Finans Politik & Ekonomik Yorumlar (671) Mart 2025: 9-35
Araştırma Makalesi

THE MEDIATING EFFECTS OF DEMOGRAPHIC FACTORS ON THE RELATIONSHIP BETWEEN FINANCIAL LITERACY AND BEHAVIORAL FINANCE*

Gözde ÖZDEMİR[1], Kübra SAKA ILGIN[2]

Gönderim tarihi: 12.06.2024 *Kabul tarihi: 06.01.2025*

ABSTRACT

The paper aims to investigate the relationship between individual investors' financial literacy levels, behavioral finance tendencies, and the sub-dimensions of behavioral finance. Another aim of the paper is to determine possible demographic factors that moderate these relationships. The main population of the paper is 70,953 households in Erzincan province and a sample of 400 people is determined with a 5% sampling error at a 5% significance level and a simple random sampling method. The data of the paper were collected by survey method and statistical analyses were carried out with the SPSS program. Analyzes applied in the paper; Pearson correlation analysis, linear and hierarchical regression analysis. As a result of the analysis; it has been concluded that although investors' financial literacy levels are high, they exhibit behavioral financial biases or tendencies and there are mediating roles of some demographic factors in that relationship.

Keywords: Financial Literacy, Behavioral Finance, Behavioral Finance Trends, Mediating Effect.

Jel Classification: G10, G41, G53.

DEMOGRAFİK FAKTÖRLERİN FİNANSAL OKURYAZARLIK VE DAVRANIŞSAL FİNANS ARASINDAKİ İLİŞKİ ÜZERİNDEKİ ARACILIK ETKİLERİ

ÖZ

Çalışmanın temel amacı bireysel yatırımcıların finansal okuryazarlık düzeyleri, davranışsal finans eğilimleri ve davranışsal finansın alt boyutları arasındaki ilişkiyi araştırmaktır. Bu ilişkilerde aracılık etkisi olan olası demografik faktörleri belirlemek çalışmanın bir diğer amacını oluşturmaktadır. Çalışmanın ana kütlesi Erzincan ili hane sayısı olan 70,953 kişiden %5 anlamlılık düzeyinde %5'lik örnekleme hatası ve basit rastgele örnekleme yöntemi ile 400 kişilik örneklem saptanmıştır. Çalışmanın verileri anket yöntemi ile toplanmış olup, istatistiksel analizler SPSS programı ile gerçekleştirilmiştir. Çalışmada uygulanan analizler; Pearson korelasyon analizi, doğrusal ve hiyerarşik regresyon analizleridir. Analizler neticesinde; yatırımcıların finansal okuryazarlık düzeyleri yüksek olsa da, davranışsal finansal önyargılar ya da eğilimler sergiledikleri ve bazı demografik faktörlerin bu ilişkide aracılık etkisi olduğu sonucuna ulaşılmıştır.

Anahtar Kelimeler: Finansal Okuryazarlık, Davranışsal Finans, Davranışsal Finans Eğilimleri, Aracılık Etkisi.

Jel Sınıflaması: G10, G41, G53.

* This paper has been developed and created from the Master's thesis completed by Gözde ÖZDEMİR under the supervision of Asst. Prof., Kübra SAKA ILGIN, at Erzincan Binali Yıldırım University Social Sciences Institute, Department of Accounting, Finance and Banking, with the title "Financial Literacy and Behavioral Finance Relationship: Erzincan Province Example".

[1] Accounting, Finance and Banking Science Specialist, E-Mail: gozdekelesgs@hotmail.com, Araştırma Makalesi, ORCID ID: https://orcid.org/0000-0001-7187-8150

[2] Asst. Prof., Erzincan Binali Yıldırım University, Department of Finance and Banking, Erzincan. E-Mail:kubra.saka@erzincan.edu.tr,, Araştırma Makalesi, ORCID: https://orcid.org/0000-0001-5797-9617.

1. Introduction

Savers and investors are the most important building blocks of country economies. Consciously maintaining the organization of the financial system in which savers and investors are involved is very important for both increasing the level of welfare and the development of the country's economy.

It is important for individuals to improve their financial literacy levels in order to ensure profitability in their savings and investments. They should learn to manage their savings better in order to keep their retirement and daily living standards at a high level and to be comfortable in their future lives. Providing financial training to individual and corporate investors that balances the relationship between savings and investment increases the financial literacy levels of investors and paves the way for the development of the financial system.

Financial literacy is the measure of the extent to which a person can comprehend and apply financial information (Huston, 2010: 307). According to the definition of financial literacy made by the Financial Literacy Association (2016); It is stated that financial literacy is the ability of individuals to make conscious evaluations and make correct/effective decisions when using and managing money. OECD (Organization for Economic Co-operation Development) defines financial education as a must for financial literacy; investors or consumers to establish their understanding of financial products and terms; it is defined as developing the ability and confidence to be aware of financial risks and opportunities, enabling them to make informed choices, and engaging in effective activities to improve and increase their financial wealth by ensuring that they know the institutions and organizations from which they can provide information and support when necessary (Improving Financial Literacy Analysis of Issues and Policies, OECD Publishing, 2005: 26).

Investors trading in financial markets choose asset mix when creating their investment portfolios. The selection of financial assets to invest in directly affects the financial markets and the country's economy. Considering psychological factors when making investment decisions has brought the concept of behavioral finance to the fore.

Even though it is not too early for the concept of behavioral finance to appear conceptually in the literature, it would not be wrong to argue that this concept has been in people's subconscious from the first moment their consumption and investment studies began until today. The concept of behavioral finance has been brought to the agenda as a new phenomenon in studies carried out to clarify the anomalies seen during the testing of the

Efficient Markets Hypothesis. It is a model that makes great contributions to clarifying why and how markets cannot be efficient (Veeraraghavan, 2010: 297). Traditional finance refuses to consider investors' investment decisions in behavioral and psychological dimensions. Behavioral finance tries to explain the psychological dimension of investments by examining how investor decisions and behaviors are affected by psychological factors. Therefore, behavioral finance has become one of the important topics in the field of finance (Shiller, 2003; Elvin, 2004: 102).

There are a wide variety of trends and biases within behavioral finance. Behavioral finance trends included in this paper; overconfidence, overoptimism, availability, avoidance of regret, conservatism and herd behavior. Overconfidence bias, also known as the illusion of knowledge; it is a situation where people think they have more knowledge than they actually do. While investment owners accept the situation when they start earning as their own success, the same situation is not seen in the case of loss and investment owners see external factors as the cause of the loss (Hayta, 2014: 335). Your excessive optimism; it can be thought that it is the result of overconfidence bias. People often believe that others may be harmed but that they will not be harmed. This situation highlights the tendency towards optimism and excessive optimism can lead to wrong investment decisions (Bayar, 2011: 143-144). Availability bias is when investors act with the help of their past experiences when making investment decisions and deciding on the probability of the direction in which the financial asset will move (Sezer and Demir, 2015: 71). The tendency to avoid regret can be expressed as the concern of entering a position with the perceived potential for a very significant loss and the attitude of staying in less risky investments. For investors, the tendency towards conservatism means that they either update their beliefs very slowly or fail to update their beliefs when they encounter innovations. Conservatism bias forces the investor to analyze mixed information rather than reach a decision can lead to preserving the current situation (Pompian, 2012: 57). Herd behavior occurs when a group of people imitate other people's behaviors and investment decisions by adopting them (Bayar, 2011: 151).

Behavioral finance pays attention to investors' emotions. Investors who prioritize their emotions during the financial decision-making process can make a profit or suffer a loss based on their financial knowledge. The impact of behavioral finance, which has become increasingly important in recent years, on investment decisions continues to increase.

Low financial literacy can cause a lot of problems to arise. Investor prejudices within the scope of behavioral finance gain meaning at this point. Investors can get rid of these prejudices if they increase their financial literacy levels.

