

Developing the effectiveness of professional audit judgment based on the mindfulness of auditors

Alireza Kamalgharibi

PhD Candidate, Department of Accounting, Gorgan Branch, Islamic Azad University, Gorgan, Iran. (Email: ar.kamalgharibi@yahoo.com)

Mansour Garkaz *

*Corresponding author, Associate Professor, Department of Accounting, Gorgan Branch, Islamic Azad University, Gorgan, Iran. (Email: M_garkaz@yahoo.com)

Alireza Matoufi

Department of Accounting, Gorgan branch, Islamic Azad University, Gorgan, Iran. (Email: alirezamaetoofi@gmail.com)

Mehdi Safari Gerayli

Associate Professor, Department of Accounting, Bandargaz Branch, Islamic Azad University, Bandargaz, Iran. (Email: mehdi.safari83@yahoo.com)

Iranian Journal of Finance, 2023, Vol. 7, No.1, pp. 35-65.

Publisher: Iran Finance Association

doi: <https://doi.org/10.30699/IJF.2021.281430.1218>

Article Type: Original Article

© Copyright: Author(s)

Type of License: Creative Commons License (CC-BY 4.0)

Received: April 15, 2021

Received in revised form: June 22, 2021

Accepted: July 25, 2021

Published online: November 26, 2022



Abstract

Judgment in the auditing profession as a subjective criterion in the decisions of auditors has a significant role in improving the quality of decision support for analysts, shareholders, and investors in the capital market. Therefore, recognizing the qualitative characteristics in this area can help the theoretical development of improving the quality of auditors' professional judgments. The purpose of this study is to develop the effectiveness of auditing professional judgment based on the mindset of auditors. In this study, to identify the components (auditing professional judgment) and research propositions (themes of auditors' mindfulness), meta-synthesis analysis was used with the participation of 12 experts and experts in the field of accounting and financial management at the university level. In the quantitative part, the identified components and propositions in the form of matrix questionnaires were evaluated by interpretive analysis by 18 auditors with work experience and a level of technical and specialized knowledge. The results showed that the statement of inferential mindfulness is the most influential theme of intuitive judgment in auditing, which can cause auditors to perform more effectively in professional judgment. This result suggests that inferential mindfulness is a factor in intuition in professional judgment.

Keywords: Mindfulness of auditors, Professional audit judgment, Decision matrix homogeneity theo.

Introduction

The continuous economic and social progress in the field of auditing has created a complex economic environment and has increased uncertainties in this field (Suyono & Farooque, 2019). Judging professionals is a key skill in the auditing profession, and in the current context of Iran, which is moving towards the application of international financial reporting standards and accounting standards based on principles, decisions are made by professionals, including managers, auditors, financial analysts, accountants, and standardizers. Their judgments will be (Hosseini and Rasouli, 2019). Undoubtedly, judging is difficult and the ability to make good judgments is the cornerstone of the accounting profession, and professional standards without professional judgment will never play an effective role (Mashayekhi et al, 2017). It is important to note that judging in auditing is based on applying knowledge and experience to an extent that is not outside accounting and auditing standards and together, they should oblige their auditors to observe the code of professional conduct to fulfill their social responsibilities properly

while observing their specialized responsibilities (Hirani et al, 2017a). The auditors' knowledge of the social responsibilities assigned to them creates the perception within the auditor to make a judgment based on justice and ethics in the review of financial statements (Saeedi Garaghani, M., Naseri, 2017).

In recent years, there have been many studies and research on professional judgment in auditing, which shows its importance in the auditing profession. Most of these judgments have focused on analytical methods, evidence evaluation, personal characteristics, and auditors' cognitive limitations since the 1970s when this type of research began. But over time, research approaches to auditors' professional judgments based on psychological domains have shifted, focusing more on the role of auditors' mentality in audit commentary. For example, studies such as Olsen and Gold (2018); Brazel et al (2016); Cohen et al (2017), and Glover & Prawitt (2018) examine and recognize the professional judgments of auditors on factors such as audit work environment, auditor's personal characteristics, how to audit evidence, they mentioned complex decision-making processes and qualitative characteristics in decision-making. Also, other groups of research such as Nolder and Kadous (2018) and Backof et al (2016) pointed to the role of the moral environment and macro-culture of society and considered it an important factor in the development of better professional judgments.

An analysis of auditing standards and research reveals that there is no standard approach to applying professional judgment, but applying proper professional judgment in performing the duties of an auditor is a prominent factor and increasing judging skills is essential for auditors (Ahmadian et al, 2019). However, professional regulations define auditors' good judgment as one that is free from bias, concern, or association with the client (Ontario Accounting Institute, 2006) and require auditors to be impartial, professional, or inquisitive (AICPA, 2006), but these rules in practice and implementation due to the internal complexities of people from different perspectives such as personality, behavior, perception, etc. face many problems. In other words, professional standards usually take into account general conditions within a certain range, and more than that, they cannot codify requirements and standards due to the behavioral and ethical characteristics of auditors (Lehmann & Norman, 2006).

Because an auditor, according to the mental philosophy defined as a professional in auditing, has different characteristics from others, and this makes the judgments of auditors not necessarily follow certain procedures of predetermined principles. Therefore, in the current situation, one of the complexities of accounting and auditing that needs attention is knowing the

criteria and characteristics of judging in the auditing profession, which is not mentioned in any standard book. Because judgment is something that exists in the whole process of audit operations and the need to pay attention to features such as professionalism leads to an increase in expectations for the quality of auditors' judgment (Goldoust et al, 2019).

Professional judgment in auditing work and its process is a complex issue and is influenced by several factors. This has caused many challenges in the auditing profession. A review of the studies conducted and the current situation in Iran and other countries indicates that auditing, like other professions, has many complexities due to its reliance on judgment, which requires special attention due to environmental changes and its impact on the audit profession. Therefore, the purpose of this study is to develop the effectiveness of judging the auditing profession based on the mindset of auditors. Then, in the second part of the research, theoretical foundations, and empirical background, in the third part, the research method, in the fourth part, is the analysis of findings, and finally, in the fifth part, the discussion and conclusion are presented.

Literature Review

The professional judgment of auditors

Judgment refers to a set of mental activities that occur when making decisions about creation or choice between different solutions (Galotti, 2002; Schraagen et al, 2008). Mintzberg & Westley (2001), define behavior as one aspect of judgment. Acknowledged that judgment is a special obligation to decide on a particular subject. Porter (1985) emphasizes that the success or failure of a company depends largely on the ability of managers to make strategic decisions. Researchers such as Mintzberg and Westley (2001) and McKenna et al (2013) emphasize that in reality, judgment is not always the result of a set of sequential and predefined behaviors, but rather the result of a non-linear and non-sequential process. In line with Harrison (1999)'s research, this study defines judgment as a continuous process of identifying and evaluating alternative solutions to achieve one or more goals where expectations and priorities about a particular behavioral path lead the decision-maker to choose the path that is most likely to lead to goals.

It is noteworthy, however, that the subject of decision-making and judgment has a long history in research such as management and organizational studies, and decision-making is largely considered a systematic process (Langley et al, 1995) through which alternative solutions are

developed. , Are compared and selected to achieve the desired goals (Keast and Michael, 2009), but in the field of financial science, such as auditing, knowledge is almost emerging, because, after the development of financial behavioral perspectives in 1990, they received more serious attention until the beginning of the present century, psychological and behavioral issues were raised as decision-making criteria, especially in the field of auditing. In other words, the issue of decision-making and commenting in the auditing profession has received special attention from the perspective of auditing professional judgments in recent years (Harding and Trotman, 2017).

