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Behavioral-psychological pattern of investors to make decisions based on environmental drivers in the Tehran Stock Exchange

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Abstract

Investors' behavior is subject to actions and environmental factors in various political, legal, regional, security, etc. dimensions that can make the investment field undergo fundamental changes. Since looking into the future is inevitable and necessary in all economic categories, in the field of investors' behavior, it is possible to pay special attention to their financial and economic developments in a futuristic manner in the direction of development. Conceptual and formative model of behavioral-psychological investors for decision-making based on environmental drivers, the researcher, while describing, explaining and modeling, seeks to identify indicators and components that play the role of investors' behavior in development. They determine the attitude and beliefs of investors. This qualitative research is based on the foundation data method and with the Strauss-Corbin approach and semi-structured interview tool to present a conceptual model in order to investigate the behavior of investors in a prospective manner through interviews with 15 experts who were selected by the snowball method, within the scope at the height of the call from different sections of society to attend the stock exchange, i.e. from 2018 to 2022. The result of the research led to the presentation of 130 concepts and 14 categories, which were presented in the form of a paradigm model, and finally, in order to ensure the reliability of the tool, the within-subject agreement method was used, and the results obtained indicate the reliability of the tool. It was presented for use by investors, brokers, and policymakers of the Tehran Stock Exchange.

Keywords: futurist, behavioral, psychological, investors, environmental drivers
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1 Introduction

Proponents of "behavioral finance" knowledge firmly believe that the knowledge of "psychological tendencies" in the field of investment is absolutely necessary and requires serious development of the field of study, and for those who consider the role of psychology in financial knowledge as a factor affecting the securities markets. And the decisions of investors take it for granted, it is difficult to accept the existence of doubts about the validity of "financial-behavioral" [29]. In other words, behavioral financial knowledge describes real human behavior in economic decisions [5]. For

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small investors, making investment decisions is very important and can lead to huge profits and losses. Therefore, the investor should be aware of the factors influencing these decisions in his decision making. Many factors can be effective in the investor's decision, including economic and psychological factors. Before investing, investors know about economic factors such as expected income, financial statements of companies, recent price movements, risk, returns, etc. But most of the investors are not able to correctly evaluate all these things. Psychological factors have important effects in decision-making, because people tend to like or dislike something [23] Today, such behaviors are also considered in financial transactions because it plays an important role in decision-making. There is no doubt that investors act with the emotions of the market, but they also use their personal emotions [1]. Investigating the behavioral patterns among investors in the stock market is necessary and necessary in order to prevent irrational and disruptive behavior in the capital markets [27]. Contrary to neoclassical theories, economic agents are not rational and because of their preferences or due to errors Cognitively, they do not behave completely rationally. Non-rational factors such as personality traits, culture, religion, ideology, feelings and opinions of others are among the factors that play a significant role in people's behavior and reactions in different decision-making situations [21]. It enables companies to increase their value and manage risk in an effective way. These activities increase the profitability of companies by reducing operating and final costs, as well as reducing uncertainty about stock market returns [4]. One of the realities in the investment environment and in the financial markets is the risks arising from the future. And it is possible that investors have different perceptions of this phenomenon. In many financial models, it is assumed that people are risk averse. In financial models, risk aversion usually exists symmetrically, that is, both in terms of earning profit and bearing losses; While behavioral finance theories believe that risk aversion in profit and loss is different from each other. In particular, people give much more weight to a specific loss than to a similar gain [6]. Perception is like beauty in that it depends on the sight of the perceiver. So that the positive vision covers all the defects and the negative vision reveals the defects [26]. Paying attention to the possible risks in the future of investment has led many shareholders to identify the drivers and environmental stimuli so that they can determine their investment horizon [13]. Behavioral pattern is one of the dimensions of behavioral finance, which is actually the subjective judgment of investors about risk, which may be estimated to be higher or lower than the actual risk [22]. Various models are used to measure investors' feelings towards future returns and risks There is. Jering and Martinez [19] used the option implied volatility index with adjustments to measure options market sentiment, which is called the risk sentiment index. Ebrahimi Lifshagerd, Pakizeh and Raisifar [15] stated that in a situation where investors are worried or fear surrounds them, real information does not solve their problem and a not so important phenomenon causes them intense irritation and unconventional actions They show that such actions are not common in normal conditions and in these conditions investors' emotions have overcome their rationality and cause systemic problems in the stock market and investors' emotions and moods as well as behavioral and cognitive biases always prevail. Their perceptions have an effect, and for this reason, they are also effective on investors' decisions [15].

