Behavioral Finance: An Empirical Study of the Tunisian Stock Market

Mustapha Chaffai
Department of Finance, Business School, Sfax University,
Route de l'Aérodrome k 4.5, PB 3018, Sfax, Tunisia.
Email: chafaialia@yahoo.fr

Imed Medhioub
Department of Finance and Investment, College of Economics and
Administration Sciences, Al-Imam Muhammad Ibn Saud Islamic University (IMSU),
PO Box 5701 Riyadh, Saudi Arabia. Email: ahmathiob@imamu.edu.sa

ABSTRACT: Behavioral finance attempts to give some explanations to the psychological and emotional factors involved in the stock market and that affect the behavior of investors and the market efficiency. In this paper we study the influence of these psychological and emotional factors on the behavior of Tunisian stock market investors. Based on a questionnaire distributed to the Tunisian investors in the stock market, and by using the Multiple Correspondence analysis, we focus to explain how the behavioral finance can affect Tunisian stock market. We conclude that persons having a high level of education are subject to behavioral biases, and agents who invest amounts between 1,000 and 20,000 TND are most vulnerable to behavioral biases. And then we can say that information on the market cannot lead to the market efficiency.

Keywords: Behavioral finance; efficient market; psychological biases; Tunisian stock market; Multiple correspondence analysis.
JEL Classifications: G11; G12; G14; G30.

1. Introduction

The efficient market hypothesis (EMH) implies that stock prices should fully reflect all the information in the market. Since 1980s, many studies have raised some problems leading to over or under reaction of the market, and then imply the rejection of the efficient market hypothesis. These critics have contributed to the development of the behavioral finance theory.

In fact, Modern finance researches pay a great attention to the study of behavioral finance. The studies deal with the influence of psychology investors on their behavioral and their effects on markets. Some works demonstrate that one of the factors that lead to market inefficiency is the presence of behavioral factors. Indeed, investors under or overreact to unexpected bad or good news in the stock market. In behavioral finance, we tend to explain why market participants generate systematic errors leading to market inefficiencies.

This paper is interested in the study of behavioral finance in the Tunisian Financial Market. According to the classical financial theory, economic agents are rational and stock market prices are close to the intrinsic value. In this field of efficient market hypothesis, Fama (1970, 1991) states that, stock market prices must reflect all the available information in the market, and then he develops the three forms of efficiency:
- Weak form of efficiency that implies that historic prices cannot be used to make prediction to generate abnormal profits.
- Semi strong form of efficiency that implies that stock market prices should reflect all available information that contributes to the reduction of the range in order to predict an abnormal return.
- Strong efficiency that implies that even insider information is available through stock prices.

This theory has been strongly rejected, and it constitutes the core of the modern finance. Some authors explain the rejection of efficient market hypothesis in the sense that investors are prone to cognitive biases that influence their beliefs and preferences.

Investor's decision making depend on many parameters such as utility maximization, return, socioeconomic, age, education, capital invested, profession, etc. These parameters are helpful to determine biases rising from the investor's behavioral finance. In this study and taking into account these factors and others specific ones to investors, we tend to analyze the mentality of Tunisian investors and their preferences. On that light, this study is taken place to identify the major influential factors which leads the investors to make decisions and to do transactions on the stocks following their desires.

Many works interested in to determining important factors that influence the decisions of investors. For example, Kahneman and Tversky (1979) developed the interdependence between the psychology of investors and their economic decisions. In studying the behaviors of Japanese investors, Kenneth and Nofsinger (2005) found that the choices of individual investors are very poor, and that they own highly riskless stocks with high trading volume, and earn low returns. Bikhchandani et al. (1998) agreed that the theory of observational learning, and particularly of informational cascades, can explain phenomena such as stock market crashes. Motivated by a variety of psychological evidences, Barberis et al. (1998) presented a model of investor sentiment that emerges under reaction of stock prices to the new information. Thaler (1999) summarize the literature on mental accounting and conclude that it influences choices. Shleifer (2000) published a pioneer work on inefficient markets: an introduction to behavioral finance. Barberis and Thaler (2003) published a survey of behavioral finance. Recently, more developments in decision making under risk have been improved upon a cumulative prospect theory. Harrison and Rutstrom (2009) proposed a reconciliation of the expected utility theory and the prospect theory by using a mixture model.

