



Applied-Research Paper

Using A Multivariate Statistical Method of Factor Analysis and Grounded Theory to Review the Theory of Agency in Developing Countries (A Case Study of Iran)

Mirza Mohammadi^a, Rahmatollah Mohammadipour^{b,*}, Ghodrattollah Talebnia^c Negar Khosravipour^a

^aFaculty of Economics and Accounting, Islamic Azad University, Central Tehran Branch, Tehran, Iran

^bFaculty of Accounting, Islamic Azad University, Ilam Branch, Ilam, Iran

^cFaculty of Accounting, Islamic Azad University, Science and Research Branch, Tehran, Iran

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ABSTRACT

The information asymmetry between managers and shareholders has a significant impact on the company's investment decisions and exacerbates agency problems. These problems are believed to be more prevalent in developing markets like Iran compared to developed markets. This research aims to explore the theory of agency in Iran through an exploratory study. The research methodology follows a qualitative approach for data acquisition, followed by qualitative study and analysis, quantitative approach, and factor analysis to validate the extracted model. The statistical analysis of the research data reveals that several hypotheses of agency theory, such as risk aversion, supervision, and reward, exhibit similar dimensions in Iran as observed in developing countries. The results confirm the following assumptions: 1. Conflict of interests between managers and owners, 2. Information asymmetry, 3. Reverse choice, 4. Ethical risk, 5. Maximizing expected utility, 6. Forcing, and 7. Inability to predict the future and receive information. The existence of information asymmetry, higher investment risks for minority shareholders, and transparency issues necessarily confirm the lack of ability to predict the future and receive information.

1 Introduction

The separation of ownership from management creates a conflict of interest between owners and managers, as managers may not always act in the best interest of the owners and may misuse company assets. This conflict of interest gives rise to agency problems, which result in agency costs according to agency theory. These costs increase due to the separation of ownership from management. In such circumstances, it becomes necessary to have a control mechanism that ensures transparency in the information reported in financial statements. Financial markets play a crucial role in allocating resources to companies that can effectively utilize them for productive investments. However, information problems and individual motivations in financial markets contribute to agency costs, which have a negative impact on company value. These costs increase the risk, volume, and complexity of operations within the

*Corresponding Author. Tel.: +989126477067

E- Mail address: Rm.accounting2@yahoo.com

investigated units, thereby influencing the company's internal decision-making. While numerous studies have examined corporate governance and agency issues empirically in companies listed on the Tehran Stock Exchange, this study is the first to review agency theory at the level of the Iranian capital market as an example of a developing country, making it thematically innovative. With the separation of ownership from management and the establishment of an agency relationship, both parties seek to maximize their personal interests. As the utility function of managers differs from that of owners, conflicts of interest arise, distorting financial statements, which are known as agency problems. Shareholders must bear the costs of aligning the managers' interests with their own, which are referred to as agency costs. As agency costs increase, conflicts over interests intensify within a company.

A literature review indicates that information asymmetry between managers and shareholders significantly influences investment decisions and exacerbates agency problems, with developing markets such as Iran experiencing a higher prevalence of these problems. Information asymmetry occurs when both parties are unaware of all possible situations and are unable to consider all definitive and reliable outcomes, leading to moral hazard. Excessive disclosure of information reduces information asymmetry and conflicts of interest between shareholders and management. In developing countries, agency problems between owners and managers differ from those observed in classical agency theory. In these countries, agency problems manifest as conflicts between controlling owners and minority owners in situations with concentrated ownership. Accounting plays a crucial role in agency theory, particularly in providing information after an event, referred to as the post-decision role of accounting. This role, often associated with accounting entrepreneurship, involves agents providing reports on past events to clients (company owners), empowering accounting to not only have predictive power but also provide information feedback. The revision of agency theory, especially in developing countries with institutional structures similar to Iran, strengthens the theoretical foundations of the effectiveness of accounting standards in corporate governance. It also contributes to the development of theoretical foundations regarding representation models, motivational issues, and performance measurement criteria for representatives in contracts and reward schemes. The present study adds value to the literature on agency theory from several perspectives. Firstly, it explores the position of agency theory hypotheses, such as maximizing desirability, risk aversion, absenteeism, and the ability to predict the future, in Iran compared to other countries, particularly Western countries.

Secondly, it examines the appropriateness and effectiveness of financial solutions, supervision strategies, and incentive strategies to alleviate agency problems in developing countries. Lastly, it investigates to what extent the implementation of strict regulations on corporate governance and auditing can help resolve agency conflicts in developing countries. The main questions addressed in this study can be summarized as follows: 1) The position of agency theory hypotheses in Iran compared to other countries; 2) The appropriateness and effectiveness of financial, supervision, and incentive strategies to address agency problems in developing countries; and 3) The extent to which the implementation of strict regulations on corporate governance and auditing can contribute to resolving agency conflicts in developing countries. The article continues with a discussion of theoretical bases and previous research, followed by an explanation of the research methodology, population and statistical sample, data gathering method and tool, and data analysis. The final section discusses the findings of the study and provides practical recommendations. Continuing with the research methodology, this study follows a qualitative approach based on the research paradigm. The data acquisition strategy is selected accordingly. The study employs both qualitative and quantitative methods, as well as factor analysis, to validate the extracted model. Statistical analysis of the research data confirms the presence of several agency theory hypotheses in Iran, such as conflict of interests between managers and owners, information asymmetry,

reverse choice, ethical risk, maximizing expected utility, forcing, and the inability to predict the future and receive information. These hypotheses are similar to those found in developing countries. The literature review demonstrates that information asymmetry between managers and shareholders has a significant impact on investment decisions and exacerbates agency problems. These problems are particularly prominent in developing markets like Iran. When both parties lack awareness of all possible situations and are unable to consider all definitive and reliable outcomes, it creates information asymmetries and moral hazard. Excessive information disclosure reduces information asymmetry and conflicts of interest between shareholders and management.

This study argues that agency problems in developing countries differ from the traditional agency perspective. In cases where ownership is concentrated, the nature of the agency issue shifts from a conflict between managers and owners to a conflict between controlling owners and minority owners. Accounting plays a crucial role in providing information after an event, referred to as the post-decision role. It empowers accounting to provide reports on past events to clients, enabling information feedback in addition to its predictive power. Examining agency theory in the context of developing countries, such as Iran, contributes to strengthening the theoretical foundations of accounting standards' effectiveness in corporate governance. It also explores representation models, motivational issues, and performance measurement criteria for representatives in contracts and reward schemes. This study offers several perspectives for analysis. Firstly, it compares the risk aversion hypothesis of agency theory in Iran with that of other countries, particularly Western countries. Secondly, it evaluates the appropriateness and effectiveness of financial solutions, supervision strategies, and incentive strategies to address agency problems in developing countries. Lastly, it investigates how the implementation of strict regulations on corporate governance and auditing can help resolve agency conflicts in developing countries.

