Türkiye. First, it compares the financial behaviors of students in the two countries and creates a profile of responsible financial behavior of students in each country in terms of both general and specific responsible financial behaviors. Second, it provides concrete data for researchers, educators, and policymakers who will undertake initiatives in financial education in both countries by determining negative and positive financial behaviors separately. The following sections provide an overview of some basic studies in the literature before outlining the research methodology and analysis in detail. Following the methodology, the discussion and conclusion section compares students from the two countries' financial behavior and draws some specific conclusions.

### **Literature review**

While measuring individuals' negative and positive financial behaviors is an important area of research, obtaining concrete data on the main factors that determine these behaviors is equally important. Rey-Ares et al. (2021) conducted a study on a determination that may affect financial behavior. They examined the possible association between financial behavior and self-control and concluded that individuals' self-control levels are associated with positive financial attitudes. Increasing self-control enhances the chances of setting long-term financial goals and creating spending plans. Moreover, these individuals are more inclined to save and invest in the stock market. As

individuals' self-esteem levels increase, they exhibit positive behaviors. Financial literacy is especially crucial for individuals who have difficulty with self-control, as it can significantly impact individuals' short- and long-term savings habits (Mpaata et al., 2023). However, individuals do not always make rational financial decisions due to cognitive biases. For example, there is an inverse relationship between financial literacy and the disposition effect as well as herd bias (Baker et al., 2019). Due to the mental accounting effect, individuals spend money from another source, such as bonus money received from card spending, more easily than money they perceive as their own; in a sense, they do not view bonus money as real currency (Atik et al., 2018). In the research conducted by Canatan et al. (2024), they concluded that environmental and social factors affect individuals' financial decisions, particularly regarding risky assets such as crypto assets and share registers. However, increasing financial literacy through financial education can help reduce such cognitive biases and help create positive financial attitudes and behaviors. In this context, Yılmaz & Kaymakçı (2021) concluded in their study that the financial literacy level can guide young individuals' financial behaviors. Responsible financial behaviors and appropriate financial knowledge are important elements of financial literacy. There is a positive relationship between responsible financial behavior and financial literacy. High financial literacy positively affects individuals' responsible financial behavior. A study by Brounen et al. (2016) concluded that among young households, those with higher levels of financial literacy have a stronger desire to save. Özbek's (2019) study on university students' financial health found that high levels of stress and anxiety negatively impact sound financial decision-making.

According to Standard & Poor's Global Financial Literacy Survey, Türkiye ranks 24th in the world regarding adult financial literacy, while Lithuania ranks 39th. The survey also found that 33 percent of adults in Türkiye have a credit card, but only 29 percent are financially literate (Klapper et al., 2015). On the other hand, according to the OECD/INFE 2015 International Survey of Adult Financial Literacy Competencies, Türkiye ranked 21st among 30 countries, while Lithuania ranked 11th. With this ranking, Türkiye remained below the average scores of the OECD and all participating countries. Conversely, Lithuania was below the OECD average score but above the average score of all participating countries (OECD, 2016). While Türkiye did not participate in the OECD/INFE adult financial literacy survey conducted in 2023, Lithuania participated and ranked 21st among 39 participating countries with a score above the average of OECD countries (OECD, 2023).

Several researches have been conducted on the financial literacy of young and older people in Lithuania and Türkiye. Ulbinaite et al. (2025) conducted a research and found that Generation Y Lithuanians' general financial knowledge level is relatively low compared to other developed OECD countries. However, Generation Y has a better financial literacy level than the country average in understanding the impact of inflation on purchasing power. In addition, they have a better financial literacy level than other OECD countries in understanding the difference between simple and compound interest. Their financial knowledge level is lower regarding the benefits of investment diversification, the risk-return relationship, and compound interest calculation. According to the research conducted by Legenzova et al. (2019), financial literacy levels were low among Lithuanian high school students. However, it was concluded that being an urban resident increases financial literacy, and as the family education and income level increase, financial literacy level also increases. The research conducted by Jurkševičiūtė et al. (2023) concluded that most Lithuanian students exhibit good habits in personal finance management, tend to create personal budget plans, are responsible in borrowing, and accurately assess investment risks.

Insufficient financial literacy not only hinders individuals from effectively evaluating the benefits and drawbacks of various capital market instruments but also prevents them from understanding how inflation affects their deposits. In Türkiye, as in many other parts of the world, a significant portion of individuals' financial assets is held in deposit accounts. Therefore, financial education is crucial for enhancing individuals' ability to make informed financial decisions. In particular, practical educational approaches, especially those that incorporate behavioral finance, can produce positive outcomes in improving financial literacy (Çetin, 2023). In particular, mental accounting significantly influences individuals' financial decisions, both short- and long-term. Raising awareness about this concept contributes to more responsible financial behavior (Göktürk & Soydan, 2021). In this context, financial literacy education should be prioritized in Türkiye, as people in Türkiye have limited basic financial knowledge and a lack of understanding of financial instruments (Tetik, 2019b), which leads to poor financial behaviors. Numerous studies have been conducted to measure the financial literacy levels of students across all educational levels in Türkiye. Sönmez and Kılıç (2020) conducted a research to measure the university students' financial literacy, and found an association between financial knowledge and financial behavior. Tetik's (2019a) research on young individuals found that financial literacy is primarily influenced by investment knowledge. In their study on university students, Baltacı & Kütük (2020) concluded that financial literacy contributes

positively to savings behavior. The research conducted by Gümüş & Pailer (2019) involving university students revealed a low level and inverse association between financial knowledge, perception, and financial behavior. It was also determined that financial perception moderately correlated with financial behaviors. The study conducted by Şimşek et al. (2021) concluded that financial knowledge translates into responsible financial behavior to a low extent.