In this paper we attempt to explain the irrational factors which affect investment decisions and portfolio selection in the Tunisian financial market. Also, we present some explanations of behavioral model based on frameworks of behavioral finance. This paper is organized as follows, after the introduction; section 2 is devoted to the presentation of behavioral finance. Section 3 treats the empirical results, and section four concludes this work.

2. Behavioral Finance: Cognitive Illusions

The financial theory is based on rationality of all participants in the market and stock prices should fully reflect all the information in the market. Since the main objective of investors is to maximize their profits and due to uncertainty, rationality loses its characteristics in the market. And this gives rise to the notion of non rationality of economic agents. In this field, many studies have raised the influence of irrational factors that make the investor's decisions inconsistent. Behavioral finance is interested in the analysis of participants' psychological decisions and explaining the anomalies observed or detected in the market.

Behavioral finance can be classified in two main components: limits to arbitrage and psychology. According to the first component, anomalies arise and persist. In an economic world, irrational agents give the chance to rational agents to take advantage and gain money. This phenomenon leads to, even in the long term, the irrational agents to quit the market, and this process is known as arbitrage. In fact, arbitrage is the opportunity that gives profit to economic agents without risk. Therefore, we can conclude that persistent anomalies observed in the market can be the result of irrationality and then limits to arbitrage lead to mispricing (Barberis and Thaler, 2003; Shleifer and Vishny, 1997). As Shleifer and Vishny argued in their famous article, the efforts of arbitrageurs to make money will make some markets more efficient without having any effect on other markets (Shleifer and Vishny, 1997).

When limits to arbitrage are high, anomalies become strong and then securities expose a greater mispricing and there is a return to arbitrage of higher average securities.

Concerning the second component, namely psychology, it rises due to the inability of the efficient market theory in order to give some explanations to the persistence observed in financial markets. Some authors rely inefficiency in the market to the psychological biases. However, psychology is considered as an important feature that plays a great role in determining the behavior of all players in the financial markets.

The Psychology factor can be interpreted as a key element that explains the instability in the market. In fact, irrationally, due to psychology of investors, can cause systematic deviations from equilibrium (ideal decision) that contributes to the inability to obtain optimality and cause many biases in the decision making.

As investors do not have the same decision and do not make the same errors, many forms of cognitive biases have been determined by psychologists. Cognitive biases can be classified into:

- Heuristics or rules of thumb: which means the effects of information processing rules?
- Overconfidence: It is known that investors and people in general, are overconfident and they have an excessive optimism. In fact, there is a tendency that investors overestimate their ability in making decisions. Overconfidence is raised due to the inability of players in the market to understand exactly the role of hazard and fortune in forecasting the future.
- Mental accounting: As speculative investments are highly risky, and in order to prevent the suddenly negative returns that can occur, investors divide their investments between speculative and safe portfolio. This leads to a mental accounting bias.
- Representativeness: 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".
- Conservatism: It is defined as the phenomenon that people only gradually adjust their beliefs to new information (Edwards, 1968). It therefore resembles the mechanism that plays a role in the theory of cognitive dissonance. Experimental research indicates that it takes two to five observations to bring about a change of information or opinion; where in the case of Bayesian learning one observation would be sufficient. The more useful the new information is stronger is conservatism. This is because new information that is at variance with existing knowledge is harder to accept.
- Risk aversion: In explaining the behaviour of an individual investor, it is convenient to assume initially that the investor is rational and fully-informed and therefore complies with the axioms underlying the subjective expected utility theory. In particular, the subjective unexpected utility theory (SEUT) assumes that individuals are fully informed about the distribution of possible returns; they can process this information accurately, and make decisions based on a utility function which has the standard properties of transitivity, continuity and independence.

In conclusion, we can say that the behavioral finance is a new field of finance that contradicts the classic financial theory. It uses scientific models in order to explain how investors make decisions in financial markets. In behavioral finance studies we analyze how psychology influences making decisions in financial markets and detects the principal factors that lead to irrationality of economic agents. This paper will be devoted to the study of the behavioral influence of the Tunisian stock market by testing the factors that influence the investor's decisions via a questionnaire treating these factors and distributed to investors in the market.