In conclusion, this study provides a comprehensive examination of agency theory at the level of the Iranian capital market, shedding light on the unique challenges and characteristics of agency problems in developing countries. By investigating the position of agency theory hypotheses, evaluating strategies to mitigate agency costs, and exploring the role of strict regulations in corporate governance, this study aims to contribute to both theoretical and practical advancements in the field. The subsequent sections of the article will delve into theoretical bases, recent research, research methodology, findings, and practical recommendations.

2 Literature Review

Corporate governance provides an effective use of resources and need for accountability. The main goal is to bring interests of company, people (stakeholders), and community as close together as possible [14, 26]. A robust corporate governance system is a vital tool for reducing conflicts of interest between stakeholders and management. Researchers emphasize that corporate governance has been recognized as a vital factor in economic stability and growth of financial markets [6, 10]. The beginning of corporate governance through equity ownership had a significant impact on corporate control, and thus, owners delegated corporate governance to managers. Separation of ownership from management (control) led to a well-known organizational problem called agency problem. Jensen and Meckling laid the foundations for agency theory. They defined corporate executives as brokers and shareholders as agents. The problem here is that brokers do not necessarily decide in favor of agents. Thus, by forming an agency relationship and creating agency problems, such as conflicts of interest between parties, agency costs are created, and agency costs have an adverse effect on the company's value; that is, if a market expects such a thing to happen, value of company will decrease [17, 13]. In general, it can be

assumed that previous studies have focused on the following topics:

Vicente Lima et al. in a study entitled “Large shareholder power and the quality of corporate governance (an analysis of Brazilian companies)” analyzed the motivation of large shareholders to implement corporate governance, a system that concentrates their interests in a highly centralized ownership framework. And poor prefer. They concluded that high-concentration ownership is detrimental to the quality of corporate governance and the quality of the board composition [43]. In a study titled “Corporate Governance and Company Performance in Emerging Markets” (Evidence from Turkey), Ciftci et al. concluded that increasing ownership did not affect market performance, but was negatively related to accounting performance. Conversely, the majority of family members on the board do not have a significant impact on performance [20]. Luo et al. stated in a study entitled “The Ability to Understand the Annual Reports and Costs of the Company’s agency”, that annual reports are a primary source of information for decisions of external investors and enable shareholders to supervise management of company [29].

Haidarpour and Nazari Tajar, in a study entitled “The effect of agency costs on the relationship between corporate governance and the cost of equity”, concluded that there is an inverse relationship between corporate governance and the cost of equity. They will incur lower financing costs and investors will demand lower returns [13]. In a study, Rahmawati et al. examined how agency theory, supervision theory, and intellectual capital act as a way to resolve agency conflict. The results show that agency theory explains importance of a principled framework, in that by acting within the framework of supervision theory and intellectual capital, an agent has similar interests in taking action toward increasing value of company and reducing agency conflicts [37]. Pakmaram and Yasman Mayan In a study entitled “Study of the effect of agency conflict on information asymmetry”, concluded that agency conflict between managerial ownership and institutional shareholder ownership has a negative effect on profit information asymmetry. This means that increasing the ownership of board members and the existence of institutional owners reduces conflicts of interest [31]. Khosravi in a study, entitled “Theory of Agency in the Light of Political Philosophy and Public Law”, concluded that in a democratic system because representatives are elected by people, they must be accountable. In case of non-response and non-provision belonging to public will, they will be excluded from agency or will not be selected by public in the following periods [27].

Rahman Seresht and Harandi in a study entitled “A model for strategic control of corporate governance using the classical theory data theory strategy”, concluded that media control, complex board control, legal system control, stakeholder control measures, market control Stocks and audits and the rating system are the main categories of strategic control of corporate governance [36]. Mustapha in a study entitled “Culture and Theory of Agency in Malaysia”, concluded after several studies that there is a significant relationship between monitoring costs required by companies controlled by different ethnic groups in Malaysia [30]. BaradaranHassanzadeh and TaghizadehKhanghah in a study, entitled “The effect of agency costs on investment behavior”, examined impact of agency costs on investment behavior in Tehran Stock Exchange. The results showed that agency costs cause a deviation from the desired investment behavior [2]. HasasYeganeh and Tajik concluded in a study entitled “Corporate Governance and Responsibility” that in the field of Globalization and privatization, corporate governance is a new song for the new millennium and privatization and Globalization is disrupted or impossible without corporate governance [15]. Namazi in a study, entitled “Study of Applied Theory of Agency in Management Accounting”, discussed the structure of agency theory and concluded that agency theory has made significant progress in the field of theory and determining optimal employment contracts and motivating [33].

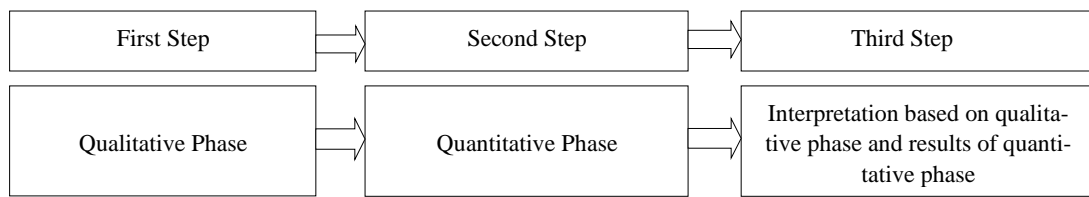


Fig. 1: Exploratory Approach
Source: Creswell and Clark 2007

3 Research Methodology

The present study is mixed exploratory research and seeks to answer the central questions of the research using a correct and acceptable approach. One of the best methods for exploratory research is the mixed method [9]. In the present study, the researchers used Mixed Method Research. The Mixed Method Research relies on the main challenge of both quantitative and qualitative-oriented approaches. This approach, which sought to create a kind of totalitarianism in quantitative and qualitative approaches, was proposed as the third methodological movement [28] and, according to some scholars, [4] responded to the limitations of dual approaches. The ratio of quantitative and qualitative approaches in mixed research and the precedence and latency of each approach has been formed in the form of two concurrent and sequential methods. In the present study, authors have used a sequential-exploratory plan of a mixed method. In this paper, first, writers collect and analyze the qualitative data, then in the second stage, quantitative data are collected and analyzed to test the extracted model from the qualitative method. Finally, both qualitative and quantitative analyzes are interpreted together. The exploratory approach is shown in Figure 1. In the present study, based on the mixed research paradigm, sequential-exploratory design, the background of the research was studied first by library and field method, and the relevant factors were extracted.