## Methodology

This study investigates the differences in responsible financial behavior between university students in Lithuania and Türkiye. It also examines the effects of gender, income, and work experience on responsible financial behavior for the entire sample. The study is based on an online survey. The self-administered online questionnaire was designed by the researcher. Google forms were used to create an online survey. The questionnaire had been conducted for 8 days from the beginning on May 5, 2025. The link of the questionnaire was sent to the students e-mails in some universities in Lithuania and Türkiye. Reminder emails are sent after 4 days to remind students to participate in the survey. It was tried to reach as many answers as possible. All questions were marked as mandatory. In the survey instructions, it was stated that the participants could leave the survey at any time. Totally 473 participants from Lithuania and Türkiye constituted the final sample of this research.

The questionnaire consists of two sections. The first section contains four questions about personal information such as "*nationality, gender, working experience, and income*". The second section includes 12 questions on topics related to responsible financial behaviors: "*paying bills on time, having a retirement account, saving for emergencies, having a monthly budget plan, having an account for saving, comparing prices when shopping, saving for the long term, having a written budget plan, spending according to the personal budget, setting goals for the future, reading financial issues, and having better financial expectations.*"

The chi-square test, applied in this study, compares frequencies of nominal or ordinal data for a single population involving two variables simultaneously (Bolboacă et al., 2011). A chi-square goodness-of-fit test was applied to assess the statistical association between observed and expected frequencies (Franke et al, 2012). Thus, it was determined how well observed frequencies fit with expected frequencies. The hypothesis of the goodness of fit test is as follows:

H<sub>0</sub>: The students from both countries have responsible financial behaviors in equal proportions ( $p_1 = p_2$ ).

H<sub>a</sub>: The students from both countries do not have responsible financial behaviors in equal proportions ( $p_1 \neq p_2$ ).

To examine the relationship between nationalities and responsible financial behaviors chi-square test of independence analysis that tests whether independent and depended variables are independent from each other was conducted for each categorical variable to obtain p-values. A probability value equal to or less than the significance level is sufficient evidence for the chi-square to conclude that the observed distribution differs from the expected distribution. There is a notable association between the categorical variables in the sample. The Chi-Square test statistic is calculated as follows (Franke, Ho, & Christie, 2012):

$$Chi - square = \chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i} \quad (1)$$

"*n*" indicates the cells' number in the table. "*O*" represents the observed value, while "*E*" refers to the expected value.

The chi-square test is an omnibus test that determines whether there are significant differences among conditions, but it does not specify which conditions are different from one another. Since the results of the omnibus test do not allow us to make statistical inferences about each individual cell, additional procedures are necessary to compare the conditions at the cell level (Franke et al., 2012). Therefore, Bonferroni adjustment is applied to the  $\alpha$  critical (adjusted standardized residuals). However, since the cells' number in the contingency table is not larger than 4 cells (2 x 2 contingency table) in this study, calculated p value and critical  $X^2$  scores were used to evaluate the possible associations between the variables. Adjusted standardized residuals which determine the contribution of cells to the overall chi-square statistics is also used to evaluate the test results. The residual value of a cell is the difference between the observed and the expected value. A larger residual value indicates a greater contribution to the chi-square value calculated from the sample. A low residual value indicates a low contribution to the overall chi-square value. Residual analysis identifies the cells that contribute most significantly to the sample's chi-square test result (Sharpe, 2015). Cell residuals indicate both the fit and the misfit of a model on a cell-by-cell basis. Comparing observed and expected frequencies on a cell-by-cell basis provides a better understanding of the evidence for the test statistic (Agresti, 2007).

Significance levels were set at  $p < 0.05$  and  $p < 0.01$  for the overall analysis, which translate into a critical z values of +/- 1.96 and +/- 2.58 standard deviations (MacDonald and Gardner. 2000; Landis et al., 2013).