One of the main reasons for the financial failures faced by individual and institutional investors is undoubtedly low levels of financial literacy. So that; Investors' lack of financial information and investment decisions being influenced by psychological factors can lead to wrong investment decisions. In this case, financial failure may be an inevitable outcome. Financial literacy levels need to be improved to prevent psychological factors that may prevent investors from making wrong decisions. To reduce and prevent financial failure, investors' financial literacy needs to be improved. In this sense, financial education has an undeniable contribution to improving financial literacy levels.

In this paper, investors' financial literacy levels were measured based on whether individual investors were financially equipped or not. Surveying 409 individual investors residing in Erzincan aims to measure the relationship between financial literacy level and behavioral finance dimensions and to examine the mediating effect of some demographic factors in this relationship. For this purpose, we tried to determine the financial literacy competencies of individual investors and the relationship between this level and investor behavior within the scope of behavioral finance. The mediating effect of demographic factors on the relationship between investors' financial literacy levels and behavioral finance dimensions has been investigated; It distinguishes the paper from its counterparts in the literature and in this context, it is thought that the paper will contribute to the literature.

2. Literature Review

Although there are lots of studies on financial literacy and behavioral finance in the literature; there are limited studies examining the relationship between financial literacy and behavioral finance. In this context, studies that partially examine the relationship between financial literacy and behavioral finance are included.

In his study, Jacobius (2003) examined investors who entered the private pension system. Investors stated that they sell stocks when the market rises and buy them when the market falls. It has been stated that this irrational behavior is due to a lack of financial knowledge. As a result of the survey conducted by Ateş (2007) to measure whether individual investors are financially literate and to reveal their behavioral and financial profiles, a significant relationship was detected between the financial and behavioral profiles of individual

investors. Mandell and Klein (2009) used a survey consisting of three parts in total when measuring financial literacy. The findings of the research are presented covering three issues. Looking at the results, it can be seen that there is no improvement in financial behavior among the students who participated in the course and those who did not attend the course. And, it is stated that positive financial behavior characteristics occur in full-time university students or graduates. Finally, it should be noted that the positive financial literacy scores and financial behavior findings of these people with a full-time college education are not only related to the course they took, but also to the additional personal financial education they received in the following years. In their retirement and financial literacy research, Lusardi and Mitchell (2011) found that investors did not know financial concepts even when making investment decisions. It has been observed that the entire population in America and other countries do not understand financial decisions such as retirement planning or investment, and especially those with low education levels living in America are quite unsuccessful in retirement planning. Ateş (2014), in his study on individual stock investors, examined the relationship between behavioral tendencies and financial literacy that can be affected by the financial decision-making process. Financial literacy levels and over-optimism, verification, and representation tendencies were also significantly and positively affected by this situation; it was determined that overconfidence, loss aversion, and framing tendencies were significantly negatively affected by this situation. According to the results obtained by Alkaya and Yağlı (2015) in their survey study with 185 university students, it is concluded that there is no significant relationship between the financial knowledge levels and the department studied among the survey participant students. When looking at the issue on a gender basis, it was concluded that men have high levels of finance knowledge, and there is also a relationship between financial behavior and attitudes. In his study, Barmaki (2015) evaluates the level of financial literacy among university students, the effects of this level on financial behavior and attitudes, and the relationship between the explanatory variables of financial literacy, behavior, and attitudes. In the question-based evaluations, first of all, it is stated that the number of people who gave correct answers to the questions about inflation information under the basic market information heading is twice as many as those who gave wrong answers. It is stated that the student's knowledge level about simple interest calculation is high, and slightly more than half of the questions regarding compound interest calculation were answered correctly. The average financial literacy scores of students were evaluated on a gender basis and it was seen that male students received higher scores than female students. However, it is also stated that this difference is not statistically significant,

in Barmaki (2015)'s paper. However, when we look at gender in the financial behavior dimension, it is stated that women score higher than men and this situation is found to be statistically significant. Inferences are also made regarding students' financial literacy, financial behavior, and financial attitudes. It seems that the results obtained are supported by the literature. Namely, it is stated that there is a positive relationship between the financial literacy and attitude levels. Sezer and Demir (2015) conducted a study in which financial literacy and behavioral finance were evaluated together. In this context, it is seen that individuals invest in the data of their studies and choose their management as a survey. They aimed to analyze the relationships between investors' level of cognitive abilities, financial literacy, and illusions. When the results of the research are evaluated, it has been seen that while the level of education and the level of awareness of investors in the areas they invest in should be parallel, in this research these two variables do not move in parallel. An important finding is that psychological illusions are not associated with financial literacy. On the other hand, when the relationship between cognitive ability level and financial literacy was tested, it was seen that investors with high cognitive abilities also had high financial literacy levels. This result is also considered important in terms of emphasizing how important the ability to think analytically is in investments. In Wagner's (2015) study, the effects of these variables on each other are investigated by distinguishing based on education and income level. The results obtained in parallel with the literature show that financial education is effective in increasing financial literacy scores and has a positive effect. In addition, as expected, financial education positively affects the subjects' ability to answer correctly to individual questions asked to them. Moreover, when looking at individuals with low income and education levels, it is seen that financial education creates greater positive effects for these individuals. Tunca (2016) examined the relationship between financial literacy and behavioral finance in his doctoral thesis, and as a result of the study, it was determined that those with a high level of financial knowledge showed rational behavior. It has been observed that individuals with high levels of financial literacy exhibit a risk-taking attitude in case of loss and a risk-averse attitude in case of gain. Again, it has been determined that those with lower levels of financial literacy and financial knowledge are more mistaken in the concept of conservatism. Kadoya and Khan's study (2018), Japanese people have slightly different savings understandings and investment behaviors compared to other societies. Japanese people generally exhibit risk aversion, passivity, collectivism, and a lower individualistic tendency. Such factors have an impact on financial literacy. Kılınç and Kılıç (2018) administered a survey to investment experts of investment institutions operating in

Turkey. As a result of the study, it was determined that the financial literacy levels of investment experts were high and that there was a relationship between financial literacy and behavioral biases. According to the results, it was concluded that as the financial literacy of investment professionals increases, self-attribution bias decreases; It was determined that cognitive dissonance, self-affirmation, and conservatism biases increased. In their study for university students, Bongini and Cucinelli (2019) found that financially literate students have broader knowledge about retirement funds and retirement investment funds and are more optimistic about investing in retirement funds.

In this paper, based on the deficiency in the literature; as a result of investigating the mediating effect of demographic factors on the relationship between individual investors' financial literacy levels and behavioral finance tendencies; It is thought that the paper will contribute to the literature.

3. Method

The research was applied to individual investors in Erzincan province. This research, which aims to evaluate the relationship between behavioral finance tendencies and financial literacy by examining the demographic characteristics and financial literacy levels of investors, and to examine the mediating effect of demographic factors in this relationship, was conducted in Erzincan / Center. The main population of the paper is 70,953 households in Erzincan province (Turkish Statistical Institute, 2019), and a sample of 400 people is determined with a 5% sampling error at a 5% significance level and a simple random sampling method.

To obtain data for the paper, the online survey link prepared on the internet was sent to the participants that determined by a simple random sampling method. 409 people responded to the surveys administered between August 2021 and October 2021. There is no invalid survey and all surveys have been evaluated. In this way, a sufficient sample size for the paper was reached.

