Providing a pricing model for independent auditing assurance services in Iran by a combination method of qualitative fuzzy Delphi and fuzzy demitel

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Abstract

The main goal of this research is to provide a pricing model for independent auditing assurance services. For achieving this goal, first effective factors and indexes on independent auditing assurance services based on context analysis technic were defined and then these factors and indexes were classified. Considering this goal, this project is an inventive combination of the type of sequential and tooling model, design and development model based on the design criteria of this model. Using a research case study method and semi-structured interview of managers and partners of the auditing institution and auditing firms, members of the Iranian Society of Certified Public Accountants has led to defining the research model criteria. Based on the interviews and analyzing the previous studies, the effective factors on the pricing model for independent auditing assurance services was recognized. 50 codes were investigated that was categorized into 9 groups based on axial codding. These factors include corporate governance, corporate ownership structure, inner company factors, outer company factors, audit firm factors, characteristics of managers and owners, financial and accounting factors, audit characteristics and competitive market auditing. To recognize the importance degree of the identified criteria, the fuzzy demitel group decision-making technique was used. Based on the obtained results, financial and accounting factors are located at the highest level of influence (9.91). Financial and accounting factors refer to the criteria of free float shares, percentage of ownership of the major shareholders, audit risk, ratio of total liabilities to total assets.

Keywords: Corporate pricing for independent auditing assurance services, auditing institution, Fuzzy Delphi, Fuzzy Demitel.
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1 Introduction

In the recent 20 years, auditing skills had fast and significant changes. Reducing legislations at auditing work, permitted the audit institutions to follow their economic goals more than before and seek to increase their revenue and reduce their expenses in auditing work. In this situation, a successful auditor can make the best estimate of his or her remuneration based on the characteristics of the under-review unit and increase the quality of work besides completing

it with the minimum price. Understanding the method to determine audit wages is important for auditors, owners, and individuals who follow this policy. All professional members and employed certified accountants are aware that for each job according to the rule, an estimation of the required working hours in different categories of auditing (budget) should be prepared and by applying the wage rate of each category of auditing staff (assistant auditor, auditor, senior auditor, supervisor and manager), the proposed amount of the wage should be calculated [36].

Pricing of auditing services is one of the critical and challenging topics and it can be considered as the main factor of economic dependency between auditor and employer its consequences can create fundamental uncertainties for the independence of auditors because it is possible that preserving customers and more benefit led to the phenomenon of comment selection.

The interests of the auditor in determining the audit services pricing and its acceptance by the employer to take advantage of the opinion selection phenomenon can lead to ethical risks for auditors. In previous research, it was shown that this theory can be used to interpret the effect of audit wages on audit quality [16].

Considering the mentioned issues and the existing disturbances and disorders in the Iranian auditing services market and because the pricing of auditing services can be an important factor in uncertainty than the independence and impartiality of the auditor, the phenomenon of ethical risks is the phenomenon for selecting opinion and quality of auditing. Also, its determination is closely related to the judgment of the auditors. This study seeks to analyze, identify and prioritize qualitative and quantitative factors affecting the pricing of auditing services and provide a model using group decision-making techniques and using identified factors.

Although the Iranian Society of Certified Accountants has recently determined the minimum wages for different categories of auditing, due to the lack of a valid model for pricing auditing services, this problem persists. Therefore, it is expected that implementing this research provides a suitable basis for determining the pricing of auditing services and the pricing of auditing services follows a regular basis.

The scientific goals of the research, study the effective factors includes the characteristics of corporate governance, employer characteristics, audit characteristics and also other environmental factors on determining the price of audit services. In this study, after identifying qualitative and quantitative factors effective on audit service pricing and finally prioritizing their scoring, a comprehensive model for determining the price of audit services will be provided. The practical goal of this research is to provide a comprehensive model for pricing the audit services which is provided after study and identifying the effective institutions' factors on audit service pricing for audit institutions and the related professional institutions and also for users of audit services, solutions will be provided to determine and agree on the pricing of professional auditing services. By identifying the effective factors on the pricing of the received audit services, appropriate policies can be formulated for some of these issues in this profession. Despite several types of research and studies in this field in many countries, there are not many types of research on this topic inside the country. Hence, this study seeks to examine the affective factors on the pricing of audit services and also clarify the elements for changing the pricing of independent auditor services. Therefore, this research seeks an answer to this question: how is the pricing model of independent audit assurance services?

2 Theoretical foundations and research background

From the view of financial information users, the audit report is very valuable. This value is a function of user groups and interested groups in company information. Now, a question is asked, what prices the business groups are willing to pay for the received services from independent auditors and whether this price is determined by them, or the auditor determines the price for his services or is it set by professional authorities. Understanding the method for determining auditing service price is important for auditors, their owners, and policy and regulator followers. Creating models that appropriately determine the pricing of audit services (such as the Simonic model, where the wage is considered as a function of the cost of the audit - operating hours multiplied by charge rates - and the risk that the auditor considers at the risk of litigation and possible future losses by the employer) is one of the best tools that can help to analyze the audit work and the continuity of activity in the competitive environment.

3 The concept of pricing of audit services and importance

Audit service pricing includes every dimension that is paid for providing audit services to the auditor or audit institution based on agreement or contract. One of the main discussions of the audit profession is currently determined and it is the minimum pricing rate of auditing. In fact, the price of every service or product is a value that the consumer has willing to pay for using it. But inaction, this formula in countries without a competitive market, does not have

a function and the price is determined with specifications or the minimum subsistence wage. The Economic Council every year, upon the suggestion of the Ministry of Economic Affairs and Finance, determines the pricing of services of audit institutions for audit services [4].

Audit economic profits are determined based on pricing the services which were received from contracts with employers. Auditors for pricing audit services use various factors and numerous searches about identifying and analyzing these factors are implemented. Descriptive factors that have been considered in most studies [41] have included risk factors, volume and complexity of the unit operations. The pricing of audit services has been the subject of many audit studies and in several studies, [25] the effective factors for the audit wage have been studied. Load ownership companies can be appeared more active in negotiating about auditing and controlling the internal aspects that affect service pricing by awareness of the effective factors on the pricing of audit services. In addition, awareness of effective factors on pricing amount of audit services for auditors is effective, because they will be able to reasonably price their audit services.

4 The method of defining pricing on audit services and the effective factors

The pricing of auditing services is a reflection of the auditing quality for external users of financial statements. Independent auditing includes an important part of the financial reporting system. The report of the independent auditor can indicate the fulfilment of the commitment of the employer's management towards the investors and the audit wage can be considered as a cost that is paid by the employer for fulfilling these commitments [9].

Pricing on services depends on several factors, with various degrees of importance in different countries. One of the main discussions of the auditing profession is currently determining the minimum pricing rate of auditing services and breaking the price of some auditing institutions, but considering auditing as a homogeneous product and non-competitive pricing, jeopardizes the independence and quality of auditing services. Also, it should be mentioned that independent auditing is the basis of economic transparency, public confidence in the market, and the response of the government to the public. Therefore, it should not be treated like an ordinary commodity and service [9].

Effective factors on the pricing of auditing services in many studies are divided into two main groups as follows: factors related to providers for auditing services such as professional auditors in industry, reputation and credibility of the auditing institution, professional independence of the auditing institution, size of audit institution and audit quality. Related factors to auditing service applicants include legal claims against the employer company, the reputation and credibility of the employer company, the size of the employer company and the risk of the employer company [2].

Examining the relationship between audit wages and delays in presenting an audit report helps to understand the timing for the presentation of the audit report. It also provides a better insight into the audit services market [23]. Examining this relationship is important for users of financial statements, customers, audit service providers, and market regulators [30]. The pricing of audit services should be determined based on the required time to perform the audit. In a competitive market for auditing services, the received additional wage by the auditor is due to the efficient use of time to perform accreditation services [22]. Fast completion of the audit operation may include more cost. Because auditors engage in activities such as overtime work or increasing the opportunities cost of audit [30]. However, there is a different view that the audit wage is related to the delay in submitting the audit report positively. Because, by increasing the wage, the amount of audit content tests also increases [49]. Also, the relationship with senior staff or negotiation with management about the outcome of the audit increases [30].

The pricing of auditor services will be determined based on the final cost of services used in the audit process as well as an estimation of future losses arising from the auditor's liability for the issued report. This process is done in three steps. The first step is the auditor's assessment of the occurrence of future losses arising from the auditor's judgment that will occur to a beneficiary, such as a shareholder, in the future. The second step is to use resources in performing audit operations, such as manpower until the ultimate benefit of reducing the present value of future expected losses from the audit of the financial statements is equal to the final cost of the additional audit investment. Finally, the auditor determines a price to cover the auditing cost. Meanwhile, the auditor's judgment plays an important role in determining the price [24]. The brokerage theory identifies the auditor as the independent representative of the stockholders and other stockholders in controlling the accuracy, reliability and relevance of the information that is provided by the managers of the commercial unit. But due to the fact that the auditing work requires a close relationship of the auditor and the managers of the business unit, in this theory, it is assumed that the auditors may not maintain their independence in doing their job and did not perform their job properly, in other words, do not act in line with their interests and their managers' interests [53]. Also, previous researches have shown that this theory can be used to interpret the effect of audit wages on audit quality [40].

Pezeshk and Pour Zamani [43], presented research with the title of seasonal auditing, the quality of information disclosure and the quality of auditing. In the study, the effect of disclosure quality and seasonality auditing on audit wages was studied experimentally. The disclosure quality was measured using the assigned points to each company by the Stock Exchange and Securities Organization, the seasonal audit was measured according to the companies' financial year and the audit wage was calculated using the natural logarithm of the paid wage by the company for independent audit services. The statistical sample of the study includes 125 companies accepted in the Tehran Stock Exchange in the period from 1388 to 1395. The results showed that there is a significant and negative relationship between the quality of disclosure and audit wages. Also, there is a significant and negative relationship between the quality of disclosure and audit wages in the busy audit season. But there is not a significant relationship between these two variables in the reclusion seasons.

