



RESEARCH ARTICLE

Judgment and Decision-Making in Accounting and Auditing: The Perspective of the Individual, Task, and Environment

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Abstract

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Considering the individual, task, and environment perspectives, this study examined judgment and decision-making in accounting and auditing. The research variables included auditor financial knowledge, auditor experience, audit environment risk, internal controls in the audit environment, time-budget pressure in auditing, and the quality of judgment and decision-making. These variables were based on a researcher-designed questionnaire and previous researchers' questionnaires, including those of Boone (1996), Bagley (2010), and Krishnan (2012), each of which has investigated these variables. A ten-year study of Tehran Stock Exchange-listed companies was conducted from 2012 to 2022. Data were collected through standardized questionnaires. The R software analyzed and fit the data to the ten research hypotheses. The results indicated a significant correlation between financial knowledge, experience, environmental risk, internal controls, and financial knowledge with the quality of judgment and decision-making by accountants. However, no significant correlation was found between work pressure and the quality of judgment and decision-making. The findings highlighted the importance of employing highly knowledgeable and skilled accountants, creating a secure environment, improving internal controls, and reducing high work pressure. Accountants can improve their judgment and decision-making by establishing such environments to improve data entry and processing accuracy.

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1. Introduction

The quality of economic decisions is undoubtedly dependent on the accuracy and reliability of the information available today. Financial statements are the primary source of information for external stakeholders, especially investors, in obtaining necessary data. Among these, the income statement has attracted significant attention from investors as it provides valuable information regarding the profitability of business entities. On the other hand, the exercise of judgment by managers in preparing financial statements raises concerns about the reliability of accounting profits. If managers, through their discretion in accounting choices within financial reporting, have incentives to mislead financial statement users, the possibility of earnings manipulation or management arises (Roychowdhury, 2006). Financial markets and investment sectors play a significant role in countries' economies. Investors expect returns on their investments. The decision-making of potential and actual investors is based on the financial statements published by companies. Therefore, this information's accuracy, quality, and reliability must be confirmed by a competent authority. Independent auditors serve as trusted agents of the owners of economic entities for this purpose. Moreover, agency theory underscores the necessity of independent auditing by illustrating the conflict of interest between owners and individuals in positions of control within the company (Al-Najjar and Clarke, 2017). Laws such as the Sarbanes-Oxley Act of 2002 were enacted to restore investor confidence, emphasizing the improvement of audit committee independence, enhancing the accountability of senior management, separating accounting operations from the computational services of the company, and ensuring effective internal controls by high-quality independent auditors (Hoag et al., 2017). As a result, the quality of auditing performed is vital for companies in the modern era. The auditor's oversight of these key issues is significant to owners. Hence, the characteristics of the company's independent auditor hold considerable value.

An auditor's personal characteristics are fundamental to the quality of the audit. An independent auditor encounters issues through their assessments, where discovering and making decisions regarding these matters are related to the auditor's traits, including skepticism, inquisitive attitude, and abilities (Gul et al., 2013). Audit quality is significantly influenced by the auditor's experience and academic knowledge (Cahan and Sun, 2015). In many studies, audit quality has been regarded as the quality of the auditor's work (Watkins et al., 2004). Consequently, this study aims to assess the relationship between auditors' characteristics and the outcomes of the work performed by independent auditors. The subsequent section may elaborate on the research problem.

This paper examines decision-making in auditing, focusing on research that uses a psychological lens to understand, evaluate, and improve judgments, decisions, or choices within an auditing context. Much of this work employs an experimental approach; however, we also covered related studies utilizing survey and field studies. Several review articles have already covered our period of interest (Libby and Lewis, 1982; Libby and Luft, 1993; Solomon et al., 1999; Libby and Tan, 1995; Solomon and Trotman, 2003). These reviews differ in how they categorize previous research. To illustrate the role of knowledge, ability, motivation, and environment in performance, Libby and Luft (1993) arranged the literature in a certain way. Understanding the literature on multimedia judgment, bias, knowledge and memory, probabilistic judgment, environment and motivation, and policy adoption is facilitated by Solomon et al. (1999) and Solomon and Trotman (2003). In this research, the existing literature on auditing JDM (Judgment and Decision Making) is classified into three broad areas: (a) auditing tasks, (b) the auditor and their characteristics, and (c) the interaction between auditors and other stakeholders in task performance. These three characteristics—task, person, and interpersonal interaction—are integral features of the auditing setting. Auditors must perform various tasks to form an overall opinion of assurance or confirmation. So, the auditor's

skills and personality (e.g., skills) have an impact on the outcome. During this process, auditors interact with other auditors and stakeholders in the firm. Accounting and auditing are based on professional judgment (Trotman, 2006). Research opportunities in auditing programs (Bedard, 1989) and the influential report from the American Accounting Association (Committee on Human Information Processing, 1977) brought about developments in judgment and decision-making in accounting and auditing. The study of Judgment and Decision-Making (JDM) has become a significant area of research (Solomon and Trotman, 2003). As a research field, JDM examines the judgments and decisions made by individuals and groups (Trotman, 2006). JDM's characteristics are becoming highly accepted as important in accounting and auditing because managers, auditors, financial analysts, accountants, and standard-setters make important choices and judgments. Professional judgment is required 244 times in the International Standards on Auditing, and professionals exercise their professional judgment in accordance with IFRS. Many other studies also show how important JDM is in accounting and audits. Libby and Tan (1995), Libby and Lewis (1982), Libby and Luft (1993), Ashton and Ashton (1995), Solomon et al. (1999), Solomon and Trotman (2003), Nelson and Tan (2005), and Humphrey (2008) are some examples of monographs and reviews connected to JDM studies. These reviews each use a different method to organize earlier studies in JDM. Libby and Luft (1993) showed how literature has changed about the effect that knowledge, ability, motivation, and environment have on auditors' performance. Solomon and Trotman (2003) gathered this literature as follows: environment and motivation, policy adoption, knowledge and memory, multimedia judgment, exploration and bias, and probabilistic judgment. Nelson and Tan (2005) said that there are three main types of research about JDM auditing: the things that need to be audited, the auditor's personal traits, and how auditors deal with other people while they do their jobs. The primary focus of this study is to identify individual, environmental, and procedural factors and their impact on judgment and decision-making in accounting and auditing.

2. Literature review and hypothesis development

According to Sharaf and Mautz (1960), it is important to understand how extensive experience, a perceptual memory, controlled imagination, and an understanding of the responsibilities and functions of the profession are valuable contributions before making a judgment on a value-related issue. Personal variables refer to the decision-maker's characteristics, including knowledge, expertise, information processing ability, decision-making tools, and prior beliefs or "anchoring" (Bonner, 1999; Nelson and Tan, 2005). Accountants must continually rely on their knowledge and decision-making skills to provide the best responses to various problems across various conditions. Therefore, theoretically and practically examining the effectiveness of these characteristics is of significant interest. Decisions regarding business matters, financial statement error prediction, information recall, and fraud assessment are some of the dependent variables that may be studied in studies that take the JDM factor as a personal characteristic variable. These studies also seek to understand the effects of knowledge, expertise, information processing ability, decision aid use, and prior beliefs (anchoring). Each attribute or quality is addressed in sections of this research that concentrate on personal characteristic factors. Our next section identifies some of the shortcomings of these studies, as well as recommendations for future research in financial accounting, which has received less attention than auditing.

2.1 Auditor knowledge

Researchers have conducted substantial studies concerning auditor judgment in recent years,

which has prompted concerns regarding how audit tasks are performed and how educational and training methods can improve individual performance. Knowledge is particularly important in facilitating improved decision-making and affecting judgment processes. As Waller and Felix (1984) noted, "A professional auditor acquires a complex network of knowledge, which is difficult to acquire in a classroom." The difference in judgment between auditors and novice students is highlighted. Ashton (1991) demonstrated that judgments related to the frequency of errors are more accurate when based on direct experience rather than indirect experience, using students and auditors. No differences were found between the two groups in a public auditing task. Frederick and Libby (1986) are considered to have conducted the first study that showed how differences in knowledge impact auditors' judgments. As a result of Kahneman and Tversky (1982), this study found that auditors are aware of the relationships between control weaknesses and accounting errors, as well as the relationships between accounts, and their judgment behavior is influenced by this knowledge. In contrast, less experienced auditors only know about the relationships between accounts, which determines their judgment behavior. Frederick and Libby (1986) contributed significantly by stating that even understanding the knowledge of experts in exploratory science and their cognitive abilities requires considering their knowledge, as knowledge interacts with the ability to make judgments.