Investment decisions and behavior without considering environmental drivers may have errors. The decision of what kind of behavior the investor will show at what point of time and in the face of environmental drivers is appropriate to the behavioral, emotional and cognitive characteristics of the investor. According to the surveys carried out inside the country, no research has been observed in the field of presenting the behavior pattern of investors considering the environmental drivers, therefore, this research seeks to answer the question that the behavioral pattern of investors What is the direction of decision-making based on environmental drivers? Therefore, the present research is conducted for the first time in Iran and with a different perspective to present a behavioral model in the face of environmental drivers, which shows the innovation of this research.

2 Theoretical foundations and research background

Jabari Khozani et al [18] concluded in their research that the majority of investors' decisions are based on appearances, overconfidence, emotional and social obligations, social pressures, lack of procedural stability, low self-esteem and mental structures. be made Parbari and Akbari [16] stated in their research that variables such as reliance and adjustment, adaptability, familiarity, self-documentation, empowerment, etc. influence the behavior of investors. Chavoshi and Flatunnejad [10] concluded in their research that a significant difference was discovered between the importance of the types of decision-making behavior of investors in the research model, which based on the importance of 1- validation behavior, 2- analytic behavior, 3- searching behavior and 4- behavioral tendencies. Bashiri Manesh and Shahnazi [8] in their research in order to investigate the effect of the bias of the behavior of investors and managers on the stock price bubble with the multivariate regression method with combined data came to the conclusion that the behavioral distortions of investors (emotional and herd behavior) And managers' behavioral biases (excessive myopia and narcissism) lead to an increase in the gap between the inherent price of stocks and the market value of stocks and lead to the creation of stock price bubbles. In a research conducted by Bahgirit and Esmailzadeh Moghri [9] in order to investigate the impact of investors' emotional behavior with the moderating role of public trust on stock prices, researchers found that investors' emotions and public trust on the stock price of the stock exchange. Tehran has a significant effect. Abdul Rahimian et al. [2] concluded in their research that the most fundamental factor in investors' behavior is the culture factor. Cognitive distortions precede emotional distortions (structural theory) which, along with the influence of the personality factor, causes mass behavior in the decision-making of real investors. There are many distortions and irregularities in the trading behavior patterns of investors, which affect the market value of companies' shares [3] Alabass. Petit et al. [24] found that the behavior caused by the emotions and feelings of investors can change the direction of group decisions and change the investment behavior of individuals. Today, there are different methods and tools that are used in some cases to change the behavior of investors. Barzegari Khanqah et al. [7] concluded in their research that there is a meaningful relationship between participation in the stock market and stock selection and the use of mass media, and also investors choose stocks and investments more than the Internet and media. They use collectives. Raki et al. [25] in their research, using the factor-based computing method and modeling an artificial stock market, presented a behavioral model to show the effect of behavioral distortions on the dynamics of the stock market, and the results of the simulation of the artificial stock market included The two groups of fundamental and non-fundamental traders with loss aversion behavior showed that this behavior gives them part of the dynamics of financial markets and plays an important role in the formation of financial market prices. Farhadi Sharif Abad and Doa'i [17], in a research that they conducted with the Fuzzy Delphi method and Dimtel, presented a model for investors' tendencies with an emphasis on psychological factors. Behaviorally, investors may be irrational and cognitive bias or psychological factors of investors are effective on their decisions, this research showed belongingness, self-reference, ambiguity avoidance, overconfidence, mental accounting, regret avoidance, conservatism , the illusion of control, foresight, optimism, herd behavior, pessimism, extreme reaction and short-sightedness are among the influencing factors of investors' tendencies, with emphasis on psychological factors, which are the final model of the psychological tendencies of investors in the Tehran Stock Exchange. are known In a research by Mahboubi et al. [20] to explain the effect of some macroeconomic indicators on stock return fluctuations, the SVAR structural vector autoregression model was used, and it was found that exchange rate and interest rate fluctuations have a positive and significant effect on stock returns, as well as production GDP per capita has not had a significant effect on stock returns.

