



Applied-Research Paper

Presenting and Explaining the Model of the Role of Behavioral Characteristics and Financial Literacy of Real Investors on Their Financial Management Components in the Iranian Capital Market

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ABSTRACT

The aim of this study is to introduce and elucidate a paradigm model that outlines the role of behavioral characteristics and financial literacy among real investors in shaping their financial management behavior in the Iranian capital market. To achieve this goal, a 77-item questionnaire, developed through qualitative studies employing the grounded theory method, was employed. The model's chi-square value stands at 3946.370, with a degree of freedom equal to 2174, resulting in a value of 1.815. The original model's fit indices are all at acceptable and appropriate levels. Behavioral characteristics and financial literacy emerge as significant predictors of financial management behavior, enabling real investors to assess stock market trends before making decisions. This, in turn, contributes to investment profitability, financial security, and capital satisfaction.

1 Introduction

The issue of behavioral finance is one of the new topics that has been raised by some financial thinkers over the past four decades and has quickly attracted the attention of professors and students in this field around the world. In investment issues, the type of decision-making of investors and the factors influencing their decision-making is very important. Financial theories and theories have taken two different approaches in recent decades. The first approach is the neoclassical approach in financial sciences. The basic premise of financial theories and theories according to this approach is market efficiency and rational behavior of investors in the market.

This approach began with the Capital Asset Pricing Model (CAPM) and the Efficient Market Theory (EMH) in the 1960s, and the Medium-Term Capital Asset Pricing Model and the Miller and Modigliani Arbitrage Pricing Theory (APT) in the 1970s [1-12]. Over time and through various studies, researchers have noticed many movements and turmoil in financial markets that could not be justified using efficient market theories. This led to the emergence of a behavioral revolution in financial discourse with

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the Kaneman and Torsky research. Financial theories and theories according to this approach have addressed the point that investment decisions are not only affected by economic indicators and rationality but also other factors have a significant impact on their behavior and type of decisions [16]. Considering the importance of "behavioral characteristics" and "financial literacy" in financial management, in this dissertation, this important issue is addressed as a model for the role of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market [13-24].

2 Theoretical Foundations and Research Background

The issue of investor behavior has a special place in the financial literature because investors in the securities capital market may exhibit different behaviors that are influenced by various factors such as information and financial literacy [19]. Psychological research has documented a wide range of behavioral tendencies (biases) in the decision-making process. These biases can affect a variety of decisions and have specific consequences for financial and investment issues [9]. Over time and through various studies, researchers have noticed many movements and turmoil in financial markets that could not be justified using efficient market theories. This led to the emergence of a behavioral revolution in financial issues. According to this approach, financial theories and theories have argued that investment decisions are not only influenced by economic indicators and rationality but also other factors that have a significant impact on their behavior and type of decisions, all of which give rise to Behavioral financial science [19]. In the above, Siri well illustrates the role of "financial literacy" and "behavioral characteristics" in "financial management behavior" and "investment decision making". Therefore, in the present study, we will address this issue and seek to develop a relationship model between the mentioned variables. Therefore, the main question of the present study is: What is the model of the role of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market?

Most economic and financial theories are based on the assumption that investors act in a completely rational way when making decisions, which is consistent with the "rational economic man" theory. Investors consider all aspects when investing and make the most rational decision, But the problem is that the concept of a rational man is not a completely clear and unambiguous one, and human decisions deviate in some way from the standard assumptions of economics. Most decisions are difficult; Because psychological factors also contribute to this process. Sometimes factors lead to irrational behavior and influence how they make decisions, which indicates the inefficiency of financial markets. Sometimes conditions arise that deprive the decision-maker of the possibility of rational behavior [21].

In recent decades, the challenge of economic theories and theories based on the principle of the concept of economic man has led to increased attention to behavioral and psychological aspects among financial researchers and new approaches in the form of behavioral financial paradigms. A paradigm in which the human assumption as a rational being that is always successful in optimizing its interests is questioned. In fact, behavioral finance seeks to explain what, why, and how to finance and invest from the perspective of a normal human being. For example, financial behavior with the study of financial markets seeks to provide reasons and explanations for irregularities, speculative bubbles, and severe falls in these markets [3]. The behavior of the masses indicates the human tendency to behave like others. There are many reasons why investors who seek to maximize their profitability or profitability are impressed by the observation of others. For example, others may have information about the return on investment that their performance contains. Another reason can be the innate desire of individuals to

accompany the group [8]. Financial literacy is a set of knowledge of understanding finance that includes the study of financial phenomena, their nature, laws, and relationships [43]. The following are the researches that are related to the subject of this research.

