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Effective Structures on Implementation of Risk- based Audit Approach to improve Audit Quality

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ABSTRACT

The present study has analyzed the identification of effective structures on the implementation of the risk-based audit approach in order to improve the quality of independent auditing. In terms of approach, the present study is exploratory in the qualitative and interview part and descriptive-causal research in the quantitative part.

In order to achieve the research objectives, first, using theoretical foundations and opinions of experts in the field; dimensions, components and indicators effective on the implementation of the risk-based audit approach were extracted and 17 components were identified and agreed upon using the Delphi method.

The statistical population of this study; was all certified public accountants in Iran and the required data was collected by distributing a researcher-made questionnaire among 338 people. After that; inferential statistical methods such as t-test and structural equation modeling using the PLS method were used to analyze the data.

The first result of this study; Identifying the dimensions and components affecting the implementation of the risk-based audit approach is in line with improving the quality of independent auditing, which was achieved by using theoretical studies, summarizing the opinions of accounting and auditing experts, analyzing the opinions of the statistical community, and receiving the opinions of experts in fields related to the research. The second result of this study showed that the components of the history of internal audit activities, auditor motivation, the effectiveness of internal control systems, the existence of risk-based audit laws and regulations, the internal control system, the ability of auditors, and audit fees had a positive and significant effect on the implementation of the risk-based audit approach. The final findings also indicated that implementing a risk-based audit approach has a positive and significant impact on the quality of independent audits.

Keywords: Risk-based audit, Audit quality, Independent audit quality

1. Introduction

As companies expanded and their operations grew, auditors faced difficulties in reducing audit risk by performing extensive substantive tests (scrutiny and other audit procedures). Advances in information technology have placed auditors in a position where they can obtain a scientific method for themselves. And estimate and determine the amount of audit risk in advance. Risk-based auditing can be considered as the process of identifying and reporting the risk of material misstatement in financial statements. The purpose of using risk-based auditing is to increase the efficiency and effectiveness of auditing, because by determining the type and nature, timing of implementation and the extent of substantive tests in a reasonable manner and with the ability to fully respond, the investigations are carried out to an appropriate extent and as a result, the time spent is changed to a more reasonable level. Risk-based auditing is a real example of the conditions for achieving mutual benefit between the auditor and the client. This article first deals with risk assessment, its components, and its relationship with audit significance and evidence, then explains the advantages of the risk-based approach by explaining its differences with traditional auditing. Finally, it describes the stages of risk-based auditing and how ignoring the most important factor affecting audit risk misleads auditors and what are its practical shortcomings in Iran, because the public opinion of the profession and users of financial statements believes that this auditing method has been developed more for the benefit of auditors. Because it is only used to reduce audit costs and create auditors' accountability and does not help increase the ability to detect deviations (Pourali and Radan, 2012). On the other hand, the quality of independent auditing is a multifaceted concept and can be examined from different perspectives. In one perspective, the auditor's report is considered as a product, and this product is evidence of audit quality in terms of compliance with the established standards. In another perspective, audit quality is considered as a service that must be provided by qualified individuals, and the process of performing this service and presenting its results is subject to specific criteria and standards (Kezikiva, 2022). Therefore, if the provision of this service from the beginning to the end (which is the presentation of the audit report); is in accordance with the established standards and criteria, it has the necessary quality. In other words, in this perspective, a systemic view governs audit quality, and the quality of audit inputs, processes, and outputs determines audit quality, and the quality of all system components is emphasized and paid attention to. The occurrence of recent financial crises has also highlighted the vital and important role of reliable and quality audit reporting (Lee et al., 2022). In addition, recent crises have highlighted the need to pay more attention to the role that "independent audit quality" plays in promoting financial reporting. Because it is believed that achieving high quality financial reporting depends on audit risk management and the correctness and accuracy of each link in the financial reporting supply chain, and risk-based auditing, as one of the links in this chain, plays a major role in maintaining and strengthening the quality of financial reporting (Salem Jaber, 1401). In the path of improving the quality of independent auditing; the advancement of information technology and its tools (such as computers) and the use of mathematical sciences and statistics have placed auditors in a position where they can obtain a scientific and usable method for themselves and, using the audit risk model and mathematical calculations, estimate and determine the amount of audit risk and its constituent elements (inherent risk, control risk, and non-detection risk). By determining the risk of non-detection, auditors can determine the type and nature, timing of implementation, and extent of the necessary substantive tests to provide adequate coverage against audit risk.

So it can be said that the purpose of applying risk-based auditing is to increase the efficiency and effectiveness of auditing, because by determining the type and nature, timing of implementation and the extent of content tests in a reasonable manner and with full accountability, the investigations are carried out to an appropriate extent and as a result the time spent changes to a more logical level (Abodonya et al., 2023).

From this perspective, the question arises as to what are the structures effective in implementing a risk-based auditing approach and what role do these factors play in improving the quality of independent auditing?

Theoretical foundations

The choice of audit approach is one of the important factors that affects the outcome of the audit. If auditors use an inappropriate audit approach, the probability of audit failure increases. These failures can lead to reduced credibility, litigation, or waste of effort and cash. At the same time, the use of audit techniques and methods consistent with the selected audit approach can indicate the ability and competence of auditors in improving quality, efficiency and cost savings. Auditors literally begin the audit process by having their knowledge of the nature of the business, the entity and its business environment (Mahmoudi and Pouyanfar, 1400). With sufficient information about a business and its environment, auditors compare themselves with each other in order to assess risk before deciding to perform a compliance test or a substantive test. Since the types of audit risk in the audit field are very large, an auditor should not be accused of using a risk-based approach. Because auditors do not only rely on risk-based auditing, but also pay attention to internal and operational controls as well as company knowledge (Karmi et al., 1400). In a risk-based audit, after obtaining an initial understanding of the accounting and internal control systems (recording the system using a written description, a questionnaire of internal controls and a representative or a combination of them, and performing a system understanding test), the auditor estimates the inherent and control risks. The initial estimate of inherent and control risks helps the auditor determine the reliability of the internal control system. If the internal control system is reliable, the auditor tests the controls on which he wants to rely (Sujana et al., 2023). After implementing it, and obtaining the results of its implementation, he can adjust and finalize the initial estimate of inherent and control risks. Despite the fact that the risk of a risk-based audit makes it less appreciated in the entire audit process; auditors can easily identify and categorize risks by understanding the principles and business models of a company; Which in turn helps to better determine the risk model or approach that is appropriate for the audit (Sinaja et al., 2023). In this way, the risk-based audit stage can improve the quality of independent audit by referring to information and the planning stage, the center and external control stages, testable stages, baseline testing stages, concluding and preparing a stage report, and assessing the significance of audit risk. Given the importance of the issues raised; identifying the structures that affect the implementation of the risk-based audit approach in order to improve the quality of independent audit shows its importance and necessity.