The survey form used in the paper consists of three parts. In the first part, there is a demographic information form, which includes information about the gender and demographic characteristics of the participants, as well as the amount allocated for investment from monthly income, investment type, and number of investment instruments. In the second part of the survey, the first 14 questions of the group were created to measure the financial literacies of individual investors are; It was prepared by adapting the survey used by the USA to determine the financial literacy of investors. The 15th question was

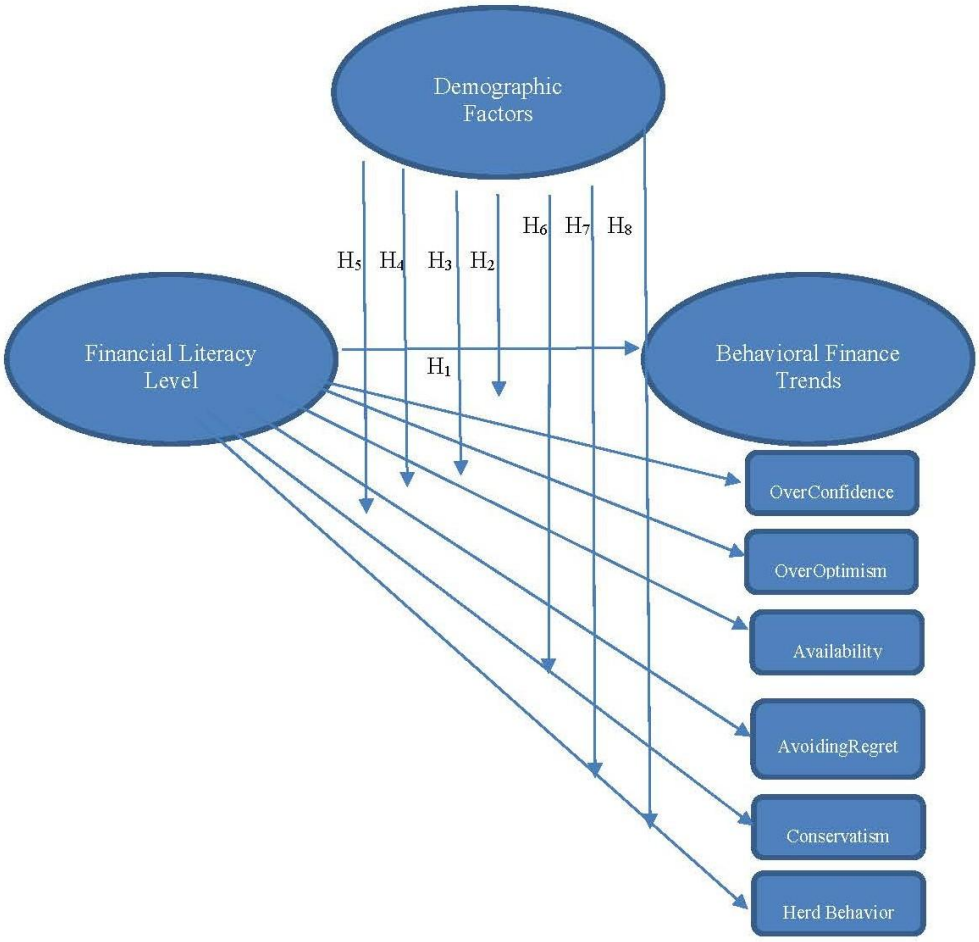
developed by Lusardi and Mitchell (2006), the 16th question was developed by Rooij, Lusardi, and Alessie (2011), the 17th question was developed by Lusardi and Tufano (2009), and the last question, which is the 18th question, was developed by Agnew and Utkus (2005) and was developed by Kılınç and Kılıç. The Financial Literacy scale, whose reliability studies were conducted (2018), was applied. In this paper, the KR-20 score of the test was determined as 0.654, and the KR-21 score was 0.615 (Kılınç and Kılıç, 2018: 50).

The third part of the survey form includes the Behavioral Financial Attitude Scale developed by Ellezoğlu (2020) to evaluate behavioral financial attitudes. The scale used has 18 items of five-point Likert type. Cronbach Alpha coefficients are important in terms of the reliability and scientific nature of the paper. The calculated Cronbach Alpha coefficient of the scale, which consists of 6 dimensions: overconfidence, overoptimism, availability, avoiding of regret, conservatism, and herd behavior, is 0.86; The calculated Cronbach Alpha coefficients of the sub-dimensions are 0.71 / 0.66 / 0.65 / 0.69 / 0.60 and 0.65, respectively. It can be stated that the scale is a reliable scale when the Cronbach Alpha value is $0.70 \leq \alpha < 0.90$ (Kılıç, 2016: 47). Confirmatory factor analysis was applied to test the validity of the scales and to determine the conformity of the data to these dimensions. It was observed that the calculated fit index values of CMIN 2.244, RMSR 0.070, GFI 0.956, AGFI 0.859, PGFI 0.673, PNFI 0.643, and RMSEA 0.053 provided acceptable values. Therefore, it can be stated that the obtained data are suitable for the scale and its sub-dimensions (Ellezoğlu, 2020: 78-79).

SPSS 21.0 package program was used to analyze the data in the paper. The scores consisting of mean, standard deviation, skewness, and kurtosis values of the scale and knowledge test scores are shown in the descriptive statistics table (Büyüköztürk, 2011: 171). Pearson Correlation Analysis was applied to analyze the relationship between behavioral finance and financial literacy scores, Linear Regression Analysis was applied to determine the effect of financial literacy on behavioral financial attitude, and Hierarchical Regression Analysis was applied to determine the mediating effect of demographic variables in this relationship.

The relationship between the likelihood of individual investors being influenced by behavioral finance trends when making investment decisions in financial markets and their financial literacy levels, and some demographic factors that may possibly affect this relationship with a mediating effect, were examined in this paper. In this context, the research model and hypotheses created in the paper are as follows in Figure 1:

Figure 1: Research Model and Hypotheses



H_1: There is a significant relationship between financial literacy (FL) level and behavioral finance tendencies. ($H_{1.a}$*: Financial literacy and sub-dimensions as over confidence, over optimism, availability, avoiding regret, conservatism, herd behavior)

H_2: Demographic factors (DFs) affect the relationship between FL and behavioral finance (mediating effect). (H_{2a}: DFs are respectively as gender, marital status, age, educational status, monthly income, the amount allocated from monthly income, the number of investment instruments affect this relationship)

* a, denote sub-dimension numbers as 1, 2, 3, 4, 5, 6, 7.

H_3: DFs affect the relationship between FL and over confidence (mediating effect) (H_{3a}: DFs respectively as the H_{2a} hypothesis affect this relationship)

H_4: DFs affect the relationship between FL and over optimism (mediating effect) (H_{4a}: DFs respectively as the H_{2a} hypothesis affect this relationship)

H_5: DFs affect the relationship between FL and availability (mediating effect) (H_{5a}: DFs respectively as the H_{2a} hypothesis affect this relationship)

H_6: DFs affect the relationship between FL and avoiding regret (mediating effect) (H_{6a}: DFs respectively as the H_{2a} hypothesis affect this relationship)

H_7: DFs affect the relationship between FL and conservatism (mediating effect) (H_{7a}: DFs respectively as the H_{2a} hypothesis affect this relationship)

H_8: DFs affect the relationship between FL and herd behavior (mediating effect) (H_{8a}: DFs respectively as the H_{2a} hypothesis affect this relationship)

4. Findings

Descriptive statistics of the variables have been analyzed first. Table 1 shows the descriptive statistics of the behavioral finance scale and financial literacy knowledge test scores.

Table 1: Descriptive Statistics of Variable Scores

Scale and Size	N	Min	Max	$\overline{X}$	SD	Skewness	Kurtosis
Over Confidence	409	1,00	5,00	2,65	0,83	0,02	0,05
Over Optimism	409	1,00	5,00	2,91	0,92	0,01	-0,07
Availability	409	1,00	5,00	3,17	0,80	-0,14	0,22
Avoiding Regret	409	1,00	5,00	3,18	0,82	-0,23	0,44
Conservatism	409	1,00	5,00	3,21	0,82	-0,19	0,19
Herd Behavior	409	1,00	5,00	3,08	0,82	-0,07	0,29
BEHAVIORAL FINANCE	409	1,00	4,72	3,03	0,58	-0,35	0,78
FINANCIAL LITERACY	409	0,00	15,00	7,52	3,40	0,19	-0,73

According to Table 1, the behavioral finance scale score was determined as 3.03±0.58. Considering the lowest (1) and highest (5) scores that can be obtained from the scale, it can be said that the behavioral finance attitude of the participants is in the "undecided" range.