2.2 Experience and expertise

There is research in this area that examines the relationship between expertise and professional judgment. Expert knowledge is crucial for understanding how and why better performance is achieved as an individual gains more experience (Nelson and Tan, 2005).

Ashton and Kramer (1980) were the first to confirm that students behave in ways similar to auditors regarding actions such as using cues, consensus, and consistency in judgment. These findings did not show a significant difference between the judgment of students and auditors. The authors concluded that future behavioral accounting research projects should include student subjects, along with real-world topics, to assess the significance of experience, wealth, age, or other factors influencing the topic under investigation. Ashton and Kramer (1980) used students and accounting auditors as subjects, while Bedard and Biggs (1991) used 29 audit partners with varying levels of experience and demonstrated that only the consensus of material judgment and disclosure of audit partners was affected by experience level and type of firm. However, these variables did not influence the consistency of judgment or insight of the individuals themselves. In the 1990s, the literature on experience expanded to include the type of information auditors use in their decision-making. These studies have significant practical implications because they emphasize that as accountants gain more experience, they can provide better professional judgment. Bedard and Biggs (1991) examined whether this experience was general or domain-specific and found that experience related to client explanations of material findings was more strongly associated with improved professional judgment.

They conducted an experiment in which the task was complex, which could only be solved by experienced auditors. Professional judgment improved with domain-specific experience (experience in the specific area of financial statement errors), as compared to general experience (number of years of experience). This study points to the importance of developing more specific measures of experience as a substitute for expertise in auditing judgment research rather than simply using general experience as a proxy for experience. Experience as a crucial determinant of performance was examined by Frederick and Heiman-Hoffman (1994). One of their research's key questions was how auditors' knowledge base varies with individual experience level. This experiment involved 51 new audit managers with a minimum of 5 years of audit experience, 43 junior auditors with one

year of audit experience, and 41 students without audit experience. The results confirmed what was predicted: students lacked the experience necessary to classify mistakes according to their intrinsic relevance to the audit aim or the transaction cycle. On the contrary, they grouped mistakes that used identical wording together. According to [Anderson et al. \(1994\)](#), when audit evidence is bad, experience has a substantial role in judgment. However, when audit evidence is positive, experience has no effect. These findings enhance our understanding of the impact of experiential differences on auditing judgment tendencies, thus contributing to the general knowledge about the role of expertise in auditing. Thus, in terms of audit effectiveness, inexperienced auditors should take on more risk or be more conservative in their approach to the auditing process, which allows them to identify potential problems that might later be explored by more experienced auditors, even those without the same level of awareness. On the other hand, these findings also raise the question of whether less experienced auditors, who base their judgments on negative audit evidence, impact the effectiveness and efficiency of the audit. [Asare and McDaniel \(1996\)](#) expanded audit research to find the impact of experience on the effect of audit evidence, as previous studies have shown that the recent impact of audit evidence, whether positive or negative, related to a business transaction, may reduce the efficiency and effectiveness of the audit. Through experiments with auditors, [Asare and McDaniel \(1996\)](#) demonstrated that experience reduces the delays related to collecting accounts receivable in an audit.

2.3 Information processing

An essential issue in auditing judgment research has been how information is gathered during decision-making, specifically, whether auditors' judgment requires configuration cues ([Hooper and Trotman, 1996](#)). According to [Nelson and Tan \(2005\)](#), since the early 1970s, attention has been paid to how information is cognitively combined and processed. Throughout the 1990s, there was considerable interest in whether accountants can process information configurational or are susceptible to biases and heuristics described in psychological literature. The study of [Brown and Solomon \(1991\)](#) and [Hooper and Trotman \(1996\)](#) are examples of studies in this area. Evidence from the study by [Brown and Solomon \(1991\)](#) suggests that many auditors process available information in a configurational manner. Based on [Brown and Solomon \(1991\)](#), [Hooper and Trotman \(1996\)](#) examined certain conditions that may facilitate the improvement of auditors' ability to process available information configurationally. The study found that the type of compensatory form and the degree of consensus were higher for auditors who processed information configurational compared to those who did not.

2.4 Decision-making assistance

This study's personal aspect is the ability to use decision-making aids. The use of decision aids to improve professional judgment in the absence of knowledge and expertise is quite common in accounting. Decision aids can range from simple tools, such as checklists, audit programs, and other elements of auditing software embedded in professional standards, to more complex tools, like different computer models. Research on the use of decision aids helps us understand how these aids improve or bias the judgments made. In the 1980s, studies focused on the use of simple decision-making aids. For example, [Butler's \(1985\)](#) study demonstrated that a five-step decision aid based on a data structuring method helps auditors make more accurate decisions when accepting or rejecting reported account balances. [Boritz \(1985\)](#) also examined the impact of judgment in auditing from data structuring techniques as a form of aid, finding that the structure in which information is presented is a helpful tool for auditors' evaluations and plans. In a study involving 105 auditors, [Bonner et al. \(1992\)](#) found that checklist aids improved experienced auditors' judgment.

2.5 Prior beliefs

Psychological studies have indicated that human reasoning is susceptible to "confirmation bias," which obstructs efficient learning and subsequently affects judgment (Klayman and Ha, 1987). Kahneman and Tversky (1974) suggest that individuals use an anchoring and adjustment heuristic to establish an initial starting point (e.g., prior experience) and then adjust from this anchor based on additional data. Lord et al. (1979) demonstrated that individuals use different criteria to criticize contradictory evidence compared to supportive evidence. While most of this work regarding prior beliefs has been conducted in psychology and social psychology, some research has also been done in accounting. Early studies in the 1980s provided substantial descriptive evidence of the impact of prior knowledge on JDM. In Waller and Felix's (1984) statement, the auditor tends to prefer confirmation evidence to disconfirmation evidence. They refer to non-causal data in their decision-making processes, supporting the impact of intuitive relationships. Trotman and Sng (1989) expanded on Kida's (1984) study on the selection of information by auditors, supporting the findings that prior beliefs lead to different judgments than when there are no prior beliefs. Wright and Ashton's (1989) study contributed to the literature on prior beliefs by examining the impact of previous audit work papers (audit information about clients in past audit engagements) on audit effectiveness and efficiency. The results indicated that when auditors rely on past information about the client, it negatively affects audit efficiency, as auditors perform unnecessary audit tests. Similarly, Butt and Campbell (1989) studied the impact of prior knowledge on the importance of information order and found that the information order did not influence individuals with strong prior beliefs, whereas those with weak prior beliefs paid more attention to newly presented information. For instance, the judgment of individuals with weak prior beliefs who received negative evidence after positive proof was lower (more negative) than that of those who received negative evidence before positive proof. In this study, the authors found that negative evidence, when followed by positive evidence, has a more significant impact on judgment.

2.6 Task complexity

Considering the wide range of complexity in accounting and auditing activities, studies that focus on the effects of task complexity can shed light on how task structure impacts judgment. There are three reasons why auditors should consider work complexity (Bonner, 1994): To begin, auditor efficiency is highly sensitive to the intricacy of the work at hand. Second, decision aids and training procedures can be improved when researchers have a better grasp of task complexity. As a third benefit, knowing how complicated the work is helps auditing firm management to allocate resources more effectively. Poursoltani Zarandi et al. (2024) used an experiment to examine how structured auditing approaches affect the human resource tasks of managers in environments with varying complexities. The findings indicated that the structure of a specific auditing approach at the task level influences the level of experience required for staff to perform tasks with lower and higher complexity. Moreover, the literature on task complexity, based on psychological and marketing theories, suggests that women may make more accurate decisions than men when tasks are complex. Chong and Monroe (2015) examined the effects of gender and task complexity on the accuracy of auditing judgments, and their findings showed that when tasks were not complex, men made more accurate decisions than women. However, when tasks were more complicated, women tended to make more precise decisions. The study participants were relatively inexperienced, so the results may not be generalizable. Ng and Tan (2003), in an experiment using data collected by Tan and Kao (1999), explored the moderating role of accountability and knowledge on the relationship between task complexity and auditor performance. According to the research, accountability and knowledge used as skill mediators moderated the relationship between task complexity and

performance.