In fact, judging the process is a choice or a decision that leads to activity. This is a simple definition of judgment. But the judgment process probably has a broader meaning. Conceptually, judgment includes initial understanding and knowledge of the subject, search for information, evaluation and weighting of existing information, consideration of the value and desirability of potential consequences, and finally decision-making (Hirani et al, 2017b). Professional judgment is a concept that is often used in disciplines, but in auditing, professional judgment means the application of knowledge and experience within the framework of accounting standards, auditing, and the practice of professional conduct to decide on one option (Sanusi et al, 2018).

Reliability in auditing as well as the credibility and usefulness of financial reporting depend on good judgment by professionals. The Canadian Institute of Chartered Accountants (1995) provides a comprehensive definition of auditing professional judgments: "Professional judgment is the essence of auditing and the value that is created by auditing financial statements is the result of a set of professional judgments that within the framework of accounting and auditing standards can lead to an increase in value in this area."

But the question is, to what extent can auditing standards help increase the accuracy of professional judgments? In response to this question, it should be said that auditing standards in the field of presenting auditors' reports, based on the procedure of professional behavior of auditors, try to control auditors' behavior to some extent by motivating responsible and professional motivations (Asadi and Naamani, 2015). In this way, they will give more credit to the financial statements and increase the decision-making power of the pillars of the capital market, from shareholders to analysts and legislators. But the fact is that because of the behavioral complexities of individuals and because judgment is based on the internal and behavioral aspects of individuals. And usually, in the perception of facts, the professional identity of auditors is ignored on a larger scale, it cannot be given a very effective role in professional judgment (Chen et al, 2018). Therefore, in the current situation,

one of the complexities in the auditing profession that needs attention is to consider the auditing criteria of auditors, which is not mentioned in any standard book. Because judgment is something that exists in the whole process of audit operations, the need to pay attention to features such as professionalism that lead to increased expectations in the quality of auditors' judgment and their decisions, is very much felt.

Theories related to professional audit judgment

From the perspective of behavioral theories in the field of auditing, it should be noted that an auditor is a specific person with technical knowledge, in a specific space, at a specific time, and in a specific place and different from all previous reviews. In these circumstances, one must look at professional judgment both from a professional and behavioral perspective, as well as into the intuitive characteristics and decision-making power of auditors under stress (Lynch et al, 2009). Standards of auditing professionals believe that auditors, based on the application of technical and specialized knowledge based on their experience, can make realistic statements based on ethical behaviors to increase transparency (Zsombok, 1997).

While traditional theories believed that based on rational approaches and based on normative models, optimal decisions should be made based on step-by-step decision-making principles. On the other hand, new theories in this field focus on behavioral and cognitive approaches to believe in the influence of complex environments in decision-making processes and base decision-making on the internal forces of auditors such as the power of intuition (Valiyan et al, 2019). In fact, decision-making shifts from a step-by-step process to judgmental processes based on auditors' personal perceptions. And focuses more on the practical aspects of decision-making. In this regard, recognizing two important schools of decision-making, including the Berlin school and the Sternberg school of equilibrium theory, can help increase the conceptualization of professional judgments.

In fact, the terms "Pragmatic", "Pragmatism", "Problem-solving" and "Responding to an Environment" are similar concepts that can be considered in the concept of rational and step-by-step judgment in the auditing profession. Lam and Mensah (2006) believe that when it is said that an auditor has made a decision, three concepts come to mind: 1) he has started a series of actions to do it 2) he has his mind Has prepared to do a particular subject regardless of past mental frameworks, and 3) he has given an opinion or opinion in the field that a person should take action in a particular situation after offering alternative solutions. Therefore, recognizing the auditing criteria of an auditor

in the review of financial statements, relying on rational conceptualization, can help to further align the mental concepts and performance facts of companies. But the Sternberg School of Equilibrium Theory (2013) considers the professional judgment of auditors to be inherently intuitive in nature because evidence alone cannot guarantee a rational decision.

Fundamentals of Critical Thinking

Socrates in his book *Apology* (Defense) points out that if life is not explored, it is not worth living (Lipman, 2013). Characteristics related to thinking in education are often summed up in the construct of critical thinking. Critical thinking is the cornerstone for gaining different experiences during a person's life (Abu_dabat, 2015). Critical thinking is perceived as one of the life skills more as the ability of thinkers to challenge their thinking (Perry, 2014). According to Myers (2007), critical thinking is the identification of erroneous arguments and the lack of emotional excitement in the face of a problem. A key factor in critical thinking is problem-solving, critique of solutions, and finding alternatives. Critical thinking here does not mean complaining. It is a sharp view that leads to improving the level of quality decision-making (Barzegar bafrooei et al, 2019).

According to Andolina (2001), critical thinking is a process that according to which, the person evaluates the opinions, information, and sources that provide information, organizes them coherently and logically, connects them with other ideas and information, considers other sources, and evaluates implicit concepts (Soleimanpour, 2019). A critical thinker, then, uses appropriate strategies and skills to achieve the desired outcome (Halpern, 1998). The American Philosophical Society defines critical thinking: "Critical thinking is a purposeful and self-regulating judgment based on the interpretation, analysis, evaluation, inference, and explanation of situational, methodological, proprietary, and conceptual considerations" (Banning, 2019). According to the theoretical foundations, the research questions are:

1. What are the components of auditing professional judgment as a basis for interpretive analysis?
2. What are the themes of auditors' mindset as a reference in interpretive analysis?
3. What are the most effective criteria for judging the auditing profession based on the mindset of auditors?

Research Background

Bentley et al (2020) conducted a study entitled "Assessing the Impact of Auditors' Critical Thinking Levels on Commenting on Managers' Operational Decisions." This study, which was conducted with the participation of 217 auditors with experience and professional background, showed that applying the level of critical thinking of auditors in commenting can help increase the decision-making power of managers and cause the level of potential risks of the company in the face of uncertainties to be controlled to some extent and the interests of stakeholders are protected.

The existence of this approach is considered an advantage of the auditing market and this issue increases the level of dynamic communication of transparent information to decision-makers and stakeholders. Wu et al (2020) conducted a study entitled *The Quality of Disclosure of Financial Statements Influenced by Critical Thinking*. In this study, 116 auditors' comments from the previous year (2017) that were critical of companies were examined. This study examined a period of one year in 2018. In fact, they examined the existence of auditors' critical comments on financial performance in 2017 for 2018 and the disclosure of information in the form of financial statements for the following year.

The results showed that the existence of critical thinking increases the level of transparency in the disclosure of corporate financial statements. Polychronidou et al (2020) conducted a study entitled "Cultivating the Voluntary Circulation of Auditors in Greece" to develop critical thinking. In this study, the level of programs of upstream institutions as a determinant of the path of performance culture of companies to increase the level of transparency was examined through content analysis which aims to assess the level of critical thinking in the form of three levels of behavior, professional and social. The results showed that increasing the optional level of auditors' turnover by companies could improve all three functional levels of critical thinking, but the social level of thinking was a priority over the other two levels. Olojede et al (2020) conducted a study entitled "Covering the Audit Expectation Gap" with the development of reasoning thinking functions.

The purpose of this study was to improve the level of thinking capacity of auditors beyond the specialized dimensions and based on covering the social interests of stakeholders to improve the level of information transparency and performance of companies. This study was conducted in Nigeria and examined the content of the dimensions of the expectation gap between auditors and

stakeholders the four main components of cultural dimension, behavioral dimension, environmental dimension, and religious dimension were among the factors that stimulated the level of auditors' functions to cover more transparency using reasoning thinking. The results showed that the existence of stellar thinking functions will cause the dynamics of auditors' decision-making functions to cover the level of critical thinking. Sanusi et al (2018) examined a study entitled "The Effects of Orientation, Self-Efficacy, and Complexity of Work on Auditors' Professional Judgments".