With the summation and investigations carried out in various domestic and foreign researches, including [14, 11, 4, 13, 6, 27, 4, 26], in their research, according to behavioral finance theories, the following pointed out:

- The effect of cognitive manipulation, such as agent intuition and overconfidence in stock prices and returns;
- Positive relationship between behavioral index and stock price and past returns;
- The relationship between investors' cognitive behavior and stock prices;
- The relationship between education and raising awareness about behavioral and cognitive abuses, attitude and environmental behavior;
- The effect of mood on investors' investment performance;
- The effect of emotions on the investment performance of investors;
- Presenting innovative methods on the investment performance of investors;
- Limitation of arbitrage on portfolio returns at different levels of excess cash;
- The effect of emotional intelligence on financial decision-making;
- Investigating investor sentiments plays an important role in explaining trading behavior;
- Cognitive biases over emotional biases;
- The personality factor on the emergence of mass behavior in the decision making of real investors;
- Institutional investment control over investors' performance;
- Investigating investors' behavior on portfolio selection;
- Checking the order frequency of the individual on overconfidence

3 Research methodology

In this research, among the qualitative research methods, the foundational data theory method was used. Grounded theory or data foundation theory is an exploratory research method and allows the researcher to formulate a new hypothesis in cases where it is not possible to formulate a hypothesis instead of using his predefined hypotheses. In other words, fundamental data theory is a method to gain knowledge about the subject under study, the subject or subjects that have not been comprehensively researched before and our knowledge in that field is limited; Grounded data theory is a general research method for generating theory. The purpose of this method is to present a theory derived from data that has been systematically collected and analyzed during the research process. In this strategy, the collection and analysis of data and the theory that is finally deduced from the data are closely related to each other. Instead of starting his study with a preconceived theory, the researcher starts with a specific field of study, allowing the theory to emerge from the data. A theory derived from data is more likely to represent reality than a theory that is the result of a series of concepts based on experience or mere reflections, and since the foundation data theory is derived from data, it can provide a complete guide by creating deeper insight and understanding. to be for action [12]. This research is categorized as causal research in terms of method and as fundamental research in terms of goal. In order to extract information and study codes, 15 people were interviewed through the snowball method until theoretical saturation was achieved. They worked in Tehran and had expertise and education in the fields of financial management, financial engineering, accounting and economics. In this research, in order to ensure the reliability of the tool, the within-subject agreement method was used, and after conducting the interviews, one of the experts was requested to code three interviews as a researcher's colleague (coder) after the required training. to do

4 Data analysis

Through open coding, 130 concepts were obtained, and 14 subcategories were formed by classifying these concepts. Based on this, the relationships between the main categories and the paradigm model were formed in line with the conceptual development and behavioral-psychological development of investors to make decisions based on Iran's environmental drivers. Finally, the revealed categories were designed in the form of 6 dimensions of the foundation's data theory paradigm model; Table 1 shows an example of open codes obtained through interviews with experts.

Table 1: Sample of open codes obtained from interviews with experts

interviewee	Initial code	Interview text (key points)
The first interviewee	Turning risk-taking shareholders to basic and liquid stocks	People with moderate risk tolerance turn to basic and liquid stocks; So that if the stocks maintain their prosperity, they will benefit from its profit or in case of unpredictable events, they will keep their capital safe from heavy losses.
The first interviewee	Risks and possible risks in the future	Shareholders make financial decisions considering possible risks and risks in the economic and security future of the country.
The second interviewee	Attention to the future and return on investment	One of the most important aspects of investment is to pay attention to the future and return on investment.
The second interviewee	Mass behavior of investors	In Iran, due to the fact that investors and shareholders behave in a mass manner, they associate investment with high risk.
The second interviewee	Risk-averse shareholders towards stocks with high volatility	Risk-averse investors move towards stocks with high volatility. This category ignores the possibility of heavy losses in the hope of obtaining maximum profit.
The third interviewee	Examining all aspects of investment and planning	If a trader has examined a share from all aspects before buying it and has drawn the loss limit and profit limit and the path for himself from the beginning, he will never have an emotional behavior and sell his share at a loss with a negative trend of the share. to be
The fourth interviewee	herd behavior and not using analytical methods in the capital market	When the shareholders join the crowd and make short-term profits, they may forget their strategies and analytical methods under the influence of this success.
The fourth interviewee	Mass behavior	The investor can follow the behavior of the crowd and on the other hand, when the collective behavior is contrary to their analysis and evaluation, it is better to avoid following others without support and exit the market immediately.
The fourth interviewee	Cognitive emotions of investors	Emotions such as satisfaction, trust, happiness, etc., are among the emotions that cause the stock market to grow sharply. For people affected by these feelings, it doesn't matter how effective a positive news is in reality.
The fifth interviewee	Investment security and behavioral risk control	Investors can be effective in controlling their behavioral risk to the extent that they feel safe. The higher the feeling of security, the higher the amount of investment in the capital market, and the lower the feeling of security, the person feels hesitant and more cautious.