In a study conducted by Mali et al. [23] under the title of designing and explaining the pattern of reducing the consequences of financial behavioral distortions effective in the banking system recession, the main purpose of this study was to design a model to reduce the consequences of effective behavioral distortions in the banking system recession. The main reason was the existence of various behavioral biases in the decision-making process and selection of the banking network in the financial markets. Banks are one of the vital and very important parts of any economy. The importance of banks for the national economy becomes clear when we know that banking is a legal and global industry that has a great impact on the formation of relations between nations and governments. In a study conducted by Taftian and Tajmalian [41] under the title of a review of financial literacy studies and financial behavior in different age groups, the article is mentioned; The economic downturn known as the Great Depression; has increased public awareness of the issue of financial illiteracy and its impact on the economy. In a study conducted by Bayar et al. [13] entitled Financial Literacy and Financial Risk Bearing and Individual Investors: A Polynomial Logical Regression Approach, financial risk tolerance is one of the most important factors influencing financial investment decisions. Individuals and institutional investors are influential and an important factor in financial planning and financial consulting

In a study conducted by Rasool and Safiullah [35] entitled Financial Literacy and Behavioral Bias of Individual Investors: Empirical Evidence from the Pakistan Capital Trading Market, the researchers stated; Financial literacy is one of the vital components of financial decision making that affects the behavior of financial investors while creating budgets, household financing, investing in stocks and retirement planning decisions.

3 Research Methodology

In the present study, in terms of purpose, it is applied research and the exploratory mixed research method has been used and the foundation data theory has been used as both a research method and an analysis method. The statistical population in the qualitative section of university experts as professors of accounting, business management, and financial management in higher education centers and managers, experts and senior experts on capital and investment in the capital hall, and in the quantitative section, real investors active in the capital market Tehran securities in the fall of 2020 are unlimited in the quality section using the snowball method to achieve theoretical saturation with 20 experts, in-depth interview was conducted that the principle of saturation, ie the researcher continues to collect data to the extent that access to There should be new categories and topics, and when you reach data saturation, there is no need for new sample people.

In this study, 20 samples of new categories and topics were not added, and the interview was saturated, and in a small part, to measure the model. A 77-item researcher-made questionnaire was distributed among 384 samples by the available sampling method. The validity of the questionnaire was confirmed by the face and content method (CVR and CVI range for each item between 0.6 to 0.1, 0.85, and 0.1, respectively,) and its reliability was confirmed by Cronbach's alpha method by 0.83 it placed. Data were analyzed by exploratory and confirmatory factor analysis with SPSS and AMOS software.

3.1 Quantitative Data Collection Tool

In the quantitative stage, the data collection tool is a questionnaire obtained from the conceptual model resulting from the qualitative study of the research, and based on this, the variables in the resulting conceptual model have been changed from qualitative to quantitative to answer the research questions. And in simpler language, the qualitative model of research was quantified.

