IN THE CONTEXT OF BEHAVIORAL FINANCE, DO INVESTOR CHARACTERISTICS AFFECT STOCK HOLDING PERIOD?[1]

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ABSTRACT | The aim of this study is to determine whether the holding period of stocks varies according to the socio-economic characteristics of the investors. According to the logit model results, it has been determined that there is a significant relationship between the variables of BIST investors' occupation, the type of asset most invested in, the number of years invested in stocks, the annual stock investment amount and the variables of following the market every day and the period of holding the stock. The results reveal that those who invest in foreign currency are 0,172 times less likely to hold their stocks than those who have invested in shares and in terms of the time it takes to start investing in stocks, those who have invested for 1 to 3 years are 1,72 times more likely to hold the stock than those who have invested for less than 1 year. It shows that those who have invested for 3 to 6 years are 2.5 times more likely to hold the stock than those who have invested for less than 1 year.

Keywords: *Stock market, holding period, ınvestment, logit model, behavioral finance*
JEL Codes: *G11, G19, G4*

Scope: *Business*
Type: *Research*

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DAVRANIŞSAL FİNANS BAĞLAMINDA YATIRIMCI ÖZELLİKLERİ HİSSE SENEDİNİ ELDE TUTMA SÜRESİNİ ETKİLER Mİ?

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ÖZ | Bu çalışmanın amacı, hisse senetlerini elinde tutma sürelerinin yatırımcıların sosyo-ekonomik özelliklerine göre değişip değişmediğini belirlemektir. Logit model sonuçlara göre, Türkiye'deki BİST yatırımcılarının meslek, en fazla yatırım yapılan varlık türü, hisse senedi yatırım süresi, yıllık yatırım tutarı ve her gün piyasayı takip etme değişkenleri ile hisse senedini elinde tutma süresi arasında anlamlı bir ilişki olduğu belirlenmiştir. Ayrıca cinsiyet, yaş, medeni durum, eğitim ve aylık ortalama gelir bakımından ise hisse senedini elinde tutma süresi arasında anlamlı bir ilişki olmadığı görülmüştür. Sonuçlar döviz yatırımı olanların hisse yatırımı olanlara göre hisse senetlerini elinde tutma ihtimallerinin 0,172 kat daha düşük olduğu, hisse senedine yatırım yapmaya başlama süresi bakımından 1 ilâ 3 senedir yatırım yapanların 1 yıldan kısa bir süredir yatırım yapanlara göre hisse senedini elde tutma ihtimalinin 1,72 kat daha fazla olduğu, 3 ilâ 6 senedir yatırım yapanların 1 yıldan az bir süredir yatırım yapanlara göre hisse senedini elde tutma ihtimalinin 2,5 kat fazla olduğu belirlenmiştir.

Anahtar Kelimeler: *Borsa, hisse elde tutma süresi, yatırım, logit model, davranışsal finans*
JEL Kodları*: G11, G19, G4*

Alan: *İşletme*
Türü: *Araştırma*

1. INTRODUCTION

Modern portfolio theory says that which stock to invest in should be decided on the basis of risk and return (Markowitz, 1952). However, it is also important how long each share will be held (Li, Liu, F-Fin & Su, 2012). Thanks to increasing financial and technological investments, stock investments have increased in Turkey as well as in the world in recent years. Experience, knowledge and expertise are needed for both individual and institutional investors in the stock markets in terms of investment preferences and investment holding times. Because, for individual and institutional investors investing in stock markets, knowledge and experience are very important in terms of correct investment and holding times. At this point, both systematic risk factors and non-systematic risk factors create the potential to affect the behavior of investors. This situation is seen as a significant disadvantage for investors who have limited access to information or who cannot interpret this information due to reasons such as lack of experience, ignorance and lack of long-term perspective despite having access to information.

Technology and increasing financial investments not only facilitate access to information, but also provide an environment for investors to make more accurate and faster decisions at the decision stage. In recent years, thanks to the increasing financial depth and the number of BIST investors in our country, progress has been made in financial literacy. In this way, it became easier for investors to make investment decisions, and the number of individual investors trading on the BIST and their financial investment levels increased. Depending on the increasing financial development and the number of investors, stock investor behaviors have also begun to change. Thanks to the rapid development of financial markets, easier access to information, technological innovation and the development of fintech applications, investors' access to information has become easier. The facilitation and acceleration of access to information may have caused investors to have different behavioral tendencies at the point of influencing investment decisions.

Figure 1 shows the number of investors in the BIST by years. While there were approximately 1 million investors in Borsa Istanbul in 2012, this figure decreased by 22.5% to 844 thousand in 2014, then rose to its previous levels again. In 2020, when the Covid-19 pandemic swept the world, the number of investors coming to BIST increased rapidly and exceeded 1.94 million at the end of the year. In 2020, the number of investors coming to BIST increased by 66%, reaching an all-time high. Factors such as closure of people's homes due to Covid-19, curfews, closure of workplaces, interruption of production in factories and the transition of universities to distance education were also influential in this high

rate of increase in 2020. Because the people whose vacancies increase, whose workplaces are closed and who cannot go out, especially those whose incomes decrease, have turned to the stock market and other investment areas in order to create a new income. In 2021, the number of investors increased by approximately 359 thousand with an increase of 20% and reached 2.3 million. The main reason for this increase is the 358 thousand increase in the number of domestic investors (MKK, 2022). The number of investors in BIST, which reached the level of 2.6 million in April due to the increase in the number of public offerings and the search for high returns by the investors, decreased to 2.3 million in the following months due to the decrease in the returns in new public offerings and the shift of investors to different instruments such as foreign exchange and especially cryptocurrencies. In the last quarter of 2021, the number of foreign investors in BIST ALL increased by 1,183 compared to the same period of the previous year and reached 13,147 (TUYID, 2021).