3. Methodology and Data Collection
3.1 Data collection
This study targets the Tunisian Stock market. Our survey is based on a sample of investors in this market through structured questionnaires (See appendix). In general, works treating behavioral finance are based on questionnaire. In fact, this technique can be considered as a good tool through which we interpret the psychology of investors which is related to their thinking and beliefs. The questionnaire was distributed to 300 investors the on Tunisian stock market. This questionnaire has led us to collect data for our analysis. All questions are related directly or indirectly to behavioral finance. A total of 32 questions were asked to 300 investors, only 193 replied us. The collected information through questionnaires entered in SPHINX software for analysis.
3.2 Data Analysis
The data was analyzed on SPHINX software by using the following statistical tools: percentage analysis, means, factor analysis, and Multiple Correspondence analysis. The data set contains questions about socio-economic factors (Age, Profession, education, employment status, etc.), investment factors (amount invested, etc.) and factors that influence the investment decision

(take risk or not, possess stocks for long/medium/short term, number of sources considered, etc). Some questions are related to the psychological factors (overconfidence, mental accounting, etc.).

3.3 Descriptive Statistics

The following tables (Table 1 and 2) show the descriptive statistics obtained from this study.

Table 1. Descriptive statistics for socio-economic factors

Age	Less than 25 years	26 –35 years	36–50 years	51 –65 years	More than 65 years
Frequency	17.7	33.3	26.1	18.2	4.7
Education	Without diploma	Certificates or Diplomas	Bachelor	Master	Doctorate
Frequency	12.9	10.4	39.9	28	8.8
Profession	Student, housewife	Executive, employer	Manager	Academic, researcher	Retired
Frequency	10.6	62.3	5.7	17.3	4.1

Table 2. Descriptive statistics for investment factors

Amount invested	Less than 1,000 TND	1,000–5,000 TND	5,000-20,000 TND	20,000 – 50,000 TND	More than 50,000 TND
Frequency	2.5	30.1	26.4	16.1	24.9
Ownership duration	<3months	3-6 months	6-12 months	> 1 year	
Frequency	15.3	1.8	52.5	30.4	
Chance of losing	30%	50%	75%		
Frequency	20.1	59.5	20.4		

From table 1 we can conclude that the majority of individual investors are young. Also, we found that 33.3% of investors have a range of age between 25 and 35 years. Individuals older than 65 years represent the smallest percentage of investors. We can show also that the majority of people who answered the questionnaire have relatively a high level of education. Individuals having a master's degree or a doctorate degree represent 36.6% of all persons interviewed. This can be considered as an advantageous factor for our study since having a certain level of education enables the people involved to make rigorous choices in the sense that their actions are not totally haphazard. This result implies that investors must have good skills to make individual optimal decisions. Generally, investments in stocks must be for long horizons. The majority of individual investors on the Tunisian market hold securities or portfolios for medium-term horizons. Indeed, we found that 52.5% of investors hold portfolios for medium terms and 30.4% for long-terms. According to these results, stocks cannot be considered as a speculative investment for most investors. However, it is clear that some investors confused between investment in the stock market and holding a portfolio. From table 2 we see also that the majority of investments are between 1,000 and 20,000 TND with a cumulative percentage of 56.5% of the total number of persons interviewed. 24.9% of our sample devoted more than 50,000 TND to their investments in the stock market. Finally, we can conclude that the acquisition of securities is essentially made by investors having a high level of education.

Table 3 presents the different psychological biases determined via our questionnaire. It shows questions related to each bias while table 4 presents the statistics related to the factors influencing investment.

Table 3. Principal biases influencing behavior

Predictor variables	Related questions to identify the behavior
Risk aversion	07(b) ; 08(a) ; 09(a) ; 10(b)
Anchoring	16(a) ; 17(c) ; 18(a) ; 19(b)
Representativeness	27(a)
Availability	24(d) ; 25(a) ; 26(a, d)
Overconfidence	11(a) ; 12(b) ; 14(a) ; 15(a)
Mental accounting	20(b) ; 21(a) ; 22(b) ; 23(a)