Thus, p values and critical z scores are 0.05 ( $z = +/- 1.96$ ) and .01 ( $z = +/- 2.58$ ) for each cell. A z-score was calculated for the data and compared to a critical region of z-scores. For instance, when conducting a two-tailed test with an alpha ( $\alpha$ ) of 0.05, we can reject the null hypothesis if the z-score is outside the range of  $-1.96$  to  $+1.96$  standard deviations ( $p < 0.05$ ) or outside the range of  $-2.58$  to  $+2.58$  standard deviations ( $p < 0.01$ ). We cannot reject the null hypothesis if the z value is within the ranges of  $-1.96$  to  $1.96$  or  $-2.58$  to  $2.58$ . When using a 95% confidence level ( $p < 0.05$ ), if the z-score exceeds 1.96, this indicates that the observed value in each cell is significantly greater than the expected value, resulting in the rejection of the null hypothesis. Conversely, if the z-score is lower than  $-1.96$ , it suggests that the observed value in each cell is significantly less than the expected value, leading to a failure to reject the null hypothesis (Corder & Foreman, 2014).

Following equation indicates the adjusted standardized residual of the form which determines variable levels, which may have the most important on association relative to sample size (Sharpe, 2015):

$$Adj\ Residual = \frac{(O - E)}{\sqrt{E * \left(1 - \frac{RowMarginal}{n}\right) * \left[1 - \frac{ColumnMarginal}{n}\right]}} \quad (2)$$

The  $n$  refers the total number of cases. The *RowMarginal* represents a cell's row marginal. The *ColumnMarginal* refers to a cell's column marginal.

This study evaluates the Phi coefficient ( $\varphi$ ) to assess the strength of the association between dichotomous variables. The Phi coefficient test indicates the association between dichotomous variables in the 2x2 contingency table. The Phi coefficient varies between  $-1$  and  $+1$ ; a negative Phi value indicates a negative relationship, a zero Phi value indicates no relationship and a positive Phi value indicates numbers indicate a positive relationship. The  $2 \times 2$  contingency table has four cells (for example, a, b, c, and d). The relationship is positive or negative according to the cells where most responses fall. Phi coefficient is calculated using the following equation.  $n$  represents the number of observation in following equation:

$$\varphi = \sqrt{\frac{x^2}{n}} \quad (3)$$

If phi value is 0.1, it indicates a small effect size. If the value is 0.3, it refers to a medium-sized effect, while a value of 0.5 represents a large effect size (Wiedmaier, 2017).

This study also applied an independent t-test to compare the total responsible financial behavior score with nationality, gender, and income. To measure the difference between each group, Cohen's d effect size was utilized, indicating the strength of the association between the independent and dependent variables. Cohen's d values for small and medium effects are 0.10 and 0.30, respectively, while the d value for large effects is 0.50. (Funder & Ozer, 2019):

$$d = \frac{M_1 - M_2}{S_p} \quad (4)$$

In this equation,  $M_1$  and  $M_2$  represent the sample means of both groups.  $S_p$  indicates the standard deviation of the groups.

Approval for the research was obtained from the Ethics Committee of Balıkesir University Social and Human Sciences Research, under decision number 2025/04-08 on April 30, 2025. At the beginning of the online survey, explanatory information was provided, clearly stating that participation was voluntary and consent had been obtained.

## Results and discussion

Due to the challenges of obtaining online surveys from students compared to in-person surveys, a specific sample size was not established for this study. The survey link was distributed to students studying in Türkiye and Lithuania using a random sampling method. Consequently, participants were not selected from a specific university. Instead, the sample included students from all accessible universities in both countries. Participation in the survey was voluntary, and efforts were made to reach as many students as possible. In online surveys, participants often either decline to participate or abandon the survey if it takes too long to complete. They are informed that they can withdraw from the survey at any time, and participation is entirely voluntary. As a result, the survey was designed to be completed in the shortest amount of time possible, which led to a reduced number of survey questions. While this survey focuses on the socio-demographic characteristics of students, it also explores differences in financial behavior between the two countries. Therefore, it provides a more in-depth analysis of financial behavior, rather than just investigating socio-demographic characteristics.

On the other hand, A Likert-scale approach could capture behavioral intensity in survey questionnaire. This study was initially designed to use a Likert scale during the planning phase. However, since the research was conducted across two different cultures, it became necessary to carry out a validity and reliability assessment. Due to the online nature of the study, comprehensive testing for validity and reliability was not feasible. Additionally, to attract a larger

number of participants, a survey that could be completed in the shortest amount of time was deemed more appropriate. Although the use of yes/no questions limited response flexibility, the results still provided valuable insights. In online surveys, participants receive an email notification containing a link to the survey. They can choose to complete the survey by clicking the link, or they can disregard it if they do not wish to participate. This aspect of online surveys limits their flexibility compared to in-person surveys. In this study, only two reminder emails were sent to participants. Sending additional reminders was considered inappropriate due to concerns about email security. Furthermore, the nature of online surveys restricts the ability to extend the survey period or gather responses from different time frames. The short duration of this study highlights the inherent differences between online and in-person surveys.

As a result, the questions covering students' socio-demographic characteristics consisted of four questions covering nationality, gender, income, and work experience. However, this study not only analyzes questions covering students' socio-demographic characteristics, but it also presents a cross-country comparison of each financial behavior. In this context, 11 financial behaviors are also analyzed comparatively across both countries. In this context, Table 1 displays the socio-demographic characteristics of participants. The number of females and males participating in the study is not equal; 71% of the participants are female. The majority have an income of over 250 Euros (60.3%). While 56.5% of Lithuanian students have a monthly income exceeding 250 Euros, only 23.9% of Turkish students fall into this category. In terms of work experience, the general average is 70%, with Lithuanian students having more work experience than Turkish students (83.0%).

