

Investigating the Influence of Educational and Familial Factors on Financial Literacy Among College Students Engaged in Finance-Related Curricula

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Abstract:

This article examines the factors affecting the financial literacy of college students, focusing on education and family variables, and reviews the existing literature. Additionally, the financial literacy of students from the finance and economics departments of Marmara University (Istanbul), selected as the sample mass, was assessed based on predetermined criteria. For the education variable, various finance, accounting, and economics courses taken at different college levels, internships done in high school or college, and short-term work experience related to their major were considered. It was found that education, rather than family, has a more significant effect on enhancing the financial literacy of college students. Furthermore, it was observed that 62.8% of the students in the sample provided correct answers to the financial literacy and financial knowledge questions.

Keywords: Financial literacy, financial education, parental influence, university students

1. Introduction

Individuals throughout their lives make financial decisions or strive to improve their financial circumstances. Particularly in today's environment, where competition is fierce, technology plays a significant role in the finance sector, the responsibility for retirement savings has shifted from employers (governments) to individuals, and skills in financial investments are crucial; individuals must engage with their personal finances more than ever before (Lusardi, 2019). For young adults, financial literacy begins with using financial knowledge for student loan repayments and credit card debt. As they age, they face financial choices like consumer loans, mortgage decisions, and retirement investments. Especially with the onset of college years, young people meet the freedom or necessity of financial decision-making, experiencing the difficulty of comparing numerous options in managing their cash and debts. Furthermore, it must not be forgotten that as active participants in financial markets after their education, young adults will influence the shaping of markets and society (Frączek et al., 2017).

If it is accepted that financial independence (Lusardi and Wallace, 2013) begins with college years, then being financially literate and the impact of financial education received during college years on financial literacy are of great importance and constitute our research topic.

Surveys conducted worldwide have revealed that not only those living in low-income countries but also those in high-income countries exhibit gaps in financial literacy levels (Xu and Zia, 2012). Particularly, the mortgage crisis of 2008 in the USA further exposed the deficiencies in financial literacy.

This study pursues two objectives. The primary objective is to examine the impact of financial education received at any stage of university on students studying in finance-related disciplines such as finance or economics. While assessing the effects of this education, the influence of family, in alignment with discussions in the literature, has also been evaluated on financial literacy. For instance, Shim et al. (2010) have identified parents, schools, and work as key agents of financial socialization, noting the significant role families play in the financial education of adolescents. Frączek et al. (2017), in their studies investigating the impact of financial education at university on students, did not reach definitive conclusions but argued that factors related to the financial

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curriculum and the manner of delivering courses were influential in the outcomes. Grohman et al. (2015) in their study found that a person's financial literacy is related to many factors.

The other goal of the study is to determine the level of financial literacy of college students with the aforementioned qualities, to contribute to the existing literature by including them in the research. In another study conducted to determine the financial literacy level of students at the same university (involving different years and departments), the general financial literacy level was found to be unsatisfactory (Cinko et al. 2017).

The organization of the study is outlined as follows: The second section systematically reviews the constructs of financial literacy, including an assessment of financial knowledge, deficiencies in financial literacy, the role of financial education, and the influence of family dynamics on financial literacy. The third section conducts a detailed analysis of the impact of educational and familial influences on the financial literacy of college students. The final chapter presents and critically evaluates the findings derived from the analysis.

2. Literature Review and Hypothesis Development

2.1 Financial Literacy, Financial Knowledge, and the Lack of Financial Literacy

Generally, literacy is concerned with how individuals better comprehend information and utilize or process this knowledge. In this regard, financial literacy specifically pertains to an individual's ability to understand financial information and to apply this understanding in practical contexts (Huston, 2010). More specifically, financial literacy can be defined as the capability to interpret and implement written documents or texts, graphical data such as charts and tables, and numerical calculations, including mathematical operations. Without the practical application or use of this knowledge, financial literacy remains incomplete (Huston, 2010).

As noted by Finke and Huston (2014), financial literacy is distinct from financial education, financial behavior, financial experience, or financial well-being.

Gerrans (2021) has adopted a definition of financial literacy that is responsive to life events and changing economic conditions. Similarly, Bay et al. (2014) have emphasized that the components of financial literacy possess attributes that vary over time and space, asserting that financial literacy should not merely be perceived as the capability to read and write in the language of finance and accounting.

Moreover, financial literacy involves an individual's basic knowledge of financial concepts and the ability to perform simple calculations on such financial topics (Lusardi and Mitchell, 2011). Remund (2010) expanded the concept of financial literacy by adding to an individual's knowledge of financial concepts the abilities related to communicating about financial topics, managing personal funds, and making appropriate financial decisions, thereby enhancing confidence in planning for future financial needs.

In this context, financial knowledge is intertwined with financial literacy, where financial knowledge becomes a significant component of financial literacy (OECD 2016; Huang, et al. 2013). Financial knowledge is sometimes used interchangeably with financial literacy, either as a different dimension or as a synonym and measure of it (Huston, 2010; Huang et al., 2013). Huston (2010) also pointed out that concepts such as money, savings/investment, borrowing, and economic protection are components of financial knowledge.