The statistical population of this study was 115 auditors working in auditing firms in Malaysia and the research tool was a questionnaire. The research was conducted over a period of 6 months and the results showed that the orientation towards owners has a strong negative effect on the professional judgment of auditors and self-efficacy as a moderating variable can moderate this relationship. It was also found that the complexity of the work further stimulates the auditors' judgment obsession and this issue has a positive effect on the auditors' judgment. Mullis and Hatfield (2018) conducted a study entitled "The Impact of a Multidimensional Perspective on Auditors' Professional Judgment".

The statistical population of this study was 83 auditing partners from auditing firms in Canada. The results of this study indicate that having a multidimensional approach will have a negative impact on the professional judgment of the auditor because it affects the individual's focus on decision-making. It was also found that self-efficacy in the auditing profession as a moderating variable can have a negative impact on the judgment of the auditing profession in moderation and lead to positive reinforcement. Kusumawati and Syamsuddin (2018) examined the effect of auditors' professional skepticism on the quality of auditors' judgment. A total of 202 auditors of the Badan Pemeriksa Keuangan Republic of Indonesia¹ participated in this study, which used partial least squares (PLS) to test the research hypotheses.

The results, while confirming the effect of auditors' professional skepticism on the quality of the audit, considered the existence of influential factors such as the environment of the auditing firm, the perceived support of the firm, and the perceived support of the auditing partner on strengthening the auditor's professional skepticism on the quality of the auditor's judgment. Jones et al (2018) conducted a study entitled "To Investigate the Impact of Company

¹ Indonesian Auditing Board (IAB)

Identity on Assumptions Formed in the Auditor's Judgment before Negotiating with Owners". The study also examined the gender of auditors as an intervening factor. The results showed that the higher the identity of a company in terms of market, industry, and production performance, the auditor will have a more positive mindset in future professional judgment, But the severity of the issue about auditors of gender, women are far less and auditors women are less influenced by the characteristics of the client's identity. Barzideh et al (2018) conducted a study entitled "Designing an Identity Model in Audit Judgment with an Approach Based on Data Foundation Theory".

This research was qualitative research that was conducted using an approach based on data foundation theory. The statistical population included auditing experts, partners of auditing firms, and managers of the Iranian Society of Certified Public Accountants. Using a purposive sampling approach, a total of sixteen people were selected as participants in the study. Data were collected through interviews with the general guidance method and in a semi-structured manner. To obtain the validity of the data, two methods of reviewing the participants as well as reviewing the non-participating experts in the research were used. The central category of identity in auditing judgment is analysis in four dimensions of personal characteristics, knowledge, skills and experience, and characteristics of the audit firm.

This study can be a good starting point for considering identity among auditors. Hirani et al (2017b) conducted a study entitled "The effect of auditors' social characteristics on their judgment in resolving the conflict between the auditor and the management of selected characteristics: overconfidence and Machiavellian personality". The statistical population of the study of professional auditors and accountants, from which the desired sample is determined using Cochran's formula and selected by random sampling method, including 225 people.

The results showed that the overconfidence of auditors and their Machiavellian personality affect professional judgment. The results also showed that professional judgment has an effect on the conflict between the auditor and management and also excessive trust has a significant effect on it professional judgment plays a moderating role in influencing the overconfidence and Machiavellian personality in the conflict between auditor and management. Hirani et al (2017a) conducted a study entitled "Professionalism and Auditing Professional Judgment".

The statistical population of this study was 550 auditors and professional accountants working in this profession. This information was extracted from

the site of the auditing organization, from which the desired sample was determined using Cochran's formula and selected by random sampling method. To investigate the mediating role of auditors' professional judgment, the Sobel test has been used. The results showed that professionalism influences the professional judgment of auditors. The results also showed that professional judgment has an effect on the conflict between the auditor and management, but professionalism has no effect on resolving the conflict between the auditor and management, and professional judgment does not play a mediating role in the effect of professionalism on the conflict between the auditor and management.

Research Methodology

In terms of result categorization, this research is part of developmental research, because the theoretical inconsistency in terms of concepts and theories related to this field, has led to this research seeking to identify the most effective criterion for judging the auditing profession based on auditors' mindset. On the other hand, based on the data type, this research is hybrid, because in the qualitative part, through theoretical screening based on the meta-synthesis analysis method, this research seeks to identify the components of auditing professional judgment and the themes of auditors' mindfulness. Then, in a quantitative part, by analyzing the polar matrix based on the multi-criteria decision-making method, examine the pattern of determining the most important causes of psychodynamic disorder in auditors. Decision-making processes are usually based on components and themes that are examined in the form of matrix analysis and based on pairwise comparisons which is one of the best processes is the interpretive rating process (IRP) (Sushil, 2009) which is the basis of analysis in this study.

The statistical population of the research

In the qualitative part, this study, through the basis of homogeneous sampling, selected 12 experts and experts in the field of accounting and financial management at the university level to participate in determining the components and themes based on a theoretical approach to the research topic. Also based on meta-analysis, this part of the research conducted in such sites as University Jihad in Iran; Iran Database of Publications; Iran Islamic Computer Science Research Center; International Reference Articles (Science direct); Emerald Insight, and Online Library was online, was used to determine the components (audit professional judgment) and research topics (auditors' mindfulness). In the second phase, to perform the prioritization interpretive

analysis section, 18 auditors with work experience and level of technical and professional knowledge were used as the target population in the quantitative section. The basis for selection based on the purposive sampling method was that the selected auditors have more than 5 years of professional experience. Also, their degree must be a master's or doctorate, so that as members of the focus group, after evaluating the identified components and themes of the quality department and approving them, they can respond to the matrix questionnaires. It should be noted that since the interpretive rating process (IRP) is an analysis based on matrix analysis and analysis in operations, should be done by the participants based on a specific criterion such as experience or specialized knowledge, which is limited in terms of sample size and is in accordance with research such as Sushil (2017).

Findings

In order to link the components of audit professional judgment and the themes of auditory criticism functions, meta-analysis is used to enter the phase of the interpretive rating process by compiling the components and themes identified in the form of research matrix checklists in the quantitative section.

Meta-Synthesis Findings

The method of meta-synthesis analysis through theoretical and research screening seeks to identify components and topics related to the research topic. The time period for analyzing similar research was 2010 to 2020. In other words, to find similar articles and research and use international and domestic research databases and references, research related to the research goal was identified.

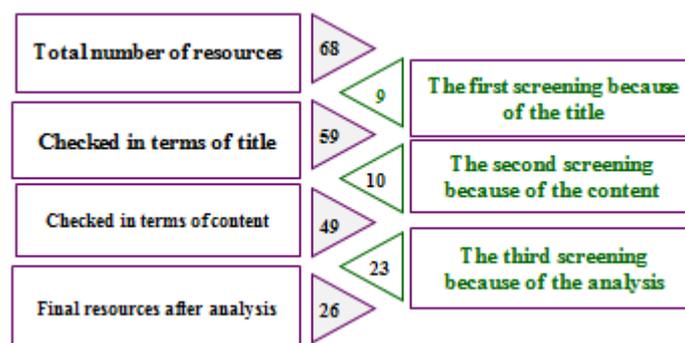


Figure1. Screening of initial research

As shown in Figure (1), all the primary sources identified are 68. After several stages of the screening process in terms of content, title and analysis, finally, 26 studies appropriate to the content, title, and analytical processes of this research. 15 studies related to determining the judgment components of auditors' professions and 11 studies related to the mental function propositions of auditory critical thinking were selected. At this stage, concepts should be broken down into components and themes, so that the most important components of auditors' professional judgments are determined based on the auditors' mindfulness in the form of scorecards. Therefore, to answer the first and second questions of the research through the criterion of critical evaluation, which includes 10 criteria of research objectives, the logic of research method, research design, sampling, data collection, reflectivity, the accuracy of analysis, theoretical and transparent expression of findings and research value, in section A) the components of auditors' professional judgments are determined and in section B) the contents of the auditors' mindfulness are determined.

