Kastamonu Üniversitesi
İktisadi ve İdari Bilimler Fakültesi Dergisi
Ocak 2016, Sayı:11

HOW RATIONAL ARE INDIVIDUAL INVESTORS: A FACTOR ANALYSIS APPLICATION IN TURKEY*

Hasan Rıza AŞIKOĞLU[1]

Adem BÖYÜKASLAN[2]

Abstract:

Individuals have generally narrow income and they aim to save and spend money after fulfilling their basic vital requirements of daily life. It is equally important to save money and to assess investments for the individual investors to realize their financial goals. Individuals' savings, directed to financial markets, increase the depth of financial markets and diversify the risks by spreading them to the baseline. Accordingly, individual investors' investment decisions cause some financial abnormalities and it forces the academic studies to clarify the underlying factors of individuals' investment decision-making process and their behavioral motivators.

This study aims to determine the behavioral factors that affect individual investors' decision-making processes with an empirical application over Afyonkarahisar province in Turkey. The study has been conducted using a survey that contains questions to specify 460 individual investors' socio-demographic information, financial habits, attributes and how they respond to 35 specific propositions which are derived from Behavioral Finance tendencies. Consequently the participants completely showed and reflected the tendencies of Behavioral Finance such as over optimism, risk aversion, avoiding regret, herding, representative bias, gambling and framing. Besides the Exploratory Factor Analysis technique has been used to convert the numerous variables into a limited number of meaningful and independent factors. Finally new variables named as Affirmation, Hetero-Emotional, Probhecy, Contrast and Adverse Advertisement / Social Circle Tendency.

Keywords: Behavioral Finance, Individual Investor, Investment Decision, Factor Analysis.

JEL CODES: G02, G11, G14, G19.

**This paper represented as a proceeding draft at International Conference On Economic and Social Studies (ICESoS'15) in Sarajevo, Bosnia and Herzegovina, 22-23 April 2015.*

1 Professor, Afyon Kocatepe University, Faculty of Economics and Administrative Sciences, riza@aku.edu.tr

2 Research Assistant, Afyon Kocatepe University, Faculty of Economics and Administrative Sciences, ademboyukaslan@aku.edu.tr

BİREYSEL YATIRIMCILAR NE ÖLÇÜDE RASYONELDİR? BİR FAKTÖR ANALİZİ ÇALIŞMASI

Özet:

Sermayenin en uygun maliyetle bulunması, alternatif yatırım alanlarının belirlenerek fonların kârlı yatırım alanlarında değerlendirilmesi ve varlıkların artırılması konusu finans alanında çalışan araştırmacılar ve işletmeciler için uzun yıllardır üzerinde önemle durulan konulardan biri olmuştur. Özellikle yatırım konusu finansal yönetimde oldukça önem teşkil etmektedir. En küçük ekonomik birim olan hanehalkı için de birikimlerini değerlendirmek en az işletmelerin fonlarını etkin kullanması kadar önemlidir. Sınırlı gelire sahip hane halkı, yaşamsal ihtiyaçlarını mümkün olan ölçüde karşılayıp tasarruf etmek amacı taşımaktadır. Hane halkı tasarruflarının finansal piyasalara çekilmesi finansal piyasaların derinliğini artırmakta ve aynı zamanda finansal piyasalar açısından riskin çeşitlendirilip tabana dağıtılarak azaltılması bakımından da önem arz etmektedir. Günümüzde yatırımcı tercihlerinin ve bireysel yatırımcıların kararlarında etkili olan faktörlerin yarattığı sonuçlar itibarıyla belirlenmesi yatırımcı davranışlarının tam olarak anlaşılabilmesini zarurî kılmaktadır.

Bu çalışma, bireysel yatırımcı davranışlarının yatırım kararını etkileyen faktörlerin Davranışsal Finans kapsamında değerlendirilmesi amacıyla Afyonkarahisar'da gerçekleştirilmiştir. Çalışmada, yatırımcıların sosyo-demografik özelliklerinin, finansal yatırım alışkanlıklarının, yatırım tutumlarının ortaya konulması amacıyla 460 katılımcı ile bir anket çalışması yapılmış ve katılımcılardan Davranışsal Finans eğilimlerini içeren 35 önermeyi yanıtlamaları istenmiştir. Sonuç olarak elde edilen veriler Açıklayıcı Faktör Analizi kullanılarak 5 ana faktör grubu altında değerlendirilmiştir.