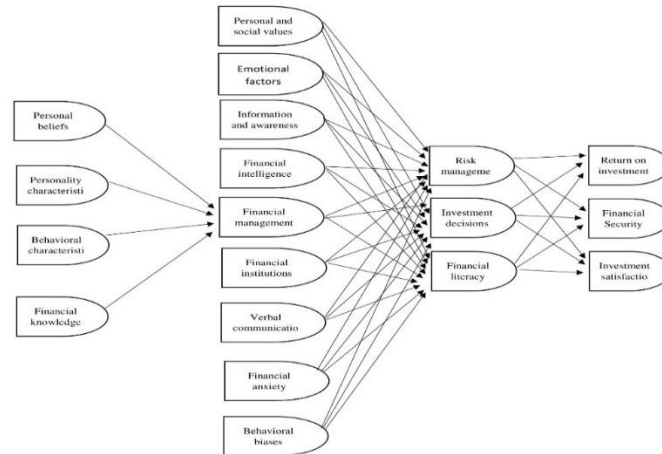


Fig. 1: Paradigm model of research in MAXqda software environment

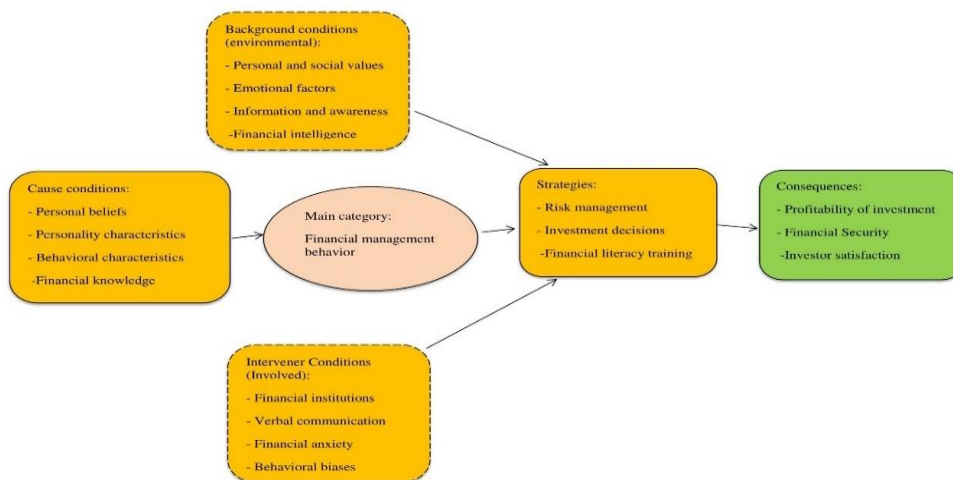


Fig. 2: Paradigm model of the research - the result of the qualitative stage

3.2 Quantitative Inferential Analysis

The main purpose of this study is to present a model of the role of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market. To conduct this research, the researcher used a questionnaire in five sections. This questionnaire was extracted based on the standard process and based on a qualitative analysis, and then its standardization steps were performed in a complete quantitative research.

3.2.1 Review of Research Questions

The main research question: What is the role model of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market? Research Special Questions - Quantitative Section

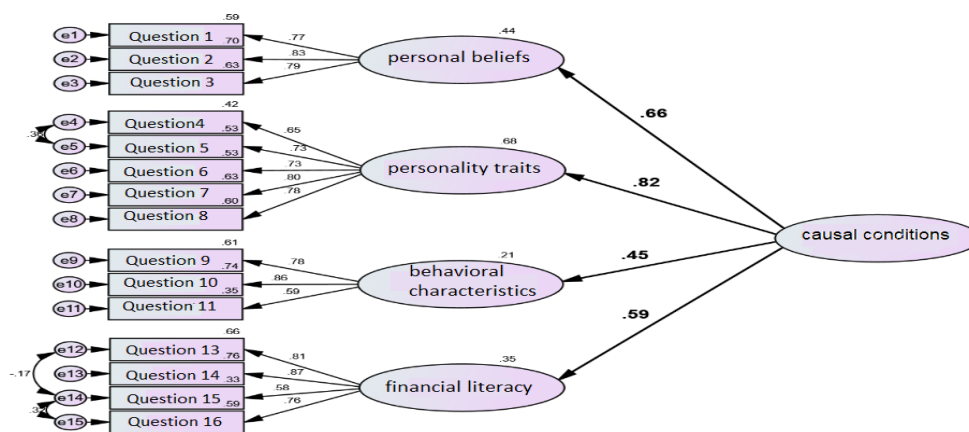
1- What are the components, relationships between dimensions, prioritization and degree of appropriateness of the role model of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market?

Question 1: What are the components of the model of the role of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market? In order to answer this research question, as mentioned, a 17-item questionnaire was prepared for the causal conditions in the first part, which was placed among the respondents with 384 people. We first used exploratory factor analysis to examine whether the structures in question were capable of measuring the target. In general, the purpose of heuristic factor analysis is to discover the main dimensions of the structure designed to measure the desired variable. To determine whether the number of data (sample size and relationship between variables) is appropriate for factor analysis? Kaiser-Meyer fitness index and Bartlett test were used. The Kaiser-Meyer fit test is an indicator of sampling adequacy that examines the small partial correlation between variables. This index is in the range of zero and one. If the index value is close to one, the data (sample size) are suitable for factor analysis, otherwise (usually less than 0.5) the results of factor analysis are not suitable for the data, and if Its value should be between 0.5 and 0.69, the data should be moderate and the data should be extracted with more caution, and values greater than 0.7 indicate that the sample size is appropriate.

A: Next dimension causal study

Table 2: Results of KMO index and Bartlett test for constructing causal conditions

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.835	
Bartlett's Test of Sphericity	Approx. Chi-Square- Bartlett	2,797.803
	df	136
	Sig. P-Value	.000



Chi_square=207.293; DF=83; P-VALUE=.000; GFI=.933; CFI=.954; RMSEA=.063

Fig. 3: Confirmatory factor analysis of the second order of causal conditions

According to Table 2, the KMO value (sampling adequacy) is equal to 0.835 and the significance level of the Bartlett sphericity test is equal to 0.0009. Therefore, in addition to sampling adequacy, the implementation of factor analysis based on the correlation matrix under study will be justified.