A) Identify the components of auditors' professional judgments (I)

In this section, according to the explanations given, the components of auditors' professional judgments are identified with the symbol (I). Table (1) evaluates how to evaluate the components based on a 50-point index in the form of scores from 1 to 5 based on the 10 criteria described.

The scores presented based on the fashion index showed three studies considering that they received less than 30 out of 50 points according to the guidelines for the adequacy of the scores of this analysis, the studies that have a score of 30 or higher are approved, were eliminated, and therefore were excluded from the review. Then, using the Trade-Sterling method (2001), the research topics are extracted. Accordingly, the following scoring method is used to determine the statements of the social pressures of stakeholders. Based on this method, all sub-criteria extracted from the text of approved articles are written in the table column. Then, in the row of each table, the names of the approved researchers are given. Based on each researcher's use of the sub-criteria written in the table column, the symbol "☑" is inserted, then the scores of each ☑ are added together in the sub-criteria column, and scores above the average of the research studies are selected as research components.

Table 1. Evaluation process of approved research to determine the components and propositions

Critical evaluation criteria/research	International Research										Internal Research				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Cyr et al (2020)	Boiral et al (2019)	Glover et al (2018)	Mubako & Donnell (2018)	Bucaro (2019)	Baybut (2016)	Kirmizia et al (2015)	Knechel et al (2013)	Grossman & Welker (2011)	Helsdingen et al (2010)	Shafati et al (2020 ^a)	Hosseini et al (2020)	Khajavi and Mohammadian (2018)	Ebrahimi Romanjan and Nazifi (2020)	Abednazari et al (2018)
Confirm <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>								
Delete <input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	
Purpose of the research	3	2	4	2	4	3	4	3	3	3	3	4	5	2	3
The logic of the research method	4	3	3	2	3	4	4	4	3	4	3	4	5	3	4
Research design	3	3	4	2	4	3	4	3	3	4	4	4	4	2	4
Sampling	3	2	4	3	4	4	4	4	4	4	3	4	5	2	4
Collecting	3	2	3	3	3	4	5	4	3	4	3	5	4	2	3
Generalized Findings	4	2	4	3	4	4	4	3	4	4	4	4	5	3	4
Ethical	4	2	4	2	4	3	5	4	4	4	3	4	4	3	4
Statistical analysis	3	2	3	2	5	4	5	4	3	4	4	5	4	2	4
Theoretical capability	4	2	3	2	3	4	4	3	4	5	4	4	4	4	4
The value of research	4	3	4	3	4	4	4	4	4	4	4	5	5	2	4
Total	35	23	36	24	38	37	39	36	34	40	35	43	45	25	38

Table 2. the process of determining the main components of research

Research environment	Researchers	Analysis of intellectual pattern presentation	Evaluative analysis	Intuitive capability analysis	Analysis based on professional competence	Evidence-based analysis	Analysis based on professional behavior
International research	Cyr et al (2020)	-	-	☑	-	☑	☑
	Glover et al (2018)	-	-	☑	-	☑	-
	Baybutt (2016)	-	-	☑	-	☑	☑
	Kirmizia et al (2015)	-	-	-	☑	-	☑
	Knechel et al (2013)	☑	☑	☑	-	☑	☑
	Grossman& Welker (2011)	-	-	-	-	☑	☑
	Helsdingen et al (2010)	-	☑	☑	-	-	☑
Internal	Shafati et al (2020 ^a)	-	-	☑	-	☑	-
	Hosseini et al (2020)	☑	-	-	-	☑	-
	Khajavi and Mohammadian (2018)	☑	-	-	☑	-	-
	Abednazari et al (2018)	-	-	-	☑	-	-
Total		3	2	6	3	7	6

Based on this analysis, three components of analysis based on intuitive ability were identified; Analysis based on critical thinking approach and analysis based on interpretive thinking have the highest frequency and therefore in this study are considered as the main criteria for determining the statements of critical thinking of auditors. In this section, after analyzing the theoretical foundations of approved research, the propositions are determined according to Table (3).

Table 3. Components of auditors' professional judgments

Category	Research components	Research Proposals
Professional judgments of auditors	Professional judgment based on the characteristics of the evidence presented	In fact, this judgment is the analytical and step-by-step judgment that is used in auditing financial statements according to the auditors' views, which is also called rational judgment. Based on this approach, auditors try to evaluate the evidence provided by owners based on tracking account information. And gain an overview of the owners' financial performance by reviewing the auditors' past comments. In other words, based on this judgment, auditors try to make accurate, evidence-based judgments in the presentation of audit reports by tracking accounts and examining documents in detail. Although this judgment can be considered a good basis for decision-making due to its time-consuming and step-by-step process, it has limitations such as sluggishness in consideration and pressure to the process. This view states that auditors seek to make judgments based on detailed facts. And pay less attention to intuitive characteristics in decision-making, while trying to perform their professional and committed behaviors in the form of step-by-step and detailed reviews based on the evidence presented (Cyr et al, 2019).
	Professional judgment based on professional behaviors	In fact, auditors try to adhere to the principles of professional conduct through an integrated and holistic interpretation, away from any partisanship or affiliation and try to maintain their professional identities in audit statements by controlling emotions and pressures from owners or intermediaries. In fact, this group of auditors has a subjective philosophy of ethical standards that in today's complex world is one of the requirements of the auditing profession. A recurring point in the participants' perspectives was the emphasis on maintaining the auditor's independence, which makes it a very important red line in the profession from other aspects of auditors' expertise and performance. It can be said that this method of professional judgment does not take long steps of the analytical method and does not make decisions based solely on the intuitive method, but is based on a set of behavioral and ethical characteristics that an auditor with a broader view of doing a specialized job. It looks at it and shows a more responsible mentality of auditors in this field (Kirmizia et al, 2015).
	Professional judgment based on intuitive ability	These auditors have a more subjective approach to judgment and are not content with merely presenting evidence from the owners. Perhaps he considered this type of professional judgment to be based more on professional skepticism. That is an approach that seeks to examine the hidden dimensions of owners' financial performance and make decisions through intuitive power, regardless of any subjective assumptions. In fact, mental approaches do not refer to the formation of the auditor's previous mental frameworks in reviewing financial performance, but rather to the auditor's ability and resilience based on the experience he has gained over the years. And it increases the auditor's speed of action and decision-making power and puts less pressure on the financial statements, such as time

	<p>budgeting. An auditor does not merely mechanically examine the evidence but makes more intuitive decisions by studying the firm's history, strategies, and relationships. Perhaps this approach and mental model can be considered as the opposite of the first mental model because, in the first mental model, more neutral approaches to decision-making prevail and according to Hart (2010) the auditor has more confidence in the owners and only based on breaking frameworks, the mental authority examines and judges. In this paradigm, however, this alone is not enough, and auditors must be able to make intelligent subjective analyzes in their reviews. It may be theoretically possible to define this mental model as a kind of judgment based on the insights and inspirations of the individual, in which auditors sometimes use their intuition and decision-making power to control the accounts and performance of the company. Although this type of judgment may not be scientifically based on specific evidence, because it is based on the experience and expertise of the auditor, he can use this judgment in his reporting with a brief look at the totality of accounts (Hosseini et al, 2020).</p>
--	---

B) Identify the themes of the auditors' mindset (L)

As above, following the critical evaluation method in this section, the minds of the auditors are determined. In this section, according to the explanations given, the mindfulness of the auditors is identified with the symbol (L). Table (4) evaluates how the topics are evaluated based on a 50-point index in the form of scores from 1 to 5 based on the 10 criteria described.