*Table 1. Socio-demographic characteristics of participants*

Nationality	Lithuania		Türkiye		Full sample	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender						
Female	151	65.7	185	76.1	336	71.0
Male	79	34.3	58	23.9	137	29.0
Income						
< € 250	100	43.5	185	76.1	285	60.3
> € 250	130	56.5	58	23.9	188	39.7
Working experience						
Yes	191	83.0	143	58.8	334	70.6
No	39	17.0	100	41.2	139	29.4

*Source: the author's own conception*

Table 2 illustrates the chi-square power analysis, which helps to identify the necessary sample size needed to detect an effect of a specific magnitude with a defined level of confidence. There are 3 confidence levels under the sample size constraints (99%:  $p < .001$  and 95%:  $p < .05$  and 90%:  $p < .1$ ). Minimum sample size is 0.50, and the Critical  $X^2$  scores and adjusted residuals (z scores) change according to confidence levels, taking the values of 6.634 ( $z = 2.58$ ), 3.841 ( $z = 1.96$ ), and 2.705 ( $z = 1.64$ ), respectively.

Table 2. Chi-square power values

<i>w</i>	<i>α-err prob</i>	<i>Power</i>	<i>df</i>	<i>X<sup>2</sup></i>	<i>Adj. Residual (z)</i>	<i>Min. Sample Size</i>
0.50	0.01	0.99	1	6.634	2.58	473
0.50	0.05	0.95	1	3.841	1.96	473
0.50	0.1	0.90	1	2.705	1.64	473

Source: the author's own conception

Table 3 shows the result of goodness of fit test. The chi-square value is more than the critical value ( $p < \alpha$ ). The obtained chi-square is significant at the conventional  $\alpha$  level of .001 for twelve variables.

As a result, we should not accept the null hypothesis that students from Lithuania and Türkiye have responsible financial behaviors in equal proportions ( $p_1 = p_2$ ). The data provides support for the alternative hypothesis that the students from both countries do not have responsible financial behaviors in equal proportions ( $p_1 \neq p_2$ ). The data do not follow the specified distribution. There is a notable difference between the observed and expected responsible financial behaviors distribution ( $p < .05$ ). This suggests that responsible financial behaviors are not equally the same in Lithuanian and Turkish students. Proportions are not equal across the two groups. On the other hand, the obtained  $X^2$  for “saving for long goals” is not significant at the conventional  $\alpha$  level of 0.001, 0.05, or 0.1 for twelve variables. Consequently, we should not reject the null hypothesis that students from Lithuania and Türkiye have responsible financial behaviors on saving for long term goals in equal proportions. There is no association between the observed and expected responsible financial behaviors distribution ( $p > .05$ ). This suggests that data of financial behaviors on saving for long term goals follow a specified distribution for Lithuanian and Turkish students. Therefore, this financial behavior is not included in the chi-square test results presented in Table 5.

Table 3. Goodness of fit test for total sample (n = 473)

Financial Behavior		Observ. N	Expect. N	Resid.	X <sup>2</sup>	df	p
Paying bills	Yes	440	236.5	203.5	350.209	1	.000
	No	33	236.5	-203.5			
Retirement account	Yes	104	236.5	-132.5	148.467	1	.000
	No	369	236.5	132.5			
Savings for emergencies	Yes	289	236.5	52.5	23.309	1	.000
	No	184	236.5	-52.5			
Monthly budget plan	Yes	265	236.5	28.5	6.869	1	.000
	No	208	236.5	-28.5			
Account for saving	Yes	11	236.5	-225.5	133.195	1	.000
	No	362	236.5	125.5			
Comparing prices	Yes	425	236.5	188.5	300.484	1	.000
	No	48	236.5	-188.5			
Saving for long-term	Yes	237	236.5	0.5	0.002	1	.963
	No	236	236.5	-0.5			
Written budget plan	Yes	65	236.5	-171.5	248.729	1	.000
	No	408	236.5	171.5			
Spending to budget	Yes	432	236.5	195.5	323.216	1	.000
	No	41	236.5	-195.5			
Setting goals for future	Yes	333	236.5	96.5	78.751	1	.000
	No	140	236.5	-96.5			
Read finance issues	Yes	178	236.5	-58.5	28.941	1	.000
	No	295	236.5	58.5			
Better expectations	Yes	369	236.5	132.5	148.467	1	.000
	No	104	236.5	203.5			

Source: the author's own conception

Table 4 shows the responsible financial behaviors of students from both countries. It is seen that the behaviors of students from both countries, such as paying bills on time, comparing prices while shopping, and spending according to the budget, are at the level of 90%. This situation shows that students' responsible financial behaviors are quite high in terms of spending behaviors. The lowest level of responsible financial behaviors for students from Lithuania and Türkiye are seen as having a retirement account (22%), having a savings account (23.5%), making a monthly budget plan (13.7%), and reading about financial issues (37.6%). Although the behavior of having a retirement account is generally low, this low average is because 8.6% of Turkish students have an individual retirement account. This percentage is 36% for Lithuanian students. The percentage of Turkish students (20.2%)

making a monthly written budget plan is higher than that of Lithuanian students (7.0%). The two countries have differences regarding better financial expectations for the future. While Lithuanian students have a positive expectation for the financial future of 93.9%, this percentage is 63% for Turkish students.