Agarwalla et al. (2015) measured financial knowledge through questions on basic numerical understanding, simple and compound interest calculations (the time value of money), the relationship between inflation and returns, inflation and prices, risk and return, and diversification as a risk reduction strategy. Thus, the OECD 2013 states that financially literate individuals are expected to possess essential knowledge on basic financial concepts (Garg and Singh, 2018). Following this framework, Hilgert et al. (2003) focused on aspects of financial management such as cash management, credit management, savings, and investment.

2.1.1. Lack of Financial Literacy

Financial literacy has become increasingly significant as financial markets deepen, with product diversity growing and individuals struggling to make appropriate decisions due to insufficient financial literacy levels (Gerardi et al., 2010; Lusardi et al., 2011). Extensive research and surveys on financial literacy have been conducted worldwide, revealing that financial literacy levels are generally low, even in developed countries, and are significantly lower in developing or underdeveloped countries (Xu and Bilal, 2012). A notable negative correlation was identified in the United States between individuals' financial literacy levels and their inability to repay mortgage debts during the mortgage crisis (Gerardi et al., 2010).

The lack of financial knowledge or low levels of financial literacy adversely affect individuals' retirement plans, savings, and wealth and securities management (Huang et al., 2013). Despite its importance, many individuals still exhibit low levels of financial literacy (Grohmann et al., 2015). Financial literacy also plays a crucial role in the development and growth of societies and economies. According to OECD (2013), financially literate consumers make more informed decisions, which in turn fosters market competition and innovation, enhancing the quality of services offered in the market. This will lead to advancements in the financial services sector and reduce the need for costly financial regulations and supervision (OECD 2013).

Lusardi et al. (2010) found that financial literacy among young people is particularly low, with less than one-third understanding fundamental concepts such as interest rates, inflation, and risk diversification. Sallie Mae (2009) reported that 84% of undergraduate students in their study felt a need for more financial knowledge (Lusardi et al., 2010). The deficiency in financial literacy is evident not only among young people but also among senior executives, board members, and employees (Bay et al., 2014).

Numerous studies in the USA and other developed and developing countries have observed a prevalent lack of financial literacy, indicating that this deficiency is not specific to any particular country or stage of economic development (Lusardi and Mitchell, 2011).

A historical note highlights that as early as 1787, the lack of financial literacy was recognized by U.S. President John Adams, who mentioned it in a letter to Thomas Jefferson, noting the general ignorance regarding credit, the circulation of money, and types of money which contributed to confusion and difficulties, underscoring the need for financial literacy (Financial Corps, 2014).

2.2 Financial Education, Family and Financial Literacy Interaction

The OECD (2012) characterizes financial education as a skill development process that propels individuals toward making appropriate decisions and choices in personal finance domains (Potrich et al., 2016). Additionally, the OECD (2005) remarks that during this process, financial investors enhance their understanding of financial products and fundamental concepts, which allows for more informed behaviors and deliberate choices regarding financial risks and opportunities (Frączek et al., 2017).

Although financial literacy is sometimes used synonymously with financial education or financial knowledge, it actually carries a deeper meaning than just financial education (Potrich et al., 2016). Typically, indicators of individual financial literacy and/or financial knowledge levels are used to determine the need for financial education (Huston, 2010).

Hogarth (2006) outlines common components in financial education including understanding money, asset management, and associated basic concepts, and having knowledge about banking, investment, credit, insurance, and taxes. Finally, using this knowledge and understanding to make financial decisions, implementing these decisions, and evaluating their outcomes are part of financial education. Comprehensive financial education programs for adults and children usually focus on basic financial information on banking, finance, savings, credit, etc., trying to impart money management skills (McCormick, 2009).

Thus, individuals who are educated and trained financially will make the right decisions for themselves and their families, securing their financial protection and contributing to the economic development of society. In this regard, financial education not only promotes the development of households but also positively impacts the welfare of societies as a whole (Hilgert et al., 2003). Prior research indicates that those who received financial education (during high school) are likely to save and accumulate wealth throughout their adult lives, underscoring the role of financial education in promoting savings (Bernheim et al., 2001).

Financial education is anticipated to mitigate the tendency towards excessive indebtedness by enhancing an individual's ability to comprehend financial situations and select financial products appropriate for their risk profile (Anderloni and Vandone, 2010).

Grohmann et al. (2015) and Kaiser et al. (2022), Wagner (2015) have cited good education as a factor that enhances financial literacy. LaBorde et al. (2013) have also stated that education can be seen as a tool for improving low levels of financial literacy.

However, there are also negative views regarding the impact of education on improving financial literacy (Mandell and Klein, 2009; Fernandes et al., 2014). Reinforcing this view, Mandell (2006) conducted a study on high school students, finding no difference between those who took finance classes and those who did not.

Generally, the inconsistency and variety in results about the impact of financial education on financial behaviors are attributed to different measurements of the education variable used in the analysis (Lyons et al., 2006). Another reason is the failure to implement the financial education received (Frączek et al., 2017).