Table 4. the critical analysis process of screened research

	Research Purposes	The logic of the research method	Research plan	Sampling	Collecting Data	Reflexivity	Ethical considerations	Accuracy of analysis	Theoretical and clear expression of findings	The value of research	Total
Bucaro (2019)	3	4	3	3	4	3	4	4	4	4	36
Suyono and Farooque (2019)	4	5	4	4	5	4	5	4	4	5	44
Mubako & Donnell (2018)	3	2	3	2	3	2	3	2	3	3	26
Kirmizia et al (2015)	4	5	5	4	4	3	3	3	4	4	38
Griffith et al (2014)	4	4	4	3	4	3	3	4	4	4	37
Knechel et al (2013)	3	4	3	3	3	3	4	3	3	3	32
Grossman & Welker (2011)	2	3	2	2	2	2	3	2	2	2	22
Ebrahimi et al (2020)	4	3	4	3	4	4	4	4	4	4	38
Shafati et al (2020 ^b)	3	3	3	3	2	3	4	3	4	4	32
Hosseini et al (2020)	3	3	3	4	5	4	4	4	4	4	36
Abednazari et al (2018)	3	2	2	2	2	3	4	3	3	3	27

The scores presented based on the fashion index showed that out of a total of 12 initial pieces of research, three kinds of research by Mubako and Donnell (2018); Grossman and Welker (2011), and Abednazari et al (2018) considering that out of 50 points, they received less than 30, and in accordance with the guidelines for the adequacy of the score of this analysis, studies that have a score of 30 or higher are approved, were eliminated, and for this reason, they were removed from the investigation. Then, using the Trade-Sterling method (2001), research propositions are extracted. Accordingly, the following scoring method is used to determine the statements of auditors' mindfulness capacity. Based on this method, all sub-criteria extracted from the text of approved articles are written in the table column, and then the names of the approved research researchers are listed in the row of each table. Based on each researcher's use of the sub-criteria written in the table column, the symbol "☑" is inserted, then the scores of each ☑ are added together in the sub-criteria column, and scores above the average of the research studies are selected as research components.

Table 5. the process of determining the main research propositions

Status	Researchers	Experimental mindfulness	Inferential mindfulness	Analytical mindfulness	Intermediate mindfulness	Interpretive mindfulness
International research	Bucaro (2019)	-	-	-	-	-
	Suyano &Farooque (2019)	-	☑	☑	☑	-
	Kirmizia et al (2015)	☑	-	-	☑	-
	Griffith et al (2015)	-	☑	-	-	☑
	Knechel et al (2013)	-	☑	☑	-	☑
Internal	Ebrahimi et al (2020)	☑	-	-	-	☑
	Shafati et al (2020 ^b)	-	☑	☑	☑	☑
	Hosseini et al (2020)	-	☑	-	-	☑
Total		2	6	3	3	5

Based on this analysis, three statements of inferential mindfulness were identified; Intuitive mindfulness and interpretive mindfulness are the most common. In this section, after analyzing the theoretical foundations of approved research, each of the identified propositions is defined according to Table (6).

Table 6. Statements related to the mindset of auditors

Mindfulness statements	Definition
Inferential mindfulness	Inferential mindfulness refers to the ability to analyze the evidence and performance facts of companies in proportion to the level of the capital market, in such a way that an auditor, with this kind of attitude, processes environmental information and participates in the capital market to shareholders, investors, and the government, in this way, relying on Levy's view, to achieve a proper understanding and decision-making to solve a problem based on accurate reasons and credible evidence. (Shafati et al, 2020 ^b).
Analytical mindfulness	As Butler and Halpern (2012) stated, this level of mindfulness in auditors refers to auditors' analytical, perceptual, and cognitive skills in analyzing corporate financial performance. In fact, an analytical mindset is based on the analytical ability performed on the individual, based on which auditors use the acquired knowledge that they acquire based on education or experience to control the accounts and performance of the company.
Interpretive mindfulness	Interpretive mindfulness refers to the level of interpretive and inferential capabilities to establish a structure of reasoning between facts and misleading actions of companies to better prove the behavioral and functional reasons of companies. At this level of mindfulness, auditors who have this attitude try to discover a more inferential understanding of companies' realities through abstract techniques.

Interpretive Rating Process

Once identified, the components of professional judges (I) and the statements of the auditors' mindset (L) are based on the effect of the line "i" on column "j" or vice versa or reciprocally, processes related to this analysis are performed. Therefore, in order to create interactive matrices, the level of direct, symmetric, or indirect communication must first be considered in line with the explanations. Therefore, first, the matrix questionnaire is determined in the following order:

Table 7. the matrix of auditors 'professional judgments of auditors' mindsets

Components		N/M	Mindfulness of auditors		
			Inferential mindfulness	Analytical mindfulness	Interpretive mindfulness
			L1	L2	L3
Professional judgments of auditors	Professional judgment based on the characteristics of the evidence presented	11	1	1	1
	Professional judgment based on professional behaviors	I2	1	1	1
	Professional judgment based on intuitive ability	I4	1	1	1

Then, based on the results of the above table, an interpretive matrix is designed to contrast the level of components of the auditors 'professional judgment components with the auditors' mindfulness propositions.

Table 8. interpretive analysis of the matrix of auditors 'professional judgment under the pressure on auditors' mindfulness

		Mindfulness of auditors		
		L1	L2	L3
Professional judgment	I1	Evidence-based professional judgment requires inferential mindfulness	Evidence-based professional judgment requiring analytical mindfulness	Professional evidence-based judgment requires interpretive mindfulness
	I2	Professional judgments based on professional behavior require inferential mindfulness	x	Professional judgments based on professional behavior require interpretive mindfulness
	I4	x	Professional judgment based on the ability of intuition requires analytical mindfulness	x

As can be seen, in the first column, two professional judgments in auditing, namely, evidence-based professional judgments and professional judgments based on professional behavior, have a direct impact (the effect of line i on column j). But intuition-based professional judgment does not affect inferential mindfulness. According to the obtained results, in this section, the level of effectiveness of each of the themes (propositions) of the mind is evaluated. This evaluation is a scoring method based on the development of a pairwise comparison score form, the result of which is used in the following sections of the matrix prioritization analysis.

Table 9. Comparison of pairs of themes of power domination

Description of how the impact	Yes/No	Couple comparison	Number
<input type="checkbox"/> ★ Couple of comparisons at the level of inferential mindfulness L1			
	Yes <input type="checkbox"/> No <input type="checkbox"/>	L1 – L2	1
Analytical mindfulness is the basis for inferential mindfulness	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	L2 – L1	2
Inferential mindfulness based on interpretive mindfulness	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	L1 – L3	3
	Yes <input type="checkbox"/> No <input type="checkbox"/>	L3 – L1	4
<input checked="" type="checkbox"/> ★ Couple comparison at the level of analytical mindfulness L2			
Analytical mindfulness is the basis of interpretive mindfulness	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	L2 – L3	11
	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	L3 – Y2	12

This table was presented as part of the influence of relationships, which shows, for example, a paired comparison at the level of inferential mindfulness L1 with the proposition of analytical mindfulness L2 as the effect of $i \leftarrow j$ are related to each other (indirect effect), which means Analytical mindfulness is the basis for inferential mindfulness. Next, the percentage points of the total level of impacts should be provided. The next step should be based on the level of dependence D and the level of influence B according to the table below to show the rankings related to the implementation of interpretive rating processes (IRP).