Anahtar Kelimeler: Davranışsal Finans, Bireysel Yatırımcı, Yatırım Kararı, Faktör Analizi.

JEL CODES: G02, G11, G14, G19.

1.Introduction

Following the Industrial Revolution that influenced initially Europe, then the whole world in the 18th and 19th centuries, industrialization propelled by mechanization accelerated in the world economies. Rapid mechanization and increasing significance of competition propelled corporations to pursue new resources. Increasing funding requirements inspired researchers

who work in the financial fields and helped several theories to emerge as a result of studies they conducted. The basis of these theories which were the foundations of classical and neo-classical economic theories was the concept of Homo Economicus manifested by Alfred Marshall in the 18th Century. One of the most discussed concepts of neo-classical economics is Homo Economicus. It defines itself an entity that acts on a rational line of behavior to maintain self-benefit, attempts to maximize benefits when deciding, prefers more to less, and does not act based on emotions (Candan and Hanedar, 2995: 2). Homo Economicus regards human as a rational entity and assumes that individuals make investment decisions based on that rationality is the founding hypothesis of classical and neo-classical economics (Ryan, 2003: 245; Üstünel, 1988: 91-102; Tura, 2003: 221-222).

Conventional Theories of Finance shaped around Homo Economicus argue that individuals are extremely rational in their decisions and are not affected by their emotions in the decision-making process. It is assumed that individuals can optimize even complex mathematical operations to maximize the total benefits and it is asserted that they reconsider and update their decisions in the light of new information and do not repeat the mistakes of the past. It can be stated that the leading criticism of Conventional Theories of Finance is that it alienates finance from human nature and accepts the character of the individual as "the nominal individual" and focuses on abstract mathematical models (Sefil and Çilingiroğlu, 2011: 248). For instance, when different perceptions of risk, return and expectations of individuals are considered, problems such as envisioning these perceptions and expectations independent of human nature, disregarding emotional and environmental interactions results in the challenging of the concept of the rational individual. The findings of the studies conducted in finance demonstrated that psychological intuition and heuristic or psychological factors plays an active role in financial investments instead of probabilistic calculations of Conventional Theories of Finance (Barak, 2006: 3). In addition, anomalies that developed outside the current stable models within the functioning of the economical system and could not be entitled were observed as examples that could not be explained within the rational framework and were therefore investigated in studies.

2.The Prospect Theory and Behavioral Finance

As the hypothetical approaches of Conventional Theories of Finance increasingly became inefficient in explaining market trends, studies investigating the effects of the behavior of individuals on the markets and the economical system became indispensable, and as a result the Behavioral Finance approach emerged in the beginning of 1980's as an intersection of the

fields of psychology and sociology with the science of finance. In other words, Behavioral Finance emerges by considering the fact that many anomalies in the markets are the results of human psychology or psychological factors which eminent in decision-making processes (Tufan, 2006). Behavioral Finance discusses the shortcomings of Conventional Theories of Finance that disregard the human factor with the help of behavioral sciences such as sociology, psychology and attempts to discover and explain the observations that conflict with the rational behavior paradigm and the postulations of the Expected Utility Theory (Frankfurter and McGoun, 2000: 211).

The most significant underlying study on Behavioral Finance is a study by Kahneman and Tversky titled "Prospect Theory: An Analysis of Decision Under Risk", and published in one of the most prestigious economics journals of the time, Econometrica in 1979 (The Royal Swedish Academy of Sciences, 2002: 10). With this study, Kahneman and Tversky established the "Prospect Theory" that pioneers Behavioral Finance (Kahneman and Tversky, 1979). Prospect Theory differs from the Expected Utility Theory that shaped Conventional Theories of Finance in many aspects. The most prominent of these differences is the shift in risk factor from the form of 'the expected risk" by the investors into the form of "perceived risk." Thus, the investors, although they desire to diversify their portfolios to reduce risks and can not realize this due to certain psychological factors and they assign certain emotional meanings to the financial assets they hold. Furthermore, Kahneman and Tversky stated that investors could prioritize their intuitions over logic when making decisions or could decide by deduction instead of examining complex possibilities and deciding as a result of this process. Kahneman and Tversky argued that the investors were not being able to decide rationally under uncertainty was due to the effects of emotional factors in this process. Emotions complicate rational decisions and behavior that people exhibit due to the cognitive contradictions they experience in understanding, reasoning and capacities because of their emotions (Şen, 2003: 82 – 92).