Gerrans (2021) has also highlighted that there is limited empirical evidence regarding the medium and long-term effects of financial education programs applied to university students. As this study will investigate, it is not straightforward to demonstrate whether students who have taken courses in finance and economics actually experience an improvement in their financial literacy and, indirectly, an enhancement in their welfare throughout their lives. However, if an individual understands the basic concepts of financial literacy, they will avoid risky financial behaviors in personal finance management (Lusardi, and Wallace, 2013). Shim et al. (2010) noted that if students take a higher number of finance courses and participate actively, their confidence in their financial knowledge and the level of their beliefs will increase. Additionally, the contribution of financial education to an individual's level of financial literacy may also depend on factors such as the family structure, living conditions, and demographic structure they are in. Huston (2010) has emphasized that activities aimed at increasing financial literacy levels and capabilities should be carefully designed and presented to suit an individual's different demographic characteristics, life stages, and learning styles. Especially, the effects of financial education are dependent on the target group, and the impact of education given to people with low and lower-middle incomes in low-middle-income economies is limited, and it is difficult to influence certain behavioral patterns in debt management. Furthermore, the success of the provided financial education also depends on the recipient's openness to receiving such knowledge, i.e., it needs to be given at an "educable moment" (Kaiser and Menkhoff, 2017).

Therefore, to test the impact of finance and similar courses taken at a public university in Turkey on financial literacy and to be able to make recommendations based on the results, hypothesis 1 (H1) has been investigated.

H1: Finance, economics, accounting, and similar education (including courses taken, internships, and related short-term work experiences) have a positive effect on students' levels of financial literacy.

The literature emphasizes that in addition to the education received at the university, the influence of the family also affects a young adolescent's financial literacy. Especially, the knowledge brought from the life experiences of families, having an average level of financial knowledge among family members, significantly contributes to the financial literacy of young people (Yew et al., 2017; Moreno-Herrero et al., 2018; Kagotho et al., 2017). Otherwise, the limited financial resources, experiences, and inadequate financial access of parents will be a barrier to young people becoming financially literate (Moreno-Herrero et al., 2018). In addition, there is doubt about the real impact of financial education given to family members with uncertain and perhaps insufficient income sources and expenditures on financial literacy (Huston, 2010). Also, Huston (2010) added that due to behavioral biases and external factors, individuals or households will not be able to make correct financial decisions.

Even in some studies (Moreno-Herrero et al., 2018; Sharif et al., 2020), it has been determined that individuals' habits are shaped at a young age, therefore, the financial decisions of parents will set an example for them, and this will contribute to increasing their savings. Also, young adults who discuss money matters with their parents, who make an effort to understand, interpret and monitor financial materials together, and who follow stock market news, have an increasing interest in managing money, and will become more financially literate. Świecka (2018), in a survey conducted with 15-year-old teenagers, found that high school students generally learn financial matters from their parents and trust their families in these matters, with school and the internet playing a smaller role in understanding financial issues. Phung (2023) and Bottazzi and Lusardi (2021), stated that parents with higher education and income and who are employed in finance-management fields contribute more to young people's financial literacy, also increasing their efforts in budgeting. The family, especially parents, is the primary source for young adults in terms of money, savings, and acquiring financial knowledge. Shim et al. (2010) determined that parents serve as role models in financial matters, and their influence on young adults is greater than the sum of their individual work experiences and financial education.

H2: The family has a positive effect on the financial literacy levels of their children.

In addition, it is mentioned that young people develop their understanding, skills, and habits in financial and economic matters not only by observing their families but also through practice and personal experiences (Moreno-Herrero et al., 2018).

3. Data Collection and Methodology

The data used in this study were collected in 2018 through a survey of 789 undergraduate and graduate students, who typically take courses in finance, economics, and related fields, at Marmara University (Istanbul), a public university located in Istanbul. The questions were administered face-to-face using the paper and pencil method.

The choice of mainly selecting students from economics, finance, and related units in the study aims to identify the factors affecting the financial literacy of university students (including bachelor's, master's, and doctoral levels) who are perceived to have received the best education in finance and are candidates for future roles in financial markets (Frączek et al., 2017).

The data collected from the survey were analyzed using logistic regression models.

3.1 Analysis

In the study, family and education-related factors were considered independent variables, while financial literacy was the dependent variable. The survey questions were divided into four groups. The first group includes personal questions about the respondent (1,2,3,4,6,8,11,15); the second group pertains to the respondent's education (7,9,10, and 18); the third group relates to family-related variables (12,13,14,16,17,19); and the fourth group concerns financial literacy and financial knowledge.

Questions on financial literacy are further divided into three groups. The first group includes questions about basic financial knowledge (questions 26 and 50 on inflation, questions 27, 28, and 29 on asset diversification, questions 30, 31, 32, 34, and 35 on investment instruments, questions 39, 40, 41, 42, 54, 55, 57, 61, 62, 63 on financial knowledge, questions 36 and 58 on risk). The second group contains market knowledge-related questions (questions 37, 38, 43, 44, 45, 46, 51, 52, 53, 59), and the last group concerns insurance and private pension plans (questions 33, 48,49,56).