3.2.2 Confirmatory Factor Analysis of the Structure of Causal Conditions

Table 3: Assessing the adequacy of second-order factor analysis of causal conditions

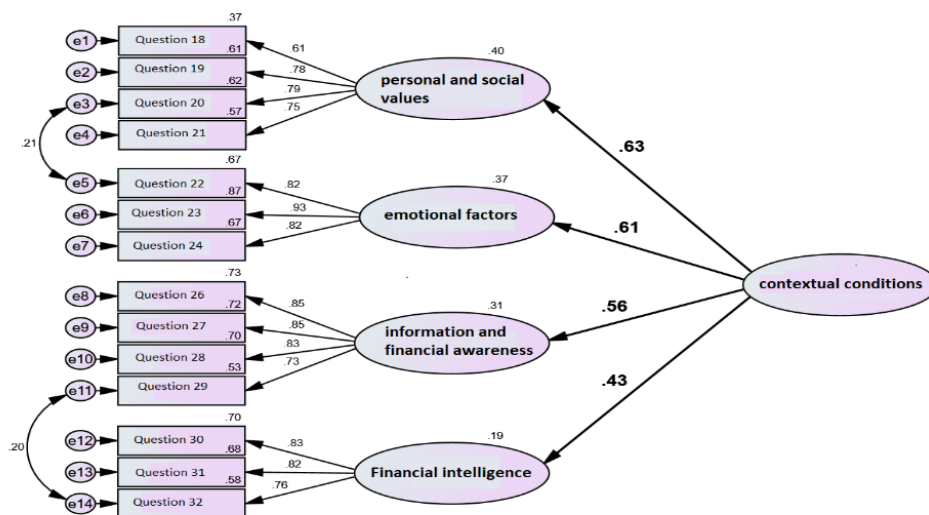
Priority	Results	P-Value	Values t	Standard coefficients	Investigating the Explanatory Components of Causal Conditions
2	Significant.	0.0009	9.549	0.66	personal beliefs
1	Significant.	0.0009	9.998	0.82	personality traits
4	Significant.	0.0009	6.697	0.45	behavioral characteristics
3	Significant.	0.0009	9.098	0.59	financial literacy

According to the above table, as a result, all the considered components are effective in explaining the causal conditions.

B: Examining the background conditions

Table 4: Results of KMO index and Bartlett test for the construction of background conditions

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.822	
Bartlett's Test of Sphericity	Approx. Chi-Square- Bartlett	2,877.213
	df	120
	Sig. P-Value	.000



Chi_square=143.852; DF=71; P-VALUE=.000; GFI=.950; CFI=.974; RMSEA=.052

Fig. 4: Second-order factor analysis model of background conditions in the case of standard coefficients

According to Table 4, the KMO value (sampling adequacy) is equal to 0.822 and the significance level of the Bartlett sphericity test is equal to 0.0009. Conclusion: In addition to sampling adequacy, performing factor analysis based on the studied correlation matrix can also be justified.

Table 5: Second-order factor analysis of contextual conditions

An explanatory study of the components of contextual conditions	Standard coefficients	Values t	P-Value	Results	Priority
personal and social values	0.63	7.500	0.0009	Significant.	1
emotional factors	0.61	8.396	0.0009	Significant.	2
information and financial awareness	0.56	7.906	0.0009	Significant.	3
intelligence	0.43	6.709	0.0009	Significant.	4

The conclusion is that, from the respondents' point of view in the research, all components are effective in explaining the contextual conditions.

D: Next dimension of intervention conditions

Table 6: Results of KMO index and Bartlett test for the structure of intervention conditions

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.858	
Bartlett's Test of Sphericity	Approx. Chi-Square -Bartlett's	2,567.954
	df	120
	Sig. P-Value	.000

According to Table 6, the KMO (sampling adequacy) value is equal to 0.858 and the significance level of the Bartlett sphericity test is equal to 0.0009. Conclusion: In addition to sampling adequacy, performing factor analysis based on the studied correlation matrix can also be justified.

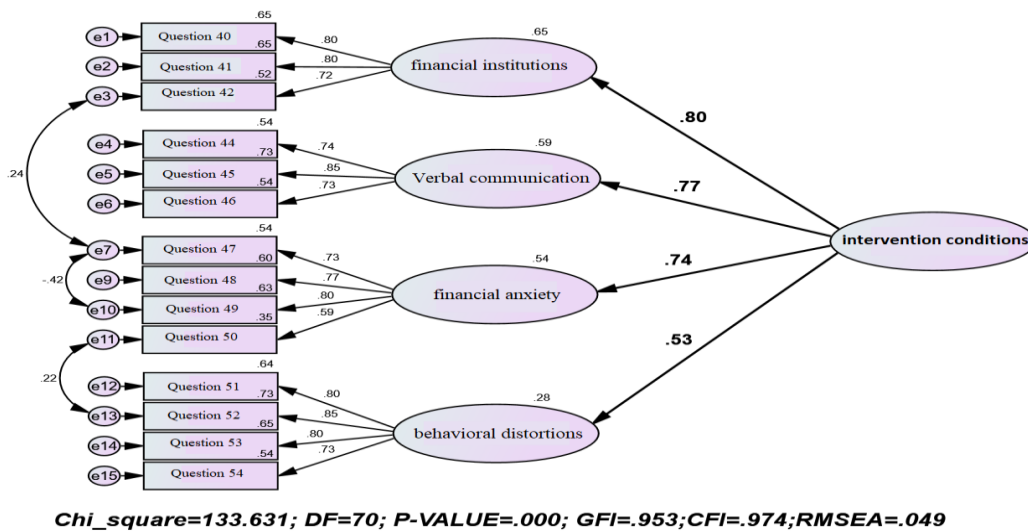


Fig. 5: Second-order factor analysis model of intervention conditions in the case of standard coefficients