Table 4 gives the percentages of different possible biases that exist in our sample.
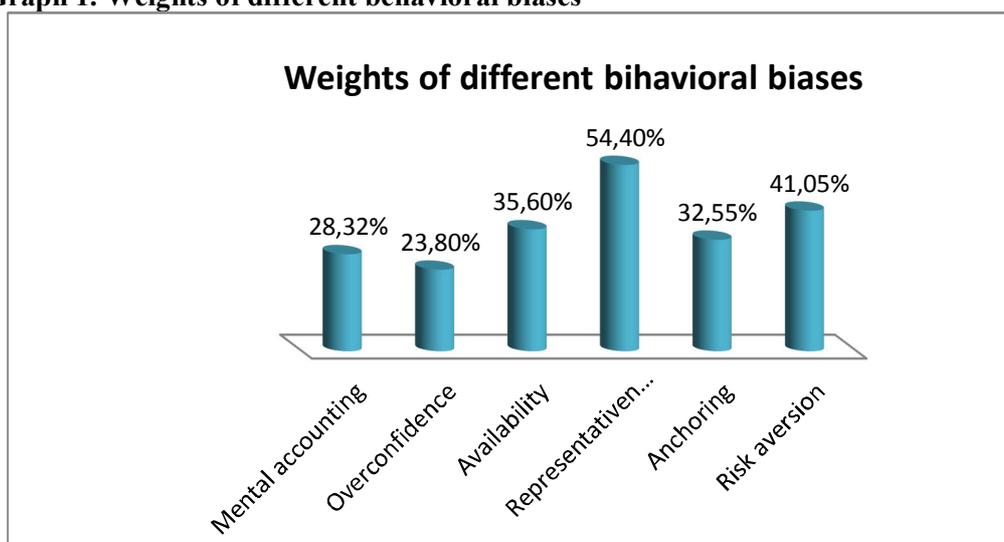
Table 4. Descriptive statistics for factors influencing investment

Risk aversion	07(b)	08(a)	09(a)	10(b)	*Weight of behavior*
Frequency	46.6%	74.6%	31.4%	8.6%	*41.05%*
Anchoring	16(a)	17 (c)	18(a)	19(b)	*Weight of behavior*
Frequency	18.3%	16%	40.6%	55.3%	*32.55%*
Representativeness	27(a)				*Weight of behavior*
Frequency	54.4%				*54.4%*
Availability	24(d)	25(a)		26(a, d)	*Weight of behavior*
Frequency	25.4%	21.9%		59.5%	*35.6%*
Overconfidence	11(a)	12(b)	14(a)	15(a)	*Weight of behavior*
Frequency	15.2%	35.5%	6.9%	37.6%	*23.8%*
Mental accounting	20(b)	21(a)	22(b)	23(a)	*Weight of behavior*
Frequency	27.7%	13.9%	24.9%	46.8%	*28.32%*

From this table, we can conclude that the various biases considered in this study affect the behavior of individual investors but with different proportions. Our empirical study highlights the existence of all these psychological biases and our assumption is also confirmed. Representativeness is the most important bias present in our sample with a weight behavior of 54.4%. Therefore, we can say that investors in the Tunisian stock market prefer to choose in their portfolio securities that perform better during the last 12 months and sell the other type of securities[1]. Availability bias is present with a weight of 35.6%. The presence of such behavior in the market implies that speculators are sure that 35.6% of the investors will follow the new trends in the market and therefore have some advantages from these situations. They will be able to reap substantial gains in comparison with to the followers. 41.05% of individual investors are subject to the bias of risk aversion, implying that investors are heavily influenced by this bias. This means that investors are much more careful in avoiding losses than making gains. Mental accounting is also present in the Tunisian market implying that the basic rule of portfolio management is not respected[2].

Finally, we conclude that the various biases that affect the behavior of Tunisian investors all occur but with different proportions. Our empirical study highlighting the existence of all these psychological biases and our assumption is also confirmed. The weights of different biases are presented in graph1.

Graph 1. Weights of different behavioral biases

Weights of different bihavioral biases

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[1] Tunisian investors prefer to sell securities that have lower returns for the last 12 months.
[2] Basic rule of portfolio management indicates that making choices in stock market is based on the profitability and risk criteria.