Then, based on the qualitative approach, a database strategy was adopted and then to test the output model, qualitative studies and analyses, quantitative approach, and factor analysis will be used. It is worth mentioning that in this method, the qualitative part of the research is more important than the quantitative part. The use of an exploratory approach has significant strengths. First, each step is done separately and has its own report. Second, despite the emphasis on qualitative aspects of the research in this study, the quantitative phase makes it acceptable to quantitative audiences. Finally, it is easy to use this design for multilevel research studies. However, it should be noted that the use of this design is time consuming due to its two-stage nature [4]. The research method of mixed-exploratory is usually done in two ways: the tool development model, and the typology creating model, the second model of which will be the basis of the present study. The model for formulating theory and typology is shown in Table 1.

Table 1: Theory Development and Typology Model

First Step	Second Step	Third Step	Fourth Step	Fifth Step	Sixth Step	Seventh Step	Eighth Step
Collecting qualitative data	Qualitative data analysis	Qualitative findings	Creating testing hypothesis	Collecting quantitative data	Quantitative data analysis	Quantitative results	Interpretation

Source: Creswell and Clark 2007

4 Statistical Population and Sample of the Study

The statistical population of this study was accounting experts who worked both at university and profession (accounting or auditing), and their number was not known. In this regard, it was conditioned that the selected individuals have at least the following characteristics:

- 1- Doctoral degree in accounting
- 2- Teaching in postgraduate courses
- 3- Writing or translating books or articles in the field of accounting
- 4- Membership in professional assemblies
- 5- Having a managerial background (middle manager, CEO or board of directors)

It should be noted that this sampling method is used by researchers whose goal is to reach a sample that represents a larger group of samples and is as close as possible to it or looking for comparisons between different groups [16]. When a case study is performed, a sampling method of selecting outstanding cases is used [39, 41]. This method is commonly used in cases where the field of research is new, and few kinds of qualitative research have been conducted in that field [16]. Thus, in the present study, researchers have used a qualitative-interpretive approach. In this regard, the samples of the qualitative part of this research were 32 experts in the field of accounting. Then, in the second stage of the research, a questionnaire that its validity was confirmed was distributed among 45 university experts and experts in the field of financial management and accounting.

5 Data Collection Methods and Tools

The following methods have been used to collect information:

A. Review Documents and Library Studies

In this study, library studies have been widely used, which include study of existing and related dissertations and researches, study of articles and related English and Persian books, as well as use of Internet to obtain new findings.

B. Interview

In the qualitative part of the present study, researchers used semi-structured interviews with open-ended questions. The use of semi-structured interviews leads to flexibility in design, follow-up, and sequencing of questions [38, 42]. The use of semi-structured interviews brings the benefits of two-way communication, reaching explanations to answer challenging questions, and solves the problem of low response rates to the questionnaires [9]. Thus, semi-structured interviews provide an opportunity to collect in-depth qualitative data [3]. In order to enrich the research, an attempt was made to interview people who are specifically involved in the subject of research and have immense knowledge and experience in this field.

C. Questionnaire

After reviewing the literature on the subject and background of the research and analyzing the interviews with the experts, the main statements were extracted, and based on that a researcher-made questionnaire was developed. The questionnaire was based on the points, interpretations, and terms derived from the quotations of the participants in the first stage of the research. This procedure led to preserving the live spirit of the research. The questionnaire was also based on a 5-choice Likert scale from very high 5 to very low 1. In order to ensure the validity of the content of the measurement, questionnaires were sent to 5 accounting professors, and after receiving feedback from these experts, the proposed

corrections were made, and the final questionnaire was submitted.

6 Analysis of Research Data

Using the interview and coding method, after asking the main research question, the initial statistical sample of 32 people were asked to answer the interview questions carefully. After collecting information and coding the interviews based on the code related to the interviewees, we extracted the desired questions and wrote them down. In the next step, we identified the common answers of all 14 codes and categorized them in the table below. In the next step, for all the answers of people, we write final implications in accordance with fitness of the items.

6.1 Coding

In a systematic approach in data-based theorizing, it is emphasized to use data analysis steps and the development of a logical model with a visual description of the generated theory. Data analysis of this study is performed based on the instructions of Strauss and Corbin. This method consists of three stages of open coding, axial coding and selective coding.

6.1.1 Open Coding

In the present study, the recorded interviews are reviewed, conceptualised and categorized after implementation, using the content analysis method line by line and phrase by phrase and then based on similarity, conceptual relationship and common characteristics were identified between open source, concepts and categories (a category of concepts). All citations and interviews were reviewed and data were constantly compared. After repeated and accurate reading of the typed text of the interviews and the items mentioned in it, the meaningful units were introduced, explained and named. In the research process, the researcher came up with 14 conceptual labels on which these concepts were classified according to their similarity. The categories were discovered when the concepts were compared and found to be related to similar phenomena. When the concepts were compared and found to be related to similar phenomena, the categories were discovered by researchers. Concepts are therefore categorized at a higher level. That is, the title assigned to the categories is more abstract than the concepts that make up the category as a whole. Categories have a high conceptual power because they can bring together concepts and micro categories. Finally, 3 sub-categories and 1 main category were identified based on this procedure.

6.1.2 Axial Coding

Axial coding is the process of linking categories to their subcategories, and linking categories at the level of features and dimensions. At this stage, the categories, features, and dimensions of the open coding are designed and placed in their position to create increasing knowledge about relationships (Lee, 2001). In this stage, data-based theoretician selects an open coding category and places it at the centre of the process he is examining, and links other categories to it. These other categories are:

Causal conditions: are categories or conditions that affect the main category and lead to the occurrence or spread of the given phenomenon. In the present study, corporate governance was chosen as the causal condition because it affects the central category.

Main or central category: Central category is a phenomenon that is the basis and axis of the process.

Therefore, it should be abstract enough and can be related to other main categories. The central phenomenon studied in this research is the review of agency theory.

Background: The specific context in which processes and interactions take place to manage, control, and respond to phenomena and affect strategies. The background conditions in this research include 3 components: the cultural characteristics of the society, the existing conditions in the professional society and the economic structure of the country.

Interfering conditions: General conditions that affect the processes and strategies and aggravate or weaken the phenomena. In the present study, based on the content analysis of the interviews, three components were identified as intervening conditions.

Strategies: Specific actions or reactions that result from a central phenomenon.