The Prospect Theory acts on the assumption that the severity of pain that arises as a result of a certain loss overweighs the strength of the happiness the same amount of gain produces. In this respect, the theory could explain most of the abnormal behavior observed in financial markets such as selling bullish stocks early, cutting costs by buying when the price of stocks go down and so on. (Şen, 2003: 86) Even though the Prospect Theory is based on empirical observations, it handles the human attitudes and tendencies in the decision-making process.

Thus, it is interested in the beliefs and preferences of people, not what they should be (Kahneman and Tversky, 1984: 341). In that respect, it displays inductive characteristics.

Behavioral Finance also differs from the Conventional Finance in the methodology it utilizes. Conventional Finance is a normative science based on non-empirical methods and implies that the current data reflect the real situation exactly the way it is. Conventional Finance studies are initiated by designing a model and the validity and consistency of this model are investigated using empirical data. The starting point of Behavioral Finance studies is to observe the behavioral patterns in the market and to explain the meaning of the behavioral patterns as a result of these observations and to design models accordingly. When the normative and hypothetical generalizations of the conventional finance are considered, behavioral finance demonstrates how the investors actually behave in financial markets and not how they should behave (Bostancı, 2003: 10).

3.Data Set and Methodology

The aim of the study is to determine the financial preferences, financial attitudes and tendencies of individual investors in Afyonkarahisar province within the dimension of Behavioral Finance components. In addition, the creation of an investment profile for individual investors in Afyonkarahisar is also realized. The study conducted to evaluate psychological, emotional, cognitive and social factors affecting the investment decisions of individual investors in Afyonkarahisar within the context of Behavioral Finance tendencies. Survey data were collected via face-to-face interviews with 460 participants using a 5-item Likert-type scale. Related survey information is collected with reference to the previously conducted study by Ateş and Ede (2007). The questions were directed to the participants in the survey using a 5-item scale varying between “I completely agree” (5) and “I completely disagree” (1). For the survey, 20 questions covering socio-demographical traits and 35 statements measuring Behavioral Finance tendencies are consecutively developed. The data collected were analyzed using the SPSS 20.0 statistical software package. Finally the analysis of Behavioral Finance statements presented to the participants was conducted using Explanatory Factor Analysis and consequently sub-factor dimensions were determined.

4.Empirical Findings

It is important to define investors’ investment habits, behaviors and attitudes for the financial markets and also considerable to constitute a financial map for the countries. Previous behavioral researches show that some demographic factors such as age, sex, education,

marital status and any other similar factors were playing a vital role on investors' decisions and of course these elements create some interactions for the financial markets.

This study is basically conducted to determine whether the individual investors who reside in Afyonkarahisar reflect the tendencies as described by Behavioral Finance. Thus, mainly 3 sectioned questions were initially directed and asked to the participants. As well as the survey was initially conducted to determine behavioral tendencies, first questions of the survey were also directed to determine the socio-demographical characteristics of individual investors to obtain a financial profile while second part of the survey established to define the financial preferences' of the participants. Although the main study consists of three phases, it is considered this study should heavily include the findings obtained through factor analysis; the findings from other two parts are only included in the result section as to their significances. Thus, according to the demographic qualifications the obtained findings can be summarized as follows:

Table-1: Findings on the Demographic Characteristics of the Participants

		Frequency	**%**			**Frequency**	**%**
Sex	Male	336	73	**Marital Status**	Married	311	67,6
	Female	124	27		Single	149	32,4
	Total	460	100		Total	460	100
Child Ownership	No child	273	59,3	**Age**	21-25	15	3,3
	1 child	62	13,5		26-30	45	9,8
	2 children	22	4,8		31-35	83	18,0
	3 children	103	22,4		36-40	99	21,5
	Total	460	100		41-45	77	16,7
					46-50	47	10,2
Educational Level	Primary & Secondary Education	80	17,4		51-55	35	7,6

	High School	159	34,6		56-60	21	4,6
	Vocational & University Degree	138	30		61-65	12	2,6
	Post-Graduate	83	18		65 +	26	5,7
	Total	460	100		Total	460	100
Job	Public Sector	209	45,4				
	Private Sector	160	34,8				
	Self-Employment	14	3				
	Housewife	39	8,5				
	Other	38	8,3				
	Total	460	100				