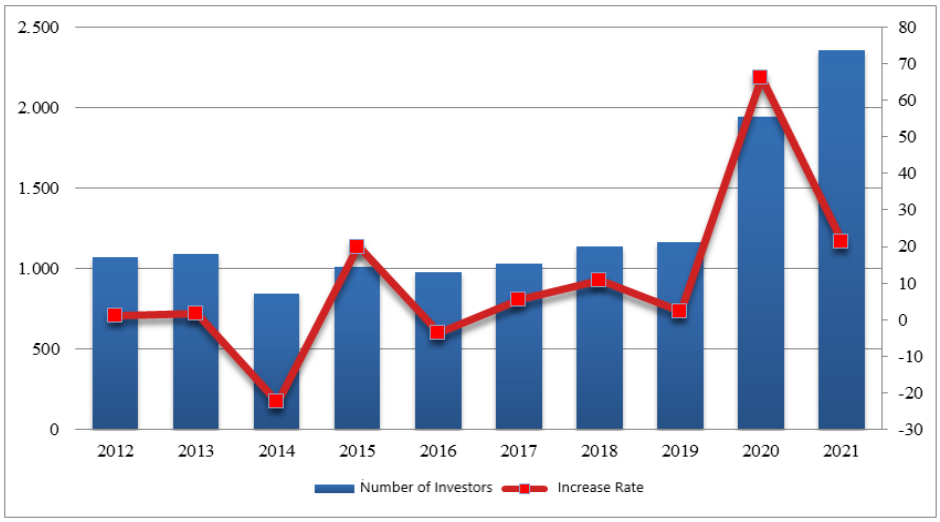

Figure 1: Number of Investors in BIST by Years
Kaynak: MKK (2022)

Figure 2 shows the length of stay of domestic and foreign investors in a share. In 2012, the holding period of foreign investors in BIST ALL was 389 days, while that of domestic investors was 46 days. Although stock investments are a type of investment that is expected to be long-term because they are made for dividends and capital gains, there is a large difference between the holding times of the domestic investor and the foreign investor. As of 2012, the holding

period of foreign and domestic investors decreased, and in 2019, the duration of foreigners decreased to 140 days and the duration of locals to 28 days. As can be seen from the figure, the stock holding times of domestic and foreign investors decreased considerably in 2020, the year when the Covid-19 epidemic affected the world and Turkey. It can be said that this decrease is due to the fact that many domestic investors, who are expected to have low financial literacy, enter the stock market. In addition, due to the systematic risk elements revealed by the global pandemic, the fact that stock investors turn their stocks into cash in a shorter time may also have an effect.

The difference between the holding period of a share by domestic investors and foreign investors is approximately 200 days for 2021. The fact that foreign investors are few in number, institutional investors and investors with high financial literacy are effective in the emergence of this situation. The large number of domestic investors and the transactions made by individuals who have entered the BIST in recent years and traded in small amounts every day, on the other hand, significantly reduce the average stay of domestic investors in shares. It is thought that these are the main reasons for such a high difference between domestic investors and foreign investors. For this reason, the holding period of a share determined as the dependent variable in the study was taken as 6 months (See Table 2).

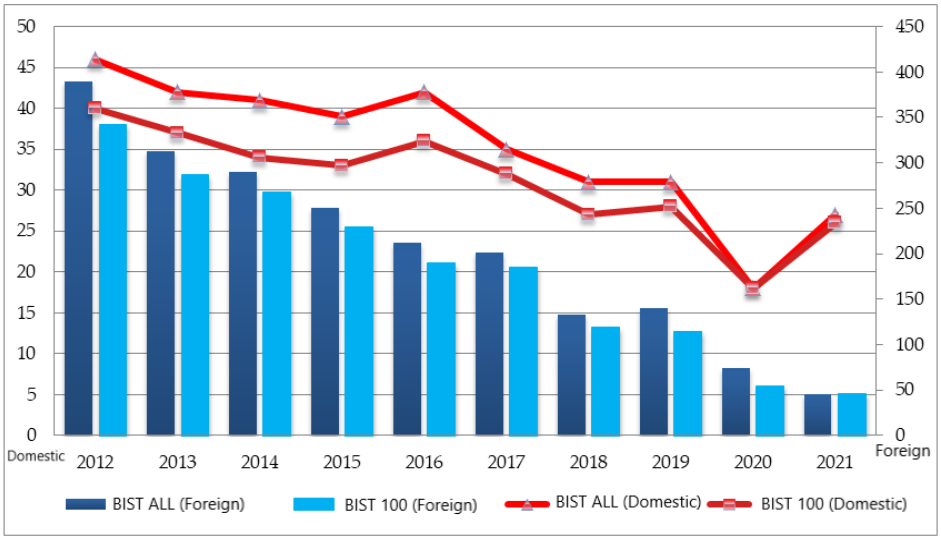

Figure 2: Stock Holding Period by Domestic and Foreign Investors in BIST
Kaynak: MKK (2022)

Studies based rational investor theory in the field of finance have been insufficient to explain the developments in the markets over time. Behavioral finance has tried to explain the areas where these theories fall short and the reasons for irrational behavior (Thaler, 2005). Although the traditional finance approach says that investors make rational decisions at the point of risk-return, behavioral finance says that investors are affected by many different variables as well as psychological factors in the evaluation of risk and return (Ostaszewski, 2010, p. 42; Özer & Korkulutaş, 2018, p. 417).