Table 4. Responsible financial behaviors ( $n = 473$ )

Responsible Financial Behavior	Lithuania		Türkiye		Full Sample	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Paying bills on time	210	91.3	230	94.7	440	93.0
Having retirement account	83	36.1	21	8.6	104	22.0
Savings for emergency	152	66.1	137	56.4	289	61.1
Having monthly budget plan	102	44.3	163	67.1	265	56.0
Account for saving	52	22.6	59	24.3	111	23.5
Comparing prices	207	90.0	218	89.7	425	89.9
Saving for long-term	135	58.7	102	42.0	237	50.1
Written budget plan	16	7.0	49	20.2	65	13.7
Spending according to budget	212	92.2	220	90.5	432	91.3
Setting goals for future	170	73.9	163	67.1	333	70.4
Reading financial issues	93	40.4	85	35.0	178	37.6
Better financial expectations	216	93.9	153	63.0	369	78.0

Source: the author's own conception

Table 5 represents the chi-square analysis results. Chi-square test was applied to explore to relationship between nationalities and responsible financial behaviors. There was a statistically significant differences between nationalities and having retirement account,  $X^2 = (1, N = 473) = 51.88, p < 0.01, \varphi = 0.33$ . The value of phi-coefficient was 0.33, indicating medium effect size. Adjusted residual ( $z = +/- 7.2$ ) is greater than the  $z$  value of  $+/- 2.34$  at the 0.01 significance level, leading to reject of the null hypothesis. It indicates a highly significant difference in the prevalence of individual retirement accounts between students from both countries. The larger positive residual for Lithuanian students ( $z = 7.2$ ) indicates that Lithuanian students have more individual retirement accounts than expected. In contrast, the larger negative residual for Turkish students ( $z = -7.2$ ) indicates that Turkish students have fewer retirement accounts than expected. The percentage of Lithuanian students with a retirement account is 36% ( $83/230 = 0.36$ ), while it is 8.6% ( $21/243 = 0.086$ ) for Turkish students. Thus, Lithuanian students are more likely to have a retirement account than their Turkish counterparts. In a study conducted by Yürük (2023) on 708 university students, 17.6% of the participants had a private pension account, and there was no difference in the

levels of financial literacy of those registered in the private pension system compared to those outside the system. The result differs from the result in this study, but since having a private retirement account depends on income status and awareness about individual finances, it may vary depending on socio-demographic characteristics. The difference in having a retirement account between the two countries is that both countries have different retirement systems. The Lithuanian retirement system, unlike Türkiye, has a triple structure: Pillar I (mandatory), Pillar II (Quasi-mandatory), and Pillar III (voluntary). While the Pillar III retirement system rate is 12%, the total rate of other systems is more than 93%. The number of people registered in the Pillar II system is 1,418,000, while the number of people registered in the Pillar III system is 118,000 (Commain & Šebo, 2024). According to the Pension Monitoring Center (EGM) (2024) data, the number of participants in the individual retirement system implemented in Türkiye is 7,571,000 for the Automatic Participation System (OKS) and 9,731,000 for private retirements.

Nationality and the variable “saving for emergencies” has also significant relationship,  $X^2 = (1, N = 473) = 4.69, p < 0.05, \phi = 0.10$ . Phi-coefficient indicated small effect size. There was significant association between nationality and having monthly budget plan,  $X^2 = (1, N = 473) = 24.98, p < 0.01, \phi = -0.22$ . The effect size is small. Adjusted residual ( $z = +/- 2.2$ ) exceeds the critical z-score ( $z > +/- 1.96$ ) at the 0.05 significance level, indicating the rejection of the null hypothesis. There is a significant difference regarding having savings for emergencies between students from Lithuania and Türkiye. The larger positive residual for Lithuanian students ( $z = 2.2$ ) indicates that they save for emergencies than expected. On the other hand, the larger negative residual for Turkish students ( $z = -2.2$ ) shows that Turkish students save less for emergencies than expected. %66 of Lithuanian students save for emergencies ( $152/230 = 0.66$ ), while emergency saving percentage of Turkish students is %56 ( $137/243 = 0.56$ ). Therefore, Lithuanian students are more likely to save for emergencies than Turkish students. Research by Gedvilaitė et al. (2022), conducted in Estonia, Latvia, and Lithuania, found that young Lithuanians were more likely to save than their peers from Estonia and Latvia. The research conducted by Jurkševičiūtė et al. (2023) in Kauno College concluded that people prefer to set aside money for emergencies rather than investing it. The study conducted by Yılmaz & Kaymakçı (2021) on high school students found an association between savings behavior and financial literacy. A study conducted by Bakır & Abdi (2024) on university students, the percentage of students with an investment account was 41.8%. In this study, finance and banking students significantly differed in terms of having an investment account, while the percentage of those saving between 5% and 25% of their income was 22%.