The questions related to education, one of the predicted independent variables, are typically composed of topics thought to influence financial literacy. These include whether a course in finance and economics or similar was taken, whether internships were completed, and whether there was any short-term work experience during university years. The other independent variable, family-related questions, concerns the educational level of the parents, whether there are family members working in the finance sector, information about the working lives of the parents, and the contribution of the family to financial awareness (for questions and survey, see Jorgensen, 2007; Chen and Volpe, 1998; Lusardi, 2008; Weber et al., 2012; Jump\$tart, 2008; Kiliç et al., 2015; VanRooij et al., 2011).

Although the survey consisted of 63 questions, with the passage of time, some questions lost their relevance and were omitted, leaving 57 questions for analysis. Surveys from students who did not answer all questions were not included in the evaluation.

Table 1. Demographic Characteristics of the Sample

Features Description (questions)		%
1.Department		
	Acturial Science	11.11
	Capital Markets	12.92
	Banking	14.60
	Insurance	13.70
	Business Administration	31.01
	Economics	5.30
	Labor Economics and Industrial Relations	0.78
	Statistics	1.81
	Econometrics	1.03

	Accounting and Finance	3.49
	Management and Organization	0.13
	Social Projects Management and Organization	2.07
	Public Relations and Publicity	0.13
	Financial Markets and Investment Management	1.68
	Information and Records Management	0.13
2. Education year	1st year	10.90
	2nd year	14.07
	3rd year	36.88
	4th year	21.80
	Mater's	15.72
	Doctorate	0.63
3.Education	Bachelor's	83.5
	Master's (with thesis)	7.3
	Master's (without thesis)	8.6
	Doctorate	0.6
4.Gender	Female	56.5
	Male	43.3
6.Marital status	Married	4.5
	Single	94.6
	Divorced	0.8
8.Type of high school	Anatolian high school	46.10
	Public (general) high school	22.90
	Private high school	7.20
	Vocational high school	20.30
	Science high school	1.00
	Other	2.10
11.Residence	With family	64.10
	With a roommate at home	15.10
	Alone at home	6.20
	In a dormitory	13.60
	Other	0.50
15 Receiving a scholarship	Yes	27.80
	No	71.00

Of the 789 students who responded to the survey and formed the sample, 56.5% are female and 43.3% are male. 83.5% are undergraduate students, 36.88% are third-year students, 21.80% are fourth-year students, with business students constituting 31.01% of the survey participation. Additionally, departments like banking, insurance, capital markets, and actuarial science, which are known to extensively cover economics, accounting, and finance courses, accounted for 52.33% of the study. 64.10% of the sample lives with their families, 15.10% live with a roommate at home, and 13.60% stay in dormitories. 71% do not receive a scholarship, 46.10% are graduates of Anatolian high schools, 22.90% are from general high schools, and 20.30% are from vocational high schools.

3.2 Methodology

In analyzing the data obtained from the survey results, logistic regression was employed. The significance of each independent variable's presence in the model was tested using the Wald statistic, and the Hosmer-Lemeshow test was utilized to evaluate the goodness-of-fit of the models.

Table 2 presents the dependent variables, while Table 3 displays the independent variables. The independent variables consist of factors related to both education and school. The dependent variable comprises questions related to financial literacy in the survey. The logistic regression analysis identified eight models as statistically significant.

4. Results

4.1 Financial Literacy Levels of College Students

In the survey, financial literacy, the dependent variable, was assessed using 36 questions. An analysis of response frequencies indicated that participants' answers often clustered around a single option, leading to the exclusion of some questions; thus, analysis was performed with 20 questions. Below, Table 2 shows the rates at which the young adult participants correctly and incorrectly answered these 20 questions (where 1.00 indicates a correct response and 0.00 an incorrect one). The percentage of correct responses among young adults to these 20 questions was found to be 62.8%. If a financial literacy rate of 60% is assumed, the sample can be considered financially literate since 62.8% of the questions were answered correctly.

Further detailing the results, this score was achieved in 11 out of 20 questions. In 5 questions (29,30,31,52,57), a significant portion of the sample failed to provide correct answers, and approximately 50% correct responses were obtained from 4 other questions. Young adults incorrectly answered questions about mutual funds, bonds, deposit interest rates, and the relationship between inflation and borrowing. Conversely, they demonstrated adequate understanding of inflation, diversification, portfolio formation, bond yield characteristics, basic balance sheet concepts, the stock market, personal budget management, and the relationship between risk and returns. If a financial literacy level of 70% is considered, questions 34, 35, 36, 40, 55, 58, and 62 were answered correctly at rates above 70%. These questions are recognized as pertaining to basic financial knowledge. The table below illustrates how close the percentages of correct and incorrect responses provided by young adults to certain questions are.