Table 10. ranks the level of dependence and influence of auditors' professional judgment

		I1	I2	I3	Dependency level D	D-B difference	Rank
Professional judgment based on the characteristics of the evidence presented	I1	2	-	1	3	4-	3
Professional judgment based on professional behaviors	I2	2	2	-	4	1-	2
Professional judgment based on intuitive ability	I3	3	3	2	8	4	1
Infiltration level B		7	5	4	122		

This table shows that the highest level of dependence is related to the component of professional judgment based on intuitive ability L3 and the lowest level of dependence is related to professional judgment based on the characteristics of the evidence presented L1. In fact, the level of dependence indicates the influence of other components, which is why the highest impact is related to the effectiveness of judgments based on intuitive ability. It was also found that the highest level of influence is related to the component of professional judgment based on the characteristics of the evidence presented in L1, which indicates a high level of influence on other methods of professional judgment of auditors. In other words, the greatest impact on judging in the audit profession is the presence of evidence that is able to complement the intuitive functions of auditors in professional judging. To determine the weights of research propositions as reference variables, auditors' mindfulness propositions should be examined through total interpretive structural modeling (TISM).

Table 11. Achieving the weights of auditors' level of consciousness

Mindfulness statements	L1	L2	L3	Influence power	Normalized weights			
Inferential mindfulness	L1	1	1*	3	1.5			
Intuitive mindfulness	L2	0	1	2	1			
Interpretive mindfulness	L3	0	0	1	0.5			
The power of dependence	1	2	3	6	Total = 3			Transitional impact

Now, based on the calculated weights, a conical matrix is presented to identify the most effective level of mindfulness in the auditors' functions, which can be seen in Figure (2).

As can be seen, the most motivating factor at the auditors' level of mindfulness is inferential mindfulness, which can enable auditors to perform more effectively in their professional judgment. Due to the determination of the weights related to each of the statements of mindfulness (L1 to L3), in this section, to determine the selection of the most effective component, according to the table below.

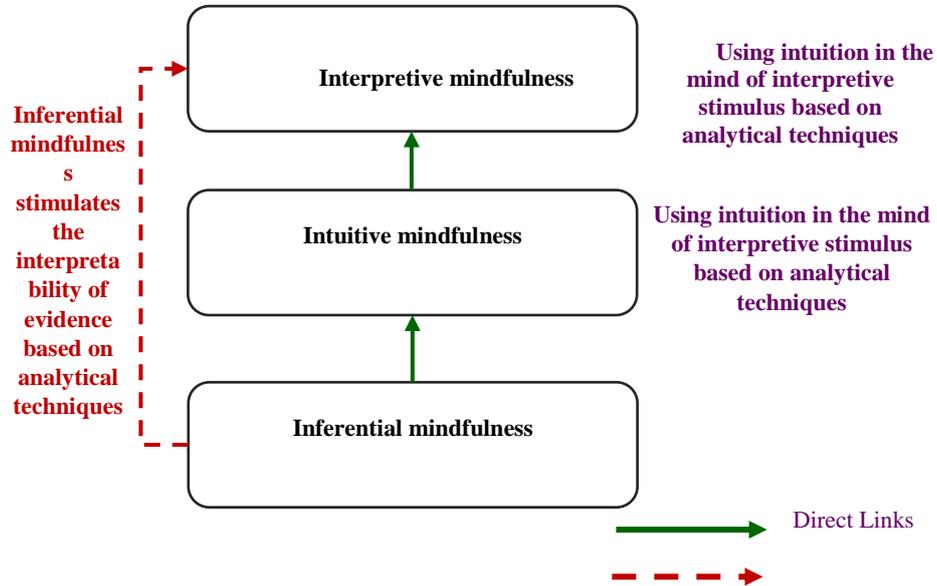


Figure 2. conical matrix of auditors' level of mindfulness

Table 12. Selection of the most influential components of research

The professional judgment of auditors		L1	L2	L3	Dependency level D	D – B difference	Rank
Professional judgment based on the characteristics of the evidence presented	L1	-	1.05	0.43	1.48	-1.3	III
Professional judgment based on professional behaviors	L2	0.95	-	0.87	1.82	0.14	II
Professional judgment based on intuitive ability	L3	1.83	0.63	-	2.46	1.16	I
Infiltration level B		2.78	1.68	1.3			

By comparing the process of simple interpretive ranking in Table (10) and interpretive ranking based on the weights calculated in the above table, the results are exactly consistent with each other, because it was determined according to Table (12), the judgment of the profession based on intuitive ability based on inferential mindfulness has the highest impact in the inverse form of the interpretation process². In other words, since the inverse of the

² In the sense that getting the last rank means the most influential factor.

propositions of Figure (2), ie the prioritization of research propositions, has determined the inferential mindset of the last layer in the figure, therefore, as the most effective proposition, it is considered a basis for forming intuitive judgment in the auditing profession.

Discussion and Conclusion

The existence of critical thinking in any profession will lead to the dynamism and growth of that profession in order to create more responsibility and commitment to its manager because it looks at its job and profession from different angles and causes the hidden patterns and criteria of that profession to discover a better worldview (Bucaro, 2019). Auditing, as one of the professions, does not need to think about this rule and it needs critical thinking to respond to the needs and changes in the level of awareness and expectations of stakeholders in the capital market, thinking that better understands deviant, distorted, and fraudulent approaches to financial performance, and exhibits a more effective understanding and intuition in the face of such situations. In fact, the existence of the critical thinking paradigm is one of the important approaches in the field of auditing, because auditors gain more significant mental and perceptual computational activities through critical thinking, and as Zeki (2015) stated, critical thinking strengthens intuitive decision-making power. Butler and Halpern (2012) also consider critical thinking as the use of skills with cognitive strategies that lead to content recognition of individual actions.

Based on these approaches to the subject of critical thinking, its presence in the auditor can be attributed to the emergence of deep and insightful views that increase the quality of auditors' reviews and comments. In other words, based on critical thinking, the auditor gains the power of reflection and reasoning in solving problems, tolerating pressure and stress, integrating information through the questioning process, and so on. And causes the auditor to consider professional practices such as skepticism and impartiality in his or her reviews. Based on these preliminary explanations, the purpose of this study is to determine the most effective criterion for judging the auditing profession based on the minds of auditors. The results in line with the third research question which was the aim of this study showed that the most effective criterion for judging the auditing profession based on the minds of auditors is the component of judging the profession based on intuitive ability.

This result reflects the fact that inferential mindfulness is a factor in intuition in professional judgment. The level of inferential mindfulness reflects

the level of the auditor's reasoning in the face of the evidence presented by the owners, where he tries to present his statements based on fact-based arguments. This insight helps auditors, regardless of any subjective assumptions, to examine the hidden dimensions of owners' financial performance and make decisions through intuitive power. In fact, subjective approaches do not refer to the formation of the auditor's previous mental frameworks in reviewing financial performance, but rather to the auditor's ability and sham based on the experience gained over the years, which increases the auditor's speed and decision-making power.

Under pressure to handle financial statements such as time budgeting. An auditor not merely examines the evidence as a mechanical mind but makes more intuitive decisions by studying the company's history, strategies, and relationships. The result obtained by the research of Cyr et al (2020); Glover et al (2018); Baybutt (2016); Knechel et al (2013); Helsdingen et al (2010) and Shafati et al (2020a,b).

Based on the obtained results, it is suggested that critical thinking training programs be considered as a training requirement for auditors by related organizations and institutions such as the Court of Audit in Iran, and focus on the necessary strategies to use the critical paradigm model in auditing judgments. It is also suggested that the speed of action and the power of mental decision-making along with the priority of reviewing the evidence of owners as part of the decision-making arguments of auditors in critical and sensitive situations to train auditors to increase the quality of audit to improve decision-making power Capital markets help.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest concerning the research, authorship and, or publication of this article.