Having monthly budget plan was also significant association with nationality,  $X^2 = (1, N = 473) = 24.78, p < 0.01, \varphi = -0.22$ . Phi-coefficient demonstrates the small effect size.  $z = +/- 5.0$ , and it is larger than critical  $z$  score of  $+/- 2.34$  at the 0.01 significance level, leading to reject of the null hypothesis. There is a strong link between students from Lithuania and Türkiye in terms of having monthly budget plan. The larger  $z$  value for Turkish students ( $z = 5.0$ ) indicates that they have monthly budget plan than expected. On the other hand, the larger  $z$  score for Lithuanian students ( $z = -5.5$ ) shows that they have monthly budget plan less than expected. %67 of Turkish students have monthly budget plan ( $163/243 = 0.67$ ), while it is %44 ( $104/230 = 0.44$ ). Therefore, Turkish students are more likely to have monthly budget plan Lithuanian students. There was a statistically significant relationship between students from Lithuania and Türkiye in terms of having written budget plan,  $X^2 = (1, N = 473) = 17.39, p < 0.01, \varphi = -0.19$ . Phi-coefficient demonstrates the small effect size. Adjusted residual ( $z = +/- 4.2$ ) exceeds critical  $z$  score of  $+/- 2.34$  at the 0.01 significance level, suggesting the reject of the null hypothesis. Students from Lithuania and Türkiye show a strong association with having a monthly budget plan. The larger positive residual for Turkish students ( $z = 4.2$ ) shows that they save have written budget plan more than expected. On the other hand, the larger negative residual for Lithuanian students ( $z = -2.2$ ) indicates that they have written budget plan less than expected. %20 of Turkish students have written budget plan ( $49/243 = 0.20$ ), while having written budget plan percentage of Lithuanian students is %6.9 ( $16/230 = 0.069$ ). Thus, students from Türkiye more likely to have written budget plan than Lithuanian students. The survey administered by Jurkševičiūtė et al. (2023) at Kauno College concluded that 69.9 % of respondents have long-term goals. Other financial behaviors account for a smaller percentage of the total. These include planning a budget, saving regularly, comparing prices, working overtime, paying taxes on time, and enhancing financial knowledge. Ulbinaite et al. (2025) concluded that Generation Y Lithuanians have responsible financial behavior. Although they tend to pay for accommodation, internet services, and credit payments on time, most do not constantly monitor their financial actions and focus on short-term rather than long-term perspectives in personal finance management. A study of high school students found that almost 73% planned their expenses and had high financial literacy levels (Yılmaz & Kaymakçı, 2021). Ergün's (2024) study concluded that 60.5% of university students create a budget plan and that financial behavior related to budget planning is important for students.

There was a statistically significant association between nationality and better financial expectations,  $X^2 = (1, N = 473) = 65.98, p < 0.01, \varphi = -0.37$ . Phi-coefficient indicated medium effect size. Adjusted residual ( $z = +/- 8.1$ ) is greater than the value of  $z$  ( $z > +/- 2.34$ ) at the 0.01 significance level, leading to rejecting of the null hypothesis. There is a strong difference between Lithuanian and Turkish students regarding better financial expectations in the future. The larger positive residual for Lithuanian students ( $z = 8.1$ ) indicates that they have better financial expectations more than expected. In contrast, the larger negative residual for Turkish students ( $z = -8.1$ ) shows that Turkish students have worse financial expectations than expected. The percentage of Lithuanian students with better financial expectations is 94% ( $216/230 = 0.94$ ), while it is 63% ( $153/243 = 0.63$ ) for Turkish students. Thus, Lithuanian students are more likely to expect better financial future than Turkish students. There is a strong connection between young people's concerns and expectations for the future and the country's economic development and social, political, and cultural values. Low-income young people have higher social expectations than high-income individuals. Young people living in rural and socio-economically less developed areas have higher levels of anxiety about their future (Zengin & Şengel, 2020). In this respect, the difference in financial expectations for the future between the two countries in this research may be due to the two countries' entirely different social, economic, and demographic structures. Lamanauskas & Augienė (2019) conducted a study on young Lithuanian individuals and found that 83.2% of participants believed in planning for the future, while 90% thought that career planning was very important. The belief that planning for the future is necessary may have increased Lithuanian students' expectations for their future.

There was no significant associations between nationality and paying bills on time ( $X^2 = (1, N = 473) = 2.03, p > 0.05, \varphi = -0.06$ ), having account for saving ( $X^2 = (1, N = 473) = 0.18, p > 0.05, \varphi = -0.02$ ), comparing prices when shopping ( $X^2 = (1, N = 473) = 0.01, p > 0.05, \varphi = -0.00$ ), spending according to personal budget ( $X^2 = (1, N = 473) = 0.40, p > 0.05, \varphi = -0.02$ ), setting goals for future ( $X^2 = (1, N = 473) = 2.64, p > 0.05, \varphi = -0.07$ ), and reading financial issues ( $X^2 = (1, N = 473) = 1.49, p > 0.05, \varphi = -0.05$ ). Although there is no statistical difference, in both countries, almost all students exhibit a high level of responsible financial behavior, such as paying their bills on time and comparing prices when shopping.