Research Background

Domestic Background

Ghaith Zuhair (1402) studied the effect of independent auditor performance on audit quality components. The results showed that independent auditor performance significantly increases the likelihood of audit adjustments (revisions), which prevents positive earnings management and improves the quality of audited financial statements. The results of this research show that in general, the performance of the independent auditor has a significant positive effect on the issuance of modified audit opinions, but it is more likely that a modified audit opinion will be issued in the absence of audit adjustments. In addition, we found that the impact of the performance of the independent auditor on audit quality is less when the clients are more complex and when the audit firms are larger.

Shahvardi et al. (1401) studied the barriers and presented a model for implementing a risk-based audit system in Iran. The results showed that organizational processes, training to increase technical capacity, acceptance and support of senior managers will affect the performance of management and the audit methods of audit organizations.

Salem Jaber (1401) designed a model of factors affecting the quality of independent audits of commercial companies operating between Iran and Iraq. In the course of conducting this research; in the interview section, all financial department managers were invited for interviews, and ultimately ten people agreed to cooperate with the researcher. The questionnaire questions were designed to rank the factors determined in the qualitative section, which had appropriate validity and reliability. In the questionnaire section, all employees of the financial department, except for the participants in the interview section, were invited, of whom 120 were willing to cooperate and 100 questionnaires were returned. The factors affecting the quality of the audit of the aforementioned companies included five main axes: 1- specialization (familiarity with trade, dual citizenship, legal, economic and customs issues), 2- experience

(work, commercial, independent activity, managerial and scientific), 3- integrity (general familiarity with countries, standards, report writing literature, relative importance and tax laws), 4- financial (salary, benefits, travel costs, easy access to information and family support), and 5- cultural (familiarity with Persian and Arabic languages, easy travel, willingness to make pilgrimages, religious prejudices and general information about the culture of the two countries).

Mahmoudi and Pouyanfar (1400) evaluated risk-based auditing with a multi-criteria decision-making approach. The results of this study showed that 4 key indicators of risk-based auditing were identified in order of importance, including; the opinion of the audit committee chairman, the value of assets exposed to risk in the last 5 years' reports of the independent auditor and the statutory auditor, the opinion of the risk management subcommittee, and the value of assets exposed to risk in the last 5 years' reports of the internal auditor. The findings also showed that; large facilities and commitments, establishment of a corporate governance framework, provision of banking products and services, and legal and investment partnerships were selected as the most important processes for risk-based auditing, respectively.

Karami et al. (1400) identified obstacles to the full implementation of risk-based auditing in Iranian audit firms and provided the necessary solutions to accelerate it. The results of the study showed that the lack of training, technology, regulations, low audit fees, lack of infrastructure, sanctions, and staff distrust are the main obstacles to the implementation of risk-based auditing in Iranian audit firms, and to accelerate the implementation of this approach, effective measures should be taken to train, develop guidelines, improve culture and technology, and audit fees.

Hamidi et al. (2019) presented a systematic method for risk-based auditing in the banking industry. In the final stage of this study, after processing high-importance risk-based processes, these processes were evaluated and screened using the Fuzzy Delphi method of Su and Yang and by the bank's specialized committees, and an empirical example of risk-based auditing from a bank was brought for the proposed methodology.

Foreign Background

Sojana et al. (2023) examined audit quality and the role of risk in improving it. They found that risk-based auditing can be considered as the process of identifying and reporting the risk of material misstatement in financial statements. Therefore, first, the audit needs to identify areas that have a high risk of material misstatement; these risks are areas that will require the use of more extensive procedures. Second, the audit must determine how much and how to reduce its procedures for low-risk areas. Also, to identify the risk of material misstatement, issues such as entity risk (the risk that an event will negatively affect the achievement of the company's objectives), how management deals with these risks, and determining the extent of risks that management has not paid attention to should be considered.

Abudonia et al. (2023) examined the risk-based auditing approach to auditing accounting estimates and its impact on audit quality. They found that risk-based auditing is based on the underlying assumption that most of the auditor's resources should be allocated to accounts that are more risky. Financial reporting managers may anticipate this allocation and intentionally manipulate seemingly low-risk accounts and exploit this auditor's strategy. If the auditor does not anticipate this manager's strategy, the risk of misstatement in the low-risk account will be greater than in the high-risk account.

Sinaja et al. (2023) analyzed the factors in implementing risk-based performance auditing. They found that the increasing expansion and complexity of economic units in today's world, the needs arising from resource constraints and increased competition, the types of risks in the financial, administrative and commercial fields that severely threaten organizational goals and policies; have caused the management to deny the review and control of all organizational activities and organizations need to establish a unit called internal audit as an integral part of an efficient management system.

Lee et al. (2022) examined the risk-based approach and the quality of independent auditing using structural equation modeling. They found that following business failures, companies' inability to identify risks related to their strategic decisions is highlighted. Since risk threatens the sustainability of the organization, proper risk management is of great importance. On the other hand, with changes in the business environment, advances in technology, and developments in the regulatory framework, it is necessary to change the approach of internal auditing,

as a dynamic profession, from its traditional form to a form that has the ability to help make management decisions in order to achieve the organization's strategic goals.

Kizikieva (2022) examined the risk-based approach to improve the quality of internal auditing in the tax field. He found that auditors have sufficient understanding of risk-based tax auditing. Also, the level of auditors' understanding of the factors affecting risk-based tax auditing does not differ significantly from each other. Auditors who have experience working in the field of legal entities have more understanding of risk-based tax auditing.