According to the Table-1 which indicates the demographical characteristics of the participants, the men (%73) mostly take place in the study while the women (%27) are in minority compared to the men. It is because that the males are forming the workforce of household and managing income for the family in Afyonkarahisar province. Evaluating this outcome with the marital status of the participants, one is obviously concluded that participants are generally male and married. This finding also imply that the traditional Turkish family structure is still proceeding in the province. But contrary to structure that mentioned previously, the participants have mostly no child (%59,3). This finding also shows that the population of average core family are formed of two people, the husband and the wife. A remarkable outcome of the study is the investors are between 31 and 45 age old (%56,2). This figure promotes Ozen and Yesildag's (2015) study which concluded that the

stock exchange investors are between the age of 36-45 (%43,4) in Usak, the neighbouring city of Afyonkarahisar. Another outcome of the study is that the investors generally completed the obligatory basic education (%17,4) in Turkey. Further up the investors with a high school degree (%34,6) have slightly a dominance effect on the investors with a vocational degree or graduate degree (%30). By checking the participants' occupation it can be claimed that most investors are working for public institutions (%45,4) and closely followed up by the investors who working in private sector (%34,8).

The financial preferences of the investors' are also essential to define their financial habits and thus it can be understood their resources' importance allocated to savings for the financial markets. So, according to the financial preferences' and investment habits of the participants the obtained findings can be summarized as follows:

Table-2: Findings on Financial Profile of the Participants

		Frequency	**%**			**Frequency**	**%**
Financial Education	Yes	118	25,7	**Monthly Income (TL)**	1-1000	214	46,5
	No	342	74,3		1001-2000	120	26,1
	Total	460	100		2001-4000	74	16,1
					4001-6000	52	11,3
					Total	460	100
		Frequency	**%**			**Frequency**	**%**
Allocated To Savings from Monthly Income (TL)	1-250	198	43	**Investment Types**	Real Estate	28	6,1
	251-500	186	40,4		Financial Instruments	409	88,9
	501-1000	49	10,7		Pension Funds	14	3
	1001-3000	20	4,3		Other	9	2
	3000 +	7	1,5		Total	460	100
	Total	460	100				

		Frequency	%			Frequency	%
Financial Instrument Types	Local Currency Deposit (TL)	96	9,6	**Financial Instruments Number in Portfolio**	1	165	35,9
	Foreign Currency Deposit (USD, EUR etc.)	142	14,2		2	190	41,3
	Stock Shares	141	14,1		3	63	13,7
	Bond	53	5,3		4	5	1,1
	Treasury Bill	6	0,6		5 and 5 +	37	8
	Investment Fund	41	4,1		Total	460	100
	Gold	321	32,1				
	Repurchase	22	2,2			**Frequency**	**%**
	Sukuk (Islamic bond)	0	-	**Frequency of Monitoring the Financial Markets**	Non-Monitoring	75	16,3
	Interest Free Contributory Funds	73	7,3		Daily	191	41,5
	Under the Mattress	99	9,9		Weekly	87	18,9
	Other	2	0,02		Monthly	107	23,3
	Total	996	100		Total	460	100
		Frequency	**%**			**Frequency**	**%**
Holding Period of the Instruments	1 month	61	13,3	**Basic Motivation on Investment**	Higher Return	147	32
	1 year	310	67,4		Capital Protection	125	27,2
	2-5 year	41	8,9		Continuous Income	97	21,1
	6 and 6 + year	48	10,4		Reducing Risk of Portfolio	91	19,8
	Total	460	100		Total	460	100

*Allowed to select more than one financial investment instrument

According to the results, most of the participants surprisingly do have neither any financial course nor financial education (%74,3). Evaluated this finding with the financial instrument type which they choose it can be concluded that the participants are reflecting a risk aversion attitude and seeking for financial instruments without risk. That can be observed on the most preferred instrument is dominantly gold with a %32,1. The gold has been always accepted a 'safely port' for the investors in Turkey while the stocks contains extremely high risk. As follows, the average monthly income of the participants are between TL 1 – 2000 (72.6%). This finding also emphasizes the result for the share reserved for financial savings is varied between TL 1 – 500 (83.4%). We can clearly conclude from the table that showing the allocated savings from monthly income, every group of participants are absolutely making a saving. Regardless of investors' monthly income they are ensuring funds for the financial markets in any condition. In addition, almost %10 of the participants keep their savings in a traditional way such as keeping the savings "under the mattress". Recently Turkish governments put some incentives into action to attract these investors' attention. These incentives are such as tax discount, government contribution for the insurance funds. The results also shows that the participants' mostly preferred investment type is financial instruments (%88,9) by a majority comparing to the other investment types such as real estate, pension funds and etc.