Funding

The authors received no financial support for the research, authorship and, or publication of this article.

References

- Abednazari, Mona., Rahnamai Rood Pashti, Fereydoun., Nikomram, Hashem., Pourzamani, Zahra. (2018). Presenting a model of integrated (Global) principles of management accounting based on critical thinking, *management accounting*, 11 (39): 67-81.
- Abu_dabat, Z. (2015). The Achievement and development of critical thinking skills in the Arabic Language of Adolescent pupils with reference to the primary stage throughout Jordan. *International Journal of Humanities and Social Science*, 3(5): 155-162
- Ahmadian, Abbas., Abdoli, Mohammad Reza., Valiyan, Hassan. (2019). Analysis of auditors' mental patterns in professional judgments based on Q methodology, *Quarterly Journal of Auditing Knowledge*, in publishing.
- AICPA. 2006. http://www.aicpa.org/about/code/et_55.html
- Andolina M. (2001). *Critical thinking for working students*. Columbia: Delmar press.
- Asadi, Morteza., Nemati, Mohammad. (2015). Professional judgment in auditing, *Certified Public Accountant Quarterly*, 27 (3): 33-43.
- Backof, A. G., Bamber, E. M., Carpenter, T. D. (2016). Do auditor judgment frameworks help in constraining aggressive reporting? Evidence under more precise and less precise accounting standards, *Accounting, Organizations and Society*, 51(3): 1-11.
- Banning, M. (2019). Measures that can be used to instill critical thinking skills in nurse prescribers. *Nurse Education in Practice*. 6(3): 98-105.
- Barzegar bafrooei, K., Hashemi, A., Zareei Mahmoodabadi, H. (2019). The Effectiveness of Training Self-Regulatory Learning Strategies on the Academic Emotion of High School Students. *Journal of School Psychology*, 8(1): 26-42
- Barzideh, Farrokh., Babajani, Jafar., Abdollahi, Ahmad. (2018). Designing an identity model in auditing judgment with an approach based on data foundation theory, *Auditing Knowledge*, Year 18, 71 (2): 5-37.
- Baybutt, P. (2016). Designing risk matrices to avoid risk ranking reversal errors, *Process Safety Progress*, 35(1): 41-46. <https://doi.org/10.1002/prs.11768>
- Bentley, J. W., Lambert, T. A., Wang, E. Y. (2020). The Effect of Increased Audit Disclosure on Managers' Real Operating Decisions: Evidence from Disclosing Critical Audit Matters, *The Accounting Review*, <https://doi.org/10.2308/tar-2017-0486>
- Brazel, J. F., Jackson, S. B., Schaefer, T. J., & Stewart, B. W. (2016). The Outcome Effect and Professional Skepticism. *The Accounting Review*, 91(6): 1577-1599.
- Bucaro, A. C. (2019). Enhancing auditors' critical thinking in audits of complex

- estimates, *Accounting, Organizations and Society*, Accounting, Organizations, and Society; <https://doi.org/10.1016/j.aos.2018.06.002>
- Butler, H., Halpern, A. (2012). Critical Thinking Assessment predicts real-world outcomes of critical thinking, *Applied Cognitive Psychology*, 26(5): 721-729.
- Canadian Institute of Chartered Accountants, (1995). Professional Judgment and the Auditor², CICA Research Study Group, Toronto, CICA
- Chen, W., Saeed Khalifa, A., Morgan, K. L., Trotman, T. (2018). The effect of brainstorming guidelines on individual auditors' identification of potential frauds, *Australian Journal of Management*, Vol. 43(2) 225–240.
- Cohen, J. R., Dalton, D. W., & Harp, N. L. (2017). Neutral and presumptive doubt perspectives of professional skepticism and auditor job outcomes. *Accounting, Organizations, and Society*. doi: <https://doi.org/10.1016/j.aos.2017.08.003>
- Cyr, D., Héroux, S. and Fontaine, R. (2020). Auditors' judgment subordination and the theory of planned behavior, *Managerial Auditing Journal*, 35(8): 1189-1211. <https://doi.org/10.1108/MAJ-12-2018-2110>
- Ebrahimi Rumanjan, Mojtaba., Nazifi, Zahra. (2020). Applying critical thinking in accounting education; Application of International Financial Reporting Standards, *Accounting Knowledge and Research*, No. 51, 1-17.
- Galotti, K. M. (2002). *Making decisions that matter: How people face important life choices*. London: Lawrence Erlbaum Associates.
- Glover, S. M., & Prawitt, D. F. (2018). Enhancing auditor professional skepticism: The professional skepticism continuum. *Current Issues in Auditing*, 8(2), 1-10.
- Goldoust, Majid., Talibonia, Qudratullah., Ismailzadeh Moghari, Ali., Rahnama Rudposhti, Fereydoun., Royae, Ramazan Ali. (2019). Analyzing the relationship between ethical perception and ethical judgment of accounting professionals in the public sector towards warning of financial violations: The Modifying Role of Ethical Intelligence. *Auditing Knowledge*, 19(76): 147-168.
- Griffith, E. E., Hammersley, J. S., Kadous, K., & Young, D. R. (2015). Auditor mindsets and audits of complex estimates. *Journal of Accounting Research*, 53(1): 1-31. <http://doi.org/10.1111/1475-679X.12066>.
- Grossman, A. M., Welker, R. B. (2011). Does the Arrangement of Audit Evidence According to Causal Connections Make Auditors More Susceptible to Memory Conjunction Errors? *Behavioral Research in Accounting*, 23(2): 93–115. <https://doi.org/10.2308/bria-10063>
- Halpern D, F. (1998). Teaching critical thinking for transfer across domains: Disposition, skills, structure training ,and metacognitive monitoring. *American Psychologist*. 1998 Apr, 53(4): 449-455.
- Harding, N., Trotman, K. T. (2017). The effect of partner communications of fraud

- likelihood and skeptical orientation on auditors' professional skepticism. *Auditing: A Journal of Practice & Theory* 36: 111–131.
- Harrison, F. E. (1999). *The managerial decision-making process* (5th Ed.), Boston, MA: Houghton Mifflin Company.
- Helsdingen, A. S., Van den Bosch, K., Van Gog, T., & van Merriënboer, J. J. (2010). "The effects of critical thinking instruction on training complex decision making". *Human factors*, 52(4), 537-545.
- Hirani, Forough., Vakilifard, Hamid Reza., Banimahd, Bahman., Rahpama Rudposhti, Fereydoun. (2017^a). The effect of auditors' social characteristics on their judgment in resolving the conflict between the auditor and the management of selected characteristics: overconfidence and Machiavellian personality, *Auditing Knowledge Quarterly*, Volume 17, Number 67, Summer, 71-98.
- Hirani, Forough., Vakilifard, Hamidreza., Rahnama Rood Poshti, Fereydoun. (2017^b). Professionalism and auditing professional judgment, *Journal of Management Accounting and Auditing Knowledge*, Year 6, Issue 22, Summer, 1-12.
- Hosseini, Seyed Ali., Rasooli, Neda. (2020). Professional judgment in auditing and measurement: concepts, Theories, and theoretical perspectives, *Management Accounting and Auditing Knowledge*, 8 (31): 155-168.
- Jones, J., Mactavish, C., Schultz, W. (2018). The effect of gender and firm identification on auditor pre-negotiation judgments, *Advances in Accounting*, <https://doi.org/10.1016/j.adiac.2018.12.003>
- Keast, S., & Michael, T. (2009). *Rational decision-making for managers*. West Sussex: Wiley
- Khajavi, S., Mohammadian, M. (2018). Accounting for citizenship conceptual paradigm based on critical thinking. *Management Accounting*, 11(37): 97-106.
- Kirmizia, F. S., Saygib, C., Yurdakalc, I. (2015). Determine The Relationship Between The Disposition of Critical Thinking and The Perception Of Problem Solving Skills. *Procedia - Social and Behavioral Sciences*, 191, 657-661
- Knechel, W. R, Sofla, Amin S., Svanström, T. (2013). The effect of professional skepticism on auditor compensation and auditor opinions. Working Paper, University of Auckland, Business School, Seminars and Events.
- Kusumawati, A., Syamsuddin, S. (2018). "The effect of auditor quality to professional skepticism and its relationship to audit quality", *International Journal of Law and Management*, <https://doi.org/10.1108/IJLMA-03-2017-0062>
- Lam, K, C, K., Mensah, M. (2006). Auditors' decision-making undergoing-concern uncertainties in low litigation-risk environments: Evidence from Hong Kong, *Journal of Accounting and Public Policy* 25; 706–739.