The fact that the behavioral finance scale score is 3 points above the average shows that individual investors in Erzincan are under the influence of these prejudices. The behavioral finance attitudes with the highest scores were found to be conservatism (3.21±0.82), avoidance of regret (3.18±0.82), and availability (3.17±0.80). According to Table 2, the financial literacy knowledge test score was determined as 7.52±3.40. Considering the minimum (0) and maximum (15) scores that can be obtained from the scale, it can be said that the financial literacy of the participants is at a low-medium level.

Table 2 shows the Pearson correlation analysis results between financial literacy and behavioral finance scores.

Table 2: Pearson Correlation Analysis

Variable	**N**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1-Over Confidence	409	0,56**	0,25**	0,23**	0,30**	0,19**	0,61**	0,14**
2-Over Optimism	409	1	0,43**	0,31**	0,51**	0,40**	0,78**	0,19**
3-Availability	409		1	0,47**	0,54**	0,28**	0,71**	0,03
4-Avoiding Regret	409			1	0,39**	0,30**	0,64**	0,03
5-Conservatism	409				1	0,45**	0,77**	0,12*
6-Herd Behavior	409					1	0,63**	-0,13**
7-BEHAVIORAL FINANCE	409						1	0,10*
8-FINANCIAL LITERACY	409							1

Note: *p<0,05 **p<0,01

According to Table 2; financial literacy score and overconfidence (r=0.14; p<0.01), overoptimism (r=0.19; p<0.01), conservatism (r=0.12; p<0.05). It was determined that there was a significant positive relationship between subscale scores and behavioral finance scale scores (r=0.10; p<0.05). A significant negative relationship (r=-0.13; p<0.01) was detected between financial literacy score and herding behavior. It was found that there was no significant relationship between financial literacy and availability and avoiding regret (p>0.05). Therefore, hypotheses $H_{1.1,}$ $H_{1.2,}$ $H_{1.5}$ ve $H_{1.6}$ were accepted; $H_{1.3}$ ve $H_{1.4}$ were rejected.

Table 3 presents the findings of the model tests regarding the relationship between the behavioral finance scale and the financial literacy scale and the mediating role of some demographic variables in this relationship.

Table 3: Hierarchical Regression Analysis of Financial Literacy and Behavioral Finance

	Independent Variables	B	SHB	β	T	p	Tolerance	VIF
1. Model	Constant	2,907	0,069		41,993	0,001		
	Financial literacy	0,017	0,008	0,098	1,980	**0,048**	1,000	1,000
	R=0,098 R^2=0,010 $F_{(1407)}$=3,922 p=0,048							
2. Model	Constant	2,556	0,135		18,941	0,001		
	Finansal literacy	-0,007	0,010	-0,043	-0,745	0,457	0,649	1,540
	Gender	-0,008	0,060	-0,007	-0,136	0,892	0,838	1,193
	Marital status	-0,131	0,072	-0,097	-1,835	0,067	0,775	1,290
	Age	0,036	0,024	0,087	1,516	0,130	0,666	1,501
	Education status	0,062	0,027	0,121	2,254	**0,025***	0,765	1,308
	Monthly income	-0,036	0,032	-0,079	-1,131	0,259	0,447	2,238
	Allocated for investment	0,129	0,027	0,309	4,694	**0,001***	0,504	1,983
	Num. of investment instrument	0,023	0,034	0,040	0,679	0,497	0,618	1,618
	R=0,354 R^2=0,126 $F_{(8400)}$=7,182 p=0,001 R^2 Difference=0,116 F Change$_{(7400)}$ = 7,585 p=0,001							

Note: *Variables that indicate the mediating effect

In the first stage of the analysis, the results of which are presented in Table 3, the effect of the independent variable of the paper, financial literacy, on the dependent variable, behavioral finance, was investigated. The first model established here was found to be significant ($F_{(1;407)}$=3,92; p<0,05), and the financial literacy variable explains approximately 1% (R^2=0,01) of the change in behavioral finance attitude. According to the first model, it was determined that the financial literacy variable had a positive and significant effect on behavioral finance attitude (β=0.10; t=1.98; p<0.05). According to this finding; The increase in financial literacy also causes behavioral finance attitudes to increase. Therefore, the H_1 hypothesis was accepted.

The second model, which included demographic factors, and the amount allocated from monthly income for investment and the number of investment instruments, was significant ($F_{(8;400)=}$7.18; p<0.05); It can be seen that there are no multicollinearity and autocorrelation problems among the independent variables (Tolerance>0.20; VIF<10). The explanation rate of the change in behavioral finance attitudes by including demographic variables in the model was determined to be approximately 13% (R^2 = 0.126). In the second model, it was

determined that the variance difference explained by adding demographic variables to the model was approximately 12% (ΔR^2=0.116) and this difference was significant (F change$_{(1; 512)}$=7.18; p<0.05). Therefore, it can be stated that some demographic variables have a mediating role and a mediating effect in the relationship between financial literacy and behavioral finance attitude. According to these findings; the H_2 hypothesis was accepted. It was seen that some demographic factors had a mediating effect on the relationship between financial literacy and behavioral finance. When Model 2 was examined, education level (β=0.12; t=2.25; p<0.05) and the amount allocated from monthly income for investment (β=0, 31; t=4.69; p<0.05) variables appear to have a positive and significant effect on the relationship between behavioral finance and financial literacy. Additionally, it can be stated that gender, marital status, age, monthly income, and number of investment instruments do not have a mediating effect. According to these findings; Hypotheses $H_{2.4}$ and $H_{2.6}$ were accepted; Hypotheses $H_{2.1}$, $H_{2.2}$, $H_{2.3,}$ and $H_{2.5}$ were rejected.

Table 4 presents the findings and hypothesis results of the model tests regarding the relationship between financial literacy and overconfidence and the mediating role of some demographic variables in this relationship.

Table 4: Hierarchical Regression Analysis of Financial Literacy and Overconfidence

	Independent Variables	**B**	**SHB**	**β**	**T**	**P**	**Tolerance**	**VIF**
1. Model	Constant	2,384	0,098		24,233	0,001		
	Financial literacy	0,035	0,012	0,144	2,933	**0,004**	1,000	1,000
	R=0,144 R^2=0,021 $F_{(; 407)}$=8,601 p=0,004							
2. Model	Constant	2,664	0,197		13,503	0,001		
	Financial literacy	0,042	0,014	0,171	2,889	**0,004**	0,649	1,540
	Gender	0,007	0,088	0,004	0,082	0,934	0,838	1,193
	Marital status	-0,314	0,105	-0,163	-3,001	**0,003***	0,775	1,290
	Age	-0,045	0,035	-0,075	-1,288	0,198	0,666	1,501
	Education status	-0,104	0,040	-0,141	-2,588	**0,010***	0,765	1,308
	Monthly income	0,090	0,047	0,137	1,909	0,057	0,447	2,238
	Allocated for investment	0,071	0,040	0,119	1,767	0,078	0,504	1,983
	Num. of investment instrument	-0,026	0,050	-0,032	-0,519	0,604	0,618	1,618
	R=0,292 R^2=0,085 $F_{(8400)}$=4,656 p=0,001							
	R^2 Difference =0,064 F change $_{(7; 400)}$ = 4,028 p=0,001							

Note: * Variables that indicate the mediating effect

In the first stage of the analysis in Table 4, the effect of the independent variable of the paper, financial literacy, on the dependent variable overconfidence was investigated. The first model established was found to be significant ($F_{(1;407)}=8.60$; $p<0.05$), and the financial literacy variable explains approximately 2% ($R^2=0.02$) of the change in overconfidence attitude. According to the first model, it was determined that the financial literacy variable had a significant positive effect on overconfidence attitude ($\beta=0.14$; $t=2.93$; $p<0.05$). Accordingly, hypothesis $H_{1.1}$ was accepted. There is a significant relationship between the financial literacy level of the participants and the overconfidence sub-dimension which supports the Pearson Correlation analysis in Table 3. The increase in financial literacy also causes an increase in overconfidence attitudes.