This graph shows that the bias of risk aversion, representativeness, anchoring and availability has the most important weight and the behavior of investors must be largely affected by these biases. It is found that the behavior of investors is mainly influenced by four to six biases considered in this study. These results confirm the fact that investors have a behavior that affects the evolution of stock prices on the Tunisian market. And it also confirms the results found in the work of Chaffai and Medhioub (2012) in which they conclude that the Tunisian stock market is not efficient and then we can say that the market is influenced by psychological biases. To complete our analysis, we try in the next section to determine the factors or the category of investors which can more influence the decisions more on the market.

3.4 Multivariate Analysis: Multiple Correspondence Analyses

Multiple correspondence analyses, which are considered as a generalization of principal component analysis, is a technical statistical method that allows to analyze the pattern of relationships of several categorical dependent variables. Also, it gives us a summary to a set of data in a dimensional graphical form. Multiple correspondence analysis is similar to the principal component analysis. According to this method, and in order to interpret clearly our results, we have created codes to variables[3]. In our analysis, we are interested in the following factors: education (level of study) and profession criteria (socio-professional category). Risk aversion to the education study gives us the following results:

Table 5. Risk aversion analysis, Socio-Professional criteria

	Axis 1		*Axis 2*	
Positive Contributions	That doesn't lose	+16.9%	No decision	+18.9%
	No decision	+14.3%	That doesn't lose	+14.3%
	Category5	+3.8%	Price starts to decrease	+12.7%
	Category3	+3.2%	Category5	+10.5%
	Max price	+2.4%	Sell off	+3.4%
	Good targeting	+1.9%	More efficient than the market	+1.9%
	Prob1	+1.2%	None	+0.4%
	Prob2	+0.9%	Prob3	+0.3%
	Buy more	+0.6%	Category2	+0.3%
Negative Contributions	Sell off	-12.6%	Buy more	-17.9%
	More efficient than the market	-12.6%	Good targeting	-6.1%
	Prob3	-12.5%	Category3	-5.7%
	Price starts to decrease	-8.9%	Max price	-3.1%
	Category1	-3.8%	None	-3.1%
	None	-2.6%	Category4	-1.0%
	Category4	-1.3%	Prob2	-0.3%

The two factorial axes corresponding to the results of table 5 show that the category 4 concerning the criteria profession (which includes university researchers, managers and doctors) has a negative contribution. This category is correlated with the good targeting of securities and that the decision of selling the security when they judge its price becomes high. Such behavior makes the risk aversion bias a very persistent factor in the Tunisian market.

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[3] See appendix 2 that concerns the codes of variables.

Table 6. Overconfidence analysis, Socio-Professional criteria

	Axis 1		Axis 2	
Positive Contributions	Lucky	+17.1%	Single source	+23.4%
	Some sources	+13.3%	Category4	+17.4%
	Over confidence	+9.0%	Not lucky	+7.7%
	Ownership duration3	+5.4%	Some sources	+2.9%
	Ownership duration2	+4.2%	Ownership duration3	+1.3%
	Category3	+3.2%	None	+1.3%
	Not lucky	+2.1%	Category1	+1.1%
	Category1	+1.0%	Overconfidence	+1.0%
			Category3	+0.7%
Negative Contributions	Ownership duration4	-14.6%	All	-11.5%
	None	-13.6%	Ownership duration1	-9.6%
	Category5	-7.0%	Category2	-7.7%
	By pleasure	-3.6%	Lucky	-7.0%
	Several sources	-3.1%	Several sources	-6.3%
	Freedom of action	-1.7%	Ownership duration2	-0.5%
	Single source	-1.0%	Category4	-0.2%

According to the results that correspond to table 6, we can say that socio-professional category 4 and category 5 and which represent executives and retirees, contribute most to the persistence of overconfidence bias and these types of investors represent a large part of the agents involved in the Tunisian market. Then, we can say that the overconfidence bias has an important influence on the behavior of the investors and it contributes to affect the price of the stocks.