Regarding the portfolio selection of the participants the findings show that investors keep one or two financial instrument (totally %77,2) in their portfolio. It can be concluded that the investors are going through no risk diversification on their portfolio. They choose just an asset or two assets and keep it or them for a long time. But contrary to portfolio's component, they prefer to monitoring financial markets in daily period (%41,5). This finding indicates a contradiction with the choice of investors' financial instrument (mostly one instrument) and keeping it in for a 1 year time (%67,4). But this result can be together comprehended with the data of investors' main motivations on their assets. They usually expect higher return and capital protection on investment (%59,2).

5.Findings on Behavioral Tendencies via Factor Analysis

A high correlation relationship is pursued between the variables in studies conducted using factor analysis. As the correlation between the variables decreases the reliability of factor analysis results decrease as well.

Table-3 : Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy/Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,677
Bartlett's Test of Sphericity	Approx. Chi-Square	11722,201
	df	171
	Sig.	,000

Since the findings demonstrated that p (sign) = 0,000 < 0,005 the result of the Bartlett test is significant. Thus, the H_0 hypothesis, which assumes no significant relationship between the variables, is rejected and the H_1 hypothesis, which proposes a relationship between the variables, is accepted. In other words, a high correlation exists between the variables and they originated from a multiple normal distribution. KMO value is over the minimum value of 0.50 and is between 0.60 – 0.70 and at a medium level. Thus, the sufficiency of the sample is confirmed with the required values.

Table-4 : Reliability Statistics with 35 prerequisities presented

For a measurement to be considered valid, the initial prerequisite is its reliability.

Cronbach's Alpha	N of Items
,930	35

The accepted Cronbach Alpha value is 0,70. The value found in the study is 0,930 and the reliability of the data have a high internal consistency.

Table-5 : Communalities

Common variance (communality) is the amount of variance that a variable shares with the other variables in the analysis (Karagöz and Köstereliođlu, 2008: 90).

	Initial	Extraction
OVERCONFA	1,000	,843
OVERCONFB	1,000	,906
OVERCONFC	1,000	,684
OVEROPTA	1,000	,805
OVEROPTB	1,000	,854
OVEROPTC	1,000	,901
SELFATTRIBA	1,000	,843
FOREKNOWA	1,000	,833
REPRESNTA	1,000	,738
ANCHORA	1,000	,746
FRAMİNGA	1,000	,876
AVOREGRETA	1,000	,748
AVOREGRETB	1,000	,661
AVOREGRETC	1,000	,772
REPRESNTB	1,000	,727
HERDINGB	1,000	,732
REPRESNTC	1,000	,792
GAMBLINGA	1,000	,748
HERDINGA	1,000	,828

Since factor loads of 4 of the 35 total statements used in the analysis demonstrates a very close distribution, it is determined that they are dominant over other variables and these irregular statements excluded from the data set. In addition, for the calculation of the common variance, the Joliffe criterion standard base value of 0.7 is taken into consideration. As a result, Table 5 demonstrates the total 19 variables in the common variance table and the variance they share with the other variables and Table-6 also shows the reliability statistics of the reduced 19 variables below.

Table-6: Reliability Statistics with 19 statements presented

Cronbach's Alpha	N of Items
0,872	19

Table-7 : Total Variance Explained

When the total variance of the variables explained by the factors are examined in Table 7, the eigenvalues before and after the conversion can be observed as follows:

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7,139	37,574	37,574	7,139	37,574	37,574	4,027	21,197	21,197
2	3,976	20,927	58,501	3,976	20,927	58,501	3,942	20,745	41,941
3	1,586	8,345	66,846	1,586	8,345	66,846	3,438	18,096	60,038
4	1,278	6,729	73,574	1,278	6,729	73,574	2,132	11,223	71,261
5	1,059	5,576	79,151	1,059	5,576	79,151	1,499	7,890	79,151
6	,795	4,183	83,334						
7	,711	3,741	87,075						
8	,625	3,287	90,362						