The second model, in which demographic factors, amount allocated from monthly income for investment and number of investment instruments were added, was found to be significant ($F_{(8;400)}=4.66$; $p<0.05$); among the independent variables Findings that there were no multicollinearity and autocorrelation problems (Tolerance>0.20; VIF<10) were obtained. The explanation rate of the change in overconfidence attitude by including demographic variables in the model was determined to be approximately 8% ($R^2 = 0.085$). According to this; H_3 hypothesis was accepted. It was observed that some demographic factors of the participants had a mediating effect on the relationship between financial literacy and overconfidence. In the second model, it was observed that the difference in variance explained by adding demographic variables to the model was 6% ($\Delta R^2=0.064$) and significant ($F\Delta_{(7;\ 400)}=4.03$; $p<0.05$). Therefore, only marital status and educational status factors have a mediating role in the relationship between financial literacy and overconfidence attitude. When Model 2 is examined, marital status ($\beta=-0.16$; $t=-3.00$; $p<0.05$) and educational status ($\beta=-0.14$; $t=-2.59$; $p<0.05$). It is seen that the variables have a negative and significant mediating effect on the relationship between financial literacy and overconfidence. According to these findings; Hypotheses $H_{3.2}$ and $H_{3.4}$ were accepted; Hypotheses $H_{3.1}$, $H_{3.3}$, $H_{3.5}$, $H_{3.6,}$ and $H_{3.7}$ were rejected.

Table 5 presents the findings and hypothesis results of the model tests regarding the relationship between financial literacy and over optimism and the mediating role of some demographic variables in this relationship.

Table 5: Hierarchical Regression Analysis of Financial Literacy and Over Optimism

	Independent Variables	B	SHB	B	T	P	Tolerance	VIF
1. Model	Constant	2,529	0,108		23,345	**0,001**		
	Financial literacy	0,050	0,013	0,186	3,810	**0,001**	1,000	1,000
	R=0,168 R^2=0,034 $F_{(; 407)}$=14,513 p=0,001							
2. Model	Constant	2,356	0,211		11,162	**0,001**		
	Financial literacy	0,032	0,015	0,119	2,081	**0,038**	0,649	1,540
	Gender	-0,035	0,094	-0,019	-0,374	0,709	0,838	1,193
	Marital status	-0,315	0,112	-0,147	-2,809	**0,005***	0,775	1,290
	Age	-0,015	0,037	-0,022	-0,395	0,693	0,666	1,501
	Education status	0,030	0,043	0,036	0,687	0,493	0,765	1,308
	Monthly income	0,020	0,050	0,027	0,392	0,695	0,447	2,238
	Allocated for investment	0,204	0,043	0,309	4,759	**0,001***	0,504	1,983
	Num. of investment instrument	-0,049	0,053	-0,054	-0,922	0,357	0,618	1,618
	R=0,385 R^2=0,149 $F_{(8400)}$=8,725 p=0,001							
	R^2 Difference =0,114 F change $_{(7; 400)}$ = 7,661 p=0,001							

Note: * Variables that indicate the mediating effect

In the first stage of the analysis in Table 5, the effect of the independent variable of the paper, financial literacy, on the dependent variable, excessive optimism, was investigated. The first model established was found to be significant ($F_{(1;407)}$=14.51; p<0.05), and the financial literacy variable explains approximately 3% of the change in over-optimism attitude (R^2=0.034). According to the first model, it was determined that the financial literacy variable had a significant positive effect on overoptimism attitude (β=0.19; t=3.81; p<0.05). There is a significant relationship between the financial literacy level of the participants and the over-optimism sub-dimension. According to this finding, the $H_{1.2}$ hypothesis was accepted and supports the Pearson Correlation analysis in Table 2. The increase in financial literacy also causes an increase in excessive optimism.

The second model, in which demographic factors, the amount allocated from monthly income for investment and the number of investment instruments were added, was found to be significant ($F_{(8;400)}$=8.72; p<0.05); It was determined that no multicollinearity or autocorrelation problems were observed among the independent variables (Tolerance>0.20; VIF<10). The explanation rate of the change in overoptimistic attitude by including demographic variables in the model was determined to be approximately 15% (R^2 = 0.145). In the second model, it was determined that the difference in variance explained by adding demographic variables to the model was 11% (ΔR^2=0.114) and significant ($F\Delta_{(7; 400)}$=7.66; p<0.05). Therefore, some demographic variables have a mediating role in the relationship

between financial literacy and over-optimism attitudes. According to this; Hypothesis H4 was accepted. When Model 2 was examined, it was determined that the marital status (β=-0.15; t=-2.81; p<0.05) variable had a negative and significant effect on the relationship between financial literacy and excessive optimism. It is seen that the variable amount allocated for investment (β=0.309; t=4.759; p<0.05) has a positive and significant effect on the relationship between financial literacy and excessive optimism. According to these findings; Hypotheses $H_{4.2}$ and $H_{4.6}$ were accepted; Hypotheses $H_{4.1}$, $H_{4.3}$, $H_{4.4}$, $H_{4.5}$, and $H_{4.7}$ were rejected.

Table 6 presents the findings and hypothesis results of the model tests conducted regarding the relationship between financial literacy and availability scores and the mediating role of some demographic variables in this relationship.

Table 6: Hierarchical Regression Analysis of Financial Literacy and Availability

	Independent Variables	**B**	**SHB**	**B**	**T**	**P**	**Tolerance**	**VIF**
1. Model	Constant	3,108	0,096		32,267	**0,001**		
	Financial literacy	0,008	0,012	0,033	0,668	0,505	1,000	1,000
	R=0,033	R^2=0,001	$F_{(; 407)}$=0,446		p=0,505			
2. Model	Constant	2,267	0,186		12,214	**0,001**		
	Financial literacy	-0,039	0,014	-0,164	-2,844	**0,005**	0,649	1,540
	Gender	0,048	0,082	0,029	0,577	0,564	0,838	1,193
	Marital status	-0,033	0,098	-0,018	-0,332	0,740	0,775	1,290
	Age	0,091	0,033	0,158	2,779	**0,006***	0,666	1,501
	Education status	0,184	0,038	0,258	4,866	**0,001***	0,765	1,308
	Monthly income	-0,111	0,044	-0,175	-2,521	**0,012***	0,447	2,238
	Allocated for investment	0,158	0,038	0,275	4,204	**0,001***	0,504	1,983
	Num. of investment instrument	0,069	0,047	0,087	1,468	0,143	0,618	1,618
	R=0,372	R^2=0,138	$F_{(8400)}$=8,017		p=0,001			
	R^2 Difference =0,137	F change $_{(7; 400)}$ = 9,090			p=0,001			

Note: * Variables that indicate the mediating effect

In the first stage of the analysis in Table 6, the effect of the independent variable of the paper, financial literacy, on the dependent variable, availability, was investigated. It was determined that the first model established was not appropriate ($F_{(1;407)}=0.45$; $p>0.05$) and the financial literacy variable could not explain the change in availability attitude ($R^2=0.001$). According to the first model, it was determined that the financial literacy variable did not have a significant effect on the availability attitude ($p>0.05$). According to this finding, the $H_{1.3}$ hypothesis was rejected and supports the Pearson Correlation analysis in Table 2. There is no significant relationship between the financial literacy level of the participants and the availability sub-dimension.

