Designing and explaining the decision-making model of shareholders with a comparative approach to classical finance and behavioral finance in the capital market

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Abstract

The title of the present study is designing and explaining the decision-making model of shareholders with a comparative approach to classical finance and behavioral finance in the capital market. The traditional finance viewpoint assumes that people make rational decisions to maximize wealth at a certain level of risk or minimize risk at a certain level of wealth. Such an approach, which states "how people should behave," is called norm. In this study, in the first stage, based on the literature review and using the previous related studies, a complete list of fifty-seven factors affecting the decision-making model of shareholders was provided to the members of the experts' panel in the form of a questionnaire for the sake of weighting. The DANP technique was then used. The results show that political factors, economic factors, market psychological factors, cognitive factors, emotional factors, and finally financial factors have the highest effect at the company level.

Keywords: decision-making of shareholders, comparative approach, classical finance, behavioral finance

1-Introduction

Nowadays, given that companies and institutions working in the stock market are required to reveal their financial information clearly, investors could access this information easily. Thus, this information allows investors to finance in the market more accurately through careful analysis of trends governing the market that makes the supply and demand of information by companies and investors very significant (Faten Moussa et al., 2017: 18). Now this question arises that based on the available information, what is the decision-making model of shareholders in the capital market and whether this component can affect the quality of financial reporting of companies listed on the stock exchange? This is an important question because financial reporting is fundamentally important in the decisions of shareholders and non-shareholder stakeholders of companies. However, the traditional view of corporate governance emphasizes that managers need to act solely on behalf of shareholders, and that usually supporting the interests of other constituencies can also be counterproductive (Ni, 2020). Therefore, it can be stated that the most important challenge facing finance is the evolution towards an integrated theory of financial market actions. This challenge has been repeatedly raised by traditional financial theorists (Nawrocki and Viole, 2014: 10).

In finance, on the other hand, the assumption of market efficiency is at the heart of any financial modeling, strategies, and policy design in financial markets. Since its development in the 1960s, the concept of efficient markets has been the subject of intense theoretical and empirical debate for more than a century (Tuyon and Ahmad, 2016: 1). The results of research (Garham, Harvey, and Rajgopal, 2005) on corporate financial reporting show that among all the information that companies disclose, corporate earnings and especially earnings per share is the most important indicator related to that report. Typically, companies that are stable in reporting their expenses and income usually carry out more analysis on their stocks and have so-called floating market stocks. On the other hand, the over-emphasis of the capital market on profits and related information has made this figure one of the most important factors in stock price changes and by creating an unusual return, it has made the growth of the company dependent on itself, this unusual return will also be associated with a corresponding risk (Rogers, 2009). In fact, return in the investment process is the driving force that creates motivation and is considered a reward for investors (Dastgir et al., 2015).

According to signaling theory, companies compete for access to limited sources of capital, and any company that is well-known in financial reporting and discloses more accurate information about its activities will be abler to attract capital because it will gain the trust of investors. Reliable and timely reports enable people to accurately evaluate the future prospects of the company, thereby reducing investment risk and expected rate of return and, of course, reducing the cost of capital (Etemadi et al., 2012). Therefore, it can be stated that in stock exchanges, choosing and deciding on the optimal investment options has become a big problem for investors. Hence, the answer to the question of what is the decision model of shareholders in the capital market can be very important for capital market companies (Scott, 2012). On the other hand, the dominant role of the efficient market hypothesis as a theoretical investment framework ended with the development of behavioral finance theory. Since then, the two approaches of classical finance and behavioral finance have been intertwined. Rationality in investing and efficient market ideas clearly contradicts the psychology of an investor and the rules of biased behavior. However, inefficient access to investment information and long-term market anomalies provide evidence of behavioral finance priorities. Behavioral finance approach is very important both at the level of individuals and at the level of companies, and usually most of the research on corporate behavior is related to capital structure, budgeting or financial problems (Jurevičienė et al., 2014). Now, according to the above, we seek to design and explain the decision-making model of shareholders with a comparative approach to classical finance and behavioral finance in the capital market.