2.7 Risk

According to [Kadous and Magro \(2001\)](#), tax experts sort client data based on how much danger they perceive. When assessing high-risk clients, tax experts focus more on the bad consequences. When [Kadous et al. \(2008\)](#) looked into the possibility that high operational risk (i.e., being exposed to monetary and non-monetary costs in making wrong recommendations) mitigates the impact of client risk preferences, it added to the existing body of study on operational risk. They found that professionals make judgments that align with the client's low operational risk preference. Despite operational risk, professionals adjust their recommendations away from the client's preferred position after controlling for the effect of information search. This study contributes to accounting literature by demonstrating that professionals can overcome confirmation bias in high-risk situations via adapting to high-risk settings and conducting a more balanced information search ([Kadous et al., 2008](#)). Operational risk are conditions that affects judgment when handling risks. [Phillips \(1999\)](#) showed that auditors, when faced with a high risk of inconsistency, pay more attention to aggressive reporting in the financial statements than when the risk is low. This study adds to the body of research on earnings management and aggressive financial reporting by showing that the amount of focus on aggressive reporting for a financial statement account relies on whether other accounts have aggressive reporting. These results also show that auditors may be more likely to focus on aggressive financial reporting when they first review evidence for high-risk accounts before considering low-risk accounts. These results have direct effects on how to plan an audit and on other people who use financial records.

2.8 Internal control

Managing risk effectively is a function of managing corporate governance and internal control, which sets the tone for the overall control environment with a great impact on risk judgment ([Boo and Sharma, 2008](#)). Corporate governance, often regarded as a key feature of a company's internal control system, influences the extent and timing of task execution (Fama, 1980; Fama and Jensen, 1983). In the 2000s, the literature shifted from perceiving corporate governance as a supervisory role to an interest in how governance mechanisms, such as boards of directors and audit committees, impact the audit process. [DeZoort and Salterio \(2001\)](#) empirically examined whether the organizational governance experience of audit committee members and their financial reporting and auditing knowledge influenced their judgment in auditor-management conflicts. Among 68 audit committee members surveyed, those with more independent experience and superior auditing knowledge were more likely to provide strong support to auditors who took a "substance over form" stance when discussing problems with client management. However, when an audit committee member also served as a board director and part of the senior management team, they tended to support client management. This study supports the idea that audit committees should be entirely composed of independent directors. Auditor concerns about systemic disagreements and conflicts between auditors and management are grounded in the results, which underline differences in knowledge levels between members of the audit committee. [Cohen et al. \(2002\)](#) showed that senior managers and audit partners use corporate governance information. They reported that auditors may also place greater trust in the audit committee when there is an increased delegation of responsibility regarding financial reporting processes. Anderson et al. (1994) added to the literature by examining board characteristics affecting the integrity of financial reporting and its consequences on debt cost. Using a sample of 500 firms, they found that debt costs were lower for firms with boards monitored by independent directors than those with insider boards. Creditors are

sensitive to board characteristics that affect the legitimacy of financial reporting. Creditors also consider audit committees and their characteristics crucial to decision-making. These findings suggested that debt costs are lower for firms with fully independent audit committees compared to those with insiders on the audit committee.

Based on the literature review and previous research background, the following hypotheses were proposed:

H1: There is a significant relationship between financial knowledge and the quality of judgment and decision-making of accountants.

H2: There is a significant relationship between experience and the quality of judgment and decision-making of accountants.

H3: There is a significant relationship between environmental risk and the quality of judgment and decision-making of accountants.

H4: There is a significant relationship between internal controls in the environment and accountants' quality of judgment and decision-making.

H5: There is a significant relationship between work pressure and the quality of judgment and decision-making of accountants.

H6: There is a significant relationship between financial knowledge and the quality of judgment and decision-making of auditors.

H7: There is a significant relationship between experience and the quality of judgment and decision-making of auditors.

H8: There is a significant relationship between environmental risk and the quality of judgment and decision-making of auditors.

H9: There is a significant relationship between internal controls in the environment and auditors' quality of judgment and decision-making.

H10: There is a significant relationship between work pressure and the quality of judgment and decision-making of auditors.

3. Research methodology

3.1 Measurement of research variables

In this study, the variables include financial knowledge among auditors, audit experience among auditors, audit environment risk, internal controls within the audit environment, and the quality of judgment and decision-making among auditors. These variables are measured using a researcher-designed questionnaire, which is based on the questionnaires of previous researchers such as Boone (1996), Bagley (2010), Krishnan (2012), and others who have studied each of these variables. The research variables are calculated as follows:

Financial Knowledge: This relates to the degree to which auditors and accountants have studied economics, financial management, accounting, and other fields intimately connected to the financial sector. There are three levels of financial knowledge: Bachelor's level, Master's level, and Doctoral level.

Work Experience: In the accounting or auditing field, the work experience of accountants and auditors is the total years spent in either linked financial professions or the accounting or auditing sector. A value of one indicates that the work experience is less than five years; a value of two indicates that the work experience is between five and ten years; a value of three indicates that the work experience is between ten and fifteen years; and a value of four indicates that the work experience is over fifteen years.

Audit Environment Risk: An audit environment risk refers to the risks that arise from various factors within the audit environment. In a standardized questionnaire, audit environment risk is measured and reported according to specific criteria.

A company's internal control system's strength or weakness is measured by its internal controls in the audit environment. This variable is examined through specific criteria, including task segregation, periodic supervision, and inspection.

Work Pressure Resulting from the Audit Time Budget: Work pressure resulting from the audit time budget refers to factors such as the company's asset size, the time the auditor has to submit the audit report, and the restrictions placed on auditors by the employer.

Quality of Judgment and Decision-Making: The judgment and decision-making quality of accountants and auditors is assessed using the questionnaires of previous researchers, including Boone (1996), Bagley (2010), Krishnan (2012), and others.

4. Research Findings

4.1 Descriptive statistics of the research variables

The description of the research variables in terms of indicators such as minimum, maximum, mean, and standard deviation is shown in Tables 1 and 2, which present the checking of the normality of the distribution of research variables.

Table 1. Descriptive statistics of the research variables

Specialty	Variable	Min	Max	Mean	SD
Accountants	Age	26.000	51.000	39.110	3.120
	Audit Experience	3.000	15.000	8.910	3.670
Auditors	Age	31.000	49.000	33.120	3.450
	Audit Experience	4.000	15.000	9.670	4.210
	Risk Environment	2.390	4.710	3.650	0.870
Accountants	Internal Controls Environment	2.010	4.970	2.710	1.140
	Work Pressure	1.970	4.810	3.780	1.110
	Financial Knowledge	2.310	4.980	2.890	1.130
	Experience	1.060	4.510	3.520	0.980
	Quality of Judgment and Decision Making	2.230	3.980	3.040	1.210
Auditors	Risk Environment	1.970	4.560	3.970	0.940
	Internal Controls Environment	2.250	4.670	3.340	1.450
	Work Pressure	1.670	3.990	3.210	1.240
	Financial Knowledge	2.150	4.560	3.670	1.120
	Experience	1.980	4.410	3.110	0.780
	Quality of Judgment and Decision Making	2.030	4.610	3.870	1.140

4.2 Correlation of research variables

As shown in Tables 2 and 3, the Pearson correlation coefficient is used to examine the relationships between variables in the research.