Table 2: Financial Literacy Levels of Participants

Question numbers	Answers	%
26	.00	31.64
	1.00	68.36
27	.00	44.63
	1.00	55.37
28	.00	39.32
	1.00	60.68
29	.00	51.33
	1.00	48.67
30	.00	53.54
	1.00	46.46
31	.00	53.41
	1.00	46.59
34	.00	29.04
	1.00	70.96
35	.00	29.78
	1.00	70.22
36	.00	25.95
	1.00	74.05
40	.00	27.31

	1.00	72.69
41	.00	46.84
	1.00	53.16
45	.00	40.73
	1.00	59.27
46	.00	32.74
	1.00	67.26
49	.00	46.96
	1.00	53.04
52	.00	54.18
	1.00	45.82
55	.00	23.42
	1.00	76.58
56	.00	45.45
	1.00	54.55
57	.00	60.81
	1.00	39.19
58	.00	15.40
	1.00	84.60
62	.00	24.81
	1.00	75.19

4.2 Educational and Family Factors Affecting the Financial Literacy of College Students

Alongside the substantial benefits that family and school contribute to a child's development, the family can also be considered as a crucial link in the educational chain (Swiecka et al., 2020).

The table below includes the 10 questions that were incorporated as independent variables in the analysis. The data indicate that 69.9% of the participants did not complete an internship during the years they attended classes, 70.1% had short job experiences along with their courses, and 90.8% took finance-related courses at the college. The educational attainment of fathers was generally higher compared to mothers (e.g., 20.9% of fathers had a bachelor's degree level of education compared to 12.4% of mothers, and 29.6% of fathers had high school education compared to 25.5% of mothers). Particularly, 50% of fathers have completed high school or college, whereas the corresponding figure for mothers is approximately 39%. It has been observed that the majority of mothers (38.6%) are primary school graduates.

Moreover, a significant proportion of mothers (74.8%) do not work, whereas 66.5% of fathers are employed full-time. The proportion of family members working in the financial sector who could provide support is 19.8%. In 69.4% of the families, the students are involved in financial matters and discussions with their families. The high rate of such involvement could be attributed to the low educational level of the families and the small number of family members working in the financial sector who could provide support. Additionally, due to the type of education the young adults are receiving, it can be inferred that they are included in financial decisions and discussions related to finance.

Table 3. Independent Variables

Question numbers and texts	Answers	%
7. Completion of internship at the undergraduate level	Yes	27.8
	No	69.9
	Other	2.3
9. Compulsory internship in high school	Yes	20.8
	No	7.9
10. Short job experience	Yes	70.1

	No	2.8
18.Were courses taken in college such as finance, accounting, economics?	Yes	90.8
	No	9.0
12.Mother's level of education	Illiterate	5.4
	Elementary School	38.6
	Middle School	17.3
	High School	25.5
	Bachelor's Degree	12.4
	Master's/Doctorate	0.8
13.Father's level of education	Illiterate	1.5
	Elementary School	27.9
	Middle School	18.2
	High School	29.6
	Bachelor's Degree	20.9
	Master's/Doctorate	1.9
14.Presence of a family member employed in the finance sector	Yes	19.8
	No	79.9
16.Employment status of the mother	Full-time	18.1
	Part-time	3.8
	Occasionally working	2.9
	Not working	74.8
17.Employment status of the father	Full-time	66.5
	Part-time	4.7
	Occasionally working	3.1
	Not working	25.5
19.Family discussions on financial decisions or household budgeting	They do not discuss these subjects with me.	9.9
	They discuss financial matters with me openly.	69.4
	They do not speak openly, but they provide examples indirectly.	20.6

As a result of the analysis, eight models have emerged. Below are the tables related to the aforementioned models.

Regression Models

Model 1

Questions	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)		
							Lower	Upper	
q28	q7	(0.62)	0.16	1.04	1.00	0.00	0.54	0.39	0.75
	q10	(0.71)	0.16	19.16	1.00	0.00	0.49	0.36	0.68
	q18	(0.51)	0.26	4.00	1.00	0.05	0.60	0.36	0.99

	q17	0.14	0.06	5.41	1.00	0.02	1.15	1.02	1.29
	Constant	2.73	0.46	35.92	1.00	0.00	15.33		

Correction ratio: 6.2%; X²:51.373; p <0.05

The question, “What happens to the risk of a portfolio if an investor diversifies their funds across different assets?” (q.28), was employed as the dependent variable to measure financial literacy and resulted in the development of Model 1. The explanatory variables included the completion of an internship (1.yes, 2.no) (q.7), the presence of short-term job experiences during school years (1.yes, 2.no)(q.10), and whether courses related to finance, accounting, or economics were taken during college (1.yes, 2.no)(q.18). Additionally, family variables such as the father's employment status (1. full-time, 2.part-time, 3.occasionally, 4.unemployed) (q.17) were found to be significant.