Behavioral finance approach the subtle facets and interactions in the human brain, faced with the uncertainty of making economic decisions. The most common human traits (fear, anger, greed, selflessness) place considerable emphasis on our decisions about money. Intellect (grasping a situation), reason (long-term consequences of the action taken) and emotion (considering a course of action) are all interrelated; they are the springs behind human decision. Human behavior is generally reactive, not proactive; therefore, it is difficult to make predictions on the basis of narrow rules. Behavioral finances can relatively easily explain why an individual has made a decision, but have difficulty in quantifying what effects that decision will have on the individual (Oprean, Tanasescu, 2014, 1710). On the other hand, the term "corporate finance" describes the interaction between company managers and investors and its effect on company value, that is, corporate financial theory tries to explain financial contracts and investment behavior resulting from the interaction between managers and investors (according to this theory, managers should make unbiased predictions of future events and use them in decisions that are in their best interest). According to modern corporate finance information, investors and investors act rationally when making financial decisions. If rational behavior is assumed to be correct, managers can expect capital markets to be efficient, which means that stocks and securities are priced correctly at all times (stock prices accurately reflect general information about their underlying value). According to this theory, managers' behavior in decision-making will be based on the principle of self-interest. Given that the main role of the capital market is the redistribution of property, when price contributes to the fair redistribution of resources, Fama (1970) noted: When prices reveal complete information, the market is efficient. Recent literature research has shown that a rational assumption of the behavior of corporate executives and investors cannot be done in

reality. Empirical studies have shown that investors taking financial decisions pay attention to peripheral information or "noise" (Black, 1986). In addition, it was observed that deviations from rational behavior are not random but systematic and depend on the approach to risk assessment and uncertainty of future problems of the impact of decision-making. In this regard, the behavioral finance approach investigates the subtle facets and interactions in the human brain and how they make decisions (Jurevičienė et al., 2020: 433). However, classical economic theory believes that rational investors are predictable, unbiased, and market is efficient. Modern portfolio theory states that risk-averse investors build their portfolio by optimizing expected returns on an acceptable and known basis of market risk.

In the following, in section 2, the research background is examined. Section 3 describes the research method. In section 4, the results are numbered and analyzed, and finally in section 5, conclusions are made.

2-Literature review

Ahmed et al. (2021), using a sample of 351 companies, confirmed that the criterion of corporate investment efficiency is low in the stages of introduction and decline and it is high in the stages of growth and maturity, and in general, the process of corporate investment efficiency in stages of the company's life cycle is inverted U-shaped.

Nguyen et al. (2020) in China from 2007 to 2016 confirmed that all three risks increase significantly in the emergence, growth and decline stages because their competitive advantages, access to resources and capabilities are limited and risk is less in the maturity stage. On the other hand, cash flow fluctuations have had a different effect on various types of risk.

Researchers and behavioral finance experts have provided different classifications of behavioral biases, the following are excerpts from these classifications:

Shahrabadi and Yousefi (2007) have provided the following classification for behavioral biases:

A) Self-deception or overconfidence: it means excessive trust in knowledge and abilities;

B) Heuristic methods: a series of rules of thumb or mental shortcuts that will facilitate the decision-making process. Obviously, innovative methods will not always lead to the right decision-making;

C) Social interactions: People tend to conform to others in their decisions and judgments.

Another classification of behavioral biases is done by prospect theory. This theory encompasses four important parts of the behavioral dimension of investors that have been completed by scientists such as Thaler, Schiller, and Johnson during the 1980s: a) Losses b) Mental accounting c) Self-control d) Remorse. Kahneman and Riepe have divided behavioral biases into three classed as described in table 1:

Table 1. Kahneman and Riepe's triple divisions of behavioral biases

A) Judgmental biases	B) Preferential biases (preference or priority)	C) Biases resulting from the decision results
1. Error of overconfidence 2. Error of optimism and pessimism 3. Error of prediction 5. Error of overreaction to random events	1. Error of nonlinear probability weighting 2. Error of ambiguity in the process of value changes 3. Error of using the purchase price as a reference point 4. Error of tendency to a short-term perspective instead of a long-term one 5. Error of attractiveness in gambling 6. Error of tendency to repeat risk and gambling 7. Error of closed framework-orientation	1. Error regret aversion 2. Error of loss aversion

Based on their own studies and research, Jafari and Dolati (2009) have classified behavioral biases into four groups as described in table 2:

Table 2. Jafari and Dolati's classifications of behavioral biases

A) Heuristic behaviors	B) Formatting	C) Abnormal phenomena (economic behavior)	D) Abnormal phenomena (price and stock returns)
1. Expectations theory 2. Loss aversion 3. Status quo bias 4. Gambler's fallacy 5. Self-serving bias 6. Money illusion	1. Cognitive formatting 2. Mental accounting 3. Fixation	1. Misplacement effect 2. Endowment effect 3. Retaliation 4. Time consumption 5. Preferences with the error of limitation in time 6. Instant investment 7. Passion and fear 8. Herd instinct (collectivist behavior) 9. Sunk cost fallacy	1. Equity premium puzzle 2. Labor wage hypothesis 3. Price stickiness 4. Limits to arbitrage 5. Dividend puzzle 6. Calendar effect 7. Fat tails

In his book, Behavioral Biases and Wealth Management, Michael Pompian (2010) divides behavioral bias into two general classes as described in table 3:

Table 3. Pompian's classifications of behavioral biases

A) Cognitive	B) Emotional
1. Error of overconfidence 2. Error of availability error 3. Error of conservatism 4. Error of mental accounting 5. Error of hindsight 6. Error of cognitive inconsistency 7. Error of confirmation 8. Self-attribution error 9. Error of ambiguity aversion 10. Error of recency 11. Error of shape or frame-orientation 12. Error of representativeness 13. Error of relying and compromising 14. Error of control delusion	1. Self-controlling error 2. Error of optimism and pessimism 3. Error of regret aversion 4. Error of loss aversion 5. Error of forgiveness 6. Status quo error

3-Methodology

The present research is a type of developmental and applied research in terms of purpose and also descriptive and causal in terms of nature and method. In this study, according to a survey of organizational experts, the sample size in the present study can be selected according to the number of organizational elites and a number of companies operating in the stock market and OTC. In general, due to the high volume of the statistical population, convenience random sampling is used. The sample size using Cochran's formula is 35 people. In fact, the sample in this section was selected from the senior members of the Tehran Stock Exchange. In explaining this technique, it should be noted that since in most decisions, the elements interact with each other and there are relationships and interdependencies between decision options and decision-making criteria, and among the objectives of most research is to prioritize and identify the complicated

interactions between them, network analysis method ANP is a good method. It should be noted, however, that in this technique, it seems unreasonable to use the averaging method to obtain a weighted supermatrix, because using this method means that each cluster of criteria has the same degree of effectiveness, however, according to the results obtained from the DMATEL technique, there are different degrees of effectiveness between the criteria and, consequently, between the clusters consisting of the criteria. Therefore, the network analysis method (ENP) based on the DMATEL technique, which is called DANP, was used in order to solve this problem. In this research, fuzzy ANP technique is used to rank the components. In the classical ANP method introduced by Saaty (1996), the expert is asked to carry out pairwise comparison on characteristics of the same level in a network structure using exact numbers and ratios. The ratios provided by the expert formed the matrix of pairwise comparisons, by calculating the matrix of its eigenvalues, the weight of each of the characteristics of the same level was obtained. Many researchers believe that this type of decision is inaccurate and unreliable due to a kind of uncertainty in the expert when carrying out the pairwise comparison and allocating the ratio to it (Leung and Cao, 2000). The fuzzy numbers used in this study to form the pairwise comparison matrices proposed by Lin (2009) are listed in the table 4 (Haghighat Monfared and Rezaei, 2011).
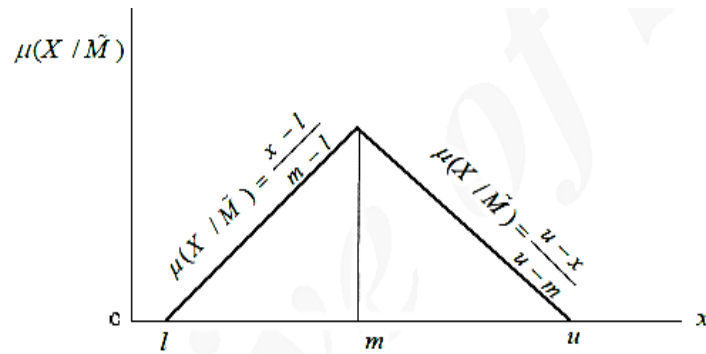
Table 4. Fuzzy numbers