- Langley, A., Mintzberg, H., Pitcher, E., Posada, E., & Saint-Macary, J. (1995). Opening up decision-making: The view from the black stool. *Organization Science*, 6(3), 260–279
- Lehmann, C. and Norman, C. (2006), “The effects of experience on complex problem representation and judgment in auditing: an experimental investigation”, *Behavioral Research in Accounting*, 18(12): 65-74.
- Lipman, M. (2013). *Thinking in Education* (2nd ed.). Cambridge, UK: Cambridge University Press.
- Lynch, A, L., Murthy, U, S., Engle, T, J. (2009) Fraud brainstorming using computer-mediated communication: The effects of brainstorming technique and facilitation. *Accounting Review* 84(4): 1209–1232.
- Mashayekhi, Bitaa., Eskandari, Ghorban. (2017). Investigating the relationship between emotional intelligence components and auditor judgment, *Auditing Knowledge Quarterly*, Year 17, 66 (1): 61-81.
- McKenna, B., Rooney, D., & Kenworthy, A. L. (2013). Introduction: Wisdom and Management - A guest-edited special collection of resource reviews for management education. *Academy of Management Learning & Education*, 12(2), 306–311
- Mintzberg, H., & Westley, F. (2001). Decision making: It’s not what you think. *MIT Sloan Management Review*, 42(3), 89–94.
- Mubako, Grace and O'Donnell, Edward, Effect of Fraud Risk Assessments on Auditor Skepticism: Unintended Consequences on Evidence Evaluation (March 2018). *International Journal of Auditing*, 22(1): 55-64, 2018, Available at SSRN: <https://ssrn.com/abstract=3121458> or <http://dx.doi.org/10.1111/ijau.12104>
- Mullis, C, E., Hatfield, R, C. (2018). The Effects of Multitasking on Auditors’ Judgment Quality, *Contemporary Accounting Research*, 35(1): 314-333.
- Myers CH. (2007). *Critical thinking training, 1960*, translated by Khodayar Ebili, Tehran: Samt; 2007. (Persian)
- Nolder, Ch, J., Kadous, K. (2018). Grounding the professional skepticism construct in mindset and attitude theory: A way forward, *Accounting, Organizations and Society* 67; 1–14.
- Olojede, P., Erin, O., Asiriwa, O., Usman, M. (2020). Audit expectation gap: an empirical analysis, *Future Business Journal*, 6(10): 111-155. <https://doi.org/10.1186/s43093-020-00016-x>
- Olsen, C., Gold, A. (2018). Future research directions at the intersection between cognitive neuroscience research and auditors' Professional Skepticism. <https://doi.org/10.1016/j.acclit.2018.03.006>
- Perry, K. D. (2014). Exploring critical thinking skills among undergraduate agriculture

education and studies students. A dissertation submitted to the graduate faculty in partial fulfillment of the requirements for the degree of doctor of philosophy, Iowa State University.

- Polychronidou, P., Drogalas, G., Tampakoudis, L. (2020). Mandatory rotation of audit firms and auditors in Greece, *International Journal of Disclosure and Governance*, <https://doi.org/10.1057/s41310-020-00080-3>
- Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. New York: Free Press
- Saeedi Garaghani, M., Naseri, A. (2017). Individual differences and the auditor's professional judgment, *financial accounting and auditing research*, 9(36): 111-130. (In Persian)
- Sanusi, Z. M., Iskandar, T. M., Monroe, G. S., Saleh, N. M. (2018) "Effects of goal orientation, self-efficacy and task complexity on the audit judgment performance of Malaysian auditors", *Accounting, Auditing & Accountability Journal*, 31(1): 75-95.
- Schraagen, J. M., Klein, G., & Hoffman, R. R. (2008). The macrocognition framework of naturalistic decision making. In J. M. Schraagen, L. G. Militello, T. Ormerod, & R. Lipshitz (Eds.), *Naturalistic decision making and macrocognition*. Aldershot: Ashgate Publishing Limited, 3–25.
- Shafati, M., Valiyan, H., Abdoli, M. (2020^a). The effect of Mental Metaphors on Professional Skepticism Auditors on Fraud Risk Assessment and Audit Quality. *Management Accounting*, 13(44): 143-163. (In Persian)
- Shafati, Morteza., Valiyan, Hassan., Abdoli, Mohammad Reza. (2020^b). Investigating the impact of mental metaphor on auditors' professional doubts in Fraud risk assessment and audit quality, *Management Accounting*, 13 (44): 143-163.
- Soleimanpour, J. (2019). The Relationship between positive curriculum and critical thinking of students of Imam Khomeini University of Marine Sciences in Nowshahr, *Quarterly Journal of Marine Science Education*, 6 (2): 89-103.
- Sternberg, R. J. (2013). *The WICS model of leadership*. In M. G. Rumsey (Ed.), New York, NY: Oxford University Press, 47–62.
- Sushil (2009). Interpretive ranking process, *Global Journal of Flexible Systems Management*, 10(4): 1-10.
- Sushil (2017^a), "Multi-criteria valuation of flexibility initiatives using integrated TISM–IRP with a big data framework, *Production Planning & Control*, 28(11/12): 999-1010
- Suyono, E. and Farooque, O. (2019). Auditors' professionalism and factors affecting it: insights from Indonesia, *Journal of Asia Business Studies*, 13(4): 543-558. <https://doi.org/10.1108/JABS-03-2018-0073>

- Valiyan, Hassan., Abdoli, Mohammad Reza., Kushki Jahromi, Alireza. (2019). Conceptualizing auditors' wise decision making based on data-based analysis, *Accounting and Auditing Reviews*, 26 (2): 301-326.
- Wu, X., Fan, Y., Yang, Y. (2020). Do critical audit matters signal higher quality of audited financial information? Evidence from asset impairment, *China Journal of Accounting Studies*, 7(2): 170-183. <https://doi.org/10.1080/21697213.2019.1676037>
- Zeki A. (2015). The effects of micro-teaching on the critical thinking dispositions of pre-service teachers. *Australian J Teach Educ*, 40(6):140-153.
- Zsombok, C. E. (1997). Naturalistic decision making: Where are we now? In C. E. Zsombok, & G. Klein (Eds.), *Naturalistic decision making*. Mahwah, NJ: Erlbaum, 3–16.

Bibliographic information of this paper for citing:

Kamalgharibi, Alireza; Garkaz, Mansour; Matoufi, Alireza & Safari Gerayli, Mehdi (2023). Developing the effectiveness of professional audit judgment based on the mindfulness of auditors. *Iranian Journal of Finance*, 7(1), 35-65.