In this study, the researcher measured the quality of disclosure based on the output of the audit activity and hence by making a significant relationship between the quality of disclosure and wages, the effective factor in assuring the prices is not interpreted. Because pricing and presenting price is done before performing the work and it is mentioned in the contract.

Nayebzadeh and Bani Mahd [16] presented a study with the title of Independent Auditing Services Pricing and Competition Theory. This article intends to examine the issue of pricing of audit services in private audit institutions based on competition theory. The research period is a twelve-year period, from 2005 to 2016. Theoretical foundations and research data have been collected through library studies and the research hypothesis test was performed based on multivariate regression. The results show that there is a significant relationship between audit wages, employer competitiveness, company size, debt ratio and sales growth. Based on the research results, the auditor's remuneration has an inverse and significant relationship with the competitiveness level of the employer. It means that, as the level of competitiveness of the employer increases, the audit wage. decreases Also, the size of the company and sales growth have a direct and significant relationship with audit wages and debt ratio has an inverse and significant relationship with audit wages. Also, the percentage of shares owned by the major shareholder has not any significant relationship with the audit wage.

In this research, pricing based on quantitative method and competitiveness hypothesis has been investigated. The competitiveness of the affective factors on the remuneration in the performed interviews was examined in the current article. In this research, we studied the desired qualitative and quantitative factors for experts and professional people for fulfilling decision making in pricing along with the other studied variables.

Khodadadi [25] in research, investigated the effect of profit-sharing policy on the relationship between profit quality and audit wages. In this study, stability of profit and manipulation of profit have been considered as profit quality indicators. Previous studies have shown that the paid cash profit shows a more reliable and stable profit; also, the paid cash profit reduces the risk of financial reporting fraud. The results of the first hypothesis testing indicate a negative and significant relationship between profit stability and audit wages, which is said that the companies that report more stable profits (high-quality profits) have a lower risk. As a result, auditors report lower wages from clients who report more stable profit than clients who do not report a stable profit.

In this study, it has been shown that the quality of profit has a positive effect on audit wages. And companies with stable profits have lower risks and receive lower wages. In this study, more emphasis is placed on the profit and loss approach. However, in pricing, attention to profit stability as one of the characteristics of risk is under consideration. The need to pay attention to an enterprise with a balance letter approach can also exist in scientific researches that in the present article they look at this issue from this aspect.

Kayhan Azadi et al. [38] presented a comprehensive model for pricing auditing services with fuzzy logic. These factors in the order of weight include the volume of operation, complexity of the operation, quality of internal controls of the employer, geographical dispersion of operation, size of the examined unit, first audit, type of comments of the previous years. Based on the Pareto chart, it was defined that the audit wage of about 31% is related to these factors. Therefore, based on the research findings, it is suggested that the audit organizations and institutions in the determination of the audit wage consider the three above factors based on their importance and priority.

In this research, the topic is studied quantitively and 31% of the effecting factors are defined on audit wage and other factors are neglected but in the current article, the quantitative aspects with qualitative aspects are investigated (with interview).

Diyanti Deilami and Bayati [17], proposed research entitles competition in the market of products and independent audit wage. The goal of this research is to investigate the relationship between the competitive market for the product and independent auditor wage in financial statements. For this regard, financial data of 72 firms in the Tehran Stock Exchange was analyzed by regression pattern of tableau data with stable effects. The obtained results, in general,

show that the competitive market of the product has a significant effect on the independent auditor wage. According to the obtained result, it can be said that competition reduces the representation problems between managers and shareholders, and this fact, in turn, reduces information asymmetry and control costs. Therefore, the audit risk is reduced and as a result, the requested wage by the auditor will be reduced.

In this project, it was shown that the competition results in decreasing asymmetry of information and reduces risk and audit wage. But probably competition may exist and managers should refrain from disclosure of some information that is effective in competition. This action increases review in audit and may lead to an increase in audit wage.

Nikbakht and Tanani [39] in their study entitled factors affecting the audit wage of financial statements, examined the factors affecting the audit wage. For this goal, they collected the required information from the companies' financial statements by conducting interviews with their executives for five consecutive years, and after ordering the information, they tested their relationship with the audit wage. The statistical method in this study was correlation analysis by using integrated data estimation (panel). Results of this study showed that the variables of operation volume (size) of the company, complexity of company operations, type of audit institution and inflation have a significant relationship with audit wage, but the audit risk variables and education and experience of the responsible person for preparing the financial statements (audit wage) did not have a statistical relationship.

In this research, it is asserted that the risk of audit has not no relationship with audit wage. But audit risk is one of the important problems in defining wage and in this article, in the performed interviews from experts, this topic is mentioned.

Mehrani and Jamshidi Evanaki [34], in their study entitled analyzing the effective factors for determining audit wage, by analyzing the relative theoretical and research literature determined the factors affecting the audit wage including the quality of the audit report, the reputation of the employer, the size of the employer, the industrial profession of audit institution, the size of the audit institution, time budget, reputation of the audit institution, risk of employer firm and legal claims. The statistical population of this research includes all accepted institutions and firms in Stock Market at 1387 and 60 firms were analyzed with the random sampling method. The obtained findings indicate that the quality of audit, the reputation of the employer, the industry professionals, the spent time budget on the audit process, the amount of balance letter, the total current assets of the company and the history of the audit firms had a positive and meaningful effect on the audit wage. On the other hand, the risk of the employer company, the number of employees, the number of employees of the auditing institution, the total revenue of the auditing firm and the number of under review Stock Market companies of every auditing institution do not have a significant effect on audit wages.

In this research, it is mentioned that the employer reputation has a positive effect on audit wage but the risk of employer firm does not have any effect. But based on theoretical concepts, it is expected that the risk of the employer is an effective factor in wage and this article considers the risk of the employer as an effective factor in determining the pricing of audit services.

Shan et al, [51] investigated the management ownership relationship, the size of the audit firm and auditor wage. The under-review sample includes Australian companies from 2005 until 2015. The results show that when management ownership level is compatible with stockholders interests (interest convergence), there is a meaningful negative relationship between management ownership and the size of audit company and audit wage. In this research, it was shown that the company leadership has a direct impact on auditing wages, which in this article is one of the effective factors on audit wages.

Wang et al. [54] investigated the relationship of the loan guarantee, social responsibility of the company, and auditor wages. The statistical sample includes active companies in the Shanghai and Shenzhen stock exchanges during the period 2008 to 2016. A total of 2926 companies and 17859 year-company were studied. The results show that assurance of the debt of another entity significantly increases the audit wage of the company. Also, the results showed that disclosure in the information of company responsibility reduces the effects of increasing the auditor wage due to loan guarantees.

This research shows that information disclosure has a direct impact on audit wage, which is following international standards.

Coffie and Bedi [13] studied the impact of international financial reporting standards and company size on the auditor's wage. The statistical population includes financial institutions in Ghana from 2003 to 2014. The results indicate that the acceptance of International Financial Reporting Standards has a significant positive relationship with the auditor's wage. The researchers discussed that the adoption of international financial reporting standards would increase the paid wages by banks and insurance companies. Also, the results showed that the size of the company has

a significant positive relationship with the wage of the auditor.

In this study, it is stated that the acceptance of international standards increases the wage. Behavioural and operational expectations want that by accepting international standards, assets will be valued at a fair value and their result will experience an increase in work risk and workload, which leads to an increase in the wage.

Donatella et al. [18] studied the relationship between auditor size and audit wages with earnings management in Sweden. The researchers investigated the information financial statements in companies from 2011 to 2013 and concluded that if auditing wages increases, the possibility of profit management would increase. The researchers argued that there is disagreement about the probability of profit management based on the size of the audit company. This means that audit quality is a factor that affects the probability of profit management in companies.

In this research, it is mentioned that profit management (profit management means the use of managers from their judgments in financial statements to change in the direction of financial reporting) has a direct impact on auditing wages, which in practice is accepted by independent auditors. In the conducted interviews in the current article, this is one of the 50 factors affecting the pricing of audit services.

Heliodoro, Carreira and Lopes [21], proposed research with the topic of audit, market competition in Portugal. They investigated the audit market competition in Portugal from 2003 to 2013. They showed that the income of four large audit institutions from the whole income of the audit market in 2003 decreased from 38% to 88% in 2013. They also found that 89% of auditing institutions have small owners. The results of their research showed that 13% of the income of auditing firms increased during this period and the remaining 90% had faced a decrease in revenue. The reason for the decrease in the income of large audition institutions was the increase of competition in the audit market, and the increase in the market competition was the product of the owners.

In the above research, the positive effect of competition on audit wage was investigated. In practice, many of the independent auditors agree on this factor as an effective factor on the wage. In this, in the conducted interviews from experts, this topic is mentioned. Competitiveness is one of the main factors in determining the price of audit services.

Gerakos and Syverson [20], in the investigation of audit market share from the view of remuneration and the number of employers in America from 2002 to 2010, conducted that PWC audit institution has higher share in terms of wage than other big audit institutions. But in terms of the employer, Ernest and Yang audit institutions have a higher share in the audit market. They showed that the share of 4 major audit institutions during the research period has a declining trend. The share of the audit market in terms of audit wages has decreased from 96.85% in 2010 to 94.72%. Also, the share of the audit market in terms of the number of employers has decreased from 82.65% in 2002 to 67% in 2010. In the above research, the effectiveness of competition in audit institutions in determining wage is mentioned and this issue has been mentioned in theoretical concepts. In this article, competitiveness is one of the main components in the pricing of audit services.

5 Methodology of the research

This research in terms of data collection method is field research because it seeks to discover the required data for investigating the desired relationship from the created data in the environment of the desired phenomenon and the data are controlled and recorded on outputs only, which is in contrast to laboratory methods that are controlled on both inputs and outputs.