However, investors may not always act rationally when making financial transactions and investments. Investors' emotions, perception differences and expectations can affect investor decisions. At this point, investors can sometimes make investment decisions based on rumors and news that are discussed in the market instead of information, news flows and balance sheets. Sometimes these decisions are due to the differences in the perception and risk level of the investor (Doğan, 2016, p. 341). This situation arises because individuals perceive the same situations given in different ways differently. Therefore, the way the information is presented affects the perception of the investors at different levels. This also affects whether investor decisions are rational (Tversky & Kahneman, 1981).

It is known that while investors are rationally expected to invest for a longer period, some investors invest for a shorter period of time. In this study, socio-economic factors that affect the stock holding time of individuals who are stock investors in the BIST in Turkey in the context of behavioral finance will be examined. In the continuation of the study, the few studies in the literature will be mentioned. Then, the logit model results will be given by using the data of the survey conducted throughout Turkey with the participation of 580 people. The study consists of five parts. In the first part, the concepts of efficient markets theory, rational behavior theory and behavioral finance are mentioned. In the second part, theory and literature evaluation was made. In the third part, the data set of the research, the method and model used in the research are explained. In the fourth part, the research findings are given and finally in the fifth part, the conclusion and evaluation are given.

2. CONCEPTUAL FRAMEWORK

Efficient markets hypothesis, which is one of the fundamental theories of finance; He says that the markets are efficient and that there is no difference between the values and prices of financial assets in the market, so they are bought and sold over their real values. When new information emerges in an efficient market, financial asset prices adjust themselves quickly and without transaction costs, so all prices in the market reflect the necessary information for everyone in

the same way (Fama, 1970, p. 383). It is thought that the actors in the market will fully evaluate and apply all the information they have. In addition, it is assumed that the future expectations of economic individuals are continuous and they do not make systematic mistakes. Likewise, it is stated that individuals are affected by policy changes in the same direction (Sarfati & Karabulut, 2004, p. 65). The efficient markets hypothesis states that it is not possible for investors to obtain a return above the market average by using the information transferred to the market (Dağlı & Çöllü, 2015). However, this does not apply to normal people who are the subject of behavioral finance (Statman, 1999).

In fact, traditional finance theories (Tufan & Sarıçiçek, 2013) state that no knowledgeable or ignorant investor in the market can earn a return above the market average, so the techniques used to earn more will not be effective. However, in different studies, different results have been obtained with the efficient markets hypothesis and it has been revealed that there is a time effect in the emergence of these returns. The developments that reveal these different income opportunities are called "Anomalies". The theory of rational behavior loses its validity because people's psychological structure, environment, environment and behavioral characteristics make them different from each other. Over time, due to the differentiating characteristics of people, the assumptions claimed by traditional finance theories have begun to be criticized and it has come to the fore that an approach that will not be valid for all people in any case has come to the fore, and the number of studies critically approaching traditional finance has increased. Because although the same information, data and variables are presented to investors in the same market, it is now known that investors understand different things from these data and therefore show different behavioral tendencies. In the literature, it is understood that the theories of efficient markets and rational behavior in world markets do not fully work and that there are deviations from these theories and various anomalies (Rozeff & Kinney, 1976; Abdioğlu & Değirmenci, 2013; Küçüksille & Özmutaf, 2015; Shah, Qureshi & Aslam, 2017) .

In these studies, it is seen that different behavior patterns apart from the various traditional finance theories shown by the investors are effective in not supporting the efficient markets hypothesis. In these studies, it is understood and understood that investors want to obtain abnormal returns and therefore investors can show irrational behaviorp.

Behavioral finance shows that investors do not act rationally as assumed in traditional finance models, individuals show different perception and behavior tendencies in the face of the same situations, and therefore anomalies occur. The study of Kahneman and Tversky (1979) is seen as the first basic study on

behavioral finance (Kıyılar, 2016, p. 112). The studies of Kahneman and Tversky, which examine the effects of individuals' psychology on investors' decision-making and the pricing of investment instruments, opened a new field in finance studies. At this point, the tendencies that prevent individuals from making rational investment decisions can be divided into three as behavioral, emotional and cognitive tendencies (Akdeniz & Turan, 2021, p. 1019).

Behavioral biases;

- Deceive Oneself (Zweig, 2011, p. 129)
- Overconfidence (Svenson, 1981, Veeraraghavan, 2010)
- Misunderstand Errors (Zweig, 2011, p. 152)
- Self-Attribution (Küçüksille and Usul, 2012, p. 32)
- Overoptimism (Zweig, 2011, p. 129)
- Choose the Familiar (Nofsinger, 2014, p. 87-88)
- Conservative (Gazel, 2014, p. 33)
- It consists of the tendency to return and generalize the situation (Pompain, 2006, p. 199).