Independent variables in Model 1	Value	Value * B	exp(B)
q7	1	-0.617154	0.53947761
q10	1	-0.705192	0.49401373
q18	1	-0.511246	0.59974784
q17	4	0.55461348	1.74126782
Constant	0	0	1

The results from Model 1 indicate that the probability of young adults being financially literate is approximately 1.74 times higher if their father does not work. Furthermore, those who completed internships during their university years are approximately 0.54 times more likely to be financially literate compared to those who did not. Additionally, young adults who gained work experience during their school years are about 0.49 times more likely to be financially literate compared to those without such experience. Lastly, the likelihood of financial literacy is 0.60 times higher among students who took courses in finance, accounting, and economics in college compared to those who did not.

Model 2

Questions	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)		
							Lower	Upper	
q34	q10	(0.41)	0.17	6.04	1.00	0.01	0.67	0.48	0.92
	q16	0.12	0.06	3.90	1.00	0.05	1.13	1.00	1.27
	Constant	1.03	0.30	11.62	1.00	0.00	2.80		

Correction ratio: 70.7 %, X²:10.373; p <0.05.

In Model 2, which assessed the question regarding whether purchasing a company's bond results in ownership of the company (q.34), the explanatory variables identified through regression analysis include the presence of the student's short-term work experience (1. yes, 2. no) (q.10) and the employment status of the mother (1. full-time, 2. part-time, 3. occasionally working, 4. not working) (q.16).

Independent variables in Model 2	Value	Value * B	exp(B)
q10	1	-0.4070666	0.66559988
q16	4	0.47300877	1.60481545
Constant	0	0	1

In Model 2, where both variables were found to be significant, young adults who had short-term work experience during their college years exhibited a 0.67 times higher likelihood of being financially literate, while individuals with non-working mothers demonstrated a financial literacy level that was 1.60 times higher compared to their counterparts.

Model 3

Questions	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for xp(B)		
							Lower	Upper	
q35	q18	(0.74)	0.25	8.70	1.00	0.00	0.48	0.29	0.78
	Constant	1.67	0.29	33.44	1.00	0.00	5.33		

Correction ratio: 70.4%, X²: 8.456; p <0.05

In Model 3, Question 35—which assesses understanding that investing in bonds yields interest income—was utilized as the dependent variable for measuring financial literacy. The regression analysis identified the completion of courses in accounting, finance, and economics (1.yes, 2. no) as a statistically significant explanatory variable.

Independent variable in Model 3	Value	Value * B	exp(B)
q18	1	-0.7401413	0.47704649
Constant	0	0	1

In the context of financial education, it has been determined that young individuals who have taken one or more courses in accounting, finance, and economics exhibit a 0.48 times higher probability of attaining a higher level of financial literacy compared to those who have not taken such courses.

Model 4

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)		
							Lower	Upper	
q40	q12	(0.22)	0.07	10.52	1.00	0.00	0.80	0.70	0.92
	q18	(0.91)	0.25	12.85	1.00	0.00	0.40	0.25	0.66
	Constant	2.68	0.37	52.91	1.00	0.00	14.55		

Correction ratio; 72.8%, X²: 23.469; p <0.05

In Model 4, the sentence "the sum of debts and equity constitutes the total liabilities" (q.40) has been designated as the dependent variable for measuring financial literacy. The explanatory variables found to be significant in this model include educational factors—specifically, whether participants have taken courses in finance, accounting, or economics (1. yes, 2. no) (q.18)—and familial factors related to the mother's educational level (1.non-literate, 2. elementary school graduate, 3. middle school graduate, 4. high school graduate, 5. college graduate, 6. postgraduate degree) (q.12)

Independent variables in Model 4	Value	Value * B	exp(B)
q12	1	-0.2216938	0.80116065
q18	1	-0.90928	0.40281413
Constant	0	0	1

Accordingly, the analysis indicates that students who have taken courses in finance, economics, and similar subjects have a 0.40 times higher likelihood of being financially literate, while young adults with mothers who are not literate have an 0.80 times higher probability of being financially literate.

Model 5

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
q55	q18	(0.56)	0.26	4.62	1.00	0.03	0.57	0.34	0.95
	Constant	1.82	0.31	35.47	1.00	0.00	6.16		

Correction ratio: 76.8%; X^2 : 4.372; $p < 0.05$.

In Model 5, the dependent variable utilized was the statement "only stocks are traded in stock exchanges" (q.55). The explanatory variable for this model was "whether courses related to finance, accounting, or economics have been taken up to now" (1.yes, 2. no) (q.18). This explanatory variable was found to be statistically significant in the analysis.

Independent Variable in Model 5	Value	Value * B	exp(B)
q18	1	-0.5643907	0.56870656
Constant	0	0	1

Accordingly, individuals who have taken the aforementioned courses exhibit a 0.57 times higher probability of being financially literate compared to those who have not taken these courses.

Model 6

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
q62	q10	(0.40)	0.17	5.57	1.00	0.02	0.67	0.48	0.93
	Constant	1.61	0.24	43.36	1.00	0.00	5.00		

Correction ratio: 74.7%, X^2 : 5.478; $p < 0.05$

In Model 6, the dependent variable used was the question, "Assume your monthly salary is TL 2,000. Your expenses include TL 900 for rent, TL 500 for groceries, TL 350 for transportation, and TL 100 for clothing. If you want to save TL 600, how many months will it take you to save this amount?" (q.62). In the regression analysis, having short-term job experience while college years (1. yes, 2. no) (q.10) was found to be a significant explanatory variable.