Table 2. Checking the normality of the distribution of research variables

Variable	Specialty	Kolmogorov-Smirnov			Shapiro-Wilk		
		Test statistic	Degree of freedom	P-value	Test statistic	Degree of freedom	P-value
Accountants	Environmental risk	0.039	320	0.219	0.993	320	0.168
	Environmental internal controls	0.026	320	0.205	0.997	320	0.794
	Work pressure	0.025	320	0.205	0.997	320	0.905
	Financial knowledge	0.024	320	0.204	0.997	320	0.802
	Experience	0.028	320	0.208	0.996	320	0.579
	Quality of judgment and decision-making	0.035	320	0.215	0.993	320	0.171
	Environmental risk	0.026	320	0.206	0.996	320	0.578
Auditors	Environmental internal controls	0.035	320	0.215	0.993	320	0.129
	Work pressure	0.023	320	0.203	0.998	320	0.929
	Financial knowledge	0.038	320	0.218	0.995	320	0.441
	Experience	0.033	320	0.213	0.997	320	0.751
	Quality of judgment and decision-making	0.040	320	0.220	0.994	320	0.205

Table 3. Pearson correlation coefficient between research variables

	Variable	Internal environmental controls	Working pressure	Financial knowledge	Experience	Quality of judgment and decision-making
Accountants	Risk Environment	R=0.002 P =0.972	R=0.065 P =0.248	R=0.077 P =0.171	R=0.074 P =0.189	R=0.191** P =0.001
	Internal Controls Environment		R=0.018 P =0.749	R=0.034 P =0.542	R=0.061 P =0.279	R=0.342** P<0.001
	Work Pressure			R=-0.006 P =0.919	R=0.038 P =0.500	R=0.017 P =0.762
	Financial Literacy				R=-0.116** P =0.037	R=0.140** P =0.012
	Experience					R=0.347** P<0.001
	Risk Environment	R=-0.029 P =0.604	R=0.050 P =0.376	R=0.100* P =0.074	R=0.050 P =0.375	R=0.146** P =0.009
	Internal Controls Environment		R=0.013 P =0.816	R=0.084 P =0.135	R=0.001 P =0.987	R=0.261** P<0.001
Auditors	Work Pressure			R=-0.017 P =0.762	R=0.020 P =0.723	R=-0.032 P =0.563
	Financial Literacy				R=-0.094* P =0.092	R=0.406** P<0.001
	Experience					R=0.084 P =0.136

R: Spearman's correlation coefficient value; P: P-value; * Significant correlation at the 0.1 level; ** Significant correlation at the 0.05 level

4.3 Inferential statistics

4.3.1 Model fit and factor loadings evaluation

The purpose of fitting the measurement model is to determine whether the number of factors and the measured variables associated with them align with what is expected from the theoretical framework, essentially verifying whether the proposed model fits the data. In other words, the measurement model checks whether the relevant questions or items adequately assess performance evaluation. Generally, factor loadings with a standardized estimate greater than 0.5 are considered suitable, indicating that the examined item significantly impacts measuring the associated construct. Therefore, items with factor loadings lower than 0.5 will be removed from the analysis process.

In this section, the environmental risk construct measurement model is fitted for accountants and auditors separately.

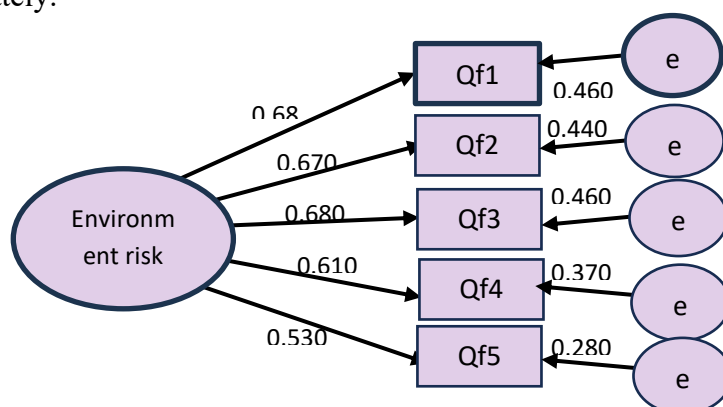


Figure 1. Fitting the environmental risk measurement model for accountants

Table 4. Examining the appropriateness of factor loadings of the environmental risk measurement model for accountants

Path		Non-standard coefficient	Test statistic	P-value	Standard coefficient
qf5 <---	Risk	1.000			0.532
qf4 <---	Risk	1.274	0.174	7.321 <0.001	0.606
qf3 <---	Risk	1.374	0.178	7.738 <0.001	0.675
qf2 <---	Risk	1.379	0.179	7.694 <0.001	0.667
qf1 <---	Risk	1.474	0.190	7.748 <0.001	0.677

In Figure 1 and Table 4, when fitting the environmental risk model for accountants, the factor loadings of all five items were greater than 0.5, indicating the significant effect of these items in measuring environmental risk for accountants. In Figure 2, the environmental risk measurement model for auditors has been fitted.

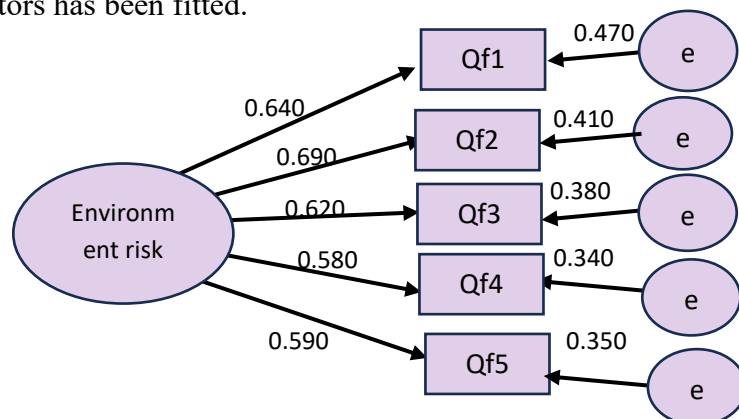


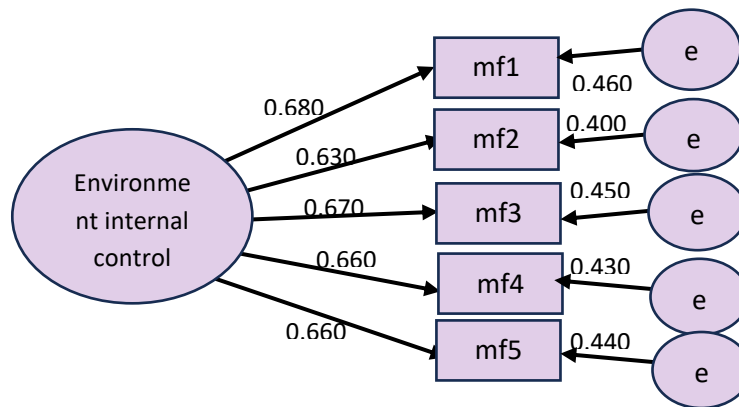
Figure 2. Fitting the environmental risk measurement model for auditors

Table 5. Auditor's assessment of factor loadings for the environmental risk measurement model

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
qf5	<---	Risk	1.000				0.594
qf4	<---	Risk	1.015	0.111	9.143	<0.001	0.58
qf3	<---	Risk	0.912	0.101	9.052	<0.001	0.62
qf2	<---	Risk	0.892	0.099	9.003	<0.001	0.689
qf1	<---	Risk	0.828	0.093	8.91	<0.001	0.639

In Figure 2 and Table 5, the factor loadings of all five items were greater than 0.5 when fitting the environmental risk model for auditors. This indicates the significant impact of these items on measuring environmental risk.

Figure 3 shows the measurement model for accountants' internal controls in the audit environment.

**Figure 3.** Fitting the internal controls measurement model for accountants**Table 6.** Examining the Fit of the factor loadings of the internal controls measurement model for accountants

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
mf5	<---	Kontrol	1.000				0.664
mf4	<---	Kontrol	0.867	0.093	9.313	<0.001	0.658
mf3	<---	Kontrol	1.002	0.106	9.457	<0.001	0.672
mf2	<---	Kontrol	1.038	0.115	9.058	<0.001	0.633
mf1	<---	Kontrol	1.046	0.110	9.516	<0.001	0.678

In Figure 3 and Table 6, when fitting the internal controls in the audit environment model for accountants, the factor loadings of all five items were greater than 0.5, indicating the significant impact of these items in measuring internal controls in the audit environment for accountants.