Emotional bias;

- Avoid Regret (Günak, 2007)
- Loss Aversion and the Affect of Propensity (Simmons and Novemsky, 2008, p. 3)
- Control Oneself (Küçüksille & Usul, 2012, p. 30)
- Ownership Effect and Status Quo (Sefil & Çilingiroğlu, 2011, p. 262).
- Hedonic Correction (Thaler & Johnson, 1990, p. 648)
- Herd behavior: (Aytekin & Aygün, 2016, p. 153).

Cognitive biases;

- Representation (Ülkü, 2001, p. 110)
- Anchoring (Flag, 2012:12)
- Availability (Tversky & Kahneman, 1979, p. 1127).
- Framing Error (Kurt, 2011, p. 18)
- Mental Accounting (Thaler, 1999, p. 184).
- Cognitive Contradiction (Schwartz, 2010, p. 64).
- Games of Chance Error (Baltaş, 2015).

Traditional economics generally accepts that people act rationally when making investment decisions (Mandeville, 1970). However, today's research shows that people are not very rational when making investment decisions (Zweig, 2011; Sefil & Çilingiroğlu, 2011; Küçüksille & Usul, 2012; Nofsinger, 2014; Aytekin & Aygün, 2016). Behavioral finance classifies the factors that affect investors' rational decision making as behavioral, emotional and cognitive and explains how these factors affect investors' decisions and behaviors. These

studies actually explain the fact that investors make incorrect decisions at the point of buying and selling. At this point, the fact that investors sell their stocks early for some reasons explained by behavioral finance deprives investors of obtaining a higher return. The main motivation of this study is that there are not enough studies on whether the holding period of shares changes according to the socio-economic characteristics of individual investors.

In this study, it is examined whether BIST stock investments, which are or expected to be a long-term investment and whether this period changes according to the socio-economic characteristics of the investors. As can be seen in Figure 2, the holding period of a share is gradually decreasing. Due to the fact that many new domestic investors with no experience have entered the BIST in recent years (See Figure 1), and the volatility in economic variables and the increase in the risk level (Ayaydın, Pala & Barut, 2016), it is thought that investors' buying new shares by selling their shares in a short time due to emotional tendencies reduces the holding period for a share.

3. LITERATURE

Although there is no study on the holding time of individual investors in the world or in Turkey, it has been observed that there are studies that compare the effect of stock holding time on the return to be obtained by investors and other investment instruments. Similar studies, on the other hand, examine the effects of investment recommendations published on companies traded in the BIST on stock pricing and investor behavior.

In the study conducted by Shen (2005), it was discussed how long the long term covers in investments related to the holding period. Although the traditional approach is that stocks provide a higher return than bonds in the long run, it has focused on the concept of "long run". Accordingly, different period returns related to stocks and bonds were analyzed by using annual data from 1926-2002. He reported that stocks yield better returns than bonds in the long run, but investors who hold their portfolios for a shorter period of time cannot receive a higher return than bond investments.

Choi and Mukherji, (2010) defined three different optimal portfolios related to risk and return for short, medium and long-term holding periods by creating random samples from the returns of six main financial assets. Optimal portfolios, which minimize risk in terms of return and maximize the risk premium for risk, consist of medium-term government bonds and stocks for all prospects, and the ratios of the stocks in these portfolios increase with investment maturity. Small company stocks form the main component of optimal 10-year portfolios. These results suggest that for investors optimizing any of these three objectives,

optimal portfolios include increasing returns on riskier assets and decreasing returns on safer assets as their holding times increase.

Li et al. (2012) reported in their study that stocks provide a higher return than fixed income assets in the long run, as accepted in the literature. Due to the high volatility in the financial market and the low performance of the stocks recently, it raises the question of how long the holding period of a share should be. In the United States between 1963 and 2011, stocks and government bonds were examined and they concluded that stocks must be held for 15 years to provide a return above risk-free assets. It has also been stated that this time may be slightly longer in portfolios with a higher market value.

Chakrabarty, Moultan and Trzincka (2017) examined the investment holding times of institutional investors, fund managers and pension funds. They stated that they found little evidence that institutions chose their holding times on the basis of portfolio optimization, and they found no evidence that short-term trades were made because of the disposition effect. In general, better and more informed institutional investors are expected to prefer a longer holding period, which will maximize the return on their investment. The study was conducted by examining the stock transactions of 1186 corporate investment companies between 1999 and 2009. Accordingly, it has been found that the investment holding period is positively related to the flow volatility of funds, the liquidity level of stocks and trading profits, and short-term trading transactions provide negative returnp.

In the research of Abramov, Radygin and Chernova (2015), annual, five-year and ten-year returns were examined in the study conducted with 19 funds (ETF-exchange traded funds) in 2004-2014. According to the results, they state that this may not always reflect the truth, as they have obtained evidence to the contrary that stocks will provide more returns than bonds in the long run, which traditional portfolio management theory says. They stated that the longer the maturity of the investment, the closer the stocks and bonds get to each other, and the risk of stocks increases faster than the risk of bonds. Therefore, it is stated that investing in private sector bonds in the long term (10 years) may yield higher returns than investing in stocks.