The second model, in which demographic factors, amount allocated from monthly income for investment, and number of investment instruments were added, was found to be significant ($F_{(8;400)}=8.02$; $p<0.05$); among the independent variables It was determined that there were no multicollinearity and autocorrelation problems (Tolerance>0.20; VIF<10). The explanation rate of the change in presence attitude by including demographic variables in the model was determined to be approximately 14% ($R^2 = 0.138$). In the second model, it was determined that the variance difference explained by adding demographic variables to the model was 14% ($\Delta R^2=0.137$) and significant ($F\Delta_{(7; 400)}=9.09$; $p<0.05$).

Demographic factors influence the relationship between financial literacy and availability attitude. In other words, some demographic variables have a mediating role in the relationship between financial literacy and availability attitude. According to this; the H_5 hypothesis was accepted. When Model 2 was examined, it was determined that financial literacy, which alone does not affect availability attitude, had a significant negative effect through demographic variables ($\beta=-0.16$; $t=-2.84$; $p<0.05$). It was determined that monthly income ($\beta=-0.17$; $t=-2.52$; $p<0.05$) had a negative and significant effect on the relationship between financial literacy and availability. Age groups ($\beta=0.16$; $t=2.78$; $p<0.05$), education level ($\beta=0.26$; $t=4.87$; $p<0.05$) and amount allocated from monthly income ($\beta =0.27$; $t=4.20$; $p<0.05$) variables have a positive and significant effect on the relationship between financial literacy and availability. According to these findings; Hypotheses $H_{5.3}$, $H_{5.4}$, $H_{5.5}$, and $H_{5.6}$ were accepted; Hypotheses $H_{5.1}$, $H_{5.2,}$ and $H_{5.7}$ were rejected.

Table 7 presents the findings and hypothesis results of the model tests regarding the relationship between financial literacy and avoiding regret scores and the mediating role of some demographic variables in this relationship.

Table 7: Hierarchical Regression Analysis of Financial Literacy and Avoiding Regret

	Independent Variables	B	SHB	β	T	p	Tolerance	VIF
1. Model	Constant	3,114	0,099		31,506	0,001		
	Financial literacy	0,008	0,012	0,035	0,703	0,483	1,000	1,000
	R=0,035 R^2=0,001 $F_{(; 407)}$=0,494 p=0,483							
2. Model	Constant	2,879	0,201		14,302	0,001		
	Financial literacy	-0,016	0,015	-0,067	-1,092	0,275	0,649	1,540
	Gender	-0,151	0,089	-0,091	-1,693	0,091	0,838	1,193
	Marital status	-0,083	0,107	-0,043	-0,776	0,438	0,775	1,290
	Age	0,049	0,035	0,083	1,383	0,167	0,666	1,501
	Education status	0,055	0,041	0,075	1,334	0,183	0,765	1,308
	Monthly income	-0,046	0,048	-0,071	-0,968	0,334	0,447	2,238
	Allocated for investment	0,057	0,041	0,096	1,387	0,166	0,504	1,983
	Num. of investment instrument	0,077	0,051	0,095	1,525	0,128	0,618	1,618
	R=0,192 R^2=0,037 $F_{(8400)}$=1,920 p=0,056							
	R^2 Difference =0,036 F change $_{(7; 400)}$ = 2,123 p=0,040							

Note: * Variables that indicate the mediating effect

In the first stage of the analysis in Table 7, the effect of the independent variable of the paper, financial literacy, on the dependent variable, avoiding regret, was investigated. It was determined that the first model established was not appropriate (F (1;407)=0.49; p>0.05) and the financial literacy variable could not explain the change in the attitude of avoiding regret (R2=0.001). According to the first model, it was observed that the financial literacy variable did not have a significant effect on the attitude of avoiding regret (p>0.05). According to this finding, the H1.4 hypothesis was rejected and this finding supports the Pearson Correlation analysis in Table 2.

It was determined that the second model, which included demographic factors, the amount allocated for investment from monthly income, and the number of investment instruments, was not valid (p>0.05). In other words, demographic variables do not have a mediating role in the relationship between financial literacy and regret avoidance attitude. According to this finding, H6 was rejected. When Model 2 is examined; It appears that any

of the demographic variables included in the model do not have a single role in the relationship between financial literacy and regret avoidance behavior. According to these findings; Hypotheses $H_{6.1}$, $H_{6.2}$, $H_{6.3}$, $H_{6.4}$, $H_{6.5}$, $H_{6.6}$ and $H_{6.7}$ were rejected.

Table 8 presents the findings and hypothesis results of the model tests regarding the relationship between financial literacy and conservatism scores and the mediating role of some demographic variables in this relationship.

Table 8: Hierarchical Regression Analysis of Financial Literacy and Conservatism

	Independent Variables	B	SHB	β	T	P	Tolerance	VIF
1. Model	Constant	2,991	0,098		30,391	0,001		
	Financial literacy	0,029	0,012	0,121	2,466	**0,014**	1,000	1,000
	R=0,121	R^2=0,015	$F_{(; 407)}$=6,083		p=0,014			
2. Model	Constant	1,997	0,185		10,806	0,001		
	Financial literacy	-0,024	0,014	-0,098	-1,753	0,080	0,649	1,540
	Gender	0,077	0,082	0,046	0,934	0,351	0,838	1,193
	Marital status	0,200	0,098	0,104	2,035	**0,042***	0,775	1,290
	Age	0,079	0,033	0,133	2,421	**0,016***	0,666	1,501
	Education status	0,211	0,038	0,287	5,598	**0,001***	0,765	1,308
	Monthly income	-0,161	0,044	-0,245	-3,654	**0,001***	0,447	2,238
	Allocated for investment	0,219	0,038	0,369	5,837	**0,001***	0,504	1,983
	Num. of investment instrument	0,058	0,047	0,072	1,254	0,211	0,618	1,618
	R=0,439	R^2=0,193	$F_{(8400)}$=11,963		p=0,001			
	R^2Difference =0,178	F change $_{(7; 400)}$ = 12,630			p=0,001			

Note: * Variables that indicate the mediating effect

In the first stage of the analysis in Table 8, the effect of the independent variable of the paper, financial literacy, on the dependent variable, conservatism, was investigated. The first model established was found to be significant ($F_{(1;407)}$=6.08; $p<0.05$), and the financial literacy variable explains approximately 1% (R^2=0.015) of the change in conservatism attitude. According to the first model, it was determined that the financial literacy variable had a significant positive effect on conservatism attitude (β=0.12; t=2.47; $p<0.05$). According

to this finding, the $H_{1.5}$ hypothesis was accepted and this finding supports the Pearson Correlation analysis in Table 2. The increase in the level of financial literacy also causes an increase in the attitude of conservatism.

The second model, in which demographic factors the amount allocated from monthly income for investment and the number of investment instruments were added, was found to be significant ($F_{(8;400)}=11.96$; $p<0.05$); It was determined that there were no multicollinearity and autocorrelation problems among the independent variables (Tolerance>0.20; VIF<10). By adding demographic variables to the model, it was determined that the explanation rate for the change in conservatism attitude was approximately 19% ($R^2 = 0.193$). In the second model, it was determined that the difference in variance explained by adding demographic variables to the model was 18% ($\Delta R^2=0.178$) and significant ($F\Delta_{(7;\ 400)}=12.63$; $p<0.05$). Therefore, some demographic variables have a mediating role in the relationship between financial literacy and conservatism attitudes. According to this finding; Hypothesis H_7 was accepted. When Model 2 is examined; marital status ($\beta=0.10$; $t=2.04$; $p<0.05$), age groups ($\beta=0.13$; $t=2.42$; $p<0.05$), educational status ($\beta=0\ .29$; $t=5.60$; $p<0.05$), amount allocated from monthly income ($\beta=0.37$; $t=5.84$; $p<0.05$) have a significant and positive effect on the relationship between financial literacy and conservatism. is; It is seen that the monthly income ($\beta=-0.24$; $t=-3.65$; $p<0.05$) variable has a negative and significant effect on the relationship between financial literacy and conservatism. According to these findings; Hypotheses $H_{7.3}$, $H_{7.4}$, $H_{7.5,}$ and $H_{7.6}$ were accepted; Hypotheses $H_{7.1}$, $H_{7.2,}$ and $H_{7.7}$ were rejected.