Consequences: are the outputs that result from implementing strategies.

The relationships between the categories formed in the data show that the pattern formed corresponds to the original form of the paradigm pattern of Strauss and Corbin. That is, the central phenomenon is affected by causal conditions and affects the strategies. Strategies, in turn, under the influence of contextual and intervening conditions, form consequences related to the phenomenon under study.

6.1.3 Selective Coding (Theorizing Step)

At this stage, the data-based theorist methodically selects the foundation of the central category (which forms the basis of other categories) and writes the theory by relating it to other categories. Data coding is based on the Foundation's data strategy shown in Table 2.

Table 2: Data Coding Based on Database Strategy

Implications	Common answers	Axial Cods
Risk aversion	14·11·9·5·3·2·1	Risk aversion depends on the institutional context.
	13·12·10·9·8·3	Risk is influenced by an individual's personal preferences.
	14·11·7·6·4·1	The shareholder is reluctant to invest due to the size of the weak government institution.
	11·9·5·4·3·2	Investment options are limited.
	14·13·12·11·10·6	The investor sees the government as an obstacle to investment.
supervision	14·10·9·7·6·3·2·1	Monitoring the performance of executives can block exploitation.
	13·12·11·8·5·4·1	Major shareholders are reluctant to have unofficial managers supervising their activities.
	14·13·12·11·10·9·7·4·2	About 80 or 90 percentage of companies are owned by major government and public government institutions.
	8·7·6·5·4·3·2·1	The power and influence of the CEO in the Board of Directors undermine supervision.
	14·13·12·11·10·9·8·5	Non-executive directors on the board of directors have the role of artificial managers and have no role in supervising the affairs of the company and are only the rations of the board of directors.
reward	14·13·12·11·9·7·6·5·4·2·1	Rewards are not a right way to balance the interests of owners and managers.
	10·9·6·5·4·3	Rewarding is not necessarily a function of a company's profitability and financial performance.
	11·6·5·4·3·2·1	The goal of managers is for the company to be one of their personal assets.
	14·13·12·9·8·7	Information interest is preferred to rewards.

Source: Research findings

6.2 Features of Fitting Structural Equation Models

In general, model fitness indicators fall into three main categories: model fitness, model matching, and model economy. In this article, we will introduce these indicators.

- Determining the fitness of the model (parameters)

Sometimes, even if the overall fitness of a model indicates an acceptable structure, estimating individual parameters in a model can be meaningless and confusing. Therefore, an interpretation of parameters in an analysis of each model is an important issue. Here are four steps you can take to begin the process of preparation for mediation:

1. Check if parameter estimation has an expected signal or not.
2. Check whether parameter estimation is in the range of desired changes or not.
3. Examine estimation of parameters to determine their statistical significance.
4. Test lack of difference between intergroup measurements by placing the parameters (constraints) in different groups and then make relative comparisons between the estimation of the parameters.

Examining the estimation of the initial parameters can also help determine the defect in a model or a poorly developed model. In this case, the initial estimation of the parameters is used as initial values. In LISREL, for example, the initial estimates of the two-step minimum squares are replaced by the initial values defined by the researcher. We may face many problems in estimating the parameters. Sometimes estimating parameters takes impossible values, for example in cases where the correlation between variables exceeds the number one, such a problem happens. Sometimes negative variance values are obtained by researchers. In addition, remote data can affect parameter estimation. The use of large enough sample sizes and multiple reagents for each latent variable has been suggested as a way to achieve stable estimates of the parameters.

After these issues have been addressed, the interpretation of correction indicators, Lagrange and Wald tests and subsequent changes in model fitness indicators can begin. Model validity based on halving the study sample or reviewing another independent sample when achieving an acceptable model, must always be considered to ensure the stability of the estimation of parameters and the validity of the model. In addition, self-administration uses an open sampling method using a single sample to test the efficiency and accuracy of the sample estimates.

6.3 Investigating the Measurement and Structural Model of the Research

In this section, the authors discuss structured equations and AMOS software, data analysis, and factor analysis of structures.

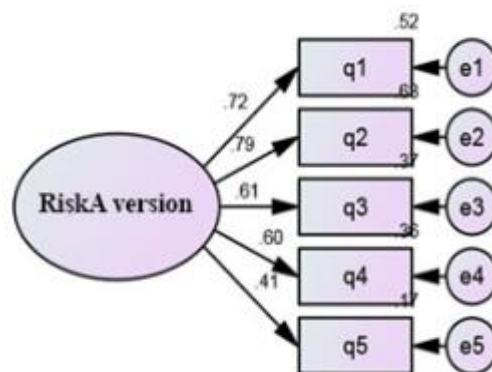


Fig.2: Confirmatory Factor Analysis of Risk Aversion Variable
Source: Research Findings

Table 3: Indicators of Fitness of Risk Aversion Variable

Fitness Index	Desired amount	Result
χ^2/df	3<	1.25
GFI	0.90>	0.945
CFI	0.90>	0.909
RMSEA	0.08<	0.051

Source: Research Findings

Table 4: Meaningfulness Coefficients of Factors Affecting Risk Aversion Variable

Relationship to item's codes		Estimate	S.E.	C.R.	P	
q1	--	Risk aversion	0.719			
q2	--	Risk aversion	0.793	0.133	8.091	***
q3	--	Risk aversion	0.611	0.130	6.351	***
q4	--	Risk aversion	0.601	0.146	6.214	***
q5	--	Risk aversion	0.409	0.140	4.187	***

Source: Research Findings

6.3.1 Confirmatory Factor Analysis of Variables

In this section, we will use confirmatory factor analysis to confirm the codes related to each of the axes. At this stage, a compiled questionnaire whose validity was confirmed was distributed among 45 university experts and experts in the field of financial management and accounting. After collecting this data, it was used for factor analysis of structural confirmations. The results of the confirmation of the factor performed using Amos software will be given below. If the factor load is less than 0.3, the assigned code is considered weak and is neglected. The factor load between 0.3 and 0.6 is acceptable, and if it is greater than 0.6, it is very desirable.

The absolute value of the meaningfulness level obtained for each factor must be greater than the value of the table 1.96 to confirm its significance. Factor analysis of variable risk aversion in Figure 2, fitness index in Table 3 and its significant coefficients are shown in Table 4. In factor analysis, the relationship between the identified codes and the risk aversion variable has been investigated by researchers. All factor loads must be greater than 0.3 to be accepted. In the above figure, all risk aversion factor loads are greater than 0.3. So, we can say that these concepts are well measured. The results obtained from the above figure indicate the confirmation of the confirmatory factor analysis of the research, and a coefficient is meaningful when its meaningfulness number is greater than 1.96 or less than -1.96. All meaningfulness numbers are greater than 1.96 in the above figure. Factor analysis of variable Supervision in Figure 3, fitness index in Table 5 and its significant coefficients are shown in Table 6.