Lingual variable	Fuzzy number	Corresponding fuzzy number scale
Same	$\tilde{1}$	(1, 1, 1)
Intermediate	$\tilde{2}$	(1, 2, 3)
Slightly more important	$\tilde{3}$	(2, 3, 4)
Intermediate	$\tilde{4}$	(3, 4, 5)
More important	$\tilde{5}$	(4, 5, 6)
Intermediate	$\tilde{6}$	(5, 6, 7)
Much more important	$\tilde{7}$	(6, 7, 8)
Intermediate	$\tilde{8}$	(7, 8, 9)
Strictly more important	$\tilde{9}$	(8, 9, 9)

Character (1) is placed on the symbols to represent fuzzy sets, and in fact, the most important feature of the fuzzy set is its ability to represent vague and uncertain data. The characteristic of this set is the membership function in which each member is assigned a membership rank between zero and one (Zhou et al., 1999). It should also be noted that triangular fuzzy numbers are used as a membership function, as shown in the figure. The reason for using triangular fuzzy numbers is its ease of calculation and use, which helps the decision maker to make decisions more easily (Kaufman and Gupta, 1998). A fuzzy number is a triangular fuzzy number if its membership function is as follows and is shown as (l,m,u).

$$\mu(X/\tilde{M}) = \begin{cases} \dfrac{x-l}{m-l} & l \leq x \leq m \\ \dfrac{u-x}{u-m} & m \leq x \leq u \\ 0 & \text{Otherwise} \end{cases}$$

(1)

The parameters l, m, and u represent the lowest possible value, the highest probable value and the highest possible value, respectively.

Fig 1. Display of a triangular fuzzy number

The model of this research is as follows:

Table 5. Research model and 37 variables

Row	Factor	Material
1	Economic factors	1. Information on the average interest rate on bank deposits 2. Desirability and sensitivity of the investor compared to other markets 3. Investigating the return on investment in the stock market compared to other markets 4. Tendency to liquidate stocks during the boom of other markets 5. Information on the average inflation rate and its flow 6. Effect of rising inflation on stock market indices 7. Effect of inflation on other investment options 8. Tehran Stock Exchange getting affected by international economic developments
2	Political factors	9. Following political news and its effect on the stock market 10. Influenced by the comments of domestic political officials 11. Influenced by the comments of foreign political officials 12. Following international political news 13. Investigating the effect of international organizations on market flow 14. Effect of internal political developments on stock market indices 15. Effect of foreign policy developments on stock market indices 16. Effect of Iran's political relations with other countries on stock prices 17. Effect of social and cultural developments on stock market indices

Table 5. Continued		
Row	Factor	Material
3	Market psychological factors	state of the market 20. Programs announced by managers and officials of companies 21. Recommending friends and acquaintances 22. Published news (official and unofficial) from company assemblies 23. Unofficial news from company meetings and programs 24. Rumors and news published on Internet sites 25. Comments of brokers and investment consulting companies 26. The extent of using consulting services in buying and selling stocks
4	Financial factors at the company level	27. Using financial ratios such as income price (P/E) and etc. 28. Use of and knowledge about the action of companies' balance sheets 29. Confidence in the published financial data of companies 30. Follow up on quarterly reports and data published by companies 31. Existence of a relationship between balance sheet items and corporate returns 32. Information on the risk and the stock market in question 33. Examining the previous share price flow at the time of decision making 34. Pay attention to the volume of share transactions 35. Following up the flow of institutional and major investment activities 36. Investigating the liquidity power of shares 37. Belief in following future price trends and returns from past performance

DEMATEL is a comprehensive and appropriate method for building and analyzing causal models between factors in complex problems (Wei et al., 2007). In fact, the interaction effects of a large number of factors affecting a particular problem can be categorized and organized using the DEMATEL method (Uzunovic et al., 2000). On the other hand, in the fuzzy analytic hierarchy process method, we first convert these matrices to a single matrix. One of the best ways to combine the pairwise comparison tables of all respondents is to use a geometric mean. This is because pairwise comparisons generate proportional data, and the inverse of the pairwise comparison matrix further justifies the use of this method, as it preserves the geometric mean of the inverse property in the pairwise comparison matrix. If we assume that the component $\tilde{a}_{ij}^{k}$ is related to the Kth respondent to compare criterion i with criterion j, the geometric mean for the corresponding components is calculated from the equation (2):

$$\tilde{a}_{ij} = \left(\prod_{k=1}^{n} \tilde{a}_{ij}^{k} \right)^{\frac{1}{n}} \quad \tilde{a}_{ij} = \left(\tilde{a}_{ij}^{1} \otimes \tilde{a}_{ij}^{2} \otimes \ldots \otimes \tilde{a}_{ij}^{18} \right)^{\frac{1}{18}} \tag{2}$$