The fifth interviewee	Fear of the future	The feeling of panic, in the case of fear specifically, and anxiety as a general general response both share a key form of the experience of uncertainty, where a person, feeling vulnerable and helpless in the face of potentially negative events, decides to flee.
The fifth interviewee	The right investment strategy	If investors do not have the right investment strategy in the capital market, they will suffer from extreme emotional behavior, anxiety and constant worry.
The sixth interviewee	The necessity of investing in high-risk programs	Investors will be reluctant to invest in high-risk programs that are necessary for growth when they are unable to properly assess the amount of risk they are facing.
The sixth interviewee	Psychological foundations of investment	Every investment, based on psychological foundations, is subject to biases that affect his reactions when faced with phenomena and making decisions.
The seventh interviewee	Refusing to obey others without support	The investor can follow the behavior of the crowd and on the other hand, when the collective behavior is contrary to their analysis and evaluation, it is better to avoid following others without support and exit the market immediately.
The eighth interviewee	Prioritizing news trends	When the market is negative, no matter how important a positive news is for the stock market, most people ignore it and vice versa for positive news in the negative market.
Ninth interviewee	Compliance of investors from each other	Investors follow each other and buy or sell a particular share without sufficient investigation, and as a result of this behavior, long buying or selling queues are formed. This event is one of the examples of certain behavioral patterns that dominate the market Every investment, based on psychological foundations, is subject to biases that affect his reactions when faced with phenomena and making decisions.
	Investment behavior pattern	
	Psychological foundations	
	Exposed and subject to biases	
10th interviewee	Investors' confidence in themselves	Some other investors tend to go their own way. These people make their own decisions by carefully studying things and having a certain level of confidence. If investors overcome their irrational behavior and manage it, they will master this behavior and finally reach their financial goals by making correct and logical decisions.
	Overcoming irrational behavior	
	Identification of sales and supply prices	
11th interviewee	Investors' short-term perspective	By examining different economic situations, investors act to identify sales and supply prices.
The twelfth interviewee	Weakness in perceptive and scientific view	The behavior of investors with the time horizon of their investments is very important, and if investors enter the market with a short-term perspective, they will definitely suffer from fear and anxiety, low and short profits without knowledge and awareness, and the capital market will be They are not considered as a long-term market
The 13th interviewee	The behavior of investors comes from a negative mindset	Investors and shareholders in the stock exchange have more of an emotional view than a perceptive and scientific view of the market's performance.
The 13th interviewee	Demographic characteristics of investors	Some investors show a behavior that originates from a negative mentality towards environmental factors that these people act differently towards buying stocks.
The fourteenth interviewee	Investment rules and regulations	Demographic characteristics such as gender, age, level of education and income and expenses of individuals, field of study, university of study, city of study, population of the region and city and other such characteristics affect the behavior of investors. Gives.
The 15th interviewee	Relying on past events	Investment laws and regulations can effectively influence the analysis and behavior of investors and affect their risks in the field of investment.

Open coding: the process of analyzing and naming concepts, classifying and discovering their characteristics and dimensions in the data through continuous comparison [28] In this research, the interviews were analyzed line by line using the data theory of the Foundation. In the end, 130 concepts were extracted. In response to the first question of the research, the categories related to causal conditions, central phenomenon, contextual, intervening, strategies and related consequences have been presented.

Causal factors: these conditions cause the creation and formation of the nuclear phenomenon or class [28] The codes related to them are as described in Table 2:

The central phenomenon: the main incident or event of a series of mutual actions to control or manage it and it is related [28] The central category of this research is the behavioral-psychological model of investors for decision-making based on environmental drivers, which characteristics It is related to it as described in table 3:

Background factors: It indicates a series of special characteristics that indicate the phenomenon. In other words, it is the location of incidents or events related to the phenomenon along a dimension where interaction is done to control, manage and respond to the phenomenon [28] Its characteristics are as described in Table 4:

Intervening factors: general factors that affect the processes and strategies. to the conditions that cause intensification or weakening of the phenomena. These conditions are described in table 5:

Table 2: Open codes and categories related to causal factors

Subcategories	Components	Causal factors
Emotional behaviors against risks, behavior and feelings of investors, inner courage based on instinctive feelings or deep fundamental feelings, a wide range of feelings or emotional states, mass movements or crowding, having high emotions, emotional and mass decisions, emotional behavior Investors, behaviors arising from feelings and emotions, hasty and fast behaviors, priority of feeling over rationality of shareholders	Behaviorism and sentiment analysis of investors	
Looking at the business environment from a different perspective, understanding the investment phenomena in the capital market, knowing and understanding the different investors, abundant knowledge and years of experience, following and obtaining financial information, using analytical methods in the capital market, increasing awareness and trading knowledge, Financial knowledge of shareholders, examining all aspects of investment	Perceptive and scientific discernment of investors	

Table 3: Open codes and categories related to the central phenomenon

Subcomponents	Components	central phenomenon
Behavioral evaluation of investors, behavioral analysis, behavioral monitoring of investors, analysis of investors' emotions, paying attention to the emotional behaviors of investors	Behavioral-psychological decisions of investors	

Table 4: Open codes and categories related to contextual factors

Subcomponents	Components	Background factors
International communication, removal of sanctions, joining international protocols, financial platforms, establishment of financial systems in the international arena, upgrading the level of foreign relations, economic openings, growth of foreign investment, regional security, sovereignty demand	Positive drivers	
Inflation rate, inflation expectations, embargo, regional events, social unrest, war, spreading rumors, spreading lies, seduction in social networks, speeches of officials and decision makers, natural and social events.	Negative drives	
The country's financial rules and policies, central bank rules, government requirements, financial rules in the stock market, the laws of the people of the world, and the rule of law regarding the capital market.	Requirements and rules	

Table 5: Open codes and categories related to intervening factors

Subcomponents	Components	interfering factors
Investors' different reactions, investors' exploits against environmental scandals, investors' happiness and intoxication during the market rise, behavioral resistance, investors' changing behaviors, investors' fear and anxiety, shareholders' fear and greed, fear, worry, anger and ... in times of market decline, behavioral abuses in the decision-making process, investors' behavior stemming from negative mentality, irrational behavior	Behavioral implications of investors	
People's and society's culture regarding investment, different opinions of people regarding the necessity of investment, religious view on the category of investment in the stock exchange,	- Government economic policies	
Investors' bias, investors' bias, investors' mass behavior, stubbornness with the capital market		

Table 6: Open codes and categories related to strategies and consequences

concepts	Subcategory	main factor	
Long-term perspective of investors, short-term strategy of investors, time horizon of investors, conservative strategies of investors, collective strategy of investors	Strategic development of investors	Strategic financial planning	Strategies
Rational decisions, how to make decisions in different situations, emotional and mass decisions, following group decisions by shareholders, being influenced by investors' decisions.	Strategic thinking of investors	Improving the level of perception of investors	consequences

After studying the theoretical foundations and analyzing the interviews, the main and subcategories were formulated as follows