Also, this research in the view of survey research is among the exploratory-descriptive researches because, in the first step, it seeks to determine the effective factors and then identifies the relationships between these variables. We use multi-criteria decision-making techniques such as hierarchical analysis for ranking and determining the weights of variables.

Also, in terms of the nature of the research, this research is among the researches based on the positivist view and uses the combined research method. The combined research method is a method that is conducted by combining two collections of quantitative and qualitative research methods. This research in its qualitative part, which has inventive nature, uses the method of content analysis and interview, and in its quantitative part uses survey methods and will seek to identify and rank them.

Qualitative research can provide delicate details of phenomena that are difficult to present in a quantitative method, or it can be used to provide a new vision on things with some awareness.

Qualitative researches can be mentioned as a quantitative research complement [7]. In the view of Antoni Hapood, the advancement of evolving science results by increasing the experience and understanding of experts [45] and qualitative research also profit the most from the experience and understanding of experts in research. Therefore, the

study of auditing wages also has this property, also, qualitative research should be used if the studied phenomenon is investigated from different dimensions [7] and because the determination of wage is an interactive and complex process and it is influenced by various factors and there are some problems in that which have not been mentioned in books, articles, etc. Hence, in order to understand it and achieve all the factors, wage processes are done from the view of experts to present a data-based model with the combined method.

The present study is based on several steps and it is done by using several techniques. In this research, the combined qualitative method, fuzzy Delphi, interpretive-structural modelling (ISM) has been used for identifying and designing the pattern of index relations. For calculations, Excel software has been used. Data analysis methods are different in the two studies. In the first study, the data analysis method is performed after collecting information from content analysis and after analysis and interpretation of results and implementation of the qualitative model. In the second study, in which a descriptive survey method is used, structural-interpretive modelling will be used.

6 Collecting and analysis

The current research was implemented in 1999. In this method, collection and analysis were performed simultaneously and it requires that the researcher perform collecting, codding and analysis on data from the beginning of the research. In this research, data are collected through interviews and questionnaires.

The required information was collected through interviewing and completing a questionnaire by experts. The research population of the present study includes managers and partners of the auditing organization and auditing institutions that are members of the Iranian Society of Certified Accountants. Which has been done using the non-probable judgment method (with purpose); Thus, first, considering the researcher's knowledge, the interview of samples was done from the selected experts who were qualified to answer the questions based on the objectives of the research. For sampling, the snowball method was used. It means that the interviewees introduced other knowledgeable and informed people about the topic of the research. The interview was conducted in a semi-structured behaviour with open and general questions for 10 people until we reached data saturation, but for assurance, the interview was performed on 12 people. Using data technique basis and by using MAXQDA software, the factors were identified. And finally, a pairwise comparison questionnaire was performed from 35 auditing experts.

In the current research for the interview, triple coding including open, axial and selecting coding was used.

6.1 Open coding (primary)

This is conceptualizing and categorizing data. The purpose of this stage is to use the data for creating abstract steps to help create theory in the next stages. The process of determining the conceptual label in open coding is guided by continuous comparison and sequential questioning. Two methods of coding in this step, by helping the participants and coding based on the existing concepts in data were performed [50]. Then, meaning units were compared to find similarities and differences and the codes which showed similar happenings and topics, were located in a step to form intellectual concept and by advancement in the interview, the stages became more open. Since, in the field of theorizing, the primary codes are temporary and need change and correction during analysis [50], the primary codes in this stage were reviewed and corrected to the end of research steps. In this research, coding based on concepts was used and based on this, the extracted data were codded and proper concepts were specialized to each code.

In the following, by presenting the questions of research and tables of the topics of interviewers, the coding of interview contexts in MAXQDA software are studied. In this part of the research, selective coding on the pricing model of independent audit accreditation services was presented. Based on comparing the different concepts, we conducted that the concepts of the pricing model of the independent audit accreditation service were presented in different studies, they mention an issue that after continuous comparisons in conceptualization at a higher level of abstraction, the label of pricing model of the independent audit accreditation service was assigned to it.

In the below picture, several cases of concept extraction and their categorization are brought as a sample. In the following, we examine the under-review contexts and conduct interviews. We as auditors did not sell any product that is valuable to the management. He wants just a button and a signature that can get it from everybody. In this situation, he should get that cheaper but if you are an auditor, and you are entered in a company and they feel your presence, the interests that are defined in audit (in audit literature it has preventing power and ...) are seen, (code: controlling aspect of auditor) the auditor has entered in the company and he gives suggestions that can improve the operations of the company (code: suggestion for improving the operation of employer) and this will increase the internal control (code: internal control improvement) you are doing a good job, and certainly, many customers give a large amount of money for a good service. But they should see the quality. When I am going to go there and do

the job that the cheaper auditor does, I have no increase in added value (code: the existence of an added value for the employer), and I have no solution for their problems, I should say that this is contrary to standard and I don't realize that, and he won't give me money and anybody else. But when you have a solution for them and help them to advance their work (code: the amount of presenting an approach for solution) it will lead to more transparency in their financial reporting (code: help to bring transparency in the financial report) and most important than anything else, it will lead to advance their operation, hence they will give you money, also, we have seen this in different works.

From the above quote, which is from the extracted interviews of the audit controlling aspect, the following factors have been extracted: suggestions to improve the client's operations, improvement in the internal controls and the amount of provided solutions to solve problems, the existence of the added value to the employer and helping the transparency of the financial statements. Mentioning some of the above concepts in other interviews that existed before and in the process of comparing and correcting the data, the above conceptual label has been assigned to them. In the process of continuous data comparison, each of these concepts is compared with each other and their similarities and differences are defined. In summing the mentioned codes and in the conceptualization of higher level of abstraction, the category of understanding the value of the auditor's work for the employer is attributed to the above-extracted concepts and this concept has a higher percentage of the above concepts and it is more abstract and it will cover the previous concepts. For this sake, a different category related to the auditor characteristics, employer and occupation situations and social environment have been investigated and extracted.

6.2 Axial codding

In the second stage of axial codding, the researchers have connected the main and sub-class stages extracted from the open codding of data and it will define the existed pattern in data. The purpose of this kind of codding is to define an axial idea among the identified stages. In other words, axial coding is a process for connecting sub-classes to a stage and its necessity is the permanent comparison of data [50].

6.3 Selective codding

Data analysis after axial codding enters the next stage with third level codding. Selective coding is determining the nature and the connections of axial stages with sub-classes and determining the central variables and asserting the final theory. In the end, 50 sub-categories are identified in 7 stages. A summary of implementing three methods of codding and their summary is presented in table number 1. In table 1, the created codes along with the main categories of every group are brought.

6.4 Validation

Based on the conceptual analysis of the specialized interviews, finally, 50 indexes were investigated. For screening and insurance of the importance of the identified indicators and selecting the final indicators, the fuzzy Delphi method was used. For analyzing the importance of indicators, expert opinions were used. However, expert people use their mental competencies and abilities for performing comparisons, but we should consider the fact that the traditional process of quantification of people's views does have not the probability of the reflection of human thinking style completely. In other words, using fuzzy collections, have higher compatibility with linguistic and ambiguous human explanations and therefore, it is better to use fuzzy collections (using fuzzy numbers) for long-term procrastination and decision making in the real world. In this study, for fuzzy analysis of expert view, triangle fuzzy numbers are used. Expert visions about the importance of every index with a 7-degree fuzzy spectrum are collected.

In the next step, expert opinions should be collected. Various methods have been proposed to collect the views of n respondents. In fact, these collection methods are experimental methods that have been proposed by various researchers. For example, a conventional method for collecting a set of triangular fuzzy numbers considers the minimum l, the geometric mean m, and the maximum u.

$$F_{AVE} = \left(\left\{ \frac{\sum l}{n} \right\}, \left\{ \frac{\sum m}{n} \right\}, \left\{ \frac{\sum u}{n} \right\} \right) \tag{6.1}$$

Each triangular fuzzy number from the collection of expert views for the Jth index is viewed as bellow:

$$\tau_j = (L_j, M_j, U_j)$$

Table 1: categorization of the identified codes

Axial coding	Primary coding	Source
Audit characteristics	Audit work	Ye et al [55]
External agent factors	Expected loss (costs of probable claims, costs of possible reputations and credit and legal offenses arising from performing the audit)	Zhang et al. [57]
Competitive audit market	Type of auditor	Redmayne et al [48]
Competitive audit market	Rate break	De George et al [14]
Competitive audit market	Discount	Martinez et al [33]
Competitive audit market	Mandatory rotation of auditors	Lang et al [29]
Competitive audit market	Competition in audit	Cassell et al [12]
Competitive audit market	Quality of audit	Ali et al [3]
Factors of the auditing institution	Auditing Institute Culture, skills	Ball et al [6]
Factors of the auditing institution	The ability of staff and auditors	Kim et al [27]
Audit characteristics	Effectiveness of audit process	Capkun et al [11]
Audit characteristics	Validity and usefulness of the audit report	interview
Factors of the auditing institution	Agent specialization in the industry of the auditing firm	Shan et al [51]
Audit characteristics	Audit ability (experience, power, adaptation and technical efficiency)	De George et al [14]
Audit characteristics	Professional implementation (independence, objectivity, professional care, conflict of interest and judgment)	Wang et al [54]
Characteristics of managers and auditors	Lack of awareness of users from financial information	interview
Audit characteristics	Diversity of the reffered works to audit institutions	Lai [28]
External agent factors	Lack of effective and active relation with interntional societies	Coffie and Bedi [13]
External agent factors	Accounting	Qasim et al [46]
Factors of the auditing institution	Reputation of audit institution	Miah [35]
Factors of the auditing institution	The length of the auditor's tenure	Biswas [8]
Factors of audit characteristics	Size of the audit institution	Martinz et al [31]
Factors of audit characteristics	Audit comment	interview
Internal agent factors	Size of employer (company)	Li & Guo [31]
Internal agent factors	Complexity of company operations	Alhadab [1]
Internal agent factors	Organizational structure of company (concentration)	Miah [35]
Internal agent factors	End of financial year (season of crowded work)	Cassell et al [12]
Internal agent factors	Interaction between the end of the financial year and the size of the company	Zegal et al [56]
Characteristics of managers and auditors	Customer reputation	Bala et al [5]
Characteristics of managers and auditors	Discussions between audit and employer	Alhadab [1]
Characteristics of managers and auditors	Employer legal claims	Vivek Mande et al [32]
Competitive market audit	Time budget	interview
Financial and audit factors	Audit risk	Donatella et al [18]
Company governance	Natural logarithm of book value of total assets	Biswas [8]
Company governance	Ondexes ofcompany ownership	Heliodoro, Carreira and Lopes [21]
Company governance	The ratio of the board members directors to the general manager	interview
Financial and audit factors	Percentage of ownership of major stackholders	De George et al [14]
Structure of company ownership	Structure of company ownership	Martiz et al [33]
Financial and audit factors	The amount of free-floating stock	Lang et al [29]