Table 7. Overconfidence analysis, age criteria

	Axis 1		Axis 2	
Positive Contributions	Age1	+27.4%	All	+30.9%
	Ownership duration1	+16.8%	Ownership duration1	+9.8%
	Not lucky	+15.0%	Age3	+9.1%
	Single source	+5.8%	Ownership duration4	+3.7%
	By pleasure	+4.5%	For pleasure	+3.5%
	Some sources	+3.0%	None	+3.2%
	Ownership duration2	+0.1%	Several sources	+1.7%
			Single source	+0.3%
Negative Contributions	Ownership duration4	-7.9%	Overconfidence	-9.5%
	Age4	-6.0%	Ownership duration3	-8.7%

Freedom of action	-4.3%	Some sources	-7.7%
Age5	-3.4%	Age2	-4.1%
Several sources	-2.9%	Lucky	-3.1%
Age3	-0.9%	Not lucky	-1.8%
None	-0.9%	Ownership duration2	-1.2%
Overconfidence	-0.6%	Age5	-0.9%
Age2	-0.2%	Freedom of action	-0.6%

The factorial analysis corresponding to the results of table7 allows us to identify the choices of investors according to their age groups and socio-professional category. We conclude the rationale for the persistence of behavioral biases.

4. Conclusion

In this paper, we study the behavior of the investors in the Tunisian stock market. In other words, we tried to study the influence of psychology on the behavior of Tunisian investors and determine the most important factors that affect the stock market, and explain the anomalies that persist in this market.

By considering a sample of 193 Tunisian investors, and by using univariate and multivariate analysis, we concluded the presence of behavioral biases on the Tunisian stock market. In fact, univariate analysis has enabled us to determine the biases that mostly affect the behavior of investors. We found that the bias of loss aversion, representativeness, availability and anchoring are the most important that affect the stock market. Via the multivariate analysis, we have tried to identify the most important biases that affect strongly the behavior of investors. For doing this, we have considered many criteria such as education, socio-professional category, age and the amount invested.

We have concluded that person having a high level of education (Bachelor and more) and which represent more than 70% of the interviewed investors in the Tunisian stock market are subject to behavioral biases. In the same way, agents who invest amounts between 1,000 and 20,000 dinars and that represent more than 50% of our sample are most vulnerable to behavioral biases. By taking into account the different criteria that have been used for various behavioral biases, we conclude a persistence of behavioral biases. This means that the presence of behavioral biases is not due to cyclical factors but to the structural factors closely related to a specific range of individuals.

In this research we found the presence of stock market anomalies, a lack of investor behavior rationality in the Tunisian stock market. Also, subjective judgments and persistence of behavioral biases can give an explanation to the market inefficiency. Furthermore, analyzing the evolution of stock market and the presence of over or under reactions in the market should normally be found in the behavior of investors. This leads us to develop, in future works, a CAPM model that integrates behavioral variables.

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Appendix 1

Questionnaire

Our research deals with the factors influencing the behavior of private investors, and their financial decision-making. This questionnaire consists of 32 questions, and takes just between 10 – 15 minutes to answer. In each question you choose the alternative that reflects your own opinion. Your answers are anonymous and confidential.

Kindly answer the following questions in the spaces provided or tick the correct options.

Q1: Please, choose your age group:
  a. Under 25 years
  b. Between 26 – 35 years
  c. Between 36 – 50 years
  d. Between 51 – 65 years
  e. Over 65 years

Q2: Please, choose your education group:
  a. Without Diplomas
  b. Certificates or Diplomas
  c. Bachelor
  d. Master, Engineer
  e. Doctorate

Q3: Please, choose your profession group:
  a. Student, Housewife
  b. Executive, Senior technician, employer
  c. Manager
  d. Academic, Researcher, Director, Doctor
  e. Retired

Q4: You place your money in stock market for having:
  a. Dividend
  b. Return (return and added value)
  c. Other

Q5: In your opinion, the placement in stock market is a placement of:
  a. Short term
  b. Intermediate term
  c. Long term

Q6: Your computer skills:
   a. Poor
   b. Average
   c. Medium
   d. Good
   e. Very Good (Excellent)

Q7: For analyzing a value, you use:
   a. Your own tools
   b. Intermediates
   c. Other

Q8: For an investment of 100 TD, you prefer:
   a. Win 75 TD with 75% chance of losing
   b. Win 50 TD with 50% chance of losing
   c. Win 25 TD with 30% chance of losing

Q9: You decide to sell your shares:
   a. When you judge that the price cannot increase
   b. Its begin at loosing

Q10: If you hold a security, whose price drops suddenly for no apparent reason, you:
   a. Quickly liquidate the security
   b. Buy more titles to benefit once the equilibrium established.
   c. Make ostrich without taking decision