4-Results

After collecting the questionnaires, the questionnaires were analyzed using fuzzy DEMATEL, fuzzy ANP and fuzzy TOPSIS techniques. The results of fuzzy DEMATEL are as follows:

Table 6. Results of DEMATEL method

	R+C	R-C		R+C		R-C
C1	2.334226415	-0.25577	C4	2.658732	C52	0.405865
C2	2.46884406	-0.12702	C3	2.64531	C24	0.370827
C3	2.645310293	0.006117	C29	2.601197	C50	0.281042
C4	2.658731579	0.043434	C19	2.594758	C36	0.267889
C5	2.193477473	0.066674	C38	2.571268	C56	0.244803
C6	2.28484417	-0.12194	C30	2.549494	C28	0.240673
C7	1.830853512	-0.01822	C24	2.544748	C19	0.230632
C8	2.413922493	0.093266	C51	2.542083	C44	0.225369
C9	2.450844739	0.161446	C32	2.539783	C14	0.221208
C10	2.390928918	0.148778	C45	2.52979	C55	0.188717
C11	2.349006829	-0.00166	C12	2.511173	C53	0.175074
C12	2.511172509	0.120557	C34	2.508717	C34	0.173503
C13	2.039997575	-0.26085	C43	2.48817	C9	0.161446
C14	2.188191947	0.221208	C22	2.488012	C51	0.156837
C15	2.188368538	-0.49863	C35	2.483766	C23	0.155723
C16	2.401495566	0.038048	C2	2.468844	C10	0.148778
C17	2.401404064	0.134883	C49	2.453676	C45	0.139024
C18	2.09105019	-0.32843	C10	2.450845	C17	0.134883
C19	2.594757989	0.230632	C23	2.447745	C12	0.120557
C20	2.324110588	-0.04844	C46	2.421222	C22	0.097391
C21	2.204627064	-0.23586	C8	2.413922	C38	0.097224
C22	2.488011652	0.097391	C16	2.401496	C8	0.093266
C23	2.447745333	0.155723	C17	2.401404	C46	0.090487
C24	2.544747825	0.370827	C56	2.39475	C5	0.066674
C25	2.236503241	-0.11083	C37	2.392931	C29	0.055677
C26	2.28586351	0.042651	C9	2.390929	C47	0.050877
C27	2.232338187	-0.15881	C47	2.354525	C32	0.043509
C28	2.314831096	0.240673	C11	2.349007	C4	0.043434
C29	2.601196515	0.055677	C40	2.34368	C26	0.042651
C30	2.549493991	0.03607	C1	2.334226	C16	0.038048
C31	1.942401444	-0.3384	C20	2.324111	C30	0.03607
C32	2.539782998	0.043509	C55	2.323403	C3	0.006117
C33	2.04478834	-0.17817	C28	2.314831	C11	-0.00166
C34	2.508717165	0.173503	C39	2.310364	C43	-0.00892
C35	2.483765833	-0.0981	C53	2.308648	C7	-0.01822

Table 6. Continued

	R+C	R-C			R+C			R-C
C36	2.250884919	0.267889		C26	2.285864		C40	-0.0183
C37	2.392930718	-0.08148		C6	2.284844		C49	-0.03252
C38	2.571267949	0.097224		C44	2.253598		C54	-0.04369
C39	2.310364285	-0.3022		C36	2.250885		C20	-0.04844
C40	2.343679931	-0.0183		C25	2.236503		C37	-0.08148
C41	2.176836112	-0.42286		C27	2.232338		C35	-0.0981
C42	2.105673877	-0.4388		C21	2.204627		C25	-0.11083
C43	2.488170448	-0.00892		C5	2.193477		C6	-0.12194
C44	2.253598471	0.225369		C15	2.188369		C2	-0.12702
C45	2.529789712	0.139024		C14	2.188192		C27	-0.15881
C46	2.421221611	0.090487		C41	2.176836		C33	-0.17817
C47	2.354525207	0.050877		C50	2.173367		C21	-0.23586
C48	2.159693233	-0.27753		C48	2.159693		C1	-0.25577
C49	2.453676217	-0.03252		C52	2.150313		C13	-0.26085
C50	2.173367103	0.281042		C54	2.146964		C48	-0.27753
C51	2.54208341	0.156837		C42	2.105674		C39	-0.3022
C52	2.150312893	0.405865		C18	2.09105		C18	-0.32843
C53	2.308647883	0.175074		C33	2.044788		C31	-0.3384
C54	2.146964389	-0.04369		C13	2.039998		C57	-0.39684
C55	2.323402537	0.188717		C31	1.942401		C41	-0.42286
C56	2.39474988	0.244803		C57	1.919883		C42	-0.4388
C57	1.919882996	-0.39684		C7	1.830854		C15	-0.49863