$$L_j = \min(X_{ij})$$

$$M_j = \sqrt[n]{\prod_{i=1}^{n} X_{ij}}$$

$$U_j = \max(X_{ij})$$

Index i refers to an expert. So that; X_{ij}: The value of ith expert evaluation of the jth criterion, The minimum

Structure of company ownership	Percentage of ownership of governmental and quasi-governmental institutions	Cassell et al [12]
Financial and audit factors	The amount of disclosure of the transaction of the related parties and timely payment of share profits by the company	Wang [54]
Internal company factors	Number of staff	Donatella et al [18]
Internal company factors	The main and subsidiary of the company	interview
Financial and audit factors	The ratio of total liabilities to total assets	Niewöhner et al [37]
Structure of company ownership	Management ownership	Usio-Ansa et al [42]
Structure of company ownership	Institutional ownership	Kikhia [26]
Structure of company ownership	Family ownership	Alhadab [1]
Structure of company ownership	governmental ownership	Wang [54]
Internal agent factors	Life cycle of company	Biswas [55]
Features of managers and owners	Management overconfidence	interview

Table 2: 7-degree fuzzy spectrum for valuating indexes

Fuzzy number scale	Fuzzy amount	Linguistic variable
(0, 0, 0.1)	$\tilde{1}$	Completely unimportant
(0, 0.1, 0.3)	$\tilde{2}$	Very unimportant
(0.1, 0.3, 0.5)	$\tilde{3}$	Unimportant
(0.3, 0.5, 0.75)	$\tilde{4}$	Average
(0.5, 0.75, 0.9)	$\tilde{5}$	Important
(0.75, 0.9, 1)	$\tilde{6}$	Very important
(0.9, 1, 1)	$\tilde{7}$	Completely important

value of the evaluations for the jth criterion, M_j: The geometric mean of the expert evaluation from the performance of the jth criterion, U_j: The maximum value of the evaluations for the jth criterion.

6.5 De-fuzzy of amounts

Generally, the sum of the mean of triangular and trapezoidal fuzzy numbers can be summarized by a definite value which is the best-related mean. This operation is called de-phasing. There are various methods for de-phasing. In most cases, for de-phasing, the following simple method is used. The mean fuzzy and de-phasing output of the related values to the index are given in Table 3. A fuzzy value greater than 0.7 is acceptable, and any indicator with a lower score than 0.7 is rejected. Based on the results of the first step, no index was omitted or added and all cases were accepted.

6.6 Second round of Delphi technique

Fuzzy Delphi analysis for indexes was continued in the second round. In this stage, 50 indexes based on the expert's opinion was analyzed. The obtained results from fuzzy Delphi in the second round are reported in table 4. Based on the absolute amount from the second round, no index was removed.

6.7 Third round of Delphi technique

Fuzzy Delphi analysis continued for the remained indexes in the third round. At this stage, 50 indicators were evaluated based on the opinions of 12 experts. The results of fuzzy Delphi in the third round are reported in Table 5:

Based on the absolute value obtained in the third round, no factor was removed.

6.8 End of Delphi technique rounds

In the third round, no questions were removed that shows the end of Delphi rounds. So that, an approach for ending Delphi is that the average of question scores of the last rounds are comprised with each other. If the difference between the two stages is lower than the threshold (0.2) hence the polling process will be stopped. Based on the listed results in table 6, it was defined that in all cases the difference is lower than 0.2, hence the Delphi rounds can be finished.

Based on the listed results in the table, it was defined that in all cases the difference was lower than 0.2, hence the Delphi rounds can be finished.

Table 3: 7-degree fuzzy spectrum for valuating indexes

Round result 1	Definite amount	Fuzzy average	Upper bound	Probable value	lower bound	index
acceptation	0.872	(0.748,0.898,0.969)	0.969	0.898	0.748	A1
acceptation	0.761	(0.61,0.779,0.894)	0.894	0.779	0.610	A2
acceptation	0.744	(0.602,0.76,0.871)	0.871	0.760	0.602	A3
acceptation	0.925	(0.829,0.954,0.992)	0.992	0.954	0.829	A4
acceptation	0.781	(0.633,0.804,0.906)	0.906	0.804	0.633	A5
acceptation	0.904	(0.792,0.929,0.992)	0.992	0.929	0.792	A6
acceptation	0.752	(0.621,0.769,0.867)	0.867	0.769	0.621	A7
acceptation	0.890	(0.771,0.917,0.983)	0.983	0.917	0.771	A8
acceptation	0.866	(0.733,0.894,0.971)	0.971	0.894	0.733	A9
acceptation	0.847	(0.706,0.871,0.965)	0.965	0.871	0.706	A10
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A11
acceptation	0.738	(0.604,0.754,0.854)	0.854	0.754	0.604	A12
acceptation	0.777	(0.623,0.796,0.913)	0.913	0.796	0.623	A13
acceptation	0.813	(0.681,0.833,0.923)	0.923	0.833	0.681	A14
acceptation	0.803	(0.66,0.825,0.923)	0.923	0.825	0.660	A15
acceptation	0.928	(0.833,0.956,0.996)	0.996	0.956	0.833	A16
acceptation	0.890	(0.771,0.917,0.983)	0.983	0.917	0.771	A17
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A18
acceptation	0.813	(0.681,0.833,0.923)	0.923	0.833	0.681	A19
acceptation	0.918	(0.815,0.944,0.996)	0.996	0.944	0.815	A20
acceptation	0.731	(0.596,0.75,0.848)	0.848	0.750	0.596	A21
acceptation	0.866	(0.733,0.894,0.971)	0.971	0.894	0.733	A22
acceptation	0.708	(0.558,0.725,0.84)	0.840	0.725	0.558	A23
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A24
acceptation	0.932	(0.84,0.96,0.996)	0.996	0.960	0.840	A25
acceptation	0.847	(0.706,0.871,0.965)	0.965	0.871	0.706	A26
acceptation	0.827	(0.706,0.85,0.925)	0.925	0.850	0.706	A27
acceptation	0.896	(0.788,0.923,0.977)	0.977	0.923	0.788	A28
acceptation	0.752	(0.621,0.769,0.867)	0.867	0.769	0.621	A29
acceptation	0.932	(0.838,0.958,1)	1.000	0.958	0.838	A30
acceptation	0.872	(0.748,0.898,0.969)	0.969	0.898	0.748	A31
acceptation	0.892	(0.779,0.917,0.981)	0.981	0.917	0.779	A32
acceptation	0.761	(0.61,0.779,0.894)	0.894	0.779	0.610	A33
acceptation	0.925	(0.829,0.954,0.992)	0.992	0.954	0.829	A34
acceptation	0.744	(0.602,0.76,0.871)	0.871	0.760	0.602	A35
acceptation	0.794	(0.648,0.813,0.921)	0.921	0.813	0.648	A36
acceptation	0.925	(0.829,0.954,0.992)	0.992	0.954	0.829	A37
acceptation	0.875	(0.765,0.9,0.96)	0.960	0.900	0.765	A38
acceptation	0.781	(0.633,0.804,0.906)	0.906	0.804	0.633	A39
acceptation	0.776	(0.646,0.794,0.888)	0.888	0.794	0.646	A40
acceptation	0.904	(0.792,0.929,0.992)	0.992	0.929	0.792	A41
acceptation	0.847	(0.706,0.871,0.965)	0.965	0.871	0.706	A42

6.9 Investigating internal relations with fuzzy dimente technique: FDEMATEL

First step: For collecting data for solving research problems, expert groups should be created.

Second step: Designing Linguistic scales and defining evaluation criteria: in this stage, the effective indexes on the research topic were investigated. Considering the under-review fields, the criteria to be evaluated are selected. Linguistic scales are based on table number 1 and fuzzy numbers in this research are triangular fuzzy-type.