Figure 4 shows the measurement model for auditors' internal controls in the audit environment.

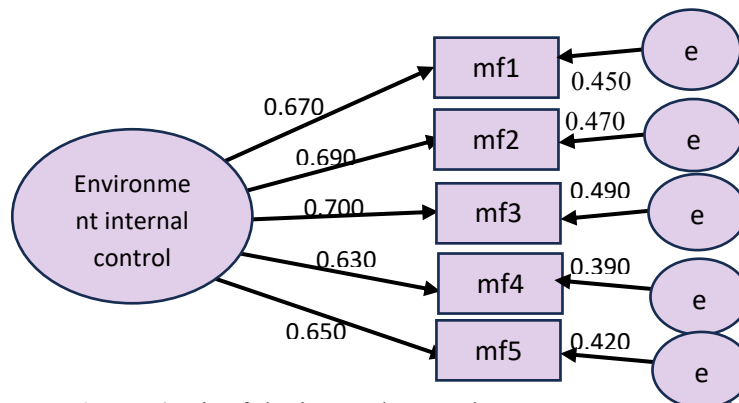
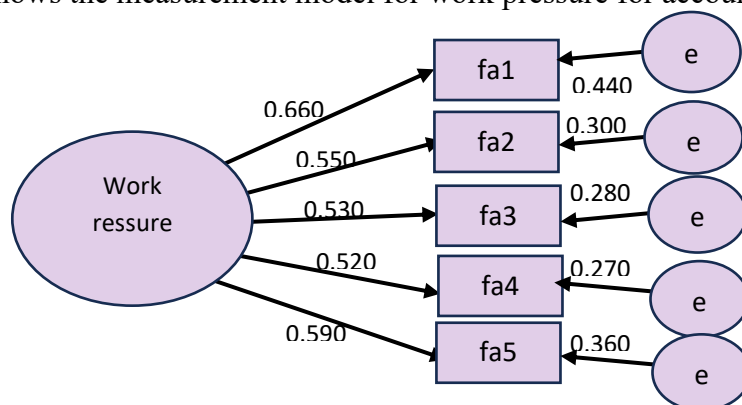
**Figure 4.** Fit of the internal controls measurement model for auditors

Table 7. Examination of the fit of the factor loadings of the internal controls measurement model for auditors

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
mf5	<---	Kontrol	1.000				0.647
mf4	<---	Kontrol	0.918	0.103	8.879	<0.001	0.625
mf3	<---	Kontrol	1.109	0.115	9.627	<0.001	0.702
mf2	<---	Kontrol	1.115	0.117	9.512	<0.001	0.689
mf1	<---	Kontrol	1.088	0.117	9.311	<0.001	0.668

In Figure 4 and Table 7, when fitting the internal controls in the audit environment model for auditors, the factor loadings of all five items were greater than 0.5, indicating the significant impact of these items in measuring internal controls in the audit environment for auditors.

Figure 5 shows the measurement model for work pressure for accountants.

**Figure 5.** Fitting the work stress measurement model for accountants**Table 8.** Examining the fit of factor loadings of the work stress measurement model for accountants

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
fa5	<---	Feshar	1.000				0.588
fa4	<---	Feshar	0.922	0.14	6.576	<0.001	0.523
fa3	<---	Feshar	0.849	0.129	6.605	<0.001	0.526
fa2	<---	Feshar	1.000	0.147	6.788	<0.001	0.549
fa1	<---	Feshar	1.166	0.157	7.421	<0.001	0.663

Figure 5 and Table 8 show that when fitting the work pressure model for accountants, the factor loadings of all five items were greater than 0.5, indicating the significant impact of these items in measuring work pressure for accountants.

Figure 6 shows the measurement model for work pressure for auditors.

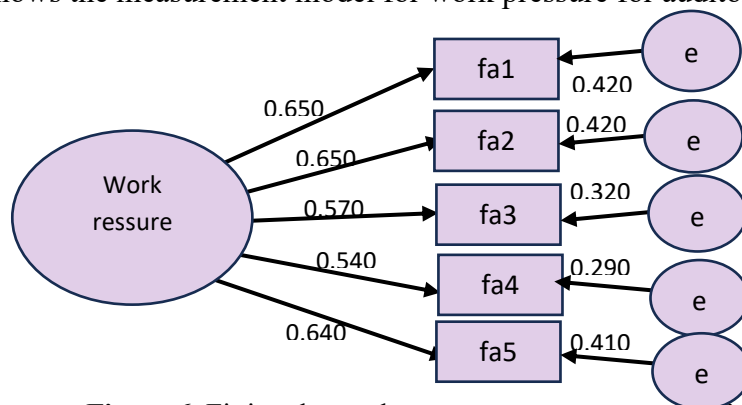
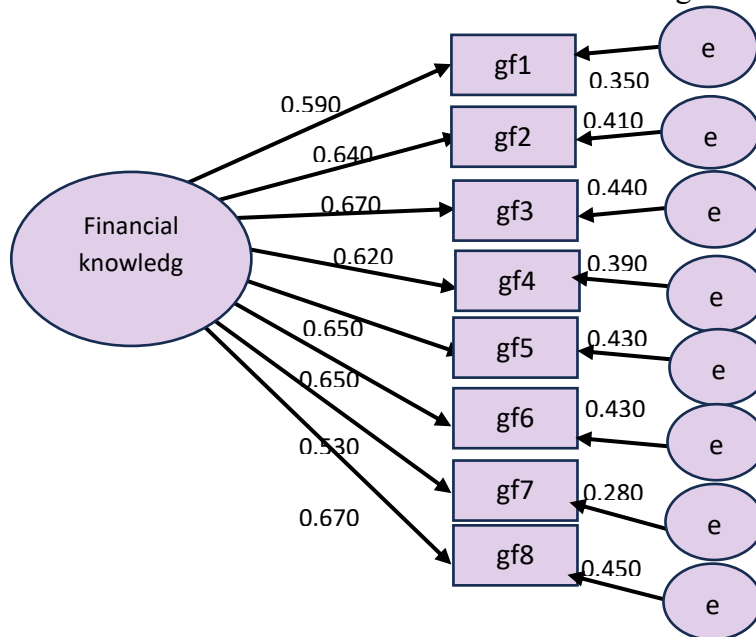
**Figure 6.** Fitting the work stress measurement model for auditors

Table 9. Examining the fit of the factor loadings of the work stress measurement model for auditors

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
fa5	<---	Feshar	1.000				0.640
fa4	<---	Feshar	0.837	0.114	7.361	<0.001	0.538
fa3	<---	Feshar	0.903	0.118	7.643	<0.001	0.567
fa2	<---	Feshar	1.090	0.131	8.334	<0.001	0.648
fa1	<---	Feshar	1.102	0.133	8.317	<0.001	0.646

Figure 6 and Table 9 show that when fitting the work pressure model for auditors, the factor loadings of all five items were greater than 0.5, indicating the significant impact of these items in measuring work pressure for auditors.

Figure 7 shows the measurement model for financial knowledge for accountants.

**Figure 7.** Fitting the financial knowledge measurement model for accountants**Table 10.** Examining the appropriateness of the factor loadings of the financial knowledge measurement model for accountants

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
gf8	<---	Danesh	1.000				0.674
gf7	<---	Danesh	0.801	0.096	8.339	<0.001	0.534
gf6	<---	Danesh	1.035	0.104	9.979	<0.001	0.655
gf5	<---	Danesh	1.020	0.102	9.962	<0.001	0.653
gf4	<---	Danesh	0.979	0.102	9.566	<0.001	0.623
gf3	<---	Danesh	1.120	0.111	10.125	<0.001	0.666
gf2	<---	Danesh	1.018	0.104	9.754	<0.001	0.637
gf1	<---	Danesh	0.921	0.101	9.087	<0.001	0.588

Figure 7 and Table 10 demonstrate that the factor loadings for all eight items, when fitted to the financial knowledge model for accountants, exceeded 0.5, meaning that they significantly influence financial knowledge measurement.