Research Questions

1) Question 1: What are the causal factors affecting the implementation of the risk-based audit approach?
2) Question 2: What are the intervening factors affecting the implementation of the risk-based audit approach?
3) Question 3: What are the contextual factors affecting the implementation of the risk-based audit approach?
4) Question 4: What are the priorities and coefficients of the factors affecting the risk-based audit approach on the quality of independent audit?
5) Question 5: What is the current status of the components and dimensions affecting the implementation of the risk-based audit approach?
6) Question 6: Does the model presented in the qualitative section have sufficient validity to reflect the identification of factors affecting the implementation of a risk-based audit approach in order to improve the quality of independent audits?

Research Methodology

The present research is a descriptive-causal research in terms of research approach; mixed with exploratory in the qualitative part and in the quantitative part;

Data Collection Method:

At this stage and in order to examine the validity of the questionnaires; the semi-structured in-depth interview method with professional elites was used. It should be noted that in the semi-structured interview; although the researcher prepared the topics and titles necessary to cover the information in advance; but not all questions are prepared in advance and the interview process relies largely on questions that arise spontaneously in the interaction between the interviewer and the interviewee. After the interview, the final questions will be designed and completed. All interviews will be conducted after necessary coordination with the eligible participants, in a place of their choice and by setting a time in advance in an environment of their choice. At the beginning and before the interview begins, the researcher clarified the benefits of conducting this research. Then, according to the determined objectives of the research, the researcher posed several types of possible questions based on the interview guide.

Data Analysis Methods and Tools

Since the data collection is based on a data-based approach; it is essential to know that the data-based method is different from methods such as surveys, content analysis, and ethnography; these methods only deal with "description", while data theory deals with "conceptualization". Descriptive methods, for example, represent the behavior of participants and interviewees. While the data method is not the voice of the interviewees, but rather a general abstraction of their behaviors and meanings, and the voices of the participants are only data for discovering concepts and patterns.

After identifying the factors, the identified dimensions can be compiled as follows in the table below.

The results of the identified dimensions in the form of causal, contextual, and intervening factors

Dimension	Conditions
History of internal audit activities	Causal
Auditors' motivation	
Time efficiency of audit activities	
Auditor job pressure	
Auditor capacity	
Risk management system	Field
Effectiveness of internal control systems	
Existence of risk-based auditing rules and regulations	
Competitiveness of audit firms	

Dimension	Conditions
Commitment and support from senior management	
Volume of internal audit activities	Interventionist
Internal control system	
Auditor's expertise in the industry	
Annual audit planning	
Auditors' ability	
Audit fee	
Communication processes	

Furthermore, and based on the identified dimensions; the research hypotheses can be formulated as follows.

1) History of internal audit activities affects the implementation of a risk-based audit approach.
2) Auditors' motivation affects the implementation of a risk-based audit approach.
3) Time efficiency of audit activities affects the implementation of a risk-based audit approach.
4) Auditor's job pressure affects the implementation of a risk-based audit approach.
5) Auditor capacity affects the implementation of the risk-based audit approach.
6) Risk management system affects the implementation of the risk-based audit approach.
7) The effectiveness of internal control systems affects the implementation of the risk-based audit approach.
8) The existence of risk-based audit laws and regulations affects the implementation of the risk-based audit approach.
9) The competitiveness of audit firms on risk affects the implementation of the risk-based audit approach.
10) The commitment and support of senior management affects the implementation of the risk-based audit approach.
11) The volume of internal audit activities affects the implementation of the risk-based audit approach.
12) The internal control system affects the implementation of the risk-based audit approach.
13) The auditor's expertise in the industry affects the implementation of the risk-based audit approach.
14) Annual audit planning affects the implementation of the risk-based audit approach.
15) The ability of auditors affects the implementation of the risk-based audit approach.
16) Audit fees affect the implementation of a risk-based audit approach.
17) Communication processes affect the implementation of a risk-based audit approach.
18) A risk-based audit approach affects the quality of independent audits.

Statistical population, sampling method and sample size Statistical population in the qualitative section

In the qualitative section; the study population; includes experts related to the research topic who have a profession related to auditing. The sampling of this study began based on the qualitative research process or as purposive sampling and continued with theoretical sampling. In this way, we first purposefully went to people who, in relation to the current research topic; were rich in information related to the risk-based audit approach and independent audit quality and could be effective in understanding the research problem and the central phenomenon; then, sampling continued until theoretical saturation was reached (i.e. when the next sample did not add any new cases to the emerging categories and the emerging theory). In this way, the selected experts must have the following conditions:

- Have at least 15 years of experience in auditing.
- Their field of study, at all levels of education, was accounting or auditing.
- Be members of the country's certified public accountants.
- Be members of the board of directors and senior and technical managers of the audit organization.

Accordingly, by initially referring to 19 participants, theoretical saturation was somewhat confirmed for the researcher; however, in order to achieve greater confidence and complete the conceptual gaps in the developed model; referring to 6 other elites was put on

the agenda and finally the total number of participants reached 25 people.

Statistical population in the quantitative section

In the quantitative section; the statistical population of this study included all certified public accountants in the country and a statistical sample was selected using the random sampling method and the Cochran method. The Cochran formula is one of the statistical methods that is usually used in connection with the study of qualitative variables to determine the sample size. The sample size in this method is calculated as follows:

$$n = \frac{\frac{z^2 + pq}{d^2}}{1 + \frac{1}{n}}\left(\frac{z^2 + pq}{d^2} - 1\right)$$

In this formula:

:N The population size includes all certified public accountants in the country, 2819 people.

Statistic: p is the percentage of the distribution of the trait in the population, that is, the proportion of people who have the trait under study (0.5)

Statistic: q is the percentage of people who do not have the trait under study (0.5)

If the values of p and q are not known, their maximum value, that is, 0.5, should be used.

Statistic z=t, and there is no problem if t is used instead of z. At a 5% error level, the value of z is 1.96 and Z2 is 3.8416.