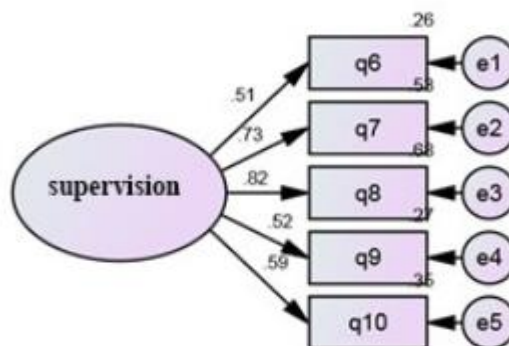


Fig. 3: Verification Factor Verification Factor Supervision

Source: Research Findings

Table 5: Fit Indices of Supervision Variable

Fit index	Desired amount	Result
X ² /df	3<	2.2
GFI	0.90>	0.930
CFI	0.90>	0.903
RMSEA	0.08<	0.07

Source: Research Findings

Table 6: Meaningfulness Coefficients of Factors Affecting the Supervision Variable

Relationship to item's codes		Estimate	S.E.	C.R.	P	
q6	<---	supervision	0.513			
q7	<---	supervision	0.726	0.300	5.360	***
q8	<---	supervision	0.819	0.389	5.585	***
q9	<---	supervision	0.523	0.250	4.759	***
q10	<---	supervision	0.586	0.257	5.053	***

Source: Research Findings

In factor analysis, the relationship between the identified codes and the supervision component is examined for the first time. All factor loads must be greater than 0.3 to be accepted. In the figure above, all factor loads related to the supervision variable are greater than 0.3. So, we can say that these concepts are well measured. The results obtained from the above figure indicate the confirmation of the confirmatory factor analysis of the research. It is meant by a coefficient being meaningful that its meaningfulness number is greater than 1.96 or less than -1.96. All meaningfulness numbers are greater than 1.96 in the above table. Factor analysis of variable reward in Figure 4, fitness index in Table 7 and its significant coefficients are shown in Table 8.

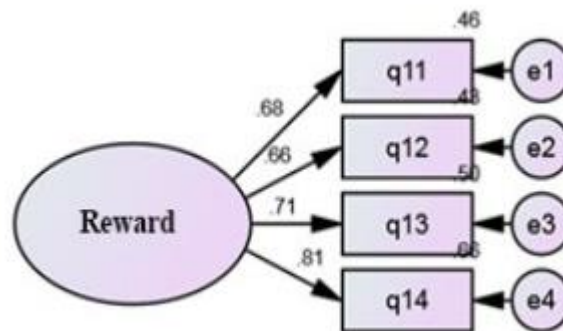


Fig. 4: Confirmatory Factor Analysis of the Reward Variable

Source: Research Findings

Table 7: Variable Reward Fitness Indices

Fitness index	Desired amount	Result
X ² /df	3<	1.8
GFI	0.90>	0.956
CFI	0.90>	0.939
RMSEA	0.08<	0.07

Source: Research Findings

Table 8: Meaningfulness Coefficients of Factors Affecting the Reward Variable

Relationship to item's codes		Estimate	S.E.	C.R.	P	
q11	<--	reward	0.68			
q12	<--	reward	0.655	0.147	7.053	***
q13	<--	reward	0.709	0.165	6.769	***
q14	<--	reward	0.814	0.172	6.985	***

Source: Research Findings

In factor analysis, first, the relationship between identified codes and the reward variable has been examined. All factor loads must be greater than 0.3 to be accepted. In the figure above, all factor loads related to the reward variable are greater than 0.3. So, we can say that these concepts are well measured. The results obtained from the above figure indicate the confirmation of the confirmatory factor analysis of the research. It is meant by a coefficient being meaningful that its meaningfulness number is greater than 1.96 or less than -1.96. All meaningfulness numbers are greater than 1.96 in the above table. Factor analysis of the second order in Figure 5, the index of fit of the Agency theory is shown in Table 9 and its significant values are shown in Table 10.

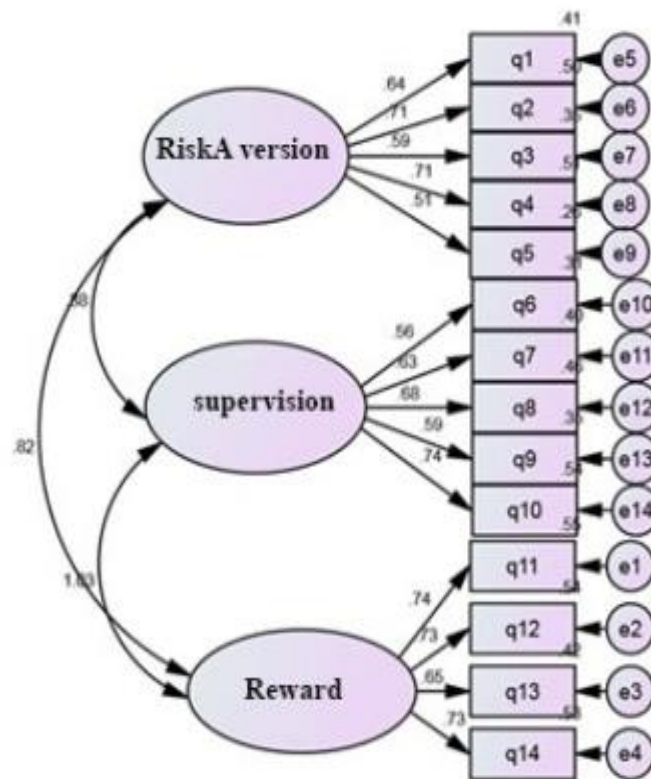


Fig. 5: The Second Factor Confirmation Analysis
Source: Research Findings

Table 9: Fitness Indices of Agency Theory Factors Variable

Fitness index	Desired amount	result
X ² /df	3 <	1.75
GFI	0.90 >	0.947
CFI	0.90 >	0.963
RMSEA	0.08 <	0.06

Source: Research Findings

In the second factor analysis, the relationship between the identified items has been investigated. All factor loads must be greater than 0.3 to be accepted. In the figure above, all factor loads of all three dimensions are greater than 0.3. So, we can say that these concepts are well measured. The results obtained from the above figure indicate the confirmation of the confirmatory factor analysis of the research. The meaningfulness of a coefficient means that its meaningfulness number must be greater than 1.96 or less than -1.96, which in the figure above all significant numbers are greater than 1.96.