Karabay (2018) discussed the optimum holding period for stocks in his study. Retention time may not be just a numerical measure. Which stock to buy and how long to hold is one of the important decisions to be made. Between 02 June 2008 and 22 November 2017, the optimum holding period for 26 stocks included in the BIST 30 index, an equally weighted portfolio formed from these stocks, and 11 sector indices were examined. Returns are calculated as overlapping periods. It has been concluded that holding longer for the stocks,

equally weighted portfolios and indices examined does not provide more return and does not reduce risk.

Ang, Lam, Ma, Wang and Wei (2019) tested whether the short-term stock investment and cash holding effect is consistent with speculative overpricing. Accordingly, it is understood that the effect is slightly stronger after periods of high sensitivity rather than periods of low sensitivity. More importantly, the holding cash trading strategy has proven to be more profitable in the short run, following periods of high sensitivity rather than periods of low sensitivity.

Chang and Young (2019) reached four conclusions in their study. Especially in the first, it offers a profitable investment strategy on holding times and related holding period returns. Second, this study presents methods for analyzing the returns of portfolios of different stocks with different holding times. Third, according to the results of empirical tests, this study presents a realistic and highly profitable alternative investment procedure that takes into account transaction costs depending on portfolios that may outperform other investment fundamentals such as market index. Fourth, by considering short-selling B stocks, this study also provides investors with a flexible investment recommendation that may outperform benchmark portfolios.

4. METHODOLOGY

4.1. Ethical Permissions For The Research

In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. None of the actions stated under the title "Actions Against Scientific Research and Publication Ethics", which is the second part of the directive, were not taken.

Ethics committee permission information
Name of the board conducting the ethical review =*** *** *** University Social and Human Sciences Scientific Research and Publication Ethics Committee
Date of ethics review decision = 23/07/2021
Ethics assessment document issue number = 2021/103.

4.2. Sample Size And Selection

The data set of the research consists of a cross-sectional data set obtained from the surveys conducted throughout Turkey. This data set consists of the results of the online survey conducted in Turkey between November 2021 and January 2022 due to the Covid-19 pandemic. All of the surveys were filled by

individuals who are active stock market investors as a result of the announcements and shares made on Investing, TradingView and MyNet Borsa sitep.

In order for the survey results to provide a more meaningful and realistic data set and interpretation opportunity, it was preferred not to include those under the age of 18 (Oktay et al., 2007, p. 28). In order to find the total population of 62.1 million living over the age of 17 in Turkey and the sample size of this mass;

$$n = \frac{N * P * Q * Z^2}{(N-1)d^2 + P * Q * Z^2}$$

The sample size formula, which is expressed in the form of, was used (Oktay et al., 2007, p. 64). Accordingly, it was determined that the sufficient sample size to represent the population with 5% significance level and 5% margin of error was approximately 385. Despite this, 580 survey data were used in the study to provide a better representation of the population. While creating the questionnaire questions, few studies in the literature were used (Choi & Mukherji, 2010; Estrada, 2014; Lyle & Wang, 2015; Karabay, 2018).

In order to test whether the questions in the survey are understandable and appropriate, a preliminary study was conducted with 30 people and the online survey questions were revised according to the notifications received. The obtained data were analyzed with SPSS 23 program. While 5 questions of the questionnaire consisting of 11 questions in total are for the determination of demographic variables, the remaining 6 questions consist of questions for determining the economic and investor behavior.

4.3. Method

The logit model is a method used when the dependent variable is two-response. In this study, those with a holding period of more than six months were given 1, and those with no holding period of more than six months were given 0. The probability of investors holding the stock for longer than six months is evaluated as a probability ranging from 0 to 1. This probability is a logistic function in the model consisting of socio-economic variables. , shows the distribution function for the logit random variable and is as follows (Griffiths et al., 1993, p. 752). I, values in the range of –∞ to +∞ are in a non-linear relationship with Pi, which takes values between Ii and 0-1. This cumulative logistic distribution function is derived (Dilek, 2021:440).

$$P_i = \frac{1}{1+e^{-I_i}} = \frac{1}{1+e^{-(\beta_0+\beta_i X_i)}} \quad (1)$$

$$L_i = l_n\left(\frac{P_i}{1-P_i}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots\ldots \beta_m X_m + n_i \quad (2)$$

$$\frac{dP_i}{dX_i} = P_i(1-P_i)\,\beta_i n_i \quad (3)$$

P indicates the probability of the events under investigation, L indicates the dependent variable with two outcomes. It shows the ratio of the probability of investors making an investment longer than six months to the probability of not making an investment shown in the formula. The probability that the probability will change according to the independent variables (β) varies according to the probability level of the model (Özer, 2004, p. 7). In this model, the slope coefficient shows the change in logit (L_i) for a unit change in the independent variable (Cokluk, 2010). To put it more clearly, if the dependent variable takes two different values such as no-take-taking, no-take-a-doer, successful-unsuccessful, longer than' and shorter than', this is quantified through dummy variables that take the value "0" and "1" (Tatlı, 2013, p. 46).

4.4. Sample Characteristics And Variables

Information about the sample on which the study is based is shown in Table 1. Accordingly, 88.2% of the participants are men and 11.8% are women. 76% of those trading on BIST are married and 23.3% are single. According to education level, 16.1% of them were high school graduates or lower, 66% were university graduates and the remaining 17.9% were postgraduate graduates. According to age, 8.8% of them are in the 18-27 age range, 39.1% are in the 28-37 age range, 35.9% are in the 38-47 age range, and the remaining 16% are 48 years old and over.