Table 7: Second-order factor analysis of intervention conditions

Investigating the Explanatory Components of Intervention Conditions	Standard coefficients	Values t	P-Value	Results	Priority
financial institutions	0.80	12.531	0.0009	Significant	1
Verbal communication	0.77	11.198	0.0009	Significant	2
financial anxiety	0.74	10.894	0.0009	Significant	3
behavioral distortions	0.53	8.631	0.0009	Significant	4

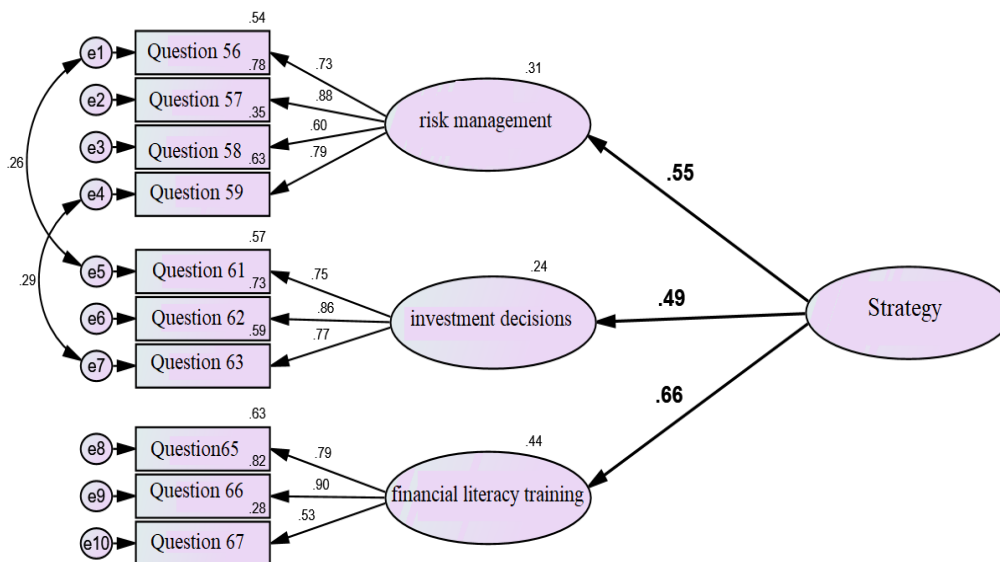
The conclusion is that, from the respondents' point of view in the research, all components are effective in explaining the intervention conditions.

A: Strategy dimension (solution)

Table 8: Results of KMO index and Bartlett test for strategy structure (solution)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.763
Bartlett's Test of Sphericity	Approx. Chi-Square Bartlett	1,670.821
	df	66
	Sig. P-Value	.000

According to Table 8, the KMO value (sampling adequacy) is equal to 0.763 and the significance level of the Bartlett sphericity test is equal to 0.0009. Conclusion: In addition to sampling adequacy, performing factor analysis based on the studied correlation matrix can also be justified.



Chi_square=66.783; DF=30; P-VALUE=.000; GFI=.965;CFI=.977;RMSEA=.057

Fig. 6: Second-order factor analysis model of the strategy (solution) in the case of standard coefficients

Table 9: Second-order factor analysis of the strategy (solution)

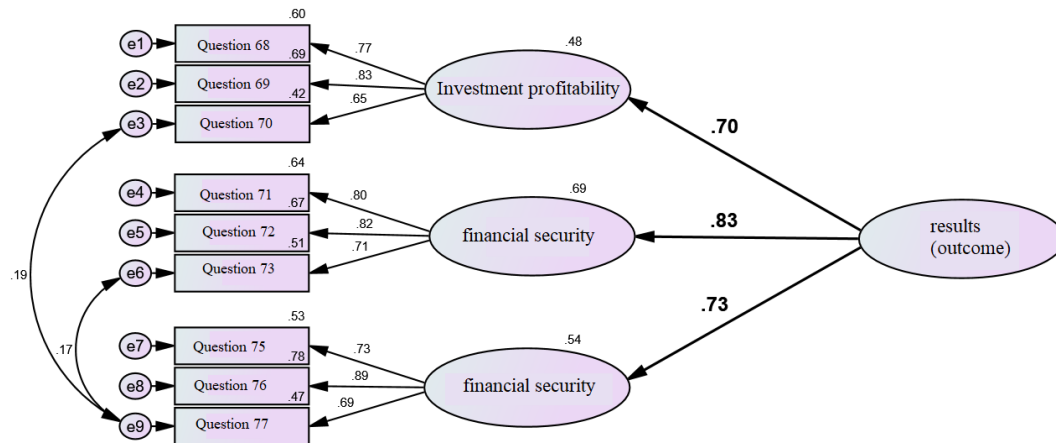
Priority	Results	P-Value	Values t	Standard coefficients	Investigating the Explanation of Strategy Components (Solution)
3	Significant	0.0009	6.367	0.55	risk management
2	Significant	0.0009	6.051	0.49	investment decisions
1	Significant	0.0009	6.653	0.66	financial literacy training