7 Conclusion and Suggestions

Based on what has been stated, the present study has been conducted in the framework of the research strategy of mixed exploratory methods - typology modelling. In the first stage of using this strategy, the data-based theory is developed to review the agency theory in Iran as a developing country. In the second stage, we have subjected it to a quantitative test to ensure the generalizability of research findings. Confirmatory factor analysis has been used to confirm the relevant codes obtained for each of the axes. If the factor load is less than 0.3, it is weak and if it is between 0.3 to 0.6, it is acceptable and greater than 0.6 is desirable. The absolute value of the level of significance obtained for each factor load must be greater than the value of 1.96 to confirm its significance. The results of factor validation performed using Amos software in examining the relationship between the identified codes with the components of risk aversion, supervision and reward in the first-order factor analysis and the relationship between the identified variables in the second-order factor analysis show that all factor loads are greater than 0.3 and have a meaningful level greater than 1.96, which indicates the confirmation of the confirmatory factor analysis of the research.

Table 10: Meaningfulness Coefficients of Factors Affecting Agency Theory

Relationship between items			Estimate	S.E.	C.R.	P
q11	<--	Reward	0.740			
q12	<--	Reward	0.734	0.119	8.955	***
q13	<--	Reward	0.650	0.120	7.829	***
q14	<--	Reward	0.728	0.112	8.799	***
q1	<--	Risk aversion	0.642			
q2	<--	Risk aversion	0.706	0.146	7.339	***
q3	<--	Risk aversion	0.590	0.147	6.071	***
q4	<--	Risk aversion	0.713	0.185	6.515	***
q5	<--	Risk aversion	0.508	0.166	4.905	***
q6	<--	supervision	0.559			
q7	<--	supervision	0.633	0.208	6.142	***
q8	<--	supervision	0.676	0.253	6.420	***
q9	<--	supervision	0.591	0.207	5.928	***
q10	<--	supervision	0.735	0.217	6.790	***

Source: Research Findings

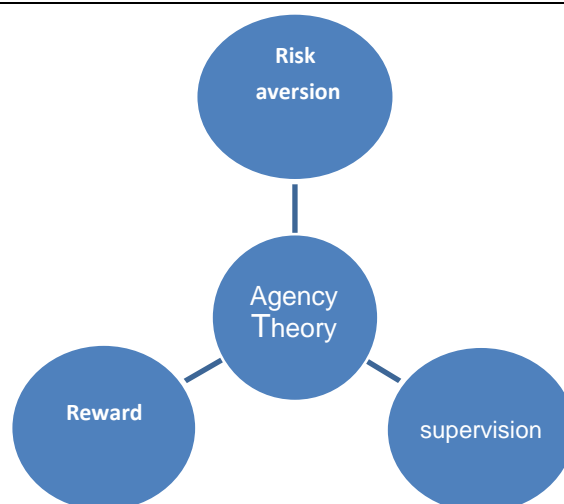


Fig. 6: Revised Dimensions of Agency Theory in Developing Countries (Iran)
Source: Research Findings

The results of the present study briefly showed that among the hypotheses of agency theory, risk aversion, supervision, and rewards have revised dimensions in Iran like an example of developing countries. Investigations have shown that risk-taking or risk-aversion behavior is highly dependent on institutional contexts and, at the same time, is influenced by a person's personal risk priorities. However, it seems that the agency theory hypothesis that agents / managers are more risk-averse than owners, and that minority investors are more risk-averse than major investors is not applicable at the level of developing countries with an institutional structure similar to Iran. Besides, it was found that financial solutions, supervisory strategies, and incentives to alleviate agency problems are not very effective at the level of developing countries. It is also generally believed that the implementation of strict regulations on supervision, corporate governance, and auditing can help resolve the conflict of agency in developing countries. Despite the delay in raising issues such as corporate governance in Iran, it is necessary to make diligent efforts in this area. It is different for domestic and foreign groups, but in practice it needs the necessary groundwork such as participation and internal audit. It seems that Iranian companies, despite the distance they have to the desired level of corporate governance, still take effective steps to improve. Have removed. The revised dimensions of agency theory in developing countries (Iran) are shown in Figure 6.

7.1 Matching Results

Research data on the conceptual scope, dimensions and components affecting the review of agency theory assumptions in the corporate governance system have been reviewed and analysed in Iran as an example of developing countries in this research. Studies conducted in the present study confirm the existence of assumptions;

1. Conflict of interests of manager and owner,
2. Information asymmetry,
3. Reverse selection,
4. Ethical risk,
5. Maximizing the expected utility,
6. Absenteeism
7. Failure to confirm the assumption to predict the future and receive information.

Due to information asymmetry, higher investment risks of minority shareholders and transparency problems, the lack of ability to predict the future and receive information is necessarily confirmed because with these conditions, the ability to predict future by those outside the company is greatly diminished, and their access to information is reduced. It should be noted, however, that in these circumstances, the ability to predict the future will continue for organization members and, in some cases, the major shareholders and controllers of the company. On the other side:

Namazi, examined the application of agency theory in management accounting. The results of the study show that agency theory has made great progress in the theoretical field and determining employment contracts and creating motivation. Jabari et al, examined the effect of agency costs on firm performance. The results show that there is a significant relationship between agency costs and firm performance.

Mousavi Shiri et al. investigated the effect of information asymmetry on stock overvaluation. The results show that information asymmetry has a positive and significant relationship to stock overvaluation. Nikokar et al, examined the relationship between corporate governance mechanisms and agency costs. Research findings show that if the ratio of asset turnover is used as a measure of agency costs, there is a meaningful relationship between the percentage of non-executive members and costs between agencies. McKnight and Weir, examined the impact of corporate governance mechanisms and ownership structure on agency costs. The results of their study showed that increasing the ownership of managers reduces agency costs. Lambert et al. examined the relationship between information difference in investment and cost of capital. The results show that increasing information asymmetry reduces firm capital costs. The advantage of the present study over the researches in literature is that the above studies have empirically examined the issues of corporate governance and agency issues at the level of companies listed on the stock exchange, while in the present study for the first time, the theory of representation at the level of the Iranian capital market is reviewed.