The average household income of 11.4% of the investors in the stock market is less than 4,501 TL, 33% of them have an income between 4,5001-8,000 TL, 24.7% of them have an income between 8,000-15,000 TL, 23.1% their income is between 15.000-20.000 TL and 7.6% of them have an income of 20.000 TL or more. While 84.5% of the investors invest the most in stocks, 9.5% invest the most in gold and 6% invest in foreign currency. While 16% of them have invested in stocks for less than 1 year, 49.3% have been investing in stocks for 1-3 years, 15% for 3-6 years and 19.7% for more than 6 years. is investing. These data confirm the new investor demand in BIST for the last two years after the Covid-19 global epidemic.

Table 1: Demographic Characteristics of Participants

Variables		Count	Ratio	Variables		Count	Ratio
Gender	Man	511	88,2	**Average Income**	0-4.500	66	11,4
	Famale	69	11,8		4.501-8.000	193	33,3
	Married	445	76,7		8.001-15.000	143	24,7

Marital Status	Single	135	23,3		15.000-20.000	134	23,1
Education	H. school and below	93	16,1		20.001 +	44	7,6
	University	383	66	**The Most Invested Asset**	Stock	490	84,5
	Graduate	104	17,9		Gold	55	9,5
Job	Officer	274	47		Currency	35	6,0
	Artisan	139	24	**Time Invested in Equities**	Less than 1 year	93	16,0
	Student	23	4		1-3 year	286	49,3
	Retired/Worker	59	10,2		3-6 year	87	15,0
	White collar	85	30,8		More than 6 y.	114	19,7
Age	18-27	51	8,8	**Annual Stock Investment Amount**	< 20.000 TL	125	21,5
	28-37	227	39,1		20-100 between	288	49,6
	38-47	208	35,9		> 100.000 TL	167	28,7
	48 and over	94	16	**Follow the Market Every Day**	Yes	468	80,7
Holding Time on a Stock	Less than 6 months	299	51,5		No	112	19,3
	Longer than 6 months	281	48,5				

While 21.5% of the investors invest less than 20,001 TL annually, 49.6% invest between 20,000 and 100,000 TL and the remaining 28.7% invest more than 100,000 TL. While 80.7% of the said investors regularly follow the market every day, 19.3% do not follow the market every day.

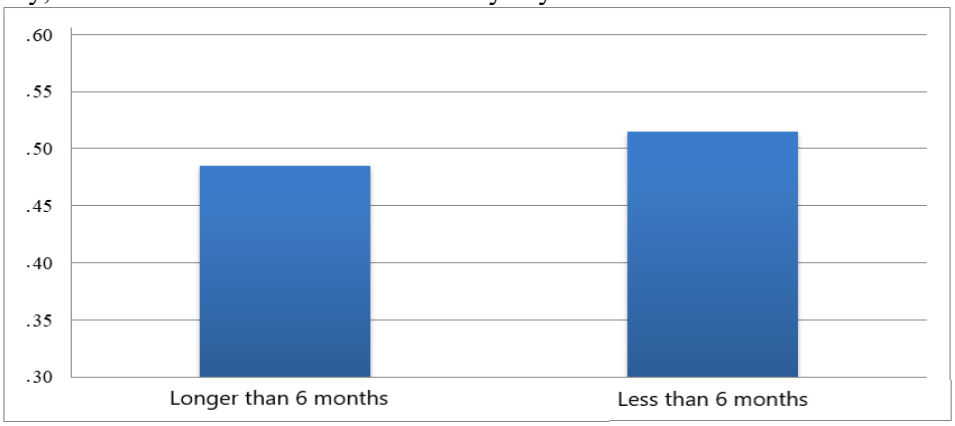

Figure 3: Holding Time of a Stock (In the Survey)

Figure 3 shows the holding period of a share purchased by those who invest in stocks in Turkey. Accordingly, 48.5% of the investors in Turkey hold a

share for more than 6 months, while 51.5% hold the invested share for more than 6 months.

Table 2: Variable List

Dependent Variable (Holding Time on a Stock, HTS)	
1= Longer than 6 months, 0= Less than 6 months	
Independent Variable	**Dummy Variables**
Gender (GDR)	CNS = 1, Man; If female 0
Marital Status (MS)	MD = 1, Married; If single 0
Education (EDC) *Reference group EDC1 = High school and below*	EDC2 = 1, University; If not = 0 EDC3 = 1, Graduate; If not = 0
Job (JOB) *Reference group MSL1 = Officer*	JOB2 = 1, Artisan; If not = 0 JOB3 = 1, Student; If not = 0 JOB4 = 1, Retired/Worker; If not = 0 JOB5 = 1, White collar; If not = 0
Age (AGE) *Reference group AGE1 = 18-27 age*	AGE2 = 1, Age 28-37; If not = 0 AGE3 = 1, Age 38-47; If not = 0 AGE4 = 1, Age 48-57; If not = 0 AGE5 = 1, Age 58 ve üzeri; If not = 0
Average Income (AI) *Reference group GLR1 = 4.500 and below*	AI2 = 1, 4.501- 7.000 TL; If not = 0 AI3 = 1, 7.001-10.000 TL; If not = 0 AI4 = 1, 10.001-15.000 TL; If not = 0 AI5 = 1, 15.001 TL ve üzeri; If not = 0
The Most Invested Asset (ASSET) *Reference group ASSET1 = Stock*	ASSET2= 1, Gold; If not = 0 ASSET3= 1, Foreign Currency; If not = 0
Time Invested in Equities (TIE) *Reference group TIE1 = Less than 1 year*	TIE2 = 1, 1 - 3 yıl; If not = 0 TIE3 = 1, 3 - 6 yıl; If not = 0 TIE4 = 1, 6 years and above; If not = 0
Annual Stock Investment Amount (ASIA) *Reference group ASIA1 = less than 10.000*	ASIA2 = 1, 10.000TL–50.000TL; If not = 0 ASIA3 = 1, 50.001 and over; If not = 0
Follow the Market Every Day (FMED)	HPTE = 1, Following; Unfollower = 0