Conclusion: All the considered components are effective in explaining the conditions of the results
 H: Next dimension study (outcome) of the research structure

Table 10: Results of KMO Index and Bartlett Test for Structure of Results (Outcome)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.841
Bartlett's Test of Sphericity	Approx. Chi-Square Bartlett	1,458.606
	df	45
	Sig. P-Value	.000

According to Table 10, the KMO value (sampling adequacy) is equal to 0.841 and the significance level of the Bartlett sphericity test is equal to 0.0009. Conclusion: In addition to sampling adequacy, performing factor analysis based on the studied correlation matrix can also be justified.



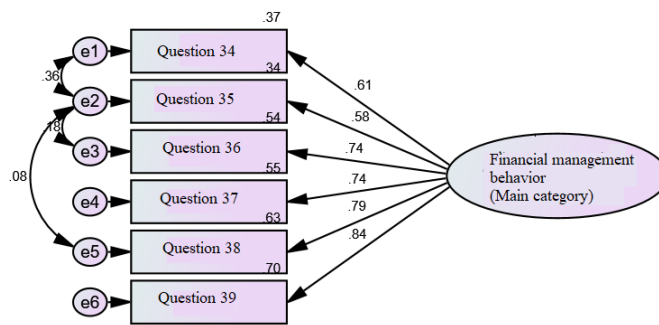
Chi_square=29.432; DF=22; P-VALUE=.133; GFI=.983; CFI=.995; RMSEA=.030

Fig. 7: Second-order factor analysis model of the strategy (solution) in the case of standard coefficients

Table 11: Second-order factor analysis of results (outcome)

Investigating the Explanatory Components of Results (Outcome)	Standard coefficients	Values t	P-Value	Results	Priority
Investment profitability	0.70	10.107	0.0009	Significant	3
financial security	0.83	11.802	0.0009	Significant	1
investor satisfaction	0.73	10.184	0.0009	Significant	2

Conclusion: All the considered components are effective in explaining the conditions of the results.
 A: A review of the main category of research structure



Chi_square=14.097; DF=6; P-VALUE=.029; GFI=.988;CFI=.992;RMSEA=.059

Fig. 8: The main category measurement model in the case of standard coefficients

Table 12: Structural reliability analysis of the main category

Variables	Cronbach's al-pha	Composite reliability coefficient (CR)	The coefficient of variance extracted (AVE)
financial management behavior	0.874	0.904	0.612

As can be seen, the structure of the main category (financial management behavior) in terms of composite reliability in all three criteria has been appropriate and acceptable.

Question 2: What is the relationship between the dimensions of the role model of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market?. To examine the second question of the research using path analysis in the research model, we examine the relationships between the dimensions of the role model of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market.

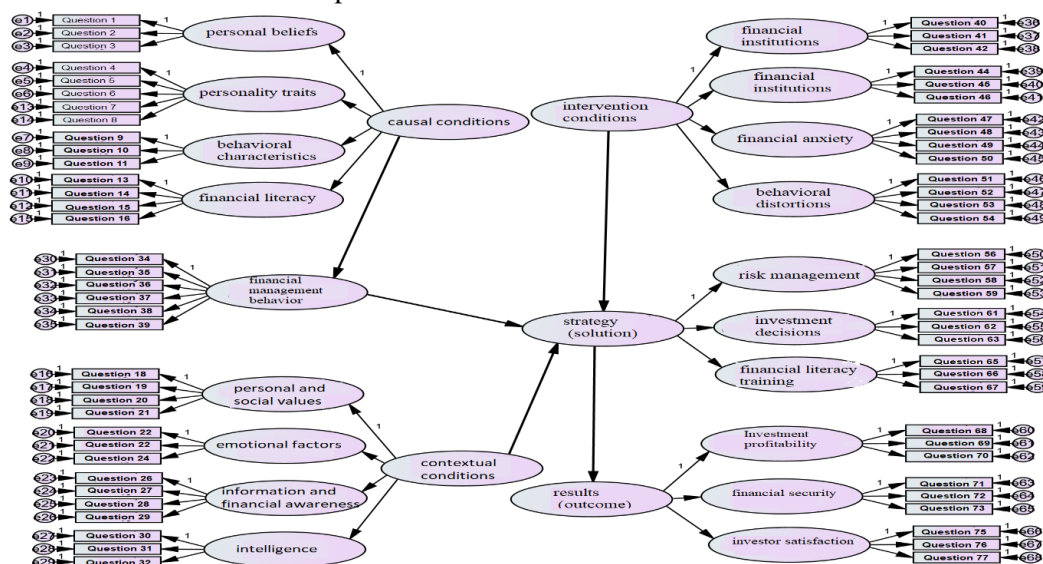


Fig. 9: The main research model

Fig. 10 shows the output effects and relationships between each of the dimensions of the original model in the form of standard coefficients.