Figure 8 shows the measurement model for auditors' financial knowledge.

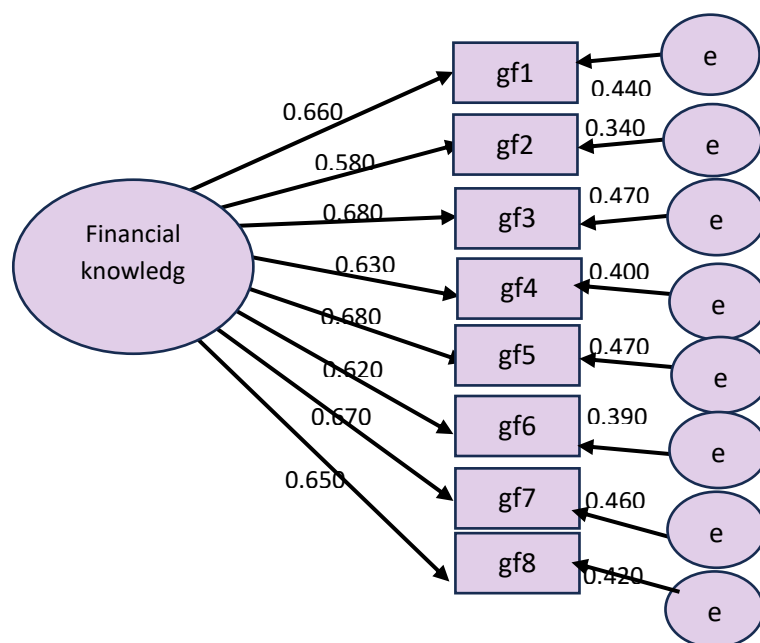


Figure 8. Fitting the financial knowledge measurement model for auditors

Table 11. Analyzing the goodness of fit of the financial knowledge measurement model for auditors

Path		Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
gf8 <---	Danesh	1.000				0.652
gf7 <---	Danesh	0.892	0.097	9.18	<0.001	0.675
gf6 <---	Danesh	1.012	0.106	9.538	<0.001	0.625
gf5 <---	Danesh	0.775	0.092	8.441	<0.001	0.682
gf4 <---	Danesh	0.880	0.098	8.954	<0.001	0.631
gf3 <---	Danesh	0.913	0.097	9.395	<0.001	0.682
gf2 <---	Danesh	1.022	0.108	9.493	<0.001	0.583
gf1 <---	Danesh	0.961	0.103	9.369	<0.001	0.662

In Figure 8 and Table 11, the factor loadings of all eight items in the financial knowledge model for auditors are greater than 0.5, indicating a significant impact of these items.

Figure 9 shows the measurement model for accountants' experience.

Table 12. An examination of the appropriate factor loadings for the accountant experience measurement model

Path		Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
sa14 <---	Tajrobe	1.000				0.672
sa13 <---	Tajrobe	0.756	0.082	9.248	<0.001	0.559
sa12 <---	Tajrobe	0.952	0.089	10.741	<0.001	0.658
sa11 <---	Tajrobe	0.861	0.083	10.383	<0.001	0.634
sa10 <---	Tajrobe	0.868	0.082	10.523	<0.001	0.643
sa9 <---	Tajrobe	1.140	0.095	12.043	<0.001	0.748
sa8 <---	Tajrobe	1.136	0.098	11.544	<0.001	0.713
sa7 <---	Tajrobe	1.196	0.099	12.081	<0.001	0.751
sa6 <---	Tajrobe	0.884	0.085	10.394	<0.001	0.634
sa5 <---	Tajrobe	0.866	0.085	10.185	<0.001	0.620
sa4 <---	Tajrobe	0.878	0.082	10.717	<0.001	0.656
sa3 <---	Tajrobe	1.025	0.091	11.229	<0.001	0.691
sa2 <---	Tajrobe	1.078	0.093	11.621	<0.001	0.718
sa1 <---	Tajrobe	1.145	0.098	11.653	<0.001	0.721

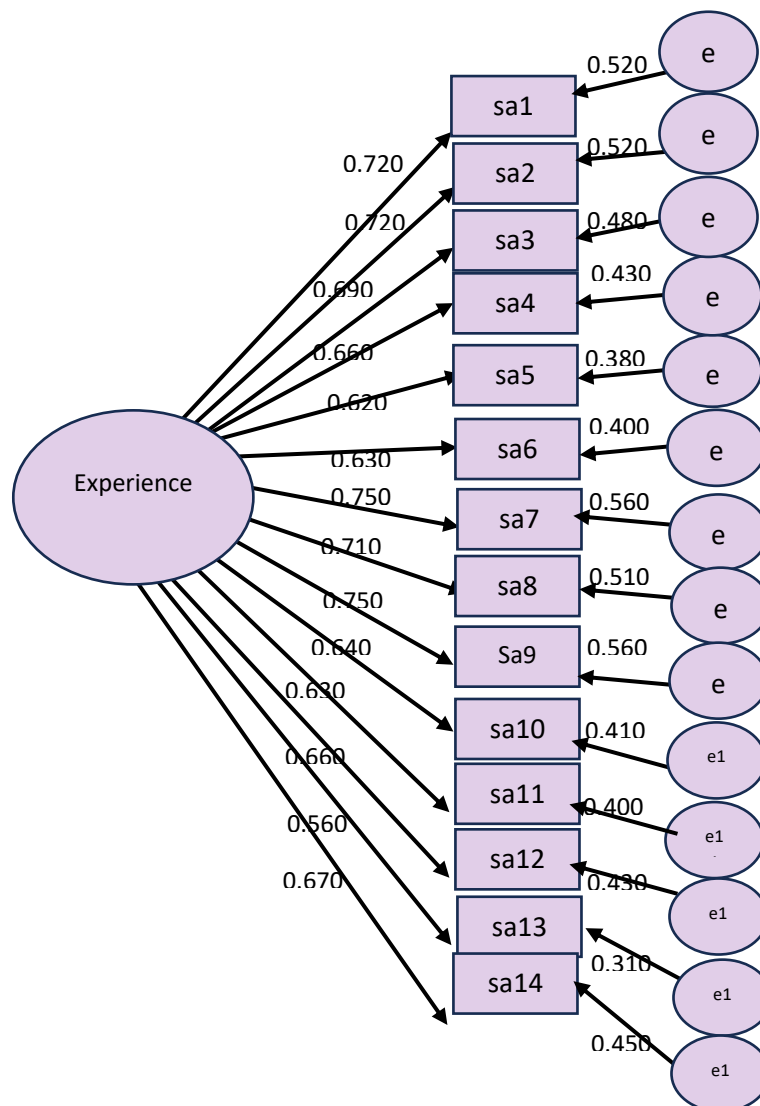


Figure 9. Fitting the experience measurement model for accountants

Using Table 12 and Figure 9, the factor loadings for all 14 items were greater than 0.5 when fitting the experience model for accountants, indicating that these items have a significant impact.

Figure 10 shows the measurement model for the auditors' experience.