Q11: In your opinion, the best investment is that:
   a. Which displays a performance superior to that of the market
   b. Which has never lost money on these investments
   c. Which knows target stocks with strong earnings

Q12: When you make an investment, you will retain stocks for:
   a. One month
   b. One year
   c. Other (specify)

Q13: You manage your portfolio by your own means because:
   a. You find pleasure in managing it
   b. You have confidence in your skills and your intuition
   c. You have a great freedom of action

Q14: You buy the SICAVs because:
   a. The intermediaries are well informed to better select securities
   b. This type of investment is less risky
   c. Your experience is insufficient to take individual risks

Q15: To select the securities you use:
   a. A single source of information because the information is costly
   b. Few sources of information
   c. Several sources of information because we have been never well informed

Q16: In a general way, you consider that:
   a. You are lucky
   b. You are not lucky
   c. None of the two first answers

Q17: When you lose money on a share, you:
   a. You never take this share
   b. Try to reinvest in this share as soon as possible
   c. Observe its evolution without buying it

Q18: If you buy a security and the next day you obtain information that challenges your choice:
   a. You review your analysis and if it is necessary you sell it
   b. You wait a bit until a new information confirms one of the two first position
   c. You minimize the importance of this information

Q19: In stock market, you think that the first idea:
    a.   Is always the best
    b.   Should never be followed
    c.   Is good when you sell
    d.   Is bad when you buy

Q20: For the long term, you prefer to buy:
    a.   A security with a PER equals 15 while the PER of its direct competitor to equal to 20
    b.   A security with a PER equals 15 while the PER of the sector equals 20
    c.   A security with a PER equals 15 while the PER of the market equals 20 at this moment

Q21: You hesitate to buy a security because its course does not indicate a progression on the rise. Suddenly, its course increase of about 10%. If you have liquidity, what will you do?
    a.   You buy despite the rise
    b.   You wait the drop to buy it
    c.   You think

Q22: When a security is down by 3% in one day, you:
    a.   Buy, because it is an opportunity not to miss
    b.   You take a sales position because you feel that the course is sufficiently high
    c.   Take information about the downfall reasons in order to verify if it is justified, exaggerated or insufficient

Q23: When you constitute your portfolio, you:
    a.   Take care that no action can have a very important percentage
    b.   You make sure that all securities have the same percentages
    c.   You do not take care to the distribution

Q24: If one year you finish with a loss, you:
    a.   You try to absorb your losses the next year
    b.   You stop investing in stocks
    c.   You consider that a loss will be followed by future earnings

Q25: When you decide to buy a stock, you rely on:
    a.   The fundamental analysis You try to absorb your losses the next year
    b.   The technical analysis
    c.   Take advice from the trading companies
    d.   Other (specify)

Q26: A rumor circulating in the market:
    a.   Consequently, We must act
    b.   The rumors come from speculators
    c.   Leaders who guide the market.
    d.   There is no interest in taking it into consideration

Q27: If you decide to purchase one share. Your decision will be based on:
    a.   The information disseminated by the company
    b.   The past performance of the company
    c.   The personal intuition based on the company prospects
    d.   The behavior adopted by mutual funds

Q28: If you discover that the shares of a well determined evolve in a downtrend:
    a.   You proceed at the liquidation of all shares in the industry
    b.   You keep your shares even if the sector is bearish

We appreciate your help, THANK YOU.

Appendix 2

Variable coding

Age	Question 1	Age1: Under 25 years Age2: 26 – 35 years Age3: 36 – 50 years Age4: 51 – 65 years Age5: Over 65 years
Ownership duration	Question 16	Duration1: Under 3 months Duration2: 3-6 months Duration3: 6-12 months Duration4: Over one year
Education	Question 2	Level1: Without Diplomas Level2: Certificates or Diplomas Level3: Bachelor Level4: Master, Engineer Level5: Doctorate
Amount invested	Question 5	Amount1: Less than 1000 TD Amount2: 1000 – 5000 TD Amount3: 5000 – 20000 TD Amount4: 20000 – 50000 TD Amount5: More than 50000 TD
Socio-professional category	Question 3	Category1: Student, Housewife Category2: Executive, Senior technician, employer Category3: Manager Category4: Academic, Researcher, Director, Doctor Category5: Retired