Table 5. Chi-square test of independence results

<i>Financial Behavior</i>		<b>Nationality</b>				$X^2$	$\varphi$
		<b>Lithuania</b>		<b>Türkiye</b>			
		<i>n</i>	$\zeta$	<i>n</i>	$\zeta$		
Paying Bills	Yes	210	-1.4	230	1.4	2.03	-0.06
	No	20	1.4	13	-1.4		
Retirement account	Yes	83	7.2	21	-7.2	51.88**	0.33
	No	147	-7.2	222	7.2		
Savings for emergency	Yes	152	2.2	137	-2.2	4.69*	0.10
	No	78	-2.2	106	2.2		
Monthly budget plan	Yes	102	-5.0	163	5.0	24.78**	-0.22
	No	128	5.0	80	-5.0		
Account for saving	Yes	52	-0.4	59	0.4	0.18	-0.02
	No	178	0.4	184	-0.4		
Comparing prices	Yes	207	0.1	218	-0.1	0.01	0.00
	No	23	-0.1	25	0.1		
Written budget plan	Yes	16	-4.2	49	4.2	17.39**	-0.19
	No	214	4.2	194	-4.2		
Spending to budget	Yes	212	0.6	220	-0.6	0.40	0.02
	No	18	-0.6	23	0.6		
Setting goals for future	Yes	170	1.6	163	-1.6	2.64	0.07
	No	60	-1.6	80	1.6		
Reading financial issues	Yes	93	1.2	85	-1.2	1.49	0.05
	No	137	-1.2	158	1.2		
Better expectations	Yes	216	8.1	153	-8.1	65.98**	0.37
	No	14	-8.1	90	8.1		

\*  $p < 0.05$ , \*\*  $p < 0.01$

Source: the author's own conception

Table 6 displays the results of the independent sample t-test, which includes Cohen's d, comparing the total test scores of students from Lithuania and Türkiye. No difference was found in the scores of Lithuanian ( $M = 6.22$ ,  $SD = 1.77$ ) and Turkish students ( $M = 5.95$ ,  $SD = 2.11$ );  $t(471) = 1.51$ ,  $p = 0.13$ . The difference in means was small (difference = 0.27, 95% CI: -0.08025 to 0.62), with a Cohen's d of 0.13. There is currently no direct comparison in the literature regarding the financial behavior of university students in Türkiye and Lithuania. Insights into this area come primarily from studies conducted by the OECD and Standard & Poor's at the national level. Additionally, this study includes a literature review of financial literacy measurements from these two institutions. Subsequent sections will focus on measurements done specifically on university students in both countries to assess their financial

behavior and literacy levels. The data from these studies contribute to a better understanding of the research findings.

In 2015 OECD Adult Financial Literacy Survey, 9 out of 21 questions measured financial behavior. Türkiye's financial behavior score was 4.8, while Lithuania's score was 5.5. This indicates that Türkiye achieved a 53% success rate in financial behavior, whereas Lithuania attained a 61% success rate (OECD, 2016). This study, which included younger individuals, aligns with the findings of the OECD. Although no significant results were observed, the average financial behavior score for Lithuanian individuals was 57%, surpassing the 54% score of Turkish individuals.

There was also no significant association between female ( $M = 6.10$ ,  $SD = 2.02$ ) and male ( $M = 6.07$ ,  $SD = 1.93$ ) regarding responsible financial behaviors;  $t(471) = 0.16$ ,  $p = 0.87$ . The effect size was small, with a Cohen's  $d$  of 0.01 (difference = 0.03, 95% CI: -0.35 to 0.42). While there is limited research directly measuring the financial behaviors of university students in both countries, a study in Türkiye by Çinko et al. (2017) found that male students had a higher level of financial behavior compared to their female counterparts. However, a study by Güvemli & Meydan (2019) on university students found that gender was not identified as a significant factor influencing financial behavior. In a study conducted by Ulbinaite et al. (2023) on Generation Y in Lithuania, the researchers concluded that men outperformed women in financial knowledge, while women performed better in terms of positive financial attitudes.