Table 9 presents the findings and hypothesis results of the model tests regarding the relationship between financial literacy and herd behavior scores and the mediating role of some demographic variables in this relationship.

Table 9: Hierarchical Regression Analysis of Financial Literacy and Herd Behaviour

	Independent Variables	B	SHB	β	T	P	Tolerance	VIF
1. Model	Constant	3,313	0,097		34,029	0,001		
	Financial literacy	-0,031	0,012	-0,129	-2,622	**0,009**	1,000	1,000
	R=0,129 R^2=0,017 $F_{(; 407)}$=6,875 p=0,009							
2. Model	Constant	3,171	0,199		15,949	0,001		
	Financial literacy	-0,040	0,015	-0,165	-2,718	**0,007**	0,649	1,540
	Gender	0,006	0,088	0,004	0,068	0,946	0,838	1,193
	Marital status	-0,244	0,105	-0,128	-2,309	**0,021***	0,775	1,290
	Age	0,057	0,035	0,097	1,625	0,105	0,666	1,501
	Education status	-0,003	0,040	-0,004	-0,080	0,936	0,765	1,308
	Monthly income	-0,009	0,047	-0,014	-0,188	0,851	0,447	2,238
	Allocated for investment	0,063	0,040	0,107	1,551	0,122	0,504	1,983
	Num. of investment instrument	0,009	0,050	0,011	0,179	0,858	0,618	1,618
	R=0,218 R^2=0,047 $F_{(8400)}$=2,488 p=0,012							
	R^2 Difference=0,031 F change $_{(7; 400)}$ = 3,847 p=0,001							

Note: * Variables that indicate the mediating effect

In the first stage of the analysis in Table 9, the effect of the independent variable of the paper, financial literacy, on the dependent variable herd behavior was investigated. The first model established was found to be significant ($F_{(1;407)}$=6.87; p<0.05), and the financial literacy variable explains approximately 2% (R^2=0.017) of the change in herd behavior attitude. According to the first model, it was determined that the financial literacy variable had a significant negative effect on herding behavior attitude (β=-0.13; t=-2.62; p<0.05). In this direction; The $H_{1.6}$ hypothesis was accepted and this finding supports the Pearson Correlation analysis in Table 2. The increase in the financial literacy levels of the participants causes the herd behavior attitudes to decrease.

The second model, in which demographic factors, the amount allocated from monthly income for investment and the number of investment instruments were added, was found to be significant ($F_{(8;400)}$=2.49; p<0.05); It was determined that there was no multicollinearity or autocorrelation problem among the independent variables (Tolerance>0.20; VIF<10). The explanation rate of the change in herd behavior by including demographic variables in the

model was determined to be approximately 5% (R^2 = 0.047). According to this; Hypothesis H_8 was accepted. It was observed that the demographic factors of the participants had a partial mediating effect on the relationship between financial literacy and herding behavior attitude. In the second model, it can be stated that the difference in variance explained by adding demographic variables to the model is significant at the 3% level (ΔR^2=0.031). It has been proven that the resulting intermediary model is meaningful. ($F\Delta_{(7;\ 400)}$=3.847; $p<0.05$) It was seen that only marital status was included as a mediating variable in the model. It was determined that only marital status, one of the demographic variables included in the model, had a mediating role in the relationship between financial literacy and herd behavior attitude, and this effect was in the form of a mediator. In line with the findings; Hypothesis $H_{8.2}$ was accepted; Hypotheses $H_{8.1}$, $H_{8.3}$, $H_{8.4}$, $H_{8.5}$, $H_{8.6}$ and $H_{8.7}$ were rejected.

When all models are examined; It has been observed that some demographic factors have a mediating effect on the financial literacy and behavioral finance relationship. When examined in general, in the context of sub-dimensions and the main dimension, gender, marital status, education level, the amount they allocate from their monthly income for investment, and age are included as mediator variables in different models. In summary, although it can be stated that the behavioral finance tendencies of individual investors in Erzincan are partially affected by the financial literacy levels; and the participants' gender, age, marital status, education level, and amount they allocate from their monthly income for investment indirectly affect behavioral finance tendencies in this relationship. The mediation effect was either increasing or decreasing in the established models, but it can be stated that this effect was not significant in the sub-dimensions of avoiding regret and conservatism.

5. Conclusion

A three-stage evaluation was made for the relationship between financial literacy and behavioral finance tendencies, which constitute the main hypothesis of this paper. First, the relationship between financial literacy and behavioral finance scale total and subscale scores was examined with Pearson correlation analysis. There is a positive and significant relationship between financial literacy and behavioral finance tendencies of overconfidence, overoptimism, and conservatism; There is a negative and significant relationship between financial literacy and herding behavior; It was found that there was no significant relationship between financial literacy and availability and regret avoidance.

In the second stage, regression analysis was carried out on the effect of financial literacy on behavioral finance tendencies, and it was found that although financial literacy explained the change in behavioral finance tendencies, the explanation rate was quite low. The paper also found that financial literacy has a significant effect on overconfidence, overoptimism, conservatism, and herd behavior; It was found that it did not have a significant effect on presence and regret avoidance. It has been determined that these findings support the results of Pearson Correlation analysis.

In the third stage, the effects of demographic factors, the amount allocated for investment from monthly income and the number of investment instruments on the relationship between financial literacy and behavioral finance tendencies were examined and it was determined that the explanatory power of behavioral finance tendencies reached 13%. In other words, financial literacy can explain behavioral finance trends at a very low level, but it can be stated that financial literacy can better explain the change in behavioral finance attitudes due to the effect of education level and the amount allocated from monthly income. Therefore; It has been determined that education level and the amount allocated for investment from monthly income have a mediating effect (mediating role) in this relationship.

In the fourth stage, the effects of demographic factors, the amount allocated for investment from monthly income and the number of investment instruments on the relationships between financial literacy and the sub-dimensions of behavioral finance tendencies were examined. According to the findings: Marital status and educational status have a significant role in the relationship between financial literacy and overconfidence; In the relationship between financial literacy and excessive optimism, the amount allocated for investment from marital status and monthly income; In the relationship between financial literacy and availability, age, education level, monthly income and the amount allocated from monthly income for investment; In the relationship between financial literacy and conservatism, age, education level, monthly income and the amount allocated from monthly income for investment; It has been determined that marital status has a mediating effect on the relationship between financial literacy and herding behavior. No mediating effect of demographic variables was found in the relationship between financial literacy and regret avoidance.