The fuzzy numbers in this research are triangular. The obtained matrix from the effective dimetel technique and the effectiveness of variables are shown. Also, the existing cause and effect relation in variables are shown.

acceptation	0.777	(0.623,0.796,0.913)	0.913	0.796	0.623	A43
acceptation	0.872	(0.748,0.898,0.969)	0.969	0.898	0.748	A44
acceptation	0.761	(0.61,0.779,0.894)	0.894	0.779	0.610	A45
acceptation	0.744	(0.602,0.76,0.871)	0.871	0.760	0.602	A46
acceptation	0.925	(0.829,0.954,0.992)	0.992	0.954	0.829	A47
acceptation	0.781	(0.633,0.804,0.906)	0.906	0.804	0.633	A48
acceptation	0.904	(0.792,0.929,0.992)	0.992	0.929	0.792	A49
acceptation	0.752	(0.621,0.769,0.867)	0.867	0.769	0.621	A50

Table 4: 7-degree fuzzy spectrum for valuating indexes

Round result 2	Definite amount	Fuzzy average	Upper bound	Probable value	lower bound	index
acceptation	0.872	(0.748,0.898,0.969)	0.969	0.898	0.748	A1
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A2
acceptation	0.761	(0.61,0.779,0.894)	0.894	0.779	0.610	A3
acceptation	0.744	(0.602,0.76,0.871)	0.871	0.760	0.602	A4
acceptation	0.925	(0.829,0.954,0.992)	0.992	0.954	0.829	A5
acceptation	0.741	(0.569,0.756,0.898)	0.898	0.756	0.569	A6
acceptation	0.781	(0.633,0.804,0.906)	0.906	0.804	0.633	A7
acceptation	0.904	(0.792,0.929,0.992)	0.992	0.929	0.792	A8
acceptation	0.890	(0.771,0.917,0.983)	0.983	0.917	0.771	A9
acceptation	0.866	(0.733,0.894,0.971)	0.971	0.894	0.733	A10
acceptation	0.847	(0.706,0.871,0.965)	0.965	0.871	0.706	A11
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A12
acceptation	0.738	(0.604,0.754,0.854)	0.854	0.754	0.604	A13
acceptation	0.777	(0.623,0.796,0.913)	0.913	0.796	0.623	A14
acceptation	0.813	(0.681,0.833,0.923)	0.923	0.833	0.681	A15
acceptation	0.803	(0.66,0.825,0.923)	0.923	0.825	0.660	A16
acceptation	0.928	(0.833,0.956,0.996)	0.996	0.956	0.833	A17
acceptation	0.890	(0.771,0.917,0.983)	0.983	0.917	0.771	A18
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A19
acceptation	0.813	(0.681,0.833,0.923)	0.923	0.833	0.681	A20
acceptation	0.918	(0.815,0.944,0.996)	0.996	0.944	0.815	A21
acceptation	0.731	(0.596,0.75,0.848)	0.848	0.750	0.596	A22
acceptation	0.866	(0.733,0.894,0.971)	0.971	0.894	0.733	A23
acceptation	0.708	(0.558,0.725,0.84)	0.840	0.725	0.558	A24
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A25
acceptation	0.932	(0.84,0.96,0.996)	0.996	0.960	0.840	A26
acceptation	0.847	(0.706,0.871,0.965)	0.965	0.871	0.706	A27
acceptation	0.827	(0.706,0.85,0.925)	0.925	0.850	0.706	A28
acceptation	0.896	(0.788,0.923,0.977)	0.977	0.923	0.788	A29
acceptation	0.752	(0.621,0.769,0.867)	0.867	0.769	0.621	A30
acceptation	0.932	(0.838,0.958,1)	1.000	0.958	0.838	A31
acceptation	0.872	(0.748,0.898,0.969)	0.969	0.898	0.748	A32
acceptation	0.892	(0.779,0.917,0.981)	0.981	0.917	0.779	A33
acceptation	0.744	(0.602,0.76,0.871)	0.871	0.760	0.602	A34
acceptation	0.794	(0.648,0.813,0.921)	0.921	0.813	0.648	A35
acceptation	0.925	(0.829,0.954,0.992)	0.992	0.954	0.829	A36
acceptation	0.875	(0.765,0.9,0.96)	0.960	0.900	0.765	A37

6.10 Creating the initial direct relation of fuzzy matrix with collecting expert opinions

We want the experts to compare the relationships between the criteria in pairs and based on their effect on each other. In this survey, experts will express their views based on Table 1. Assuming that we have n criteria and k experts; we have k fuzzy matrix and each of them corresponds to the opinions of an expert with triangular fuzzy

acceptation	0.781	(0.633,0.804,0.906)	0.906	0.804	0.633	A38
acceptation	0.776	(0.646,0.794,0.888)	0.888	0.794	0.646	A39
acceptation	0.777	(0.623,0.796,0.913)	0.913	0.796	0.623	A40
acceptation	0.803	(0.66,0.825,0.923)	0.923	0.825	0.660	A41
acceptation	0.890	(0.771,0.917,0.983)	0.983	0.917	0.771	A42
acceptation	0.918	(0.815,0.944,0.996)	0.996	0.944	0.815	A43
acceptation	0.872	(0.748,0.898,0.969)	0.969	0.898	0.748	A44
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A45
acceptation	0.761	(0.61,0.779,0.894)	0.894	0.779	0.610	A46
acceptation	0.744	(0.602,0.76,0.871)	0.871	0.760	0.602	A47
acceptation	0.925	(0.829,0.954,0.992)	0.992	0.954	0.829	A48
acceptation	0.741	(0.569,0.756,0.898)	0.898	0.756	0.569	A49
acceptation	0.781	(0.633,0.804,0.906)	0.906	0.804	0.633	A50

Table 5: fuzzy mean and fuzzy screening of indicators (third round)

Round result 3	Definite amount	Fuzzy average	Upper bound	Probable value	lower bound	index
acceptation	0.904	(0.792,0.929,0.992)	0.992	0.929	0.792	A1
acceptation	0.738	(0.604,0.754,0.854)	0.854	0.754	0.604	A2
acceptation	0.928	(0.833,0.956,0.996)	0.996	0.956	0.833	A3
acceptation	0.777	(0.623,0.796,0.913)	0.913	0.796	0.623	A4
acceptation	0.803	(0.66,0.825,0.923)	0.923	0.825	0.660	A5
acceptation	0.890	(0.771,0.917,0.983)	0.983	0.917	0.771	A6
acceptation	0.918	(0.815,0.944,0.996)	0.996	0.944	0.815	A7
acceptation	0.866	(0.733,0.894,0.971)	0.971	0.894	0.733	A8
acceptation	0.932	(0.84,0.96,0.996)	0.996	0.960	0.840	A9
acceptation	0.847	(0.706,0.871,0.965)	0.965	0.871	0.706	A10
acceptation	0.896	(0.788,0.923,0.977)	0.977	0.923	0.788	A11
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A12
acceptation	0.741	(0.569,0.756,0.898)	0.898	0.756	0.569	A13
acceptation	0.813	(0.681,0.833,0.923)	0.923	0.833	0.681	A14
acceptation	0.928	(0.833,0.956,0.996)	0.996	0.956	0.833	A15
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A16
acceptation	0.731	(0.596,0.75,0.848)	0.848	0.750	0.596	A17
acceptation	0.708	(0.558,0.725,0.84)	0.840	0.725	0.558	A18
acceptation	0.932	(0.84,0.96,0.996)	0.996	0.960	0.840	A19
acceptation	0.827	(0.706,0.85,0.925)	0.925	0.850	0.706	A20
acceptation	0.752	(0.621,0.769,0.867)	0.867	0.769	0.621	A21
acceptation	0.872	(0.748,0.898,0.969)	0.969	0.898	0.748	A22
acceptation	0.761	(0.61,0.779,0.894)	0.894	0.779	0.610	A23
acceptation	0.744	(0.602,0.76,0.871)	0.871	0.760	0.602	A24
acceptation	0.918	(0.815,0.944,0.996)	0.996	0.944	0.815	A25
acceptation	0.866	(0.733,0.894,0.971)	0.971	0.894	0.733	A26
acceptation	0.932	(0.84,0.96,0.996)	0.996	0.960	0.840	A27
acceptation	0.847	(0.706,0.871,0.965)	0.965	0.871	0.706	A28
acceptation	0.896	(0.788,0.923,0.977)	0.977	0.923	0.788	A29
acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A30
acceptation	0.741	(0.569,0.756,0.898)	0.898	0.756	0.569	A31
acceptation	0.813	(0.681,0.833,0.923)	0.923	0.833	0.681	A32
acceptation	0.928	(0.833,0.956,0.996)	0.996	0.956	0.833	A33

numbers as its elements. The initial matrix of evaluating relationships of n criteria from the view of expert k is as bellow:

acceptation	0.778	(0.646,0.798,0.89)	0.890	0.798	0.646	A34
acceptation	0.731	(0.596,0.75,0.848)	0.848	0.750	0.596	A35
acceptation	0.708	(0.558,0.725,0.84)	0.840	0.725	0.558	A36
acceptation	0.932	(0.84,0.96,0.996)	0.996	0.960	0.840	A37
acceptation	0.827	(0.706,0.85,0.925)	0.925	0.850	0.706	A38
acceptation	0.752	(0.621,0.769,0.867)	0.867	0.769	0.621	A39
acceptation	0.872	(0.748,0.898,0.969)	0.969	0.898	0.748	A40
acceptation	0.761	(0.61,0.779,0.894)	0.894	0.779	0.610	A41
acceptation	0.890	(0.771,0.917,0.983)	0.983	0.917	0.771	A42
acceptation	0.918	(0.815,0.944,0.996)	0.996	0.944	0.815	A43
acceptation	0.904	(0.792,0.929,0.992)	0.992	0.929	0.792	A44
acceptation	0.738	(0.604,0.754,0.854)	0.854	0.754	0.604	A45
acceptation	0.928	(0.833,0.956,0.996)	0.996	0.956	0.833	A46
acceptation	0.777	(0.623,0.796,0.913)	0.913	0.796	0.623	A47
acceptation	0.803	(0.66,0.825,0.923)	0.923	0.825	0.660	A48
acceptation	0.890	(0.771,0.917,0.983)	0.983	0.917	0.771	A49
acceptation	0.918	(0.815,0.944,0.996)	0.996	0.944	0.815	A50