Table 13. Analyzing the factor loadings of the auditor experience measurement model

Path		Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
sa14 <---	Tajrobe	1.000				0.645
sa13 <---	Tajrobe	0.937	0.091	10.276	<0.001	0.657
sa12 <---	Tajrobe	0.952	0.097	9.810	<0.001	0.622
sa11 <---	Tajrobe	0.998	0.096	10.448	<0.001	0.670
sa10 <---	Tajrobe	0.694	0.085	8.124	<0.001	0.502
sa9 <---	Tajrobe	1.068	0.101	10.526	<0.001	0.676
sa8 <---	Tajrobe	1.183	0.108	10.958	<0.001	0.710
sa7 <---	Tajrobe	1.060	0.103	10.307	<0.001	0.659
sa6 <---	Tajrobe	0.809	0.088	9.188	<0.001	0.576
sa5 <---	Tajrobe	0.870	0.092	9.466	<0.001	0.597
sa4 <---	Tajrobe	0.875	0.093	9.458	<0.001	0.596
sa3 <---	Tajrobe	1.026	0.097	10.583	<0.001	0.681
sa2 <---	Tajrobe	1.204	0.106	11.386	<0.001	0.745
sa1 <---	Tajrobe	1.142	0.109	10.509	<0.001	0.675

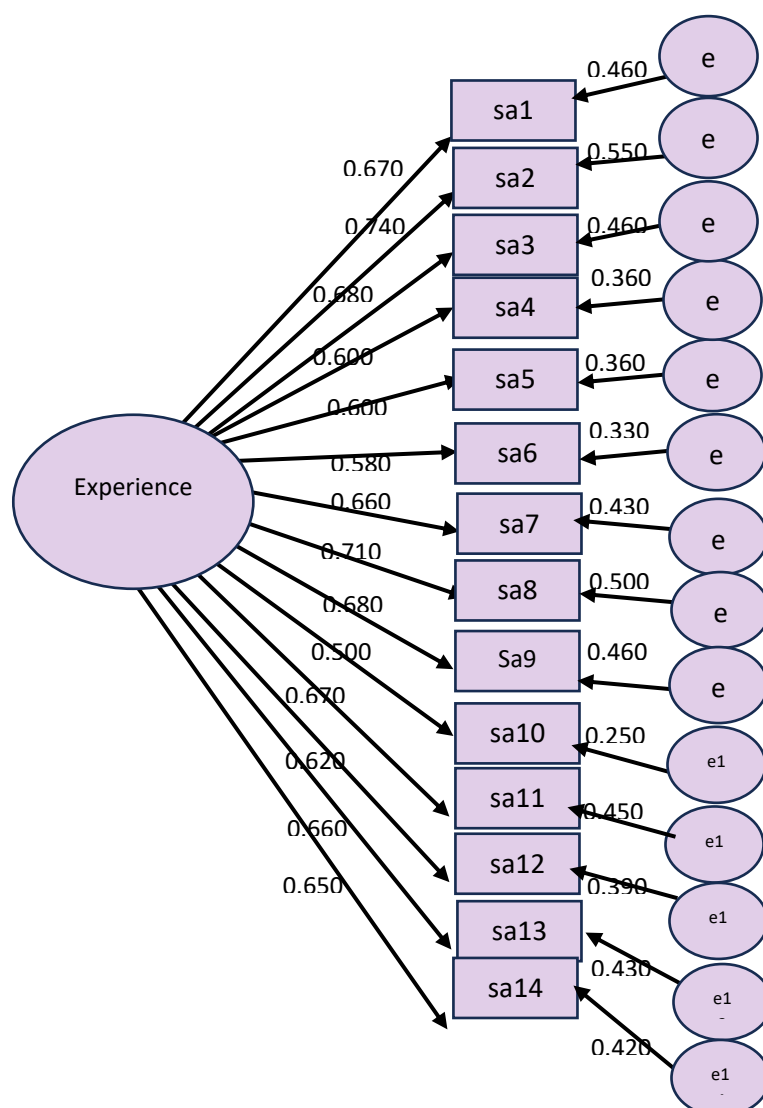


Figure 10. Fitting the experience measurement model for auditors

Figure 10 and Table 13 show that when fitting the experience model for auditors, the factor loadings of all 14 items were greater than 0.5, indicating the significant impact of these items in measuring experience for auditors.

Figure 11 shows the measurement model for accountants' judgment and decision-making quality.

In Figure 11 and Table 14, when fitting the judgment and decision-making quality model for accountants, the factor loadings of all 14 items were greater than 0.5, indicating the significant impact of these items in measuring judgment and decision-making quality for accountants.

Figure 12 shows the measurement model for auditors' judgment and decision-making quality.

Figure 12 and Table 15 show that when fitting the judgment and decision-making quality model for auditors, the factor loadings of all 14 items were greater than 0.5, indicating the significant impact of these items in measuring judgment and decision-making quality for auditors.

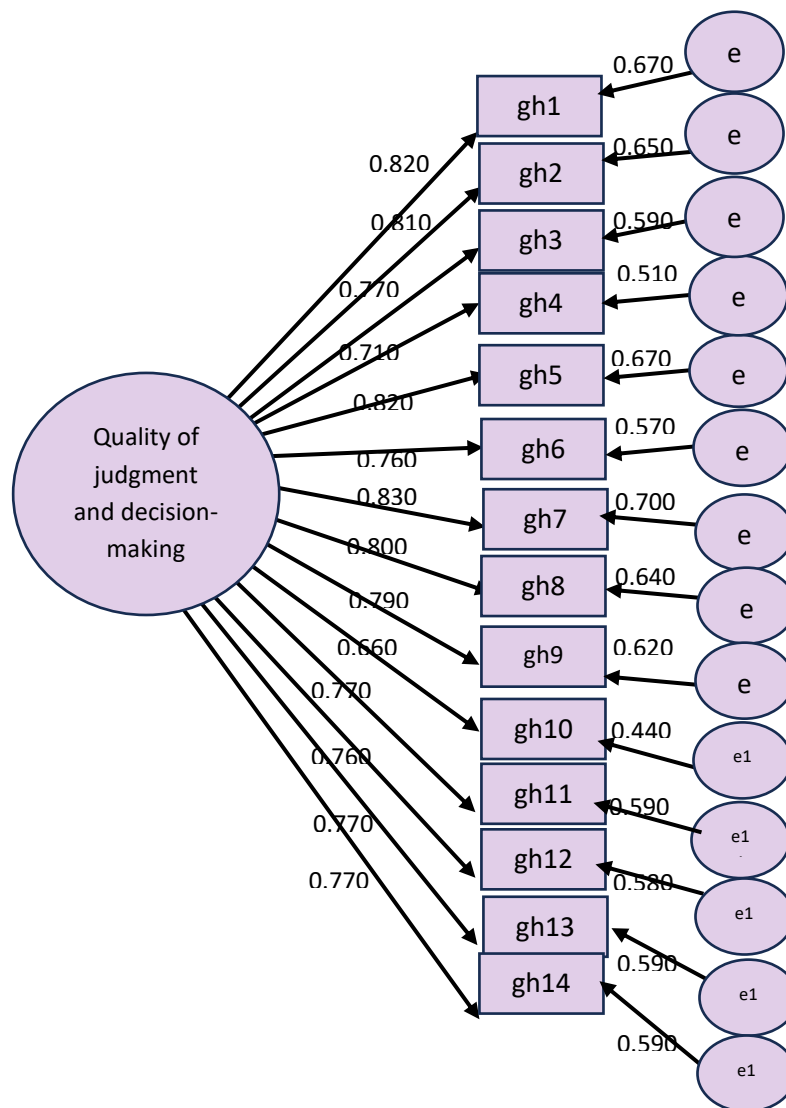


Figure 11. Fitting the model for measuring the quality of judgment and decision-making for accountants

Table 14. Analyzing the factor loadings of the model for measuring accountants' judgment and decision-making

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
gh14	<---	Ghezavat	1.000				0.766
gh13	<---	Ghezavat	0.931	0.063	14.703	<0.001	0.767
gh12	<---	Ghezavat	1.010	0.069	14.605	<0.001	0.763
gh11	<---	Ghezavat	0.982	0.067	14.667	<0.001	0.766
gh10	<---	Ghezavat	0.722	0.059	12.342	<0.001	0.661
gh9	<---	Ghezavat	1.082	0.071	15.223	<0.001	0.789
gh8	<---	Ghezavat	1.155	0.075	15.447	<0.001	0.799
gh7	<---	Ghezavat	1.177	0.072	16.299	<0.001	0.834
gh6	<---	Ghezavat	0.936	0.065	14.456	<0.001	0.756
gh5	<---	Ghezavat	1.207	0.076	15.931	<0.001	0.819
gh4	<---	Ghezavat	0.835	0.062	13.486	<0.001	0.713
gh3	<---	Ghezavat	0.966	0.066	14.703	<0.001	0.767
gh2	<---	Ghezavat	1.144	0.073	15.613	<0.001	0.806
gh1	<---	Ghezavat	1.174	0.074	15.902	<0.001	0.818