Note: 1$ = 11.50 Turkish Lira (TL) 15.11.2021

The variables included in the model are shown in Table 2. In this study, determined as the dependent variable; “0” if investors have a holding period of more than six months; If it is less than six months, it takes the value "1".

Participants in the study were divided into two types of investor types with short-term and long-term holding periods of less than six months. This was done both to separate the investors as short and long as well as to derive a dependent variable with two outcomes suitable for the logit model. In addition, since the average share holding period of individual investors in Turkey has

decreased considerably in recent years (see Figure 2), the six-month period has been determined as a limit for stock investors. Because those with less than six months represent short-term investors, while those with more represent long-term investors.

5. FINDINGS AND ANALYSIS

The logit model was used to examine the holding times of the investors in Turkey and the socio-economic factors that may affect this. It was understood that there was no significant relationship (P>0.05) between the GDR, MS, EDC, AGE and AI variables and the stock holding variable, which are among the independent variables in Table 1. The variables included in the model are shown in Table 4.

Table 3: The Relationship Between Stock Holding Period and Variables

Independent Variables	Chi-Square Value	Prob.
GDR	,644	0,422
MS	,129	0,719
EDC	1,171	0,556
AGE	,389	0,823
JOB	3,018	0,055***
AI	1,070	0,899
ASSET	4,714	0,057***
TIE	13,834	0,003*
ASIA	9,503	0,014**
FMED	3,645	0,049**

Note: *, **, *** indicate significance at 1%, 5% and 10% significance level, respectively.

Logit model estimation was made with the variables shown in Table 3. Accordingly, it is seen that there is a significant relationship between the holding period of the stock and some variables. In the Chi-square analysis, the variables of gender, marital status, education level, age and monthly average income were excluded from the model because they were statistically insignificant at the desired significance level (p>0.05). The results are shown in Table 4 by estimating the logit model over the variables that are statistically significant.

Tablo 4: Logit Model Results

Variables	B	S.E.	Wald	df	Sig.	E.(B)	95% EXP(B) Min.	Max.
JOB			4,355	4	,360			
JOB (2)	,270	,299	,816	1	,078***	1,310	,950	2,613
JOB (3)	-,543	,309	3,089	1	,715	,581	,376	4,172
JOB (4)	,046	,520	,008	1	,510	1,047	,347	1,693
JOB (5)	-,925	,440	4,433	1	,617	,396	,468	3,591
ASSET			5,360	2	,069***			
ASSET (2)	-,309	,326	,900	1	,343	,734	,387	1,391
ASSET (3)	-,936	,422	4,932	1	,026**	,392	,172	,896
TIE			10,205	3	,017**			
TIE (2)	,543	,278	3,825	1	,050**	1,721	,999	2,967
TIE (3)	,916	,345	7,040	1	,008*	2,500	1,271	4,920
TIE (4)	1,036	,353	8,589	1	,003*	2,817	1,409	5,632
ASIA				2	,200			
ASIA (2)	,221	,237	,871	1	,351	1,247	,784	1,982
ASIA (3)	,484	,272	3,174	1	,075***	1,623	,953	2,765
FMED	-,650	,232	7,815	1	,005*	,522	,331	,824
Constant	-,645	,634	1,032	1	,310	,525		
Nagelkerke R^2			0.353	-2 Log likelihood				721,175
Cox & Snell R^2			0,300					
Model prediction rate			%63,6	Hosmer and Lemeshow (sig)				,919

Note: *, **, *** indicate significance at 1%, 5% and 10% significance level, respectively. Reference Group Respectively; Officer, Stock, Less than 1 year, Less than 10,000 and Following the market every day.

According to the logit model results in Table 4, the Cox & Snell R^2 value was found to be 0.300 and the Nagelkerke R^2 value to be 0.353. This shows that the change in the dependent variable can be explained by the independent variables in the model between 30% and 35.3%. The (sig) value of the Hosmer and Lemeshow test, which shows the goodness of fit of the model as a whole, was found to be 0.919. This result ($p>0.05$) shows that the fit of the model as a whole is quite good.

There was a negative correlation between JOB3, JOB 5, ASSET2, ASSET3, FMED variables and stock holding period. It was determined that there is a positive relationship between the variables JOB2, JOB4, TIE2, TIE3, TIE4, ASIA2 and ASIA3 and the holding period of the stock. According to the logistic regression results, it has been revealed that there is no significant relationship between the period of holding the stock in terms of gender, age, marital status, education and monthly average income of BIST investors in Turkey. According to the results, in terms of occupational groups, tradesmen are 1.31 times more likely to hold stocks than civil servants.