In his study on individual stock investors, Ateş (2014) found that as the level of financial literacy increases, the levels of confirmation, representativeness and overoptimism biases increase, and the levels of framing, loss aversion and overconfidence biases decrease. In their

paper applied to investment professionals, Kılınç and Kılıç (2018) determined that a high financial literacy levels reduces only self-attribution, which is a behavioral finance biases. It has been found that it also increases tendencies towards conservatism, self-affirmation, and cognitive dissonance. Erbaş and Yıldırım (2021) determined that there is a negative relationship between herd behavior and loss avoidance and financial literacy and a positive relationship between overconfidence and only advanced financial literacy. Şimşek, Hithit, and Şimşek (2021) concluded that spending and saving attitudes and behaviors are positively related to financial literacy. Özdemir, Bengü, Bulut, and Çelik (2021) found in their studies with academic staff that there was a low level of relationship between financial literacy and financial attitude. The results of the analysis applied to determine the relationships between the financial literacy level of individual investors and behavioral finance biases, which is the main purpose of the study, showed that there is a significant but weak relationship between the financial literacy level of individual investors and behavioral finance biases and errors. It was concluded that although the level of financial literacy increased, behavioral biases could not be prevented. The findings obtained from this paper are parallel to the findings in the literature; Results have been obtained that financial attitudes and behaviors are related to financial literacy and that individuals generally exhibit financial attitudes and behaviors in line with their financial literacy. Considering the sub-dimensions of behavioral finance; an increase in the level of financial literacy reduces herd behavior but increases overconfidence, overoptimism, and conservatism behaviors.

The paper concluded that some demographic factors play a mediating role in the relationship between individual investors' financial literacy and behavioral finance tendencies and sub-dimensions, strengthening this relationship. The paper differs from its counterparts in the literature by investigating the mediating effect of demographic factors in this relationship and the findings obtained accordingly. In line with the results obtained from the paper, it was observed that individual investors in Erzincan province have low-medium level financial literacy and this situation leads to behavioral finance prejudices. It is thought that this paper can play a motivating role in increasing the financial literacy levels and awareness of behavioral finance for individual investors, which will provide them with maximum benefit in their investment decisions. Different financial literacy and behavioral finance scales can be used in future studies. In addition, the paper can be made more comprehensive by examining it according to regions in Turkey and a geographically comparative analysis can be made.

References

Agnew, J. R., Utkus, S. P., & Young, J. A. (2007). Do financial literacy and mistrust affect 401 (k) participation?. *Available at SSRN 1118472*.

Alkaya, A. ve Yağlı, İ. (2015). Finansal okuryazarlık-finansal bilgi, davranış ve tutum: Nevşehir Hacı Bektaş Veli Üniversitesi İİBF öğrencileri üzerine bir uygulama, *Uluslararası Sosyal Araştırmalar Dergisi,* 8(40), 585-600.

Ateş, A. (2007). *Finansal yatırımların davranışsal finans açısından değerlendirilmesi üzerine bir araştırma* [Yayımlanmamış doktora tezi]. Selçuk Üniversitesi.

Ateş, S. (2014). *Finansal okuryazarlık ve davranışsal önyargılar: Bireysel hisse senedi yatırımcısı üzerine ampirik bir çalışma* [Yayımlanmamış *yüksek lisans tezi*]. Galatasaray Üniversitesi.

Barmaki, N. (2015). *Üniversite öğrencilerinin finansal okuryazarlık düzeylerini belirlemeye yönelik bir araştırma: Hacettepe Üniversitesi örneği* [Yayımlanmamış doktora tezi]. Hacettepe Üniversitesi.

Bayar, Y. (2011). Yatırımcı davranışlarının davranışçı yaklaşım çerçevesinde değerlendirilmesi*, Girişimcilik ve Kalkınma Dergisi,* 136-151.

Bongini, P. ve Cucinelli, D. (2019). University students and retirement planning: Never too early, *International Journal of Bank Marketing*, *37*(3), 775-797.

Büyüköztürk, Ş. (2011). *Sosyal bilimler için veri analizi el kitabı*. Ankara: Pegem Akademi.

Ellezoğlu, N. (2020). *Bireysel yatırımcı davranışlarının davranışsal finans kapsamında incelenmesi: Ankara ili uygulaması* [Yayımlanmamış *yüksek lisans tezi*]. Gazi Üniversitesi.

Elvin, M. (2004). *Financial Risk Taking: An Introduction to the Psychology of Trading and Behavioral Finance*, England 2004.

Erbaş, C.N. ve Yıldırım, D. (2021). Bireysel yatırımcıların davranışsal yanlılıkları ve finansal okuryazarlık ilişkisi: Samsun ili örneği, *Bingöl Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi,* 5(2), 315-341.

Finra, (2016). *Financial Capability in the United States*, Minnesota.

Hayta, A.B. (2014). Bireysel Yatırımcıların Finansal Risk Algısına Etki Eden Psikolojik Önyargılar, *Türkiye Sosyal Araştırmalar Dergisi*, 183(183), 329-352.

Huston, S.J. (2010). Measuring financial literacy, *Journal of Consumer Affairs*, 44(2), 296-316.

Organization for Economic Co-operation and Development. (2005). *Improving financial literacy: Analysis of issues and policies*. OECD Publishing.

Jacobius, A. (2003). Education Fails as Participants Time Market, *Pensions and Investments*, 31(6), 1-3.

Kadoya, Y. ve Khan, M. S. R. (2018). Can financial literacy reduce anxiety about life in old age?, *Journal of Risk Research*, *21*(12), 1533-1550.

Kılıç, S. (2016). Cronbach'ın alfa güvenirlik katsayısı. *Journal of Mood Disorders*, *6*(1), 47-48.

Kılınç, N. ve Kılıç, Y. (2018, Ekim, 10-13). 22. Finans Sempozyumu, Mersin, Türkiye.

Mitchell, O. S., Lusardi, A., & Curto, V. (2009). Financial literacy among the young: Evidence and implications for consumer policy. *Pension Research Council WP*, *9*.

Lusardi, A., & Mitchell, O. S. (2011). Financial literacy and retirement planning in the United States. *Journal of Pension Economics & Finance*, 10(4), 509-525.

Mandell, L., & Klein, L. S. (2009). The impact of financial literacy education on subsequent financial behavior. *Journal of Financial Counseling and Planning*, *20*(1), 10-21.

OECD (2005). Improving financial literacy: analysis of issues and policies. *OECD Publishing*, 26-36; 42-45; 62; 62-70; 132-134; 146-147.

Özdemir, F.S., Bengü, H., Bulut, E. ve Çelik, S. (2021). Bilim insanlarının finansal okuryazarlık tutum ve davranışları üzerine bir araştırma: Niğde Ömer Halisdemir Üniversitesi örneği, *Anadolu Üniversitesi Sosyal Bilimler Dergisi,* 21(2), 449-482.

Pompian, M. M. (2012). *Behavioral finance and wealth management: How to build investment strategies that account for investor biases* (Vol. 667). John Wiley & Sons.

Robb, C. A. ve Woodyard, A.S. (2011). Financial knowledge and 'best practice' behavior, *Journal of Financial Counseling and Planning*, 22(1), 60-70.

Sezer D. ve Demir S. (2015). Yatırımcıların finansal okuryazarlık ve bilişsel yetenek düzeylerinin psikolojik yanılsamalar ile ilişkisi, *Muhasebe ve Finansman Dergisi*, 54-85.

Shiller, R. J. (2003). From efficient markets theory to behavioral finance, *Journal of Economic Perspectives*, 17(1), 83-104.

Şimşek, T., Hithit, M. ve Şimşek, N. (2021). Finansal okuryazarlık ve para yönetimine ilişkin tutum ve davranışların belirlenmesi, *Enderun Dergisi*, 5(2), 117-143.

Tunca, L. (2016). Finansal bilgi ve tecrübenin davranışçı yanılgılar ile olan ilişkisi [Yayımlanmamış doktora tezi]. Marmara Üniversitesi.

Veeraraghavan, K. (2010). Role of behavioural finance a study, *International Journal of Enterprise and Innovation Management Studies*, 1(3), 109-112.

Wagner, J. (2015). An analysis of the effects of financial literacy and financial behaviors, Degree of Doctor of Philosophy, University of Nebraska-LincolnDissertation and Theses from the College of Business Administration.

Türkiye İstatistik Kurumu (2019). İstatistik veri portalı. https://data.tuik.gov.tr/Kategori/Get Kategori? p=Nufus-ve-Demografi-109