7.2 Practical Suggestions

Based on the research findings, the following suggestions are presented:

7.2.1 The Most Important Suggestions of the Anterviewees of the Interviews in Order to Improve the Risk Coverage of Investors and Managers, Respectively, are:

1. Increasing supervision by professional institutions on the quality of audit services and observance of professional conduct by auditing firms
2. Strengthening the quality of auditing to reduce the dependence of auditing firms on companies through the merger of auditing firms and the formation of large auditing firms
3. Strengthen the rules and regulations that require transparency
4. Increasing the legal requirements for companies to disclose non-financial and supplementary information
5. Supporting the presence of rating agencies in the capital market.

7.2.2 The Most Important Suggestions of the Interviewees in Order to Improve the Status of Reward Contracts, in Order of Importance, are:

1. Requiring management to report on the quality of the internal control system
2. Require audit and comment on the quality of the internal control system by independent auditors
3. Increasing the executive guarantee in case of non-observance and low quality of the internal control system
4. Strengthening the organizational position of the internal audit unit
5. Increase legal requirements regarding the necessary frameworks of the internal control system.

7.2.3 The Most Important Suggestions of the Interviewees in Order to Improve the Supervision of the

Board, in Order of Importance, are:

1. Strengthening the supervision of the stock exchange organization over non-executive members of the board of directors
2. Increase professionalism in selecting non-executive members for the board of directors of companies so that they can play a more important role in matters of executive supervision.
3. Expanding the general knowledge of actual and potential shareholders of the duties of non-executive board members in order to increase their demand for non-executive board members
4. Creating legal responsibilities for non-executive members of the board of directors in order to increase their responsibilities.

References

- [1] Akerlof, A., *The market for lemons: Quality uncertainty and the market mechanism*, Quarterly Journal of Economics, 1970, **84**(3), P.488-500. Doi:10.2307/1879431
- [2] Baradaran Hassanzadeh, R., TaghizadehKhaneghah, V., *The effect of agency costs on investment behavior*, Financial, Accounting and Auditing Research, 2016, **8**(32), P.139-170. Doi:10.22103/jak.2018.9813.2330. (In Persian)
- [3] Braiman, S., *Agency Research in Managerial Accounting*, A Survey. Journal of Accounting Literature, 1982, **1**, P.154-213, Doi:10.12677/FIA.2013.21001
- [4] Creswel, W., Plano Clark, V.L., *Designing and Conducting Mixed Methods Research London*, sage publication Inc, 2007, Doi:10.1177/1094428108318066
- [5] Dastgir, M., Tabousian, A., *Study of the effect of corporate governance system characteristics on profit management and tax management in Tehran Stock Exchange*, Accounting Studies, 2017, **4**(14), P.96-77. Doi:10.22055/jiar.2017.20466.1083(In Persian)
- [6] Darweesh, M., *Correlations between Corporate Governance, Financial Performance, and Market Value*, Walden Dissrtationaand Doctoral Studies, 2015. Doi:10.5897/JHF2014.0379
- [7] Dharwadkar, B., George, G., Brandes, P., *Privatization in emerging economies: An agency theory perspective*, Academy of Management Review, 2000, **25**(3), P.650–669. Doi:10.2307/2593
- [8] Eisenhardt, K. M., *Agency theory: An assessment and review*, Academy of Management Review, 1989, **14**(1), P.57–74. Doi:10.2307/258191
- [9] Fama, E., *Agency Problems and the Theory of the Firm*, Journal of Political Economy, 1980, **88**(2), P.288-307.
- [10] Frank, J., Mayer, C., *Corporate Ownership and Control in the UK, Germany and France*, Joel M. Stern and Donalds.H. Chew, Jr. The Revolution in Corporate Finance, 4th Ed. United Kingdom, Blackwell Publishing, 2004, P.535-551. Doi:10.1111/j.1745-6622.1997.tb00622.x
- [11] Fan, J., Wong, T. J., *Do external auditors perform a corporate governance role in emerging markets? Evidence from East Asia*, Journal of Accounting Research, 2015, **43** (1), P.35–72. Doi:10.24191/mar.v2i1.531
- [12] Guariglia, A., Yang, ., *A Balancing Act: Managing Financial Constraints and Agency Costs to Minimize Investment Inefficiency in The Chinese Market*, 2016, **36**, P.111-130. Doi:10.1016/j.jcorpfin.2015.10.006

- [13] Haidarpour, F., Nazari Tajar, M., *The Impact of Agency Costs on the Relationship between Corporate Governance and the Cost of Stock Capital*, Asset Management and Financing, 2018, **6**(2), P.98-85, Doi:10.22108 / amf.2017.21183
- [14] Hart, O., *Firms, Contracts Financial Structure*. Oxford University Press, New York, 1995. Doi:10.10123/456
- [15] HasasYeganeh, Y., *Corporate Governance in Iran*, Auditor's Quarterly, 2006, **32**, P.39-32. Doi:10.22103/jak.2011.32 (In Persian)
- [16] HesasYeganeh, Y.,Tajik, K., *Corporate Governance of the Board of Directors and Interaction with the Environment*, Accountant Monthly, 2009, **23**(9), P.68-62. Doi:10.22059/ 2019.246391.1007755(In Persian)
- [17] Hays, D.G., *Singh AAQualitative inquiry in clinical and educational settings*, New York, 2012,Guilford Press. Doi:10.1109/5.771073
- [18] Healy, P.M., Palepu, K.G., *Information asymmetry, corporate disclosure, and the capital markets*, a review of the empirical disclosure literature, J. Account Econ, 2001, **31**(1–3), P.405–440. Doi:10.1016/s0165-4101(01)00018-0
- [19] Heydari, M., *the Impact of Agency Costs on Financial Flexibility and CapitalStructure*, MasterThesisinAccountin, Al-Zahra University, 2016, Doi:10.22059/qbss.2019.36405.2136 (In Persian)
- [20] Ciftci, I., Tatoglu, E.,Wood, G., Demirbag, M., Zaim, S., *Corporate Governance and firm performance in emerging markets:EvidencefromTurkey*, International Business Review, 2019, **28**(1), P.90-103. Doi: 10.1016/j.ibusrev.2018.08.004
- [21] JabbarzadehKangarloui, S., Fatehi, S., Motusal, M., *Ethical Ideologies, Social Responsibility and Information Asymmetry in Companies*, Financial Accounting and Auditing Research, 2016, **8**(31), P.40-23. Doi: 10.1016/j.jaccpubpol.2017.05.004 (In Persian)
- [22] Jiang, G., Lee, C.M.C., Yue, H., *Tunneling Through Intercorporate Loans, The China Experience*, Journal of Financial Economics, 2010, **98**(3), P.1-20. Doi: 10.1016/j.jfineco.2010.05.002
- [23] Jensen, M. C., Meckling, W. H., *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structur*, Journal of Financial Economics, 1976, **3**(4), P.305–360. Doi:10.1109/5.771073
- [24] Khabazkar Foomani, M., Sarlak, A., *Investigating the relationship among information asymmetry, dividend policy and ownership structure*, Advances in Mathematical Finance and Applications, 2018, **3**(2), P.69-80. Doi: 10.22034/amfa.2018.540832
- [25] Khajavi, S., HosseiniNia, S., Nasiri, T., *The Relationship between Corporate Governance Mechanisms and Voluntary Disclosure of Environmental Information (Case Study of Chemical Industries and Pharmaceuticals and Pharmaceuticals)*, Financial Accounting Research and Auditing, 2016, **10**(40), P.20-1. Doi: 10.1016/j.iref.2014.12.01330 (In Persian)
- [26] Kouki, M., Guizani, M., *Ownership structure and dividend policy: Evivence from the Tunisian stock market*. European journal of Scientific Research, 2017, **25**(1), P.42–53. Doi:10.20473/tijab.v1.11.2017-13
- [27] Khosravi, H., *Theory of Agency in the Light of Political Philosophy and Public Law*, Legal Research, 2018, **21**(83), P.186-159. Doi:10.2203/jlr.2018.113083 (In Persian)