According to the obtained results, it can be stated that the horizontal vector (R+C) is the value of effect and the effect of the desired factor in the system. In other words, the higher the R+C factor, the more it interacts with other system factors. The vertical vector (R-C) represents the final value of the effect of each factor on the set of other factors of the system.

As mentioned before, the interactions of a large number of factors affecting a particular problem can be categorized and organized using the DEMATEL method (Uzunovic et al., 2000). In fact, this technique can not only be used as a tool to categorize the factors affecting a particular problem, but also can be a good criterion for measuring the internal communication between factors. According to the results obtained from the DEMATEL technique, there are different degrees of effectiveness between the criteria and, consequently, between the clusters consisting of the criteria. These relationships are as follows:
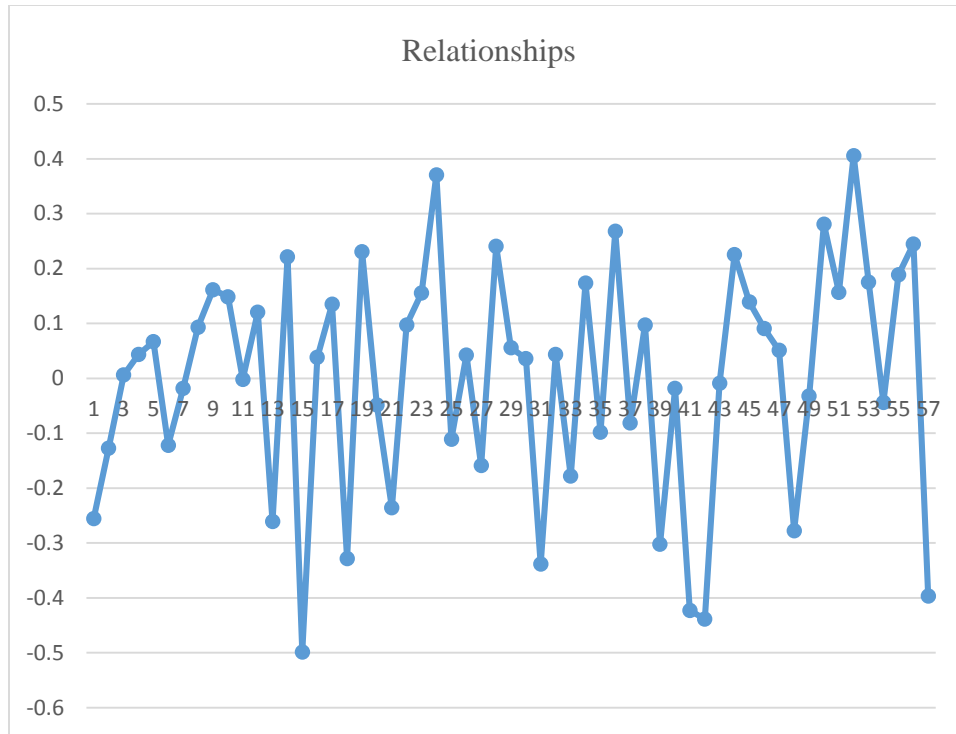
Fig 2. Effectiveness between the criteria

Following the studies, we use the fuzzy ANP technique. In explaining this technique, it should be noted that since in most decisions, the elements interact with each other and there are relationships and interdependencies between decision options and decision-making criteria, and among the objectives of most research is to prioritize and identify the complicated interactions between them, network analysis method ANP is a good method. The results of these studies are as follows:

Table 7. ANP Technique results

Row	Component	Criterion	Rank	Weight
1	Economic	Information on the average interest rate on bank deposits	7	0.103948
2		Desirability and sensitivity of the investor compared to other markets	1	0.154344
3		Investigating the return on investment in the stock market compared to other markets	3	0.144417
4		Tendency to liquidate stocks during the boom of other markets	6	0.108435
5		Information on the average inflation rate and its flow	8	0.058717
6		Effect of rising inflation on stock market indices	4	0.142203
7		Effect of inflation on other investment options	2	0.145514
8		Tehran Stock Exchange getting affected by international economic developments	5	0.141197