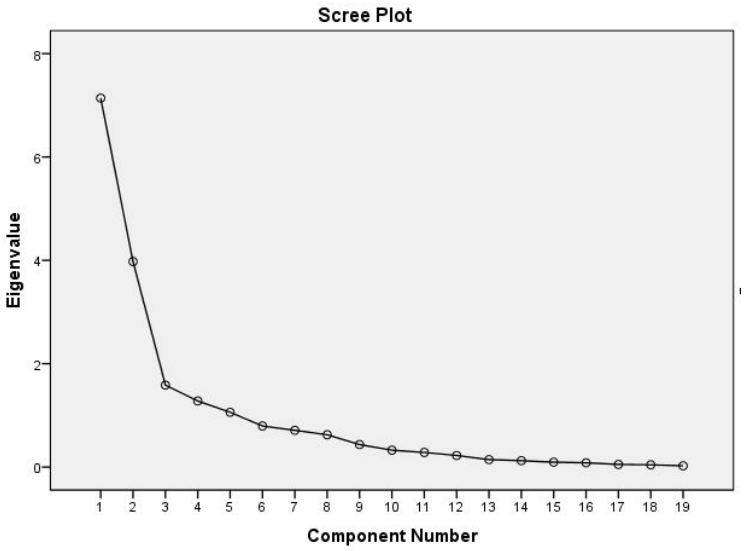
9	,436	2,294	92,656						
10	,327	1,720	94,376						
11	,283	1,489	95,864						
12	,224	1,178	97,042						
13	,143	,755	97,797						
14	,123	,649	98,446						
15	,095	,499	98,945						
16	,082	,433	99,377						
17	,051	,266	99,643						
18	,043	,225	99,869						
19	,025	,131	100,000						

Extraction Method: Principal Component Analysis.

Consequently, 5 factor sub-groups are formed and the first among these explains 21.197% of the total variance. The second factor explains 20.745% of the total variance. The amount of cumulative variance explains by the eigenvalues equaled 79.151% of the total variance. This expresses the fact that the scale explains almost 79% of the features that are aimed to be measured. Since the eigenvalues have a key role in determination of the number of factors that would be rotated, it is positive to observe the effect of each factor on the total variance.

Graph-1: Scree Plot Test

Graph 1 demonstrates that there are 5 factors with eigenvalue statistics of 1 and greater than 1 ($\lambda \geq 1$).



Furthermore, when the alignment of the 5 factors is observed, it can be seen that the graph starts to lose its slope, and the serial distribution becomes a straight sequence and shaping parallel to the eigenvalue statistical value of 1.

Table-8: Rotated Component Matri**x**

	Components				
	1. Factor Item	2. Factor Item	3. Factor Item	4. Factor Item	5. Factor Item
OVEROPTIMSC	,804				
OVEROPTIMSB	,670				
AVOREGRETC		,834			
REPRESNTA		,811			
HERDINGA		,588			
OVEROPTA		,564			
AVOREGRETB		,560			
REPRESNTC		,491			
GAMBLINGA			,758		
AVOREGRETA			,684		
FOREKNOWA			,784		

FRAMINGA				,894	
REPRESNTB					,785
HERDINGB					,518

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

The distribution of factor loads as a result of factor rotation implemented using Varimax rotation method is displayed in Table 8. This matrix is the final result of factor analysis. Finally, it is demonstrated that the new scale consisted of 14 items and 5 dimensions.

Exhibit-1: Abbreviations List used above

OVERCONF stands for Overconfidence Bias. The bias towards optimism often leads investors to have an unrealistically positive view of themselves and their futures.
OVEROPTA stands for Overoptimism Bias. Optimism bias and cognitive dissonance also lead many individual investors to overestimate their investment results.
SELFATTRIB stands for Self-Attribution Bias. Self-attribution bias occurs when people attribute successful outcomes to their own skill but blame unsuccessful outcomes on bad luck.
FOREKNOW stands for Forecasting Bias. The bias can be expressed shortly by a word "I already knew that".
REPRESNT stands for Representation Bias. When people are asked to judge the probability that an object or event A belongs to class or process B, probabilities are evaluated by the degree to which A is representative of B, that is, by the degree to which A resembles B.
ANCHOR stands for Anchoring Bias. It reflects the degree to which the initial judgment about an event or situation prohibits one from deviating from that position regardless of new Information to the contrary
FRAMİNG stands for Framing Bias. Framing - with reliance on how information is presented, a judgement is made on the benefit of a choice and investors indeed realize their gains more readily than their losses. And the winning investments investors chose to sell continue to outperform the losers they hold on to in subsequent months.
AVOREGRET stands for Regret Avoidance Bias. Regret avoidance is the tendency to avoid actions that can create discomfort over prior decisions, even though those actions may be in the individual's best interest.
HERDING stands for Herding Bias. The behavior, although individually rational, produces group behavior that is, in a well-defined sense, irrational. This herdlike behavior is said to arise from an /information cascade.