The value of d is the difference between the actual proportion of the trait in the population and the researcher's estimate of the presence of that trait in the population. The accuracy of sampling depends on this factor, and if the researcher's intention is to have the highest accuracy in sampling, the maximum value of d is 5%. Accordingly, we will have:

$$n = \frac{2819 * 1.96^2 * (0.5 * 0.5)}{8293140 * 0.05^2 + 1.96^2(0.5 * 0.5)} \approx 338$$

• Accordingly, 338 people were selected as a statistical sample, and the required data were collected by distributing a researcher-made questionnaire among 338 people.

Research Findings

Descriptive Statistics

Descriptive statistics are shown in the table below. This information is categorized based on parameters such as gender, membership in the Society of Certified Public Accountants, position, work experience, education, and type of audit activity. In descriptive statistics, information is displayed in summary form in tables and graphs, and there is no conclusion or generalization of the results to the community. In fact, statistics are summarized with the help of graphs and tables and show a general and comprehensive picture of the subject.

Frequency information of demographic variables

Membership in the Society of Certified Public Accountants		Gender	
Number	Description	Number	Description
338	Employed members	298	Man
		48	Woman
338	Total number	338	Total number
Work history		Side	
Number	Description	Number	Description
40	Less than 6 years	95	Manager
106	6 to 10 years	88	Audit Supervisor
90	11 to 15 years	92	Audit Manager
102	Over 15 years old	63	Audit partner
338	Total number	338	Total number
Type of audit activity		Education	
Number	Description	Number	Description
338	Independent audit	188	Bachelor's degree
		149	Master's degree
		89	PhD
338	Total number	338	Total number

Frequency information of demographic variables (experts)

Membership in the Society of Certified Public Accountants		Gender	
Number	Description	Number	Description
25	Employed members	16	Man
		9	Woman
25	Total number	25	Total number
Work history		Side	
Number	Description	Number	Description
12	15 to 20 years	12	Manager
13	Over 20 years old	13	Members of the board of directors and technical and senior managers of the auditing organization
25	Total number	25	Total number
Type of audit activity		Education	
Number	Description	Number	Description
25	Independent audit	5	Bachelor's degree
		14	Master's degree
		6	PhD
25	Total number	25	Total number

Questionnaire return rate

Questionnaire return rate Based on the information in the table below; 81% of the distributed questionnaires were answered.

Questionnaire return rate information

Questionnaire return rate	Number of questionnaires answered	Total number of distributed questionnaires
81%	338	418

After collecting the information from the distributed questionnaire study, the resulting data were analyzed using factor analysis and path analysis methods using Excel and SmartPLS software.

Results of the Validity and Reliability of the Questionnaires

The results of the validity and reliability of the questionnaires are shown in the table below.

Results of the validity and reliability of the questionnaires

Narrative	**Reliability**		**Variable**
	Combined reliability	**Cronbach's alpha coefficient**	
656/0	878/0	826/0	History of internal audit activities
685/0	715/0	878/0	Auditors' motivation
699/0	777/0	896/0	Time efficiency of audit activities
649/0	769/0	812/0	Auditor job pressure
512/0	866/0	833/0	Auditor capacity
593/0	813/0	802/0	Risk management system
599/0	799/0	788/0	Effectiveness of internal control systems
612/0	720/0	856/0	Existence of risk-based auditing rules and regulations
603/0	719/0	802/0	Competitiveness of audit firms
559/0	802/0	864/0	Commitment and support from senior management
622/0	830/0	858/0	Volume of internal audit activities
605/0	811/0	898/0	Internal control system
633/0	825/0	855/0	Auditor's expertise in the industry
614/0	785/0	812/0	Annual audit planning
690/0	755/0	863/0	Auditors' ability
655/0	717/0	826/0	Audit fee
587/0	728/0	846/0	Communication processes
609 /0	799 /0	01 /0	Independent audit quality

Based on the results, such as Cronbach's alpha coefficient and The composite reliability is greater than the standard value of 0.7 and the convergent validity value is greater than the standard value of 0.5, the reliability and validity of the distributed questionnaires are confirmed.

Testing of research hypotheses

The testing of research hypotheses is based on examining the path coefficient, t-significant numbers and the coefficient of determination (R2). The path coefficient expresses the existence of a linear causal relationship and the intensity and direction of this relationship between two latent variables. In fact, it is the same regression coefficient in the standard form as observed in simpler simple and multiple regression models. The path coefficient is a number between -1 and +1, which if equal to zero, indicates the absence of a linear causal relationship between the two latent variables. On the other hand, the most basic criterion for measuring the relationship between structures in the structural part model is the t-significant numbers. If the value of these numbers exceeds 1.96, it indicates the accuracy of the relationship between the structures and, as a result, the research hypotheses are confirmed at a 95% confidence level. Of course, it should be noted that t-numbers only indicate the accuracy of the relationships and cannot measure the intensity of the relationship between the structures. Finally, the second criterion for examining the fit of the structural model in a study is the coefficient of determination (R2) coefficients related to the endogenous latent variables of the model. The coefficient of determination (R2) is a criterion used to connect the measurement part and the structural part of structural equation modeling and indicates an effect that indicates the effect of an exogenous variable on an endogenous variable. One of the main advantages of the Smartpls method is that this method has the ability to reduce errors in measurement models or increase the variance between structures and indicators.

Testing the first to fourth hypotheses

The results of the first to fourth hypotheses of the study are shown in the table below.

The results obtained from testing the hypotheses by separating the existing paths are explained below.

In the first hypothesis test, the path coefficient of the independent variable is 0.241 and the value of the t statistic of the mentioned variable is 141.4, and since the sign of the said statistic is positive, its value is greater than the standard value of 1.96; This indicates that the history of internal audit activities has a significant effect on risk-based auditing, indicating the confirmation of the first hypothesis. Based on the coefficient of determination of the model, about 73% of the changes in the dependent variable are explained by changes in the independent variable. These results are in line with the findings of Jonasan (2020).

In the test of the second hypothesis, the path coefficient of the independent variable is 0.487 and the value of the t-statistic of the said variable is 6.501, and since the sign of the said statistic is positive, its value is greater than the standard value of 1.96; This indicates that the motivation of auditors has a significant effect on risk-based auditing, indicating the confirmation of the second hypothesis. Based on the coefficient of determination of the model, about 68% of the changes in the dependent variable are explained by changes in the independent variable. These results are in line with the findings of Chen et al. (2020).