Table 7. Continued				
Row	Component	Criterion	Rank	Weight

Row	Component	Criterion	Rank	Weight
9	**Political factors**	Following political news and its effect on the stock market	1	0.201131
10		Influenced by the comments of domestic political officials	5	0.109824
11		Influenced by the comments of foreign political officials	2	0.146902
12		Following international political news	4	0.11138
13		Investigating the effect of international organizations on market flow	8	0.043291
14		Effect of internal political developments on stock market indices	7	0.09404
15		Effect of foreign policy developments on stock market indices	3	0.145896
16		Effect of Iran's political relations with other countries on stock prices	6	0.109505
17		Effect of social and cultural developments on stock market indices	9	0.037137
18	**Market psychological factors**	News published in newspapers and magazines	3	0.145912
19		Comments of stock exchange officials on the future state of the market	6	0.098424
20		Programs announced by managers and officials of companies	1	0.184364
21		Recommending friends and acquaintances	4	0.144958
22		Published news (official and unofficial) from company assemblies	8	0.058019
23		Unofficial news from company meetings and programs	7	0.073093
24		Rumors and news published on Internet sites	5	0.115335
25		Comments of brokers and investment consulting companies	2	0.158858
26		The extent of using consulting services in buying and selling stocks	9	0.021037
27	**Financial factors**	Using financial ratios such as income price (P/E) and etc.	7	0.075102
28		Use of and knowledge about the action of companies' balance sheets	1	0.159318
29		Confidence in the published financial data of companies	2	0.142918
30		Follow up on quarterly reports and data published by companies	8	0.063266
31		Existence of a relationship between balance sheet items and corporate returns	9	0.062472
32		Information on the risk and the stock market in question	11	0.055418
33		Examining the previous share price flow at the time of decision making	3	0.103642
34		Pay attention to the volume of share transactions	10	0.059378
35		Following up the flow of institutional and major investment activities	4	0.100511
36		Investigating the liquidity power of shares	5	0.091023

Row	Component	Criterion	Rank	Weight
		Table 7. Continued		
37		Belief in following future price trends and returns from past performance	6	0.086952
38		Error of overconfidence	14	0.049846
39		Error of availability error	10	0.060474
40		Error of conservatism	6	0.067159
41		Error of mental accounting	12	0.054479
42		Error of hindsight	5	0.072103
43		Error of cognitive inconsistency	13	0.05273
44	**Cognitive factors**	Error of confirmation	1	0.107759
45		Self-attribution error	3	0.097072
46		Error of ambiguity aversion	2	0.100456
47		Error of recency	8	0.066111
48		Error of shape or frame-orientation	4	0.084948
49		Error of representativeness	9	0.06267
50		Error of relying and compromising	11	0.057544
51		Error of control delusion	7	0.066649
52		Self-controlling error	2	0.244118
53		Error of optimism and pessimism	1	0.340012
54	**Emotional factors**	Error of regret aversion	3	0.176048
55		Error of loss aversion	4	0.133469
56		Error of forgiveness	5	0.067745
57		Status quo error	6	0.036131

Finally, the main components of the research were ranked, the results of which are as follows:

Table 8. Criteria ranking

Criterion	Rank	Defuzzificated weight	uw_j	mw_j	lw_j	$\tilde{W}_j$
Self-controlling error	2	0.244118	0.238195	0.243098	0.254123	$\tilde{W}_1$
Error of optimism and pessimism	1	0.340012	0.326563	0.34499	0.333549	$\tilde{W}_2$
Error of regret aversion	3	0.176048	0.178098	0.175175	0.177491	$\tilde{W}_3$
Error of loss aversion	4	0.133469	0.133795	0.133691	0.132255	$\tilde{W}_4$
Error of forgiveness	5	0.067745	0.073687	0.067039	0.064624	$\tilde{W}_{‘5}$
Status quo error	6	0.036131	0.034803	0.036006	0.037959	$\tilde{W}_{‘6}$
Judgment consistency rate						0/0214

And given that the calculated consistency index is much less than 0.1, it can be said that the pairwise comparisons of the group in the matrix of the table have good consistency and the model is completely significant.