Independent variable in Model 6	Value	Value * B	exp(B)
q10	1	-0.403158	0.66820649
Constant	0	0	1

In the regression analysis, it was determined that students who had short-term job experiences during their college years have a 0.67 times higher likelihood of achieving a higher level of financial literacy compared to those without such experiences.

Model 7

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
q58	q7	(0.51)	0.22	5.26	1.00	0.02	0.60	0.39	0.93
	q4	0.53	0.21	6.25	1.00	0.01	1.69	1.12	2.56
	Constant	1.75	0.55	10.18	1.00	0.00	5.73		

Correction ratio: 84.3%; X²: 5.613; p <0.05

In Model 7, which examines the linear relationship between risk and return, positing that investments with higher returns entail higher risks (q.58), significant explanatory variables include whether the respondent completed an internship while at university (1.yes, 2.no) (q.7), and gender (1.female, 2.male)(q.4).

Independent variables in Model 7	Value	Value * B	exp(B)
q7	1	-0.50939	0.600862
q4	2	1.0541666	2.86958266
Constant	0	0	1

Accordingly, if a student completes an internship during university, their likelihood of being financially literate increases by 0.60 times. Furthermore, the analysis indicates that male young adults are 2.86 times more likely to be financially literate compared to their female counterparts.

Model 8

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
q36	q7	(0.55)	0.18	9.20	1.00	0.00	0.58	0.40	0.82
	q4	0.55	0.17	10.07	1.00	0.00	1.74	1.23	2.44
	Constant	1.47	0.45	10.94	1.00	0.00	4.36		

Correction ratio:74 %; X²: 7.677; p <0.05

In Model 8, the dependent variable measuring financial literacy is the question addressing the relationship between risk and returns (q.36). In this model, the independent variables explaining financial literacy were whether the student completed an internship during university (1.yes, 2.no) (q.7) and gender (1. female, 2.male) (q.4). It has been observed that the explanatory variables in Model 8 are the same as those in Model 7.

Independent variables in Model 8	Value	Value * B	exp(B)
q7	1	-0.5526051	0.57544878
q4	2	0.55119925	1.73533286
Constant	0	0	1

The analysis indicates that the likelihood of men being financially literate is 1.73 times higher compared to women. Additionally, the completion of an internship by the student increases the probability of achieving financial literacy by a factor of 0.58.

5. Conclusion

College marks the beginning of a period when young people typically establish financial connections for the first time in terms of financial independence (Lusardi and Wallace, 2013). This financial independence tends to increase during subsequent educational periods.

The efficacy of young individuals in financial markets, their conscious use of financial products and services, their awareness of these, their financial actions, —from a general perspective, all integral aspects of financial literacy— the elements of financial literacy and their experiences, contribute positively to the development of the economy and markets (Frączek et al., 2017). Thus, the enhancement of financial literacy among young adults in colleges will distinguish them from others. It is a known fact that many people make risky and budget-exceeding decisions, accumulate credit card debt, and struggle to make payments on time (Shim et al., 2010).

Financial education received and knowledge about financial matters from the family are known to increase young people's financial literacy. Although different results have emerged in studies, the structuring and management of financial education initiatives, along with their integration into college curricula, play a crucial role in improving students' financial literacy (Lusardi and Wallace, 2013).

In addition to school education, Lyons et al. (2006) and Phung (2023) discovered that influences from familial and social circles significantly shape an individual's financial behaviors, as these are informed by their acquired financial knowledge.

Therefore, our study identified how financially literate undergraduate and postgraduate students studying business, economics, banking, insurance, capital markets, actuarial science, public administration, management and organization, statistics, labor economics, econometrics, public relations and publicity, information and records management, financial markets and investment management, accounting and finance, social projects management and organization are, and the factors affecting their financial literacy.

The regression analysis demonstrated that within the sampled population of college students, various educational determinants generally affecting financial literacy included the completion of college internships, engagement in short-term work experiences related to their major, and enrollment in courses in finance, accounting, or economics, all of which were found to significantly impact their financial literacy.

Bagci and Kahraman (2019) also found in their study in Turkey that financial education positively impacts financial literacy. Similarly, Widyastuti et al. (2020) observed that individuals who engaged in paid employment during their educational period tended to exhibit higher levels of financial literacy. This situation stems from the reality of young adults earning their own money facing the responsibility of their money and practicing their own finances. Our research supports these findings, determining that short-term work experiences during college years also enhance financial literacy. Furthermore, studies by Chen and Volpe (1998) and Shim et al. (2010) have demonstrated that practical experiences significantly contribute to financial literacy.

One of the financial literacy topics questioned in the study is about financial asset diversification or portfolio diversification. It was observed that young people in the sample generally answered these questions correctly and were financially literate in this regard. Grohmann et al. (2015) stated that a high level of financial literacy is largely related to diversifying financial assets. Huang et al. (2013) found that individuals with low levels of financial literacy tend to have weaker diversification tendencies in their investment portfolios.