Before finalizing the survey, a pilot test was conducted with approximately 30 students for the income question as well as other socio-demographic questions. The test revealed that if income exceeds €400, nearly all Turkish students have incomes below €400. This finding made it difficult to compare the two countries. Besides in the study by Vosyelis & Klimstra (2020) involving students aged 18 to 21, 87% reported a monthly income ranging from 100 to 500 Euros. As result a threshold of €250 was established for students from both countries. According to the  $t$  test there was a strong difference in responsible financial behavior scores between individuals with income levels of less than €250 ( $M = 5.85$ ,  $SD = 2.00$ ) and those with income levels greater than €250 ( $M = 6.43$ ,  $SD = 1.82$ ). The  $t$ -test result was  $t(471) = -3.18$ , with  $p = 0.00$ . The differences in the means were medium (-0.58, 95% CI: -0.93 to -0.22), with a Cohen's  $d$  of 0.30. In Türkiye, Fettahoğlu & Kıldız (2019) found that operational risk is significant when individuals in the upper income group use fintech products. Making more prudent and responsible financial decisions can enhance overall financial behavior as income levels rise. Vosyelis & Klimstra (2020) conducted a study on university students in

Lithuania and found that financial satisfaction was more closely linked to parental support than to financial independence. Moreover, young people from families with higher socioeconomic status demonstrated weaker financial skills, such as spending control and planning. The authors proposed that higher incomes might actually impede the development of financial skills among young individuals, a finding that somewhat contradicts this study's results.

There was also a strong difference in responsible financial behavior scores between individuals who have working experience ( $M = 6.74$ ,  $SD = 2.11$ ) and those who do not have working experience ( $M = 6.26$ ,  $SD = 2.22$ ). The t-test result was  $t(471) = 2.19$ , with  $p = 0.028$ . The differences in the means were small (0.48, 95% CI: 0.50 to -0.90), with a Cohen's  $d$  of 0.22. The study by Ergün & Serel (2019) found that as university students gain work experience, their perception of responsible financial behavior improves. Jurkševičiūtė et al. (2023) found that Lithuanian university students with work experience tend to reduce their spending if their economic situation worsens, showing less willingness to borrow, and are more likely to save. Gaining work experience offers individuals valuable market knowledge and the ability to earn a living. This, in turn, fosters a greater awareness of the importance of earning money for personal expenses and helps individuals understand various financial instruments available for saving. As a result, these factors may encourage individuals to adopt more responsible financial behaviors.

*Table 6. Comparison analysis of participants' socio-demographic characteristics*

<b>Parameters</b>	<b>N</b>	<b>M</b>	<b>SD</b>	<b>t</b>	<b>p</b>	<b>Cohen's d</b>
Nationality						
Lithuania	230	6.22	1.77	1.517	0.13	0.13
Türkiye	243	5.95	2.11			
Gender						
Female	137	6.10	2.02	0.16	0.87	0.01
Male	336	6.07	1.93			
Income						
< € 250	285	5.85	2.00	-3.18	0.00	0.30
> € 250	188	6.43	1.82			
Working experience						
Yes	334	6.74	2.11	2.19	.028	0.22
No	139	6.26	2.22			

*Source: the author's own conception*

## Conclusion and implications

This study examines students from two countries regarding responsible financial behavior. The results show that students from both countries have similar responsible financial behaviors but also differ in some ways. Lithuanian students have a higher responsible financial behavior level than Turkish students. Economic conditions, including growth rates, inflation rates, and unemployment rates, as well as cultural differences and educational disparities between the two countries, may influence variations in responsible behavior. Financial education courses and certificate programs for university students, as well as financial education courses that can be integrated into the university curriculum, can lead to increased responsible financial behavior. While gender is not a determinant of responsible financial behavior for the total sample, having a higher income is associated with higher levels of responsible financial behavior. Turkish students have more responsible financial behavior in planning monthly budgets, while Lithuanian students are at a higher level than Turkish students in terms of responsible saving behaviors. While Lithuanian students have a more optimistic perspective for a better financial future, it is noticeable that Turkish students are more anxious about their expectations. In this respect, this study can provide good data for education authorities and policymakers responsible for education to increase responsible financial behaviors, and appropriate financial education programs can be organized in the framework of the results provided by this research. Financial knowledge is essential for developing financial literacy, as it fosters responsible financial behavior. The key to successful financial literacy programs lies in converting financial knowledge into responsible actions, both in the short term and long term. Therefore, compulsory financial education programs should be integrated into school curricula, starting from the primary level. Given that students are increasingly using internet technologies and digital tools from a young age, these programs should be delivered using digital resources. Additionally, financial education should be reinforced with practical applications both inside and outside the classroom at all educational levels to facilitate the transition from knowledge to responsible behavior. The effectiveness of these behaviors should be assessed over time, and financial education programs should be updated as needed.

This study faced some limitations, including a smaller sample size than desired, which may encourage future research involving larger samples. This research explored familiar themes like gender, income, and work experience. However, the challenges of collecting data through an online survey required the researcher of this paper to focus on broader topics. Furthermore, because

the survey was conducted online, the socio-demographic data collected were limited. Additionally, since the study took place in two different countries, it was unable to use a Likert scale or collect qualitative data. Despite these limitations, the study compared university students from two different countries regarding responsible financial behavior, including general topics and yielded valuable insights.

***Ethics Committee Approval:*** *Approval for the research was obtained from the Ethics Committee of Balıkesir University Social and Human Sciences Research, under decision number 2025/04-08 on April 30, 2025.*

***Conflict of Interest:*** *The author declares no conflict of interest.*

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