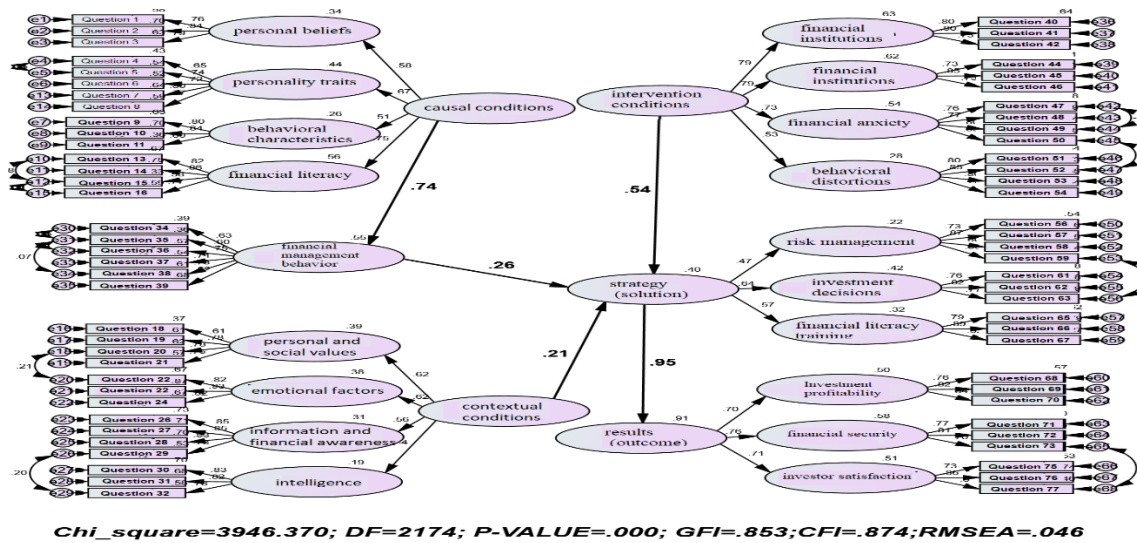


Fig. 10: Output effects

Table 13: A path analysis of the main research model

routes	Standard coef-ficients	Values t	P-Value	Results
Causal conditions on the main category	0.74	7.021	0.0009	Significant
The main category of strategies (solutions)	0.26	.3.856	0.0009	Significant
Background conditions on strategies (solutions)	0.21	2.680	0.007	Significant
Terms of intervention on strategies (solutions)	0.54	5.456	0.0009	Significant
Strategies Resolve Results	0.95	5.984	0.0009	Significant

Conclusion: Causal conditions have a significant effect on the main category, main category on strategies, contextual conditions on strategies, intervention conditions on strategies, and strategies on results.

Table 14: Indirect impact of model components on the outcome based on Bootstrap

Indirect route	Coefficients	Probability value P-Value	Results
Causal conditions on the outcome	0.183	0.008	Significant
Intervention conditions on the outcome	0.516	0.007	Significant
Underlying conditions on the outcome	0.195	0.102	Significant
The main category of the outcome	0.246	0.016	Significant

Conclusion: Due to the P-value less than 0.05, the paths of causal conditions on the outcome, the intervention conditions on the outcome, and the main category on the outcome have significant indirect effects on the model, and only the path of the underlying conditions on the outcome equal to the value of P-Value not more than 0.05 is significant.

Question 3: What is the priority of each of the dimensions and components of the model of the role of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market?

Table 15: Prioritization of paradigm model dimensions

	Average rating	Rank
Causal conditions	3.81	1
contextual conditions	3.60	2
The main category	3.64	3
Intervention conditions	3.73	4
Strategy	3.58	5
Results (Consequences)	2.63	6

Question 4: How appropriate is the model of the role of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market?