GAMBLING stands for Gambler's Fallacy. Gambler's fallacy stems from two sorts of confusion. First, people have very poor intuition about the behavior of random events. With gambler's fallacy, they expect reversals to occur more frequently than actually happens.

Table-9: Ultimate Factor Dimensions to be named

To entitle the factors it is necessary to determine and group the variables with the largest weight under a factor. According to certain sources, this is the most difficult stage of factor analysis. Table 9 shows the new dimensions obtained by factor rotation.

Ultimate Factor Dimensions of The Scale	Ultimate Dimensions Named As	Related Proposition Number	Related Propositions Names
1	Affirmation	6, 5	OVEROPTIMSC (0,804), OVEROPTIMSB (0,670)
2	Hetero-Emotional	19, 10, 32, 4, 18, 27	AVOREGRETC (0,834), REPRESNTA (0,811), HERDINGA (0,588), OVEROPTIMSA (0,564), AVOREGRETB (0,560), REPRESNTC (0,491)
3	Prophecy	29, 17, 9	GAMBLINGA (0,758), AVOREGRETA (0,684), FOREKNOWA (0,784)
4	Contrast	16	FRAMINGA (0,894)
5	Adverse Advertisement/Social Circle	21,24	REPRESNTB (0,785), HERDINGB (0,518)

When the statements are grouped, the entitling should cover the whole group. Thus, the related dimensions are compared with the statements included in the analysis and the new dimensions are named as follows: The first dimension is named Affirmation Tendency for the weight of the positive statements in that dimension; the second dimension is named Hetero-

Emotional Tendency for the statements in that dimension which are not distributed explicably homogenous. The third dimension is named Prophecy Tendency for the tendencies of prescience are prominent in the dimension and since the statement presented in the fourth dimension consists of two situations that lead to one positive and one negative consequences, this dimension is named Contrast Tendency. The fifth and the final dimension is named Adverse Advertisement/Social Circle Tendency because of the content of the related statements.

6.Conclusion

Individuals naturally have different traits, habits, attitudes and behaviors. Humans, social being, are differently affected by the social environment in addition to cognitive and emotional factors in the decision-making process. Contrary to the Conventional Finance Theories, Behavioral Finance is a new approach for the decision-making process of the investors using behavioral sciences such as psychology, sociology and instead of organizing the way investors should behave normatively, concentrates on the actual behavior of the investors.

The findings of the studies that conducted to exhibit the intricacies of the decision-making process demonstrated that as much as the decision-making process of an individual is complex and in relation with this fact the financial decision-making processes for the individual investors are similarly complex. In regard to, the study mainly includes three sections which aim firstly determining the socio-demographic structures and secondly disclosure of financial profiles, saving status, financial instrument preferences, other financial and economical issues of individual investors' and finally if they reflect the Behavioral Finance tendencies or not.

Although the socio-demographic and financial profile findings are presented in the findings section, it can be restated that the participants completely shows and reflects the tendencies of Behavioral Finance such as over optimism, risk aversion, avoiding regret, herding, representative bias, gambling and framing. In the application section of the study, totally 35 statements containing 20 tendencies developed within the Behavioral Finance tendencies, are tested with the factor analysis model and initially they are reduced to 19 variables. According to the empirical methodology it is also observed that the Cronbach Alpha coefficient

reliability and KMO test results that measure the scale efficiency for Explatory Factor Analysis are satisfactory as demonstrated in the methodology section. Mentioned 19 variables are consequently processed using Varimax factor rotation and finally reduced to 5 main factors in which 14 variables are effective. These factors are ultimately named Affirmation Tendency, Hetero-Emotional Tendency, Prophecy Tendency, Contrast Tendency and Advertising/Social Circle Tendency. These 5 dimensions can be applied in a different study with the help of other models available for the further researches. Finally; it can be concluded from the study that the individual investors strongly reflect the tendencies mostly regarding the emotional and self-confidence attitudes of financial behavior.

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