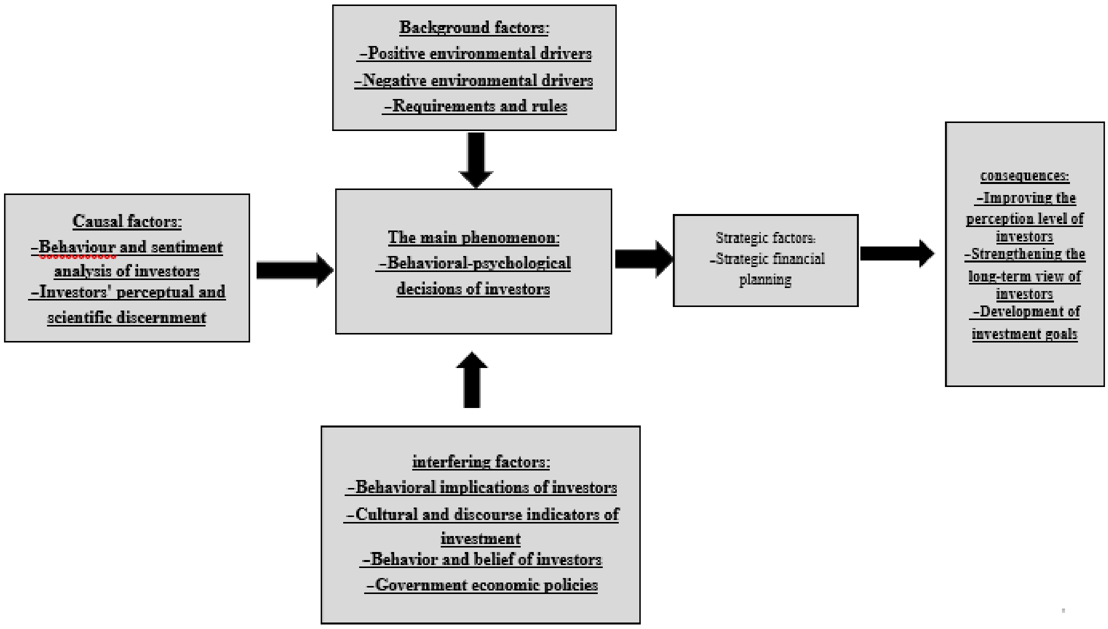

Figure 1: Research paradigm model

Finally, in this study, to ensure the reliability of the tool, the within-subject agreement method was used. For this purpose, one of the experts was asked to code three interviews as a researcher's colleague (coder) after conducting the interviews. Finally, the extracted codes were compared by the researcher and the researcher's colleague. In this method, if the index number is more than 0.6, it indicates the reliability of the tool, the information related to coding from the within-subject agreement method and the amount of agreement resulting from coding in each interview as well as the reliability of the interviews are given in Table 7. Is.

Table 7: Results of the reliability check between two coders

index (percentage)	agreements	Number of codes	interview	Row
78%	22	28	Third	1
72%	23	32	Eighth	2
75%	27	35	twelfth	3
75%	72	95		Total

5 Discussion and conclusion

According to the research, financial markets are affected by the reactive behavior of the investors of these markets, but it is clear that not paying attention and ignoring the behavior of individual investors in the Tehran Stock Exchange can cause great damage to this market. Growing and also the investors of this market. Also, future interventions, environmental drivers, etc. can affect the investment process in the capital market by stimulating behavioral tendencies. By examining the behavior of investors in a limited period of time, it shows that their behavior is based on changes and developments that are caused by environmental drivers and various actors such as economic actions including currency fluctuations, increase in commodity prices. industrial, increase in insurance, increase in bank interest, etc., political actions including international sanctions, political resolutions, internal disputes among the country's parties, words and positions of politicians, etc. Social actions include gatherings of popular institutions, protests, popular emotions, etc., and regional actions include war, famine, diplomatic relations, etc., all of these drivers and activists in changing behavior The investment has been effective. In the current research, the researcher examines and analyzes the environmental drivers as a driver in influencing the investors' behavior in the future time horizon, and the effective factors in the investors' decision-making through theorizing. It examines based on external stimuli.

The present study tried to answer the question of using the approach of data base theorizing and document analysis, what is the psychological-behavioral pattern of investors to make decisions based on environmental drivers? The conceptual model of the research, based on the conducted interviews, included 6 categories of factors. In the form of the presented model, the central phenomenon that has the most references in the coding includes the psychological-behavioral decisions of investors, causal factors including behaviorism and analysis of investors' feelings, and the perceptual and scientific recognition power of investors, which can be determined through research and Jafari [11] considered the same, background factors including positive environmental drivers, negative environmental drivers and requirements and laws, intervening factors including investors' behavioral suffixes, investors' cultural and discourse indicators, and investors' behavior and beliefs that These factors are in line with the research of Mirbazari et al. [21] and Abdur Rahimian et al. [2], which were mentioned in the text of the article, strategic factors include the financial strategic planning of investors, and impact factors include improving the level of perception of investors, strengthening the long-term capital Investors and the development of investment goals.

According to the obtained results, the following suggestions are presented for the use of Tehran Stock Exchange activists and policy makers in this area:

- The behavior of investors according to their demographic characteristics, including the level of education, gender, expertise, etc.;
- Guidance and guidance of investors based on their risk-taking approaches;
- Paying attention to negative and positive external stimuli by investment companies;
- Paying attention to the perception and knowledge of investors in facing environmental risks;
- Discourse creation and cultural creation of the way of investment according to environmental risks;
- Explaining the behavioral characteristics of investors in the capital market;
- Identification and behavioral output analysis of investors in the capital market.

Suggestions for future research include the following:

- Investigating how investors face environmental risks in the field of investment;
- Identifying and prioritizing effective factors on reducing investment losses in the Tehran Stock Exchange from a behavioral perspective;
- Complications of emotional behavior of investors in the face of environmental risks;
- Providing preventive strategies in facing environmental risks by investment companies.

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