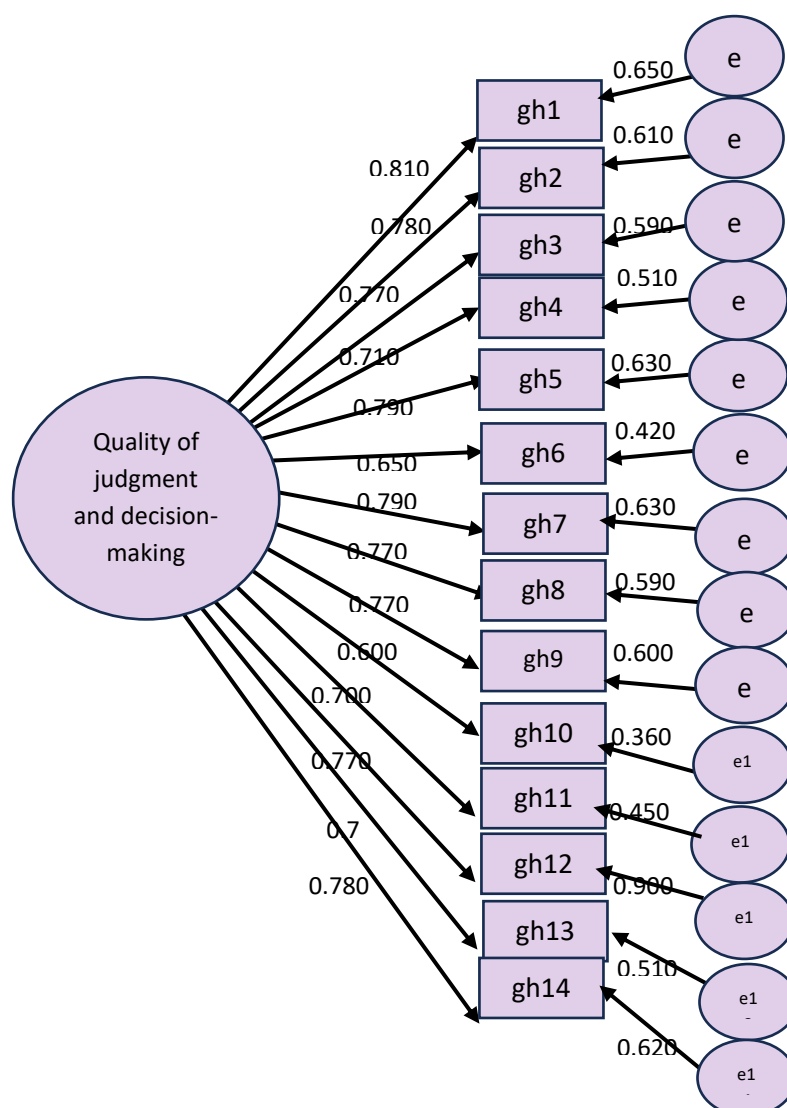


Figure 12. Fitting the model for measuring the quality of judgment and decision-making for auditors

Table 15. Examining the appropriateness of the factor loadings of the model for measuring the quality of judgment and decision-making for auditors

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
gh14	<---	Ghezavat	1.000				0.785
gh13	<---	Ghezavat	0.846	0.061	13.813	<0.001	0.716
gh12	<---	Ghezavat	1.000	0.066	15.204	<0.001	0.773
gh11	<---	Ghezavat	0.812	0.061	13.362	<0.001	0.697
gh10	<---	Ghezavat	0.669	0.059	11.287	<0.001	0.604
gh9	<---	Ghezavat	0.938	0.062	15.170	<0.001	0.772
gh8	<---	Ghezavat	0.971	0.064	15.149	<0.001	0.771
gh7	<---	Ghezavat	1.095	0.07	15.694	<0.001	0.793
gh6	<---	Ghezavat	0.733	0.06	12.208	<0.001	0.646
gh5	<---	Ghezavat	1.045	0.067	15.655	<0.001	0.791
gh4	<---	Ghezavat	0.851	0.062	13.725	<0.001	0.712
gh3	<---	Ghezavat	0.961	0.064	15.002	<0.001	0.765
gh2	<---	Ghezavat	1.064	0.069	15.423	<0.001	0.782
gh1	<---	Ghezavat	1.087	0.068	16.073	<0.001	0.807

4.3.2 Goodness-of-Fit Indices

Researchers use goodness-of-fit indices to evaluate the overall fit of the hypothesized model with the observed data. The most common index is the Chi-square statistic, which measures the difference between the covariance matrix of the fitted model and the covariance matrix from the observed sample. In this case, the null hypothesis suggests no difference between the fitted model and the sample covariance matrix, which is influenced by the sample size. Therefore, a small difference will indicate a good fit when the sample size is large. For this reason, some modified indices, such as the Chi-square over degrees of freedom, are used in conjunction with other goodness-of-fit indices, including Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), Root Mean Square Residual (RMR), and Root Mean Square Error of Approximation (RMSEA) (where values less than 0.08 indicate reasonable approximation errors for the population). The goodness-of-fit indices for the measurement models are reported in Table 16.

Table 16. Fit indices of measurement models

Specialty	Symbol	Environment risk	Internal controls of the environment	Work pressure	Financial knowledge	Experience	Quality of judgment and decision-making
Accountants	χ^2	2.270	5.940	2.064	13.154	48.469	63.786
	χ^2/df	0.568	1.188	0.413	0.658	0.655	0.874
	GFI	0.997	0.993	0.997	0.990	0.979	0.972
	AGFI	0.990	0.979	0.992	0.982	0.970	0.960
	RMR	0.021	0.036	0.020	0.032	0.038	0.044
	CFI	0.999	0.997	0.999	0.999	0.999	0.999
	RMSEA	0.001	0.024	0.001	0.001	0.001	0.001
	χ^2	3.712	20.437	6.116	14.165	87.926	63.427
Auditors	χ^2/df	0.742	4.087	1.223	0.708	1.142	0.824
	GFI	0.995	0.978	0.992	0.989	0.962	0.973
	AGFI	0.986	0.934	0.976	0.980	0.948	0.963
	RMR	0.027	0.059	0.032	0.037	0.050	0.041
	CFI	0.999	0.965	0.996	0.999	0.993	0.999
	RMSEA	0.001	0.098	0.026	0.001	0.021	0.001

Based on the obtained indices, all the indices are within an acceptable range. Therefore, the results from the model can be considered reliable.

4.3.3 Validity and reliability assessment

Composite Reliability (CR) and Average Variance Extracted (AVE) indices help evaluate every concept's validity and dependability. Every construct is deemed legitimate if the AVE value for each one exceeds 0.4. Furthermore, the CR value should be higher than 0.6 if the build is reliable. Table 17 lists the validity and reliability values for every measuring methodology.

Based on the results, the constructs meet the acceptable criteria for convergent validity and reliability.

4.3.4 Structural equation model fit

The structural model must be fitted to test and examine the research hypotheses, which are the essential part of the research and result in significant conclusions, allowing the relationships between the constructs to be reviewed and the significance of each of these relationships to be determined. In other words, we need to assess whether the available data support the conceptual model of the research. In this section, the structural equation model is fitted separately for accountants and auditors. The fitted structural model for the accountants' data is shown in Table 18 and Figure 13.

Table 17. Examining the convergent validity and reliability of the constructs

Specialty	Measurement model	AVE	CR
Accountants	Risk Environment	0.402	0.674
	Internal Controls Environment	0.437	0.675
	Work Pressure	0.377	0.607
	Financial Knowledge	0.397	0.763
	Experience	0.455	0.867
	Quality of Judgment and Decision Making	0.600	0.899
Auditors	Risk Environment	0.391	0.662
	Internal Controls Environment	0.445	0.698
	Work Pressure	0.372	0.671
	Financial Knowledge	0.422	0.763
	Experience	0.418	0.855
	Quality of Judgment and Decision Making	0.557	0.889