Table 16: Fits of the main research model

Indicators	Acceptable amount	The amount of research findings	Desirability
Chi-squared test(χ^2)	-	3946.70	Model approval
P-Value	-	0.000	Model approval
Df	$df \geq 0$	2174	Model approval
χ^2/df	$\chi^2/df < 3$	1.815	Model approval
RMSEA	$RMSEA < 0.1$	0.046	Model approval
NFI	$NFI > 0.8$	0.758	Non-approval of the model
AGFI	$AGFI > 0.8$	0.756	Non-approval of the model
GFI	$GFI > 0.8$	0.081	Model approval
CFI	$CFI > 0.8$	0.874	Model approval
IFI	$IFI > 0.8$	0.874	Model approval
SRMR	The closer it is to zero	0.158	Model approval

According to Table 4-54, the value of the chi-square statistic in the model is 370/3946, the degree of freedom of the model is equal to 2174, the result of their ratio is equal to 1.815, which is an acceptable value. On the other hand, the fit indicators of the original model such as CFI and IFI are all acceptable and appropriate.

4 Summary of the Methodology

Quantitative section results: Question 1: What are the components of the model of the role of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market?

The results of confirmatory factor analysis showed that from the respondents' point of view in research, personal beliefs, personality traits, behavioral characteristics, and financial literacy in explaining causal conditions, personal and social values, emotional factors, information, and financial awareness, and intelligence in explaining contextual conditions, financial institutions Verbal communication, financial anxiety, and behavioral distortions are effective in explaining intervention conditions, risk management of investment decisions, and financial literacy training in explaining investment strategy and profitability, financial security, and investor satisfaction in explaining outcomes.

Question 2: What is the relationship between the dimensions of the role model of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market?

The results of confirmatory factor analysis showed that causal conditions have a significant effect on the main category, main category on strategies (strategies), contextual variables on strategies (strategies), intervention conditions on strategies (strategies), and strategies (strategies) on the results.

Question 3: What is the priority of each of the dimensions and components of the model of the role of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market?

According to the results of Friedman's test on the research paradigm model, in terms of performance; The highest priority was related to causal conditions and the lowest priority was related to results (outcome). Also according to the results of the Friedman test; Functionally, in terms of causal conditions, the highest priority is related to the component of personality traits and the lowest priority is related to personal beliefs, in terms of environmental conditions (context), the highest priority is financial intelligence and the lowest priority is related to personal and social values. Intermediaries). The highest priority of verbal communication and the lowest priority of behavioral biases, regarding the conditions of strategy (solution) The highest priority of investment decisions, and the lowest priority of financial literacy training and regarding the conditions of outcome (results). The highest priority was financial security and the lowest priority of investor satisfaction.

Question 4: How appropriate is the model of the role of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market?

The value of the chi-square statistic in the model is 370.3946, the degree of freedom of the model is equal to 2174, and the result of their ratio is equal to 1.815, which is an acceptable value. On the other hand, the fit indices of the main model such as CFI and IFI are all acceptable and the SRMR index is 0.158.

5 Conclusion

The present study seeks to design a model of the role of behavioral characteristics and financial literacy of real investors on the components of their financial management behavior in the Iranian capital market and the research questions were answered using qualitative and quantitative methods [25-37]. According to the results of the qualitative part, the paradigm model of the research has eighteen dimensions and according to the results of the quantitative part, components of personal beliefs, personality traits, behavioral characteristics, financial literacy, personal and social values, emotional factors, information and awareness, financial intelligence, financial institutions Verbal communication, financial anxiety, behavioral biases, risk management, investment decisions, financial literacy training, investment profitability, financial security, and investor satisfaction Explain the role model of behavioral characteristics

and financial literacy of real investors on the components of financial management behavior [38-46]. According to the results, the paradigm model of the research was presented as follows.

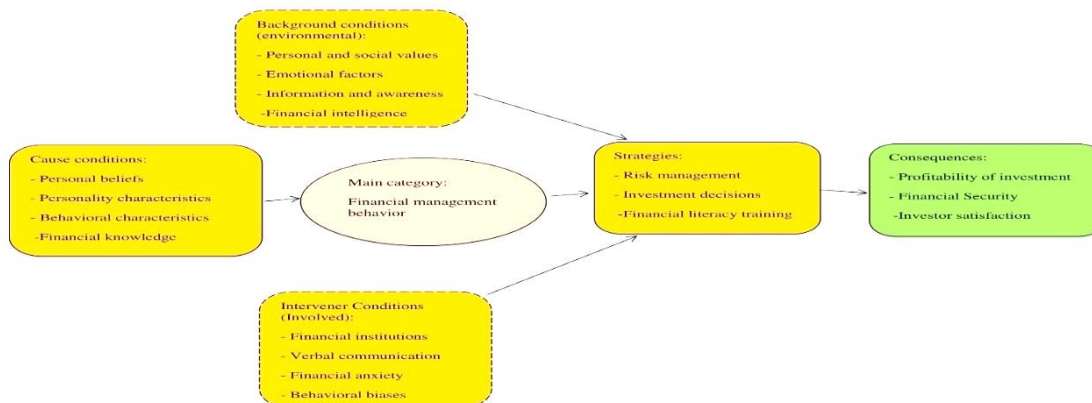


Fig. 11: The Final Paradigm Model of the Research

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