Table 6: the difference of second and third round results

result	difference	Round result 2	Round result 3	index
acceptation	0.032	0.872	0.904	A1
acceptation	0.04	0.778	0.738	A2
acceptation	0.167	0.761	0.928	A3
acceptation	0.033	0.744	0.777	A4
acceptation	0.122	0.925	0.803	A5
acceptation	0.149	0.741	0.890	A6
acceptation	0.137	0.781	0.918	A7
acceptation	0.038	0.904	0.866	A8
acceptation	0.042	0.890	0.932	A9
acceptation	0.019	0.866	0.847	A10
acceptation	0.049	0.847	0.896	A11
acceptation	0	0.778	0.778	A12
acceptation	0.003	0.738	0.741	A13
acceptation	0.036	0.777	0.813	A14
acceptation	0.115	0.813	0.928	A15
acceptation	0.025	0.803	0.778	A16
acceptation	0.197	0.928	0.731	A17
acceptation	0.182	0.890	0.708	A18
acceptation	0.154	0.778	0.932	A19
acceptation	0.014	0.813	0.827	A20
acceptation	0.166	0.918	0.752	A21
acceptation	0.141	0.731	0.872	A22
acceptation	0.105	0.866	0.761	A23
acceptation	0.036	0.708	0.744	A24

$$\begin{bmatrix} 0 & \tilde{X}_{12}^{(k)} & \cdots & \tilde{X}_{1n}^{(k)} \\ \tilde{X}_{21}^{(k)} & 0 & \cdots & \tilde{X}_{2n}^{(k)} \\ \vdots & \vdots & \ddots & \vdots \\ \tilde{X}_{n1}^{(k)} & \tilde{X}_{n2}^{(k)} & \cdots & 0 \end{bmatrix} \qquad (6.2)$$

In the initial matrix, each element of the triangular fuzzy number is as below:

acceptation	0.14	0.778	0.918	A25
acceptation	0.066	0.932	0.866	A26
acceptation	0.085	0.847	0.932	A27
acceptation	0.02	0.827	0.847	A28
acceptation	0	0.896	0.896	A29
acceptation	0.026	0.752	0.778	A30
acceptation	0.191	0.932	0.741	A31
acceptation	0.059	0.872	0.813	A32
acceptation	0.036	0.892	0.928	A33
acceptation	0.034	0.744	0.778	A34
acceptation	0.063	0.794	0.731	A35
acceptation	0.217	0.925	0.708	A36
acceptation	0.057	0.875	0.932	A37
acceptation	0.046	0.781	0.827	A38
acceptation	0.024	0.776	0.752	A39
acceptation	0.095	0.777	0.872	A40
acceptation	0.042	0.803	0.761	A41
acceptation	0	0.890	0.890	A42
acceptation	0	0.918	0.918	A43
acceptation	0.032	0.872	0.904	A44
acceptation	0.04	0.778	0.738	A45
acceptation	0.167	0.761	0.928	A46
acceptation	0.033	0.744	0.777	A47
acceptation	0.122	0.925	0.803	A48
acceptation	0.149	0.741	0.890	A49
acceptation	0.137	0.781	0.918	A50

Table 7: fuzzy spectrum and dimetel technique, source: Wang [54]

Fuzzy equivalent	Linguistic variable
(0.0, 0.1, 0.3)	Without effect
(0.1, 0.3, 0.5)	Low effect
(0.3, 0.5, 0.7)	Average effect
(0.5, 0.7, 0.9)	High effect
(0.7, 0.9, 1.0)	Very high effect

$$\tilde{X}_{ij}^{(k)} = \left(\tilde{l}_{ij}^{(k)}, \tilde{m}_{ij}^{(k)}, \tilde{u}_{ij}^{(k)} \right) \tag{6.3}$$

When we use the opinions of various experts, a simple calculational mean for opinions is used. We create the direct fuzzy relation matrix or –. For n triangular fuzzy numbers, the fuzzy average is calculated as below:

$$F_{AVE} = \frac{\sum l}{n}, \frac{\sum m}{n}, \frac{\sum u}{n} \tag{6.4}$$

6.11 Calculating the normal direct relation matrix

The amounts of $\tilde{a}_i^{(k)}$ and $\tilde{b}_i^{(k)}$ for normalization of amounts should be calculated. The normalization matrix $\tilde{N}$ will be obtained by dividing the matrix elements $\tilde{X}$ on the maximum amounts of $\sum u_{ij}$.

$$\tilde{a}_i^{(k)} = \sum X_{ij}^{(k)} = \left(\sum_{j=1}^{n} \tilde{l}_{ij}^{(k)}, \sum_{j=1}^{n} \tilde{m}_{ij}^{(k)}, \sum_{j=1}^{n} \tilde{u}_{ij}^{(k)} \right) \tag{6.5}$$

Table 8: calculation of fuzzy direct relation matrix

X	C1	C2	C3	C4	C5	C6	C7	C8	C9
C1	(0.51, 0.7, 0.87)	(0.45, 0.64, 0.81)	(0.29, 0.46, 0.64)	(0.51, 0.7, 0.87)	(0.35, 0.54, 0.72)	(0.3, 0.48, 0.66)	(0.51, 0.7, 0.87)	(0.23, 0.4, 0.6)	(0.3, 0.48, 0.66)
C2	(0.51, 0.7, 0.87)	(0, 0.1, 0.3)	(0.26, 0.44, 0.63)	(0.32, 0.5, 0.69)	(0.16, 0.32, 0.51)	(0.3, 0.46, 0.63)	(0.43, 0.62, 0.79)	(0.21, 0.36, 0.55)	(0.3, 0.46, 0.63)
C3	(0.25, 0.4, 0.58)	(0.37, 0.56, 0.73)	(0, 0.1, 0.3)	(0.27, 0.46, 0.65)	(0.47, 0.66, 0.82)	(0.36, 0.54, 0.71)	(0.32, 0.5, 0.69)	(0.35, 0.52, 0.7)	(0.36, 0.54, 0.71)
C4	(0.27, 0.44, 0.62)	(0.27, 0.44, 0.62)	(0.27, 0.44, 0.63)	(0, 0.1, 0.3)	(0.31, 0.48, 0.67)	(0.37, 0.56, 0.73)	(0.37, 0.56, 0.74)	(0.33, 0.5, 0.67)	(0.37, 0.56, 0.73)
C5	(0.29, 0.46, 0.63)	(0.37, 0.56, 0.74)	(0.2, 0.36, 0.55)	(0.26, 0.42, 0.6)	(0, 0.1, 0.3)	(0.33, 0.52, 0.7)	(0.31, 0.48, 0.66)	(0.33, 0.5, 0.68)	(0.33, 0.52, 0.7)
C6	(0.15, 0.3, 0.5)	(0.33, 0.52, 0.7)	(0.42, 0.6, 0.77)	(0.25, 0.42, 0.61)	(0.31, 0.5, 0.68)	(0, 0.1, 0.3)	(0.4, 0.6, 0.76)	(0.27, 0.44, 0.63)	(0, 0.1, 0.3)
C7	(0.37, 0.56, 0.74)	(0.3, 0.48, 0.66)	(0.25, 0.42, 0.61)	(0.43, 0.62, 0.78)	(0.44, 0.62, 0.77)	(0.46, 0.66, 0.84)	(0, 0.1, 0.3)	(0.4, 0.6, 0.78)	(0.46, 0.66, 0.84)
C8	(0.39, 0.58, 0.74)	(0.33, 0.52, 0.7)	(0.36, 0.54, 0.72)	(0.37, 0.56, 0.74)	(0.26, 0.44, 0.63)	(0.32, 0.52, 0.71)	(0.4, 0.58, 0.75)	(0, 0.1, 0.3)	(0.32, 0.52, 0.71)
C9	(0.27, 0.44, 0.62)	(0.27, 0.44, 0.62)	(0.27, 0.44, 0.63)	(0, 0.1, 0.3)	(0.31, 0.48, 0.67)	(0.37, 0.56, 0.73)	(0.37, 0.56, 0.74)	(0.33, 0.5, 0.67)	(0.37, 0.56, 0.73)

$$\tilde{b}^{(k)} = \max \left(\sum_{j=1}^{n} \tilde{u}_{ij}^{(k)} \right); 1 \leq i \leq n \tag{6.6}$$

Hence, the normalized matrix is as below:

$$\begin{bmatrix} \tilde{N}_{11}^{(k)} & \tilde{N}_{12}^{(k)} & \cdots & \tilde{N}_{1n}^{(k)} \\ \tilde{N}_{21}^{(k)} & \tilde{N}_{22}^{(k)} & \cdots & \tilde{N}_{2n}^{(k)} \\ \vdots & \vdots & \ddots & \vdots \\ \tilde{N}_{n1}^{(k)} & \tilde{N}_{n2}^{(k)} & \cdots & \tilde{N}_{nn}^{(k)} \end{bmatrix} \tag{6.7}$$

Therefore, the elements of the normal matrix are as below:

$$\tilde{N}_{ij}^{(k)} = \left(\tilde{X}_{ij}^{(j)} \right) / \tilde{b}^{(k)} = \left(\frac{\tilde{l}_{ij}^{(k)}}{\tilde{b}^{(k)}}, \frac{\tilde{m}_{ij}^{(k)}}{\tilde{b}^{(k)}}, \frac{\tilde{u}_{ij}^{(k)}}{\tilde{b}^{(k)}} \right) \tag{6.8}$$

Based on equation (6.5) and (6.6) we have:

$$\tilde{b}^{(k)} = 5.48$$

Hence the normal matrix is as below:

$\sum u_{ij}$ of every row is used for normalization of amounts and by dividing the variables of matrix $\tilde{X}$ on the maximum amounts of $\sum u_{ij}$, the normal fuzzy matrix $\tilde{N}$ will be achieved:

$$k = \max \left(\sum_{j=1}^{n} u_{ij} \right) = 5.48$$

$$\tilde{N} = \frac{1}{k} * \tilde{X}$$

6.12 Calculating complete relation matrix

Equation $N \times (I - N)^{-1}$ is used for calculating complete relation matrix. In fuzzy dimetel method, fuzzy normal matrix is divided into three matrixes as below:

$$N_l = \begin{bmatrix} 0 & l_{12} & \cdots & l_{1n} \\ l_{21} & 0 & \cdots & l_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ l_{n1} & l_{n2} & \cdots & 0 \end{bmatrix}$$