In terms of the most invested financial asset, those with foreign currency investments are 0.172 times less likely to hold stocks than those with equity investments. In terms of the time to start investing in the stock, those who have invested for 1 to 3 years are 1.72 times more likely to hold the stock for more than 6 months than those who have invested for less than 1 year. Those who have invested for 3 to 6 years are 2.5 times more likely to hold the stock for more than 6 months than those who have invested for less than 1 year. Those who have invested in stocks for more than 6 years are 2.82 times more likely to hold the stock for more than 6 months than those who have invested for less than 1 year. Investors with an annual investment amount of more than 50,000 TL have a 0.95 times longer holding period than investors with an annual investment amount of less than 10,000 TL. Those who follow the market every day are 0.522 times less likely to hold stocks than those who do not follow the market every day.

6. CONCLUSION AND EVALUATION

Recent studies show that people do not act rationally enough when making investment decisions (Sefil & Çilingiroğlu, 2011; Küçüksille & Usul, 2012; Nofsinger, 2014). At this point, behavioral finance explains how the factors that affect the rational decision-making of investors affect the decisions and behaviors of investors. In these studies, the factors affecting the rational decision making of investors are explained. At this point, the fact that investors sell their stocks early for some reasons explained by behavioral finance deprives investors of obtaining a higher return.

The number of stock investors is gradually increasing thanks to the development of technology, the increase in the number of companies going public, and the increasing awareness of financial investment in the society and financial literacy. In fact, the number of domestic investors in Turkey, which was 1.1 million in 2019, reached 2.3 million by the end of 2021 (See Figure 1). In the 2-year period, the number of investors investing in the BIST in Turkey has increased by 110% (See Figure 2). Due to the increase in the number of investors, the period of stay of the investors in a share decreased in the same period.

According to the results of this study, 84.5% of the investors invest most of their investments in stocks, 9.5% in gold and the remaining 6% in foreign currency. While 16% of the investors have invested in stocks for less than 1 year, 49.3% have been investing in stocks for 1-3 years, 15% for 3-6 years and 19.7% for more than 6 years. makes investment. These data confirm the new investor demand for the BIST in 2020 and 2021 after the Covid-19 global epidemic. While 21.5% of the investors invest less than 20,001 TL annually, 49.6% invest between 20,000 and 100,000 TL and the remaining 28.7% invest more than 100,000 TL.

While 80.7% of these investors regularly follow the market every day, 19.3% of them do not follow the market every day, while 48.5% of the investors hold a share for longer than 6 months, 51.5% of them do not. retention period is less than 6 months.

According to the results of the Logit model, it has been revealed that there is no significant relationship between the period of holding the stock in terms of gender, age, marital status, education and monthly average income of BIST investors in Turkey. According to the results, in terms of occupational groups, tradesmen are 1.31 times more likely to hold stocks than civil servants. In terms of the most invested financial asset, those with foreign currency investments are 0.172 times less likely to hold stocks than those with equity investments. In terms of the time to start investing in the stock, those who have invested for 1 to 3 years are 1.72 times more likely to hold the stock for more than 6 months than those who have invested for less than 1 year. Those who have invested for 3 to 6 years are 2.5 times more likely to hold the stock for more than 6 months than those who have invested for less than 1 year. Those who have invested in stocks for more than 6 years are 2.82 times more likely to hold the stock for more than 6 months than those who have invested for less than 1 year.

As it can be understood from here, the older the BIST investors' entry period to the stock market, the longer the investors' holding time for a share. New investors entering the BIST, on the other hand, have a shorter stay in a stock. This shows that depending on the increase in the financial literacy levels of the investors, the holding time of the stock is prolonged. These results support the work of Jack (Choi, & Mukherji, 2010; Chakrabarty et. al. 2017). Investors with an annual investment amount of more than 50,000 TL have a 0.95 times longer holding period than investors with an annual investment amount of less than 10,000 TL. Accordingly, the larger the investment, the longer the share holding period. Those who follow the market every day are 0.522 times less likely to hold stocks than those who do not follow the market every day. This result shows that long-term investors act by taking into account the sector and market trends, and make longer-term investments instead of daily or short-term trading. The results are in line with the Chang and Young (2019) study.

There was no significant difference in the investments of investors according to gender, age, marital status, education and average monthly income. Regardless of the average income level of individual investors, it is noteworthy that the share holding period does not change significantly. This result can be interpreted as individual investors' holding time varies according to their financial literacy level and stock market experience rather than their income (Chakrabarty et. al. 2017). The results are important in terms of showing which socio-economic

factors are effective in terms of investors' holding the stock and being one of the first studies made in this respect. In a period when investors cannot act very rationally, choosing the right shares is also important, as well as the holding period of these shares.

7. CONFLICT OF INTEREST STATEMENT

There is no conflict of interest between the authors. (Single Author)

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9. AUTHOR CONTRIBUTIONS

AP: The idea;
AP: Design;
AP: Collection and / or processing of resources;
AP: Empirical Analysis and / or interpretation;
AP: Literature search;
AP: Writer

10. ETHICS COMMITTEE STATEMENT AND INTELLECTUAL PROPERTY COPYRIGHTS

Ethics committee principles were complied with in the study and necessary permissions were obtained in accordance with the intellectual property and copyright principles.

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