Among the significant variables related to the family, the mother's education level and the employment status of both parents are included. However, findings contrary to existing literature reveal that financial literacy among young adults tends to increase when the mother's educational level is low and neither parent is employed. Notably, Jorgensen and Savla (2010) and Grohmann et al. (2015) have documented that higher parental education levels positively impact young adults' financial literacy, enhancing it by 14%. Similarly, Bottazzi and Lusardi (2021) observed that employed mothers boost the financial literacy of their children by 19 points, whereas homemakers demonstrate lower financial literacy levels.

Akben and Yilmaz (2014) also pointed out in their similar study with college students that the full-time work of the father was a factor increasing financial literacy; our study reached the conclusion that the financial literacy of individuals from families where both the father and mother did not work full-time is likely to increase. In this case, our study cannot assert that family factors have an instructional effect on the financial literacy of young adults. However, it should be stated that this factor is motivating and encouraging, applying what they have learned.

Especially in families like our sample, where literacy is lacking and the working situation is limited (not full-time), the lack of general and financial knowledge is assumed to be an opportunity and motivation source for the student to use the knowledge acquired at school. Such families, due to their lack of financial knowledge or financial literacy, will tend to use and apply the financial knowledge acquired through academic education, internships, and short-term employment in practical life settings.

In another study supporting the effect of the family on financial literacy, Sharif et al. (2020), stated that discussing financial matters with the child in the family increased the child's financial literacy. Although financial matters were shared in our study's family, it did not affect the outcome as an explanatory variable in the models.

Swiecka et al. (2020), found that male students in Poland were more financially literate than female students. In our study as well, both in models 7 and 8, within the analysis examining knowledge about risk-return as the dependent variable, gender was identified as one of the independent variables. Accordingly, it was understood that male students are more likely to be financially literate than female students. Lusardi et al. (2010) also found significant differences in financial literacy between young women and young men, with young women having a lower rate of correctly answering basic questions about financial literacy.

Furthermore, it was observed that the majority of university students who comprised the sample provided accurate responses to the survey questions about financial literacy. Young adults answered questions about mutual funds, bonds, deposit interest rates, and the relationship between inflation and borrowing incorrectly. On the other hand, they showed adequate understanding of inflation, diversification, building a portfolio, characteristics of bond yields, basic balance sheet concepts, the stock market information, personal budget management, and the relationship between risk and returns. Many studies in Turkey, although the sample varies, have found that the level of financial literacy among young people is low (Cinko et al., 2017; Akben and Yılmaz, 2014; Altıntaş, 2011). The result of our study indicates a slightly higher level of financial literacy than the results found in previous studies. This is presumed to be due to the fact that the departments where the survey was conducted took many courses in finance, accounting, and economics.

However, as financial literacy increases, the contributions of future generations to the economy, the country, and themselves will also increase. Finally, let us conclude by stating that low levels of financial literacy are not specific to any country or stage of economic development (Lusardi and Mitchell, 2014).

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Appendix

Questions about basic financial knowledge.

- Q26. You have TL 1,000 invested in a saving account which pays 10% APR compounded annually. Annual inflation during the same period is 15% per year. After one year, what will be the purchasing power of your money be?
- Q27. What are your thoughts on the statement, "Investing in a single stock provides a more reliable return than any mutual fund containing stocks"?
- Q28. What happens to the risk of a portfolio if an investor holds their money in a portfolio consisting of various assets?
- Q29. Which of the following statements is correct about mutual funds?
- Q30. What happens to bond prices when interest rates fall?
- Q31. "Stocks are riskier investments than bonds."
- Q34. "Buying the bonds of a company makes you a shareholder"
- Q35. "When you buy bonds, you earn interest."
- Q36. As the risk of a security increases, its return also increases.
- Q40. "The sum of debts and equity constitutes the total liabilities"
- Q41. A company has TL 10,000 of shareholders' equity and TL 8,000 of liabilities. Therefore, the total assets of this company must be TL 18,000.
- Q55. "Only stocks are traded in stock exchanges."
- Q57. If the inflation rate is higher than the bank's interest rate on loans, it's beneficial to take out a bank loan.
- Q58. "An investment with a high risk also has a high return."
- Q62. "Assume your monthly salary is TL 2,000. Your expenses include TL 900 for rent, TL 500 for groceries, TL 350 for transportation, and TL 100 for clothing. If you want to save TL 600, how many months will it take you to save this amount?"
- Questions about market information.
- Q45. EFT (Electronic Funds Transfer) is the name for money transfers between branches of the same bank.
- Q46. Stock trading can be done via internet banking.
- Q52. In Turkey, the annual deposit interest rate is below %10.
- Questions about retirement plans.
- Q49. In the individual retirement system (BES), contributions must be paid for 10 years to qualify for retirement.
- Q56. When you retire from the individual retirement system (BES), the pension you receive from the Social Security System is discontinued.