Table 9: calculation of matrix of fuzzy normal direct relation

N	C1	C2	C3	C4	C5	C6	C7	C8	C9
C1	(0.09, 0.13, 0.16)	(0.08, 0.12, 0.15)	(0.09, 0.13, 0.16)	(0.07, 0.1, 0.13)	(0.09, 0.13, 0.16)	(0.05, 0.09, 0.12)	(0.06, 0.09, 0.13)	(0.04, 0.07, 0.11)	(0.05, 0.09, 0.12)
C2	(0.09, 0.13, 0.16)	(0, 0.02, 0.05)	(0.05, 0.08, 0.11)	(0.06, 0.09, 0.13)	(0.03, 0.06, 0.09)	(0.05, 0.08, 0.11)	(0.08, 0.11, 0.14)	(0.04, 0.07, 0.1)	(0.05, 0.08, 0.11)
C3	(0.05, 0.07, 0.11)	(0.07, 0.1, 0.13)	(0, 0.02, 0.05)	(0.05, 0.08, 0.12)	(0.09, 0.12, 0.15)	(0.07, 0.1, 0.13)	(0.06, 0.09, 0.13)	(0.06, 0.09, 0.13)	(0.07, 0.1, 0.13)
C4	(0.05, 0.08, 0.11)	(0.05, 0.08, 0.11)	(0.05, 0.08, 0.11)	(0, 0.02, 0.05)	(0.06, 0.09, 0.12)	(0.07, 0.1, 0.13)	(0.07, 0.1, 0.14)	(0.06, 0.09, 0.12)	(0.07, 0.1, 0.13)
C5	(0.05, 0.08, 0.11)	(0.07, 0.1, 0.14)	(0.04, 0.07, 0.1)	(0.05, 0.08, 0.11)	(0, 0.02, 0.05)	(0.06, 0.09, 0.13)	(0.06, 0.09, 0.12)	(0.06, 0.09, 0.12)	(0.06, 0.09, 0.13)
C6	(0.03, 0.05, 0.09)	(0.06, 0.09, 0.13)	(0.08, 0.11, 0.14)	(0.05, 0.08, 0.11)	(0.06, 0.09, 0.12)	(0, 0.02, 0.05)	(0.07, 0.11, 0.14)	(0.05, 0.08, 0.11)	(0, 0.02, 0.05)
C7	(0.07, 0.1, 0.14)	(0.05, 0.09, 0.12)	(0.05, 0.08, 0.11)	(0.08, 0.11, 0.14)	(0.08, 0.11, 0.14)	(0.08, 0.12, 0.15)	(0, 0.02, 0.05)	(0.07, 0.11, 0.14)	(0.08, 0.12, 0.15)
C8	(0.07, 0.11, 0.14)	(0.06, 0.09, 0.13)	(0.07, 0.1, 0.13)	(0.07, 0.1, 0.14)	(0.05, 0.08, 0.11)	(0.06, 0.09, 0.13)	(0.07, 0.11, 0.14)	(0, 0.02, 0.05)	(0.06, 0.09, 0.13)
C9	(0.05, 0.08, 0.11)	(0.05, 0.08, 0.11)	(0.05, 0.08, 0.11)	(0, 0.02, 0.05)	(0.06, 0.09, 0.12)	(0.07, 0.1, 0.13)	(0.07, 0.1, 0.14)	(0.06, 0.09, 0.12)	(0.07, 0.1, 0.13)

$$
N_m = \begin{bmatrix} 0 & m_{12} & \cdots & m_{1n} \\ m_{21} & 0 & \cdots & m_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ m_{n1} & m_{n2} & \cdots & 0 \end{bmatrix}
$$

$$
N_u = \begin{bmatrix} 0 & u_{12} & \cdots & u_{1n} \\ u_{21} & 0 & \cdots & u_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ u_{n1} & u_{n2} & \cdots & 0 \end{bmatrix}
$$

Finally, the below operation is done to achieve a complete relation matrix:

$$
T_l = N_l \times (I - N_l)^{-1}
$$

$$
T_m = N_m \times (I - N_m)^{-1}
$$

$$
T_u = N_u \times (I - N_u)^{-1}
$$

$$
\tilde{t}_{ij} = \left(t_{ij}^l, t_{ij}^m, t_{ij}^u \right)
$$

Table 10: calculating matrix of fuzzy complete relation

T	C1	C2	C3	C4	C5	C6	C7	C8	C9
C1	(0.04, 0.19, 1.65)	(0.12, 0.29, 1.81)	(0.09, 0.24, 1.66)	(0.1, 0.27, 1.76)	(0.1, 0.27, 1.75)	(0.1, 0.26, 1.8)	(0.1, 0.28, 1.84)	(0.08, 0.23, 1.68)	(0.1, 0.26, 1.8)
C2	(0.12, 0.28, 1.69)	(0.04, 0.19, 1.67)	(0.08, 0.23, 1.61)	(0.09, 0.25, 1.7)	(0.07, 0.22, 1.66)	(0.09, 0.25, 1.74)	(0.12, 0.28, 1.8)	(0.07, 0.22, 1.62)	(0.09, 0.25, 1.74)
C3	(0.09, 0.24, 1.7)	(0.11, 0.28, 1.8)	(0.04, 0.18, 1.61)	(0.09, 0.25, 1.74)	(0.12, 0.29, 1.77)	(0.11, 0.28, 1.81)	(0.1, 0.27, 1.84)	(0.1, 0.25, 1.7)	(0.11, 0.28, 1.81)
C4	(0.08, 0.24, 1.65)	(0.09, 0.25, 1.73)	(0.08, 0.23, 1.61)	(0.04, 0.18, 1.63)	(0.09, 0.25, 1.69)	(0.1, 0.27, 1.75)	(0.11, 0.27, 1.79)	(0.09, 0.24, 1.64)	(0.1, 0.27, 1.75)
C5	(0.09, 0.24, 1.62)	(0.1, 0.26, 1.71)	(0.07, 0.21, 1.56)	(0.08, 0.23, 1.64)	(0.04, 0.18, 1.59)	(0.1, 0.26, 1.71)	(0.1, 0.26, 1.74)	(0.09, 0.24, 1.6)	(0.1, 0.26, 1.71)
C6	(0.06, 0.21, 1.62)	(0.1, 0.26, 1.73)	(0.11, 0.25, 1.63)	(0.08, 0.24, 1.67)	(0.09, 0.25, 1.68)	(0.04, 0.19, 1.67)	(0.11, 0.28, 1.78)	(0.08, 0.23, 1.62)	(0.04, 0.19, 1.67)
C7	(0.11, 0.28, 1.81)	(0.1, 0.28, 1.88)	(0.09, 0.25, 1.75)	(0.12, 0.29, 1.85)	(0.12, 0.29, 1.85)	(0.13, 0.31, 1.92)	(0.05, 0.22, 1.87)	(0.11, 0.28, 1.79)	(0.13, 0.31, 1.92)
C8	(0.11, 0.27, 1.76)	(0.1, 0.28, 1.84)	(0.1, 0.26, 1.71)	(0.11, 0.28, 1.8)	(0.09, 0.26, 1.78)	(0.1, 0.28, 1.85)	(0.12, 0.29, 1.89)	(0.04, 0.19, 1.66)	(0.1, 0.28, 1.85)
C9	(0.06, 0.21, 1.62)	(0.1, 0.26, 1.73)	(0.11, 0.25, 1.63)	(0.08, 0.24, 1.67)	(0.09, 0.25, 1.68)	(0.04, 0.19, 1.67)	(0.11, 0.28, 1.78)	(0.08, 0.23, 1.62)	(0.04, 0.19, 1.67)

After, calculating the complete connection matrix, we must implement de-phasing. And for the patterns of relations, the completely definite relation matrix should be used. For de-phasing operation, the surface centre method is used.

6.13 Showing the map of network relations

we calculate the value of the threshold to draw notable relations. Because the value of the threshold is 0.58 and just relations will be shown that their value is higher than the threshold in matrix T and all of the amounts of matrix T that are lower than the threshold, will be removed and their relation will not be considered as cause relation.

Table 11: dephasing complete relation matrix (absolute)

T	C1	C2	C3	C4	C5	C6	C7	C8	C9
C1	0.5158	0.6274	0.5575	0.5988	0.5955	0.6058	0.6243	0.5554	0.6056
C2	0.5934	0.5239	0.5378	0.5738	0.5453	0.5849	0.6204	0.5323	0.5014
C3	0.5663	0.6166	0.5014	0.5852	0.6158	0.6168	0.6233	0.5759	0.5387
C4	0.5524	0.5784	0.5387	0.5087	0.5703	0.5998	0.6115	0.5539	0.5143
C5	0.5438	0.5841	0.5143	0.5482	0.4952	0.5805	0.5865	0.5416	0.5805
C6	0.5289	0.5868	0.5599	0.5573	0.5695	0.5241	0.6132	0.5424	0.5241
C7	0.6188	0.6359	0.5826	0.6398	0.6398	0.6671	0.5912	0.6163	0.6671
C8	0.6041	0.6228	0.5833	0.6134	0.5949	0.6263	0.6478	0.5195	0.6228
C9	0.5289	0.5868	0.5599	0.5573	0.5695	0.5241	0.6132	0.5424	0.5868

Table 12: the matrix of meaningful relations of the studied variables

T	C1	C2	C3	C4	C5	C6	C7	C8	C9
C1	×	0.63	×	0.60	0.60	0.61	0.62	×	0.60
C2	0.59	×	×	×	×	0.58	0.62	×	×
C3	×	0.62	×	0.59	0.62	0.62	0.62	×	×
C4	×	×	×	×	×	0.60	0.61	×	×
C5	×	0.58	×	×	×	0.58	0.59	×	0.58
C6	×	0.59	×	×	×	×	0.61	×	×
C7	0.63	0.64	0.59	0.63	0.60	0.68	0.60	0.63	0.66
C8	0.61	0.63	0.59	0.62	0.59	0.62	0.64	×	0.61
C9	×	×	×	×	×	×	0.61	×	0.59

We can define the effectiveness and impact collections based on the patterns of the relations.