Summary of the results of the tests considered for testing the first to fourth hypotheses

Coefficient of determination (R2)	Numbers Significance t	Path coefficient (β)	Description
73%	141/4	241/0	History of internal audit activities
68%	501/6	487/0	Auditors' motivation
10%	718/0-	0/455 -	Time efficiency of audit activities
6%	-111/0	-0/255	Auditor job pressure

In the test of the third hypothesis, the path coefficient of the independent variable is -0.455 and the value of the t-statistic of the said variable is -0.718, and since the sign of the said statistic is negative, its value is less than the standard value of -1.96; it indicates that the time efficiency of audit activities does not have a significant effect on risk-based auditing, indicating the rejection of the third hypothesis. Based on the coefficient of determination of the model, about 10% of the changes in the dependent variable are explained

by changes in the independent variable. These results are in contrast to the findings of Rasa and Zeville (2015). In the test of the fourth hypothesis, the path coefficient of the independent variable is -0.255 and the value of the t-statistic of the said variable is -0.111, and since the sign of the said statistic is negative, its value is less than the standard value of -1.96; it indicates that the auditor's job strain does not have a significant effect on risk-based auditing, indicating the rejection of the fourth hypothesis. Based on the coefficient of determination of the model, about 6% of the changes in the dependent variable are explained by changes in the independent variable. These results are in contrast to the findings of Jonasan (2020).

Testing the fifth to seventh hypotheses of the study

The results of examining the fifth to seventh hypotheses of the study are shown in the table below.

Summary of the results of the tests examined for testing the fifth to seventh hypotheses

of the results of the tests considered for testing hypotheses five to seven

Coefficient of determination (R2)	**Meaningful numbers t**	**Path coefficient (β)**	**Variable**
13%	658/1	556/0	Auditor capacity
14%	555/1	698/0	Risk management system
80%	546/4	380/0	Effectiveness of internal control systems

The results obtained from testing the hypotheses by separating the existing paths are explained below.

In the test of the fifth hypothesis, the path coefficient of the independent variable is 0.556 and the value of the t-statistic of the mentioned variable is 1.658, and since the sign of the said statistic is positive, its value is less than the standard value of 1.96; This indicates that auditor capacity does not have a significant effect on risk-based auditing, indicating the rejection of the fifth hypothesis. Based on the coefficient of determination of the model, about 13% of the changes in the dependent variable are explained by changes in the independent variable. These results are in contrast to the findings of Jonasan (2020).

In the test of the sixth hypothesis, the path coefficient of the independent variable is 0.698 and the value of the t-statistic of the said variable is 1.555, and since the sign of the said statistic is positive, its value is less than the standard value of 1.96; This indicates that the risk management system does not have a significant effect on risk-based auditing, indicating the rejection of the sixth hypothesis. Based on the coefficient of determination of the model, about 14% of the changes in the dependent variable are explained by changes in the independent variable. These results are in contrast to the findings of Natisi (2019).

In the test of the seventh hypothesis, the path coefficient of the independent variable is 0.380 and the value of the t-statistic of the mentioned variable is 4.546, and since the sign of the mentioned statistic is positive, its value is greater than the standard value of 1.96; it indicates that the effectiveness of internal control systems has a positive and significant effect on risk-based auditing and indicates the confirmation of the seventh hypothesis. Based on the coefficient of determination of the model, about 80% of the changes in the dependent variable are explained by the changes in the independent variable. These results are in accordance with the findings of Chen et al. (2018).

Testing the Eighth to Eleventh Hypotheses

The results of examining the eighth to eleventh hypotheses of the study are shown in the table below.

Summary of the results of the tests examined for testing the eighth to eleventh hypotheses

the results of the tests considered for testing the eighth to tenth hypotheses

Coefficient of determination (R2)	Meaningful numbers t	Path coefficient (β)	Variable
93%	465/8	646/0	Existence of risk-based auditing rules and regulations
10%	250/1	859/0	Competitiveness of audit firms
11%	548/1	513/0	Commitment and support from senior management
8%	698/1 -	568/0 -	Volume of internal audit activities

The results obtained from testing the hypotheses by separating the existing paths are explained below.

In the test of the eighth hypothesis, the path coefficient of the independent variable is 0.646 and the t-statistic value of the mentioned variable is 8.465, and since the sign of the said statistic is positive, its value is greater than the standard value of 1.96; it indicates that the existence of risk-based auditing laws and regulations has a positive and significant effect on risk-based auditing, indicating the confirmation of the eighth hypothesis. Based on the coefficient of determination of the model, about 93% of the changes in the dependent variable are explained by changes in the independent variable. These results are in accordance with the findings of Sullivan and Zhou (2023). In the test of the ninth hypothesis, the path coefficient of the independent variable is 0.859 and the t-statistic value of the mentioned variable is 1.250, and since the sign of the said statistic is positive, its value is less than the standard value of 1.96; it indicates that the competitiveness of audit firms does not have a significant effect on risk-based auditing, indicating the rejection of the ninth hypothesis. Based on the coefficient of determination of the model, about 10% of the changes in the dependent variable are explained by changes in the independent variable. These results are in contrast to the findings of Akbari (2019).

In the test of the tenth hypothesis, the path coefficient of the independent variable is 0.513 and the value of the t-statistic of the said variable is 1.548, and since the sign of the said statistic is positive, its value is less than the standard value of 1.96; this indicates that the commitment and support of senior management on risk-based auditing does not have a significant effect and indicates the rejection of the tenth hypothesis. Based on the coefficient of determination of the model, about 11% of the changes in the dependent variable are explained by changes in the independent variable. These results are in accordance with the findings of Zeinal Melhem (1401).

In the test of the eleventh hypothesis, the path coefficient of the independent variable is -0.568 and the value of the t-statistic of the said variable is -1.698, and since the sign of the said statistic is positive, its value is less than the standard value of -1.96; This indicates that the volume of internal audit activities does not have a significant effect on risk-based auditing, indicating the rejection of the eleventh hypothesis. Based on the coefficient of determination of the model, about 8% of the changes in the dependent variable are explained by the changes in the independent variable. These results are in contrast to the findings of Ramazani (2016).