5-Conclusion and suggestions

Findings of the present research suggest that political factors are of great importance for investors. In general, one of the characteristics of the capital market of any country is being affected by political issues, and sometimes these effects can be very complex and multifaceted, and maintain their impact for a long

time. Political risks cause investments to decline and people to make more decisions out of excitement and emotion rather than to thoroughly investigate the situation and consider different dimensions. Many studies show that political risks affect the stock markets of developed countries more than the stock markets of developing countries.

These factors especially have determinative importance in Iran because the speed of changing laws and regulations is very high in Iran. The behavior of shareholders in the Iranian capital market accepts a dual effect from political news that needs to be followed carefully. The first is the fluctuations of the dollar price in the free market and the second is the negative effect of systematic political risk on stock prices. Now, based on the issues raised and considering the investigated factors, paying attention to the following can be helpful: It is suggested that the government focus more on expert activities in the main body of the government. It is also suggested that the government improve the emotional state of the market by increasing the management of investment risk control in the capital market by attracting new capital and increasing the liquidity of securities, as well as creating stock exchanges for large market shares. In this regard, the government can also reduce government ownership by preventing the politicization of the stock market and, consequently, by reducing political tensions in society and preventing political comments, by socializing economic activities through transferring shares of state-owned companies in a gradual process. In this research, it was found that economic factors can affect the investment behavior of investors. For example, with the increase of the construction budget (realized), part of the budget funds will be spent on contracting companies contracted by the government and another part will be spent on purchasing materials and capital products for state-owned companies from private sector companies. The combination of the above two cases improves the financial situation of the contracted companies, and the shares of some of these companies are listed on the stock exchange and traded by the shareholders. On the other hand, if the increase in money volume is the result of the government budget deficit, it can have a negative effect on stock prices. As a result, the variable of money volume can have a positive or negative effect on changes in the price index. Therefore, economic factors can be considered a very important component in this field. According to the monetary theory of inflation, the continuous increase of liquidity at a rate greater than the product of the growth rate of real income and the elasticity of demand for money is a necessary and sufficient condition for continuous inflation. On the other hand, some believe that increasing liquidity can increase the demand for investments, including stocks, therefore, the relationship between liquidity and indicators should be positive (Karimzadeh et al., 2013). Hence, it is suggested that the rules and regulations governing the stock market be formulated and implemented in such a way that the results put the country's economy on the path of growth and development. Allocating appropriate credits can be very effective to support the industrial sector and encourage them to participate more effectively in the stock and OTC markets and to invite Iranian investors abroad to create economic prosperity, increase competitiveness and raise the level of liquidity. It is also suggested to stabilize the existing conditions and increase the attractiveness of the capital market and reduce investment risk by stabilizing macroeconomic indicators. Because these factors increase the percentage of liquidity absorption and luck of this market compared to competitors such as the housing market and foreign currencies. Another factor affecting the decision of shareholders is the psychological component of the market. In classical finance theory, investors are assumed to be rational. Also, according to the efficient market hypothesis, stock prices reflect all company information. On the other hand, the emotional decision of investors in the capital market causes stock prices to deviate from real (fundamental) prices. For example, when the index is sharply declining and negative, and every day puts the high numbers of negative and red in front of the eyes of market participants, it automatically issues the command to the minds of people that capital is disappearing and there is more possibility for falling prices, so traders, especially inexperienced people from one point start emotional trading and sell their stocks at high losses, which in turn leads to a more negative overall market and intensifies liquidity outflow. Such emotional behaviors can severely damage the market as a whole. Now, accordingly, some suggestions are made. The government and regulators in general can control emotional behaviors by reducing the risk of market fluctuations by developing corporate financial performance analysis and providing information in this regard. In fact, providing complete and transparent information to investors and shareholders will lead to correct and timely decisions in the capital market, and in addition,

taking training and counseling as a national duty by the development staff of the stock exchange organization can help control these behaviors.

5-1-Future suggestions

The title of the present research is designing and explaining the decision-making model of shareholders with a comparative approach to classical finance and behavioral finance in the capital market. In this research, using effective decision-making methods and techniques, the effective components were identified and the model was explained. For future studies, it is suggested to examine each of these components on the market using statistical and regression techniques by collecting the available data and the proposed model. Also, using the existing model, it is possible to investigate the predictability of the market in similar conditions by using meta-heuristic algorithms such as neural networks.

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