Table 13: dephasing complete relationship matrix (absolute)

D-R	D+R	R	D	Original criteria	
0.16	9.20	4.52	4.680	Company governance	C1
-0.26	9.29	4.78	4.511	Structure of company ownership	C2
0.33	9.08	4.37	4.701	Internal agent factors	C3
-0.11	9.14	4.62	4.513	External agent factors	C4
-0.23	9.02	4.63	4.394	Factors of the auditing institution	C5
-0.32	9.28	4.80	4.481	Features of managers and owners	C6
0.07	9.91	4.92	4.991	Financial and audit factors	C7
0.37	9.25	4.44	4.811	Audit characteristics	C8
-0.25	8.778	4.518	4.260	Competitive audit market	C9

Financial and accounting factors have the greatest impact on other factors because they have the maximum value in every line (D). The second influencing factor is audit features.

Financial and accounting factors have the highest effectiveness from other factors because it has the highest value in column (R). The second most influential factor is the characteristics of managers and employers.

(D+R) is the horizontal vector of the plot that shows the desired amount of effectiveness and impact in the system. Every variable whose value is higher has a higher impact on other factors of the system. Hence, the financial and accounting factors have the highest effect.

(D-R) is the horizontal vector of the plot and shows the effective power of each variable. If the value of each variable in (D-R) is negative, that variable is an effect variable and if it is positive, it is a cause variable.

We draw a coordinate device whose transverse axis is D-R and its longitudinal axis is D+R.
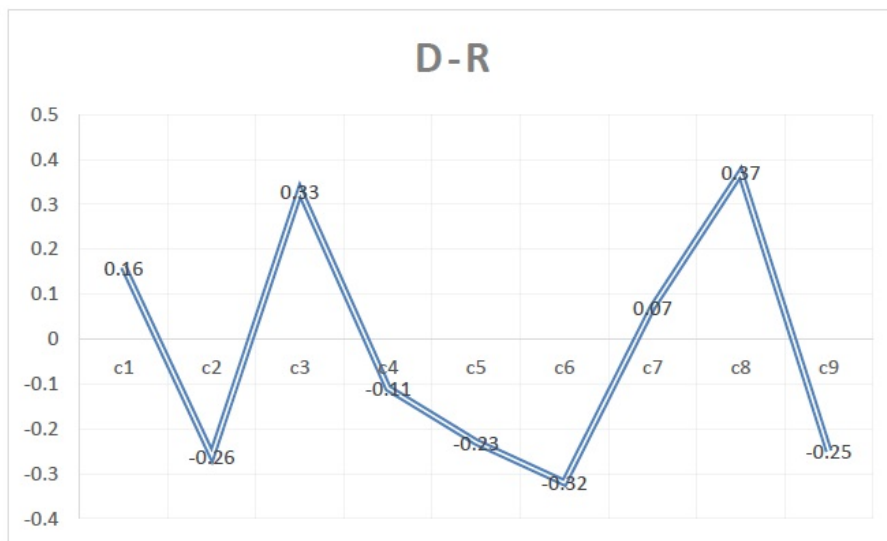
Figure 1: cartesian diagram of DEMATEL output for the main criteria

7 Conclusion

The results of the present study show that some of the components of the extracted model in this research, which has already been studied, are following the existing background. However, in this model, there is more emphasis on some of the specific factors and variables, and some factors have been added to previous models. These factors are described as code. 50 codes were identified which were divided into 9 categories based on axial coding. These factors are company governance, company ownership structure, internal factors of the company, external factors of the company, audit firm factors, characteristics of managers and owners, financial and accounting factors, audit properties and competitive audit market.

In other words, based on the views of audit experts, the pricing of audit services (audit wage) is about 80%, and it is a function of the mentioned 9 factors.

7.1 Analyzing importance degree of effective factors on pricing the audit accreditation services in the Iranian audit market

By using the Delphi technique, 50 identified criteria were studied and screened and all of the cases were accepted by experts. This technique is conducted in two rounds and intangible differences of opinions had led to confirm all criteria. Hence, the identified criteria from interviews and the related texts were acceptable by experts.

For identifying the importance degree of the identified criteria, the fuzzy dimetel group decision-making technique was used. Based on the obtained results, audit and financial factors were placed at the highest level of effectiveness (9.91). Audit and financial factors refer to the criteria of free float shares, the percentage of ownership of the major stockholders, audit risk, the ratio of total liabilities to total assets.

In the stock market, the major stockholders include every individual or company that has more than 1% company share. Generally, real or legal individuals have management share. These main stockholders have a large number of published shares or they have a part of the company share that permit them significantly to control it by applying opinions and influencing the company's decisions. These individuals seek to decrease expenses to gain more profit at the end of the financial year. Hence, by decreasing the volume of audit reviews, they seek to decrease audit service costs. On the other hand, minor stockholders for maintaining their benefits against major stockholders, use independent auditor tools and it can be said that they increase the demand for independent audit services.

Auditors are forced to collect more evidence to reduce the risk of a lack of detecting important misstatements, which increases the cost of audit services. This topic reduces competition in the auditing market.

The ratio of debt to asset shows a part of the asset that is supplied by debts and the ratio of debt lower than one shows that the assets of the company are higher than debts and debts more than one shows that the debts are higher than assets. The ratio of debt in combination with other methods, calculate the financial health of the company. If the financial ratio of the company is higher, it can create ambiguity about the continuity of the company

activity and the liquidity. And this action leads to more audits being done by the auditor, which increase the price of audit services. After that, it is the criterion for company structure (9.29). Researchers show that as the degree of company ownership structure increases, the difference of interest between major and minor stockholders will increase and representation problems due to separation of ownership and control will reduce. This difference in interests leads to a decrease in assurance in the stock market and auditors who give accredits to financial statements of the board will increase stakeholder confidence and the structure of effective structure on risk and complexity of financial forms and representation theory. Auditors for analyzing these factors should spend a lot of time and this increases the cost of audit services.

The third factor is the characteristics of managers and owners (9.28). When an employer presents a legal claim to an audit company, can ruin the credit of the audit company and create problems for the auditor and he cannot present his work high quality also, the previous managers have a lower tendency to select an expert audit because they will discover their audit method and for this reason, they will pay a lower cost for audit services.

Other criteria were considered in the nest scores.

These categories with the concepts related to each category and the dimensions and characteristics of each concept increase knowledge; also, the type of economy and market, the power of observant organizations and the degree of interaction of these institutions with legislators and the government on the auditing profession and the degree of the systematic profession of accounting are the most important features of the context in the level of the auditing profession in the macro level. Realization of reasonable and logical pricing requires the provision of a suitable context and field. These factors are a set of categories that are not mentioned in the previous research; the most important difference of field theory making in audit wage with previous researches is its comprehensiveness and integrity. Hence, the majority of conducted researches in audit service wage mentions a certain aspect of this context, while in the current study, pricing of audit services in different levels and dimensions are studied.

The results of this research are in accordance with studies from Simunic [52], Francis [19] and also in internal researches, some of the variables of this research experiment with audit service pricing. A meaningful relation between the mentioned factors with audit wage has been observed. Some of the most important researches are the conducted researches by Rahimian et al [47], Mehrani and Jamshidi [34].

Based on the results from this research, it is proposed to the audit organization and audit institutions who are members of the society of certified public accountants, to consider the identified factors from this research in the pricing audit services. Since, defining a proper service pricing can be considered as a factor for the quality of audit services, hence considering the concept of pricing can have a good impact on audit service pricing.

It is also suggested that the audit organization and the society of certified public accountants of Iran, based on the model of this article and the identified factors, have developed a guideline for determining the pricing of audit services and implementing these guidelines for better performance of audit operations and higher quality work.

Considering that the statistical population of this study are the managers of audit organizations and institutions simultaneously and because pricing in audit organizations is specific, in another study the statistical samples were divided based on managers of organizations and institutions and the results were compared with each other.

Due to the competitiveness of specialized professional services, it is suggested that in another research, the mental priorities of users from specialized audit services (service customers or employers) should be studied and analyzed. Because its result can be an influential factor in the pricing of auditing services.

Quality is one of the main influential factors on the pricing of auditing services, it is suggested that the Iranian society of certified public accountants and the Tehran stock exchange organization, by upgrading tools and using stronger resources, take steps for better evaluation of the quality of independent auditing and after the implemented evaluation, policies and strategies for an everyday increase of independent audit quality will be presented.

In many countries, the related information to audit services is disclosed. But, in Iran due to high sensitivity, it is not any necessity and legislation for information disclosure of pricing information of audit services. It is proposed that by implementing suitable laws, their information will be disclosed.

The Iranian society of certified public accountants and its members should observe the pricing of services and the method of calculation in order to determine the fixed criteria for determining the pricing services and to consider minimums for calculating and determining the contract cost. Also, the quality control working group should analyze the method of pricing and the rates of contracts during referring to institutions and (individual employees), and in cases with extremely low rates, they should check the files. The quality control working group should not only pay attention to large files but examine small files at least at the level of proving the current and permanent document formation and the existence of reviews and worksheets.

The created limitations during the process of the research have not much importance that influences its findings or ruins them. But for better usage and with more knowledge use of the results in this research, it is necessary to consider this fact.

Interviews and questionnaires of this study are implemented by audit experts and by the presence of the researcher with solving ambiguous points for respondents. Hence, solutions might not have sufficient accuracy and this is the natural limitation of the questionnaire researches.

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