Testing the twelfth to fifteenth hypotheses

The results of the twelfth to fifteenth studies of the research are shown in the table below.

Summary of the results of the tests examined for the twelfth to fifteenth tests

The results obtained from testing the hypotheses by separating the existing paths are explained below.

In the test of the twelfth hypothesis, the path coefficient of the independent variable is 0.521 and the value of the t statistic of the mentioned variable is 151.10. Since the sign of the said statistic is positive, its value is greater than the standard value of 1.96; it indicates that the internal control system has a positive and significant effect on risk-based auditing and indicates the confirmation of the twelfth hypothesis. Based on the coefficient of determination of the model, about 85% of the changes in the dependent variable are explained by changes in the independent variable. These results are in line with the findings of Malik et al. (2021).

Summary of the results of the tests reviewed for the 12th to 15th exams

Coefficient of determination (R2)	Meaningful numbers t	Path coefficient (β)	Variable
85%	151/10	521/0	Internal control system
14%	998/0	645/0	Auditor's expertise in the industry
14%	1/141	215/0	Annual audit planning
59%	636/8	985/0	Auditors' ability

In the test of the thirteenth hypothesis, the path coefficient of the independent variable is 0.645 and the value of the t-statistic of the said variable is 0.998, and since the sign of the said statistic is positive, its value is less than the standard value of 1.96; this indicates that the auditor's expertise in the industry does not have a significant effect on risk-based auditing, indicating the rejection of the thirteenth hypothesis.

Based on the coefficient of determination of the model, about 14% of the changes in the dependent variable are explained by changes in the independent variable. These results are in contrast to the findings of Yatridis and Dimitras (2013).

In the test of the fourteenth hypothesis, the path coefficient of the independent variable is 0.215 and the value of the t-statistic of the said variable is 1.141, and since the sign of the said statistic is positive, its value is less than the standard value of 1.96; This indicates that annual audit planning does not have a significant effect on risk-based auditing, indicating the rejection of the fourteenth hypothesis. Based on the coefficient of determination of the model, about 14% of the changes in the dependent variable are explained by changes in the independent variable. These results are in contrast to the findings of Jia et al. (2020).

In the test of the fifteenth hypothesis, the path coefficient of the independent variable is 0.985 and the value of the t-statistic of the said variable is 8.636, and since the sign of the said statistic is positive, its value is greater than the standard value of 1.96; This indicates that the ability of auditors has a positive and significant effect on risk-based auditing, indicating the confirmation of the fifteenth hypothesis. Based on the coefficient of determination of the model, about 59% of the changes in the dependent variable are explained by changes in the independent variable. These results are in accordance with the findings of Muhammad (2022).

Testing the sixteenth and seventeenth hypotheses

The results of the sixteenth and seventeenth hypotheses of the study are shown in the table below.

Summary of the results of the tests considered for testing the sixteenth and seventeenth hypotheses

Coefficient of determination (R2)	Meaningful numbers t	Path coefficient (β)	Variable
61%	587/5	622/0	Audit fee
16%	155/1	297/0	Communication processes

The results obtained from testing the hypotheses by separating the existing paths are explained below.

In the sixteenth hypothesis test, the path coefficient of the independent variable is 0.622 and the value of the t statistic of the mentioned variable is 587.5 and since the sign of the said statistic is positive, its value is greater than the standard value of 1.96; This indicates that audit fees have a positive and significant effect on risk-based auditing, indicating confirmation of the sixteenth hypothesis.

Based on the coefficient of determination of the model, about 61% of the changes in the dependent variable are explained by changes in the independent variable. These results are in accordance with the findings of Deniz et al. (2018).

In the test of the seventeenth hypothesis, the path coefficient of the independent variable is 0.297 and the value of the t-statistic of the mentioned variable is 1.155, and since the sign of the mentioned statistic is positive, its value is less than the standard value of 1.96; it indicates that communication processes do not have a significant effect on risk-based auditing and indicates the rejection of the seventeenth hypothesis. Based on the coefficient of determination of the model, about 16% of the changes in the dependent variable are explained by changes in the independent variable. These results are in accordance with the findings of Salim et al. (2016).

Test of the eighteenth hypothesis

The results of examining the eighteenth hypothesis of the research are shown in the table below.

The results obtained from the hypothesis test, divided into existing paths, are explained below.

Summary of the results of the tests examined for the eighteenth hypothesis test

Coefficient of determination (R2)	Meaningful numbers t	Path coefficient (β)	Variable
82 %	125/10	925 /0	Risk-based audit approach

In the test of the sixteenth hypothesis, the path coefficient of the independent variable is 0.925 and the value of the t-statistic of the said variable is 10.125, and since the sign of the said statistic is positive, its

value is greater than the standard value of 1.96; it indicates that the risk-based audit approach has a positive and significant effect on the quality of independent auditing and indicates the confirmation of the eighteenth hypothesis. Based on the coefficient of determination of the model, about 82% of the changes in the dependent variable are explained by changes in the independent variable. These results are in accordance with the findings of Deniz et al. (2018).

Calculating the GOF goodness-of-fit index

This index was developed as a general measure of model fit for partial least squares structural equation models. It is the square of the product of the mean of the common factors and the mean of the coefficients of determination. However, because the GoF goodness-of-fit index cannot reliably distinguish between valid and invalid models and because its applicability is limited to specific model settings, researchers should avoid using it as a suitable measure. GoF may be useful for multigroup analysis (PLS-MGA). Hensler and Sarstedt (2012) explain in detail that the GoF index is not a suitable measure of fit for partial least squares structural equation models and should not be used. However, Hensler and Sarstedt (2012) also show that GoF may be useful for multigroup analysis (PLS-MGA).

The GOF index is related to the general fit of structural equation models. This means that with this criterion, the researcher can control the fit of the general part after examining the fit of the measurement part and the structural part of his general research model. Its formula is given below.

$$GOF = \sqrt{R^2 * \text{Communality}}$$

Considering that the value of R2=87% and Communality=0.812 were obtained; we will have:

$$GOF = \sqrt{0.812 * 0.87} = 0.70$$

The GOF index of this model was obtained approximately 0.70, which indicates the strong suitability of the model.