- [28] La Porta, R., Lopez-de-Silanes, F., Shleifer, A., *Corporate ownership around the world*, The Journal of Finance, 1999, **54**(2), P.471–517. Doi:10.1111/0022-1082.00115
- [29] Izadikhah, M. *Financial Assessment of Banks and Financial Institutes in Stock Exchange by Means of an Enhanced Two stage DEA Model*. *Advances in Mathematical Finance and Applications*, 2021, **6**(2), P. 207-232. Doi: 10.22034/amfa.2020.1910507.1491
- [30] Luo, J-h., Li, X., Chen, H., *Annual report readability and corporate agency costs*. China Journal of Accounting Research, 2018, **11**(3). P.187-212. Doi:10.1016/j.cjar.2018.04.001
- [31] Mustapha, M., *Culture and Agency Theory: Case Study of Malaysia*. International Business Management, 2017, **11**(3), P.664-672. Doi:10.52961/jmr.v1i2.12843
- [32] Pak Maram, A., Yasman Mayan, R., *Investigating the Impact of Agency Cost on Information Asymmetry*, Accounting and Management Perspective, 2018, **1**(2), P.96-83, Doi:10.22108 / .2018.23183
- [33] Namazi, M., *Study of Applications of Representative Theory in Management Accounting*, Journal of Social Sciences and Humanities, Shiraz University, 2005, **22**(2), P.164-147. Doi:10.22099/JAA.2005.3477 (In Persian)
- [34] Namazi, M., *Theoretical Developments of Principal - Agent Employment Contract in Accounting: The State of the Art*, Journal of Accounting Literature, 1985, **4**, P.113-163. Doi:10.5897/JAT11.032 (In Persian)
- [34] Radenovic, S., Hasani, P., *Impact of Financial Characteristics on Future Corporate Risk-Taking Behavior*, Advances in Mathematical Finance and Applications, 2020, **5**(2), P.129-147. Doi: 10.22034/amfa.2019.562157.1104
- [35] Radfar, M., Zomorodian, G., Aligholi, M., Minouei, M., Hanifi, F., *Designing Native Decision-Making Model for Selecting Venture Capital Investment in Emerging Companies*, Advances in Mathematical Finance and Applications, 2019, **4**(2), P.75-88, Doi: 10.22034/amfa.2019.584735.1178
- [36] Rahman Seresht, Hossein and Ataollah Harandi, *A Model for Strategic Control of Corporate Governance Using the Classical Foundation Data Theory Strategy*, Public Management Research, 2017, **10**(37), P.29-28, Doi:10.22111 / jmr.2017.3677
- [37] Rahmawati, A., Moeljadi, T., Djumahir, L., Sumiati, F., *How Do Agency Theory, Stewardship Theory and Intellectual Capital as a Solution for Agency Conflict?* Journal of Management Research, 2018, **10**(2), P.94-111. Doi:10.52961/jmr.v1i2.12843
- [38] Rennekamp, K., *Processing fluency and investors' reactions to disclosure readability*, J. Account. Res. 2012, **50**(5), P.1319–1354. Doi: 10.1111/j.1475-679x.2012.00460.x
- [39] Sharifian, F., *Typology and the process of designing and implementing combined research*, Quarterly Journal of Humanities Methodology, 2008, **14**(57), P.103-75. Doi:10.1111/j.1540-6261.1997.tb04820.x
- [40] Shleifer, A., Vishny, R.W., *A survey of corporate governance*. J. Finance, 1997, **52**(2), P.737–783. Doi:10.1111/j.1540-6261.1997.tb04820.x
- [41] Teddlie, C., Tashakkori, A., *Foundations of mixed methods research: integrating quantitative and qualitative techniques in the social and behavioral sciences*, sage publication Inc, London, 2009, Doi:10.1177/1558679506382461

-
- [42] Teddlie, C., Yu, F., *Mixed methods sampling*, Journal of Mixed Methods Research, 2007, **1**(1), P.77-100. Doi: 10.1177/1558689806292430
- [43] Vicente, L.C., Brandão, Freitas, I., Iturriagacá F. J. L., *Large shareholders' power and the quality of corporate governance: An analysis of Brazilian firms*, Research in International Business and Finance, 2020, **51**, 101076, Doi: 10.1016/j.ribaf.2019.101076
- [44] Zamani, S., Zanjirdar, M., Lalbar, A. *The effect of information disclosure on market reaction with meta-analysis approach*. Advances in Mathematical Finance and Applications, 2022, **7**(3), P. 629-644. Doi: 10.22034/amfa.2021.1937478.1625
- [45] Zanjirdar, M., *Overview of Portfolio Optimization Models*. Advances in Mathematical Finance and Applications, 2020. **5**(4), P.419-435. Doi: 10.22034/amfa.2020.674941.
- [46] Zanjirdar, M., Kasbi, P., Madahi, Z., *Investigating the effect of adjusted DuPont ratio and its components on investor & quote; s decisions in short and long term*, Management Science Letters, 2014, **4**(3), P.591-596. Doi: 10.5267/j.msl.2014.1.003
- [47] Rahmani, A., Zanjirdar, M., Ghiabi, H., *Effect of Peer Performance, Future Competitive Performance, and Factors of Correlation with Peer Companies on Manipulation of Abnormal Real Operations*, Advances in Mathematical Finance and Applications, 2021, **6**(1), P. 57-70. Doi: 10.22034/amfa.2020.1875478.1272