Presentation of the conceptual model

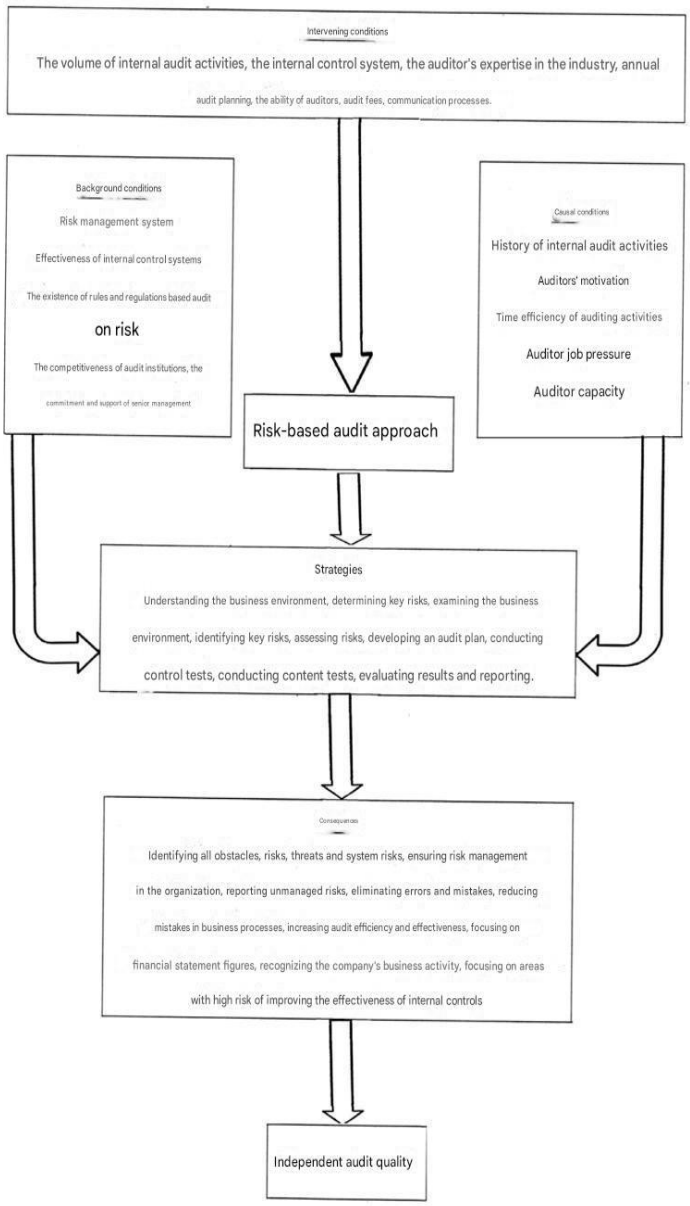
In the supplementary stage of the research and in order to present the model; the research literature and the results of the quantitative data analysis obtained; were used. At this stage, in order to determine the degree of fit of the model; the one-sample t-test and other statistical tests were used. The results of the tests used showed that the difference between the average of the presented model in all parts and the expected average; is less than the 5 percent error level. Therefore, the statistical model was approved by experts and independent auditors with a confidence level of 95%. In the following, the conceptual model of factors affecting the implementation of the risk-based audit approach in order to improve the quality of independent audits is explained.

Conceptual model of factors affecting the implementation of a risk-based audit approach in order to improve the quality of independent auditing

The first result of this research is to identify the dimensions and components affecting the

implementation of a risk-based audit approach in order to improve the quality of independent auditing, which was achieved by using theoretical studies, summarizing the opinions of experts in the field of accounting and auditing, analyzing the opinions of the statistical community, and receiving the opinions of experts in fields related to the research. The second result of this research showed that the components of the history of internal audit activities, auditor motivation, the effectiveness of internal control systems, the existence of risk-based audit laws and regulations, the internal control system, the ability of auditors, and audit fees had a positive and significant effect on the implementation of a risk-based audit approach.

Analysis of findings and presentation of suggestions arising from testing research hypotheses



Today, considering the opportunities and threats existing in the field of industry and trade, assessing the ability of industries and companies in dealing with uncertainties and managing business risks is very important. Risk assessment encompasses all financial and non-financial aspects of business and is an integral part of successful management of an organization in a commercial environment. One of the oversight units that helps an organization achieve assurance on risk management is internal audit. The way internal audit works has changed dramatically over the past decade. This change has been from system-based auditing to process-based auditing and now emphasizes risk-based internal auditing. Risk-based internal auditing requires the identification of organizational risks, thus making optimal use of scarce audit resources, better aligning internal auditors with management objectives,

facilitating organizational development, and reducing potential risks by focusing on areas of weakness.

Internal audit is on a path that will require changes in its traditional methods, tools, and techniques in the next few years to meet new legal requirements for corporate governance and new risk management standards. These new requirements are designed to provide greater assurance of the organization's ability to manage risk, which will require major changes in the internal audit function and its support by the board of directors. There are various quantitative and qualitative methods for assessing risk. Organizations and internal audit units can choose one of the recognized and accepted frameworks of international professional bodies for risk management and assessment, depending on their needs and objectives. The requirements of the corporate governance directive in recent years, including the requirement of the board of directors to ensure the effectiveness of risk management, have created challenges and opportunities for internal audit. In recent years, internal audit has been required to change its role and approach in order to increase the effectiveness of risk management. Given the importance of this issue, the present study identified the structures that affect the implementation of the risk-based audit approach in order to improve the quality of independent auditing. In order to achieve the defined goals, after conducting statistical analyses in both quantitative and qualitative sections, the results showed that the history of internal audit activities has an impact on the implementation of the risk-based audit approach. Therefore, and given that internal audit approaches include a set of activities and processes that are used to review and evaluate internal controls, management processes, and the overall performance of the organization, it is possible to provide areas for improving the risk-based audit approach by improving the aforementioned issues.

Regarding the internal control system, it can also be said that this is an accounting process in companies that is usually carried out in order to achieve short-term and long-term goals for the company's profitability or to maintain the financial strength of the institution. Because the internal control of companies has a variety of transaction cycles, goals and requirements unique to its field that must be observed in carrying out this process. Because as a result of an effective internal control system, the quality of risk-based auditing and consequently the quality of independent auditing improves.

We also found that the motivation of auditors has a positive and significant effect on the implementation of the risk-based auditing approach. Therefore, based on this, it should be provided by providing incentives with a suitable structure to motivate auditors, thereby improving risk-based auditing.

It should also be explained that when planning and implementing audit procedures, as well as evaluating and reporting the results of the audits, the auditor should be aware that failure to comply with laws and regulations by the audited entity may significantly affect the financial statements, and in this regard, the existence of codified and enforceable laws and regulations can be a solution.

On the other hand, it can be stated that the effectiveness of internal control systems has a positive and significant impact on the implementation of a risk-based audit approach. Therefore, it can be stated that since each economic unit establishes its own control environment in accordance with organizational needs and objectives; this environment must be in a way that can strengthen the risk-based audit approach. Because the control environment; It includes the management's mindset and leadership style, operational methods, organizational design, duties and responsibilities of the board of directors and its committees, methods of delegation of authority and responsibilities, management control methods, internal audit unit, human resource management policies and methods, and external factors affecting the economic unit.

Regarding the competitiveness of audit firms, it can be suggested to managers, given that risk management is an essential element of corporate governance and that the organization's senior management is responsible for establishing and implementing a risk management framework. In this regard, considering the pivotal role of internal audit in providing the necessary assurance to the audit committee and the board of directors regarding the effectiveness of risk management, it is essential to implement and use risk-based internal audit in organizations.

The results of testing the following hypotheses showed that audit fees have a positive and significant effect on the implementation of a risk-based audit approach. From this perspective, it is possible to determine the audit fee correctly by paying attention to

factors such as the volume and complexity of the work, the type of audit, and the expertise of the auditor, and in this way, it can strengthen the risk-based audit approach.

Also, regarding communication processes, it can be stated that since the communication between internal and independent auditors, as the two main pillars of the corporate governance structure, has become very important; this interaction has a direct and tangible impact on the stability and credibility of companies by gaining confidence and increasing the quality of financial reports, which can strengthen the risk-based audit approach.

Based on the importance of the ability of auditors, it can also be explained that by carefully examining the accounts and financial records of an organization, auditors ensure that the financial information provided is accurate, reliable, and in accordance with accounting standards. Obviously, the more capable the auditors are; they prepare a more comprehensive report of their audit results in which they express their opinion on the financial status of the organization.

The final findings showed that the risk-based audit approach has an impact on the quality of independent audits. Accordingly, it can be said that risk-based internal audit focuses on evaluating the business process and strategic processes and evaluating the organization's objectives, risks and controls. By identifying, assessing and monitoring the company's risk, internal audit helps to ensure that resources are adequate and that they are focused on priorities. In general, risk-based audit assesses high-risk areas and, more importantly, implements continuous risk assessment.

Practical Suggestions

Considering that risk management is a fundamental element of corporate governance and that management is responsible for establishing and implementing the risk management framework by the board of directors; in this regard, considering the pivotal role of internal audit in the field of risk management in providing the necessary assurance to the management and board of directors of the organization regarding the effectiveness of risk management, necessary measures should be taken to implement and apply risk-based internal audit in organizations and companies. Therefore, senior managers, audit committees, risk committees and internal audit managers of organizations and companies are recommended to support, accept, implement and apply risk-based internal audit based on recognized frameworks of internal controls and risk management in order to enjoy the benefits of the new internal audit approach.

It should also be noted that the risk-based internal audit process should not be limited to identifying and reporting risks, and that monitoring audit and risk management performance is as important as identifying risks. The auditor's monitoring and review process should also determine how successful internal controls have been in reducing the adverse effects of risks. It should be noted that this monitoring should be ongoing and its results reviewed at various time intervals. It can be further suggested that in developing a risk-based audit program, after risks have been identified, a response or responses should be defined for each risk based on the organization's risk appetite. Because in general, the following four responses can be defined and adopted regarding the identified risks:

Risk avoidance: In some cases, activities that can pose a risk or risks to the organization are beyond the organization's risk tolerance level and it is not possible to apply appropriate controls to deal with them, in which case the organization may avoid the relevant activity in order not to face the risk.

Risk transfer: The organization may accept the risk and apply a set of measures to reduce its adverse effects. These controls cause the risk to be reduced from the inherent risk level to the residual risk level.

Risk sharing: In order to reduce the adverse effects of the risk, it may be shared with an external organization by performing activities such as insuring goods, property or activities or outsourcing risk measures.

Risk acceptance: In some cases, the risk is lower than the organization's risk appetite level, so that the organization accepts the adverse effects of the risk and does not take any action to reduce it.

Future Suggestions

It is suggested that sufficient field studies be conducted on different groups of users of management reports in Iran and that the users' opinions regarding risk-based auditing and its effects on each of the stakeholder groups be carefully documented and evaluated. Because this type of information is of great help in determining the best way to deal with the issue of management reports in Iran. The degree to which

the various dimensions of the importance of the present study are clarified; the following topics can be suggested to future researchers.

- Implementing a risk-based auditing approach in order to improve the quality of independent auditing with a meta-synthesis approach.
- Implementing a risk-based auditing approach in order to improve the quality of independent auditing with an emphasis on the role of conflict between auditors, managers, and the board of directors.
- Implementing a risk-based auditing approach in order to improve the quality of independent auditing with an emphasis on the role of personality traits of independent auditors.

Research Limitations

During qualitative research, the possibility of researcher's assumptions and biases may distort the findings and results of the research; although in the present study, the researchers have made every effort to prevent bias. The most important limitation in this type of research is the research approach. Since in qualitative research, the phenomenon in question is examined in the context in which it occurred; the possibility of generalizing the results and findings of the research to conditions and situations is limited and requires empirical testing through quantitative research. Also, the lack of understanding of some questionnaire questions by the respondents was the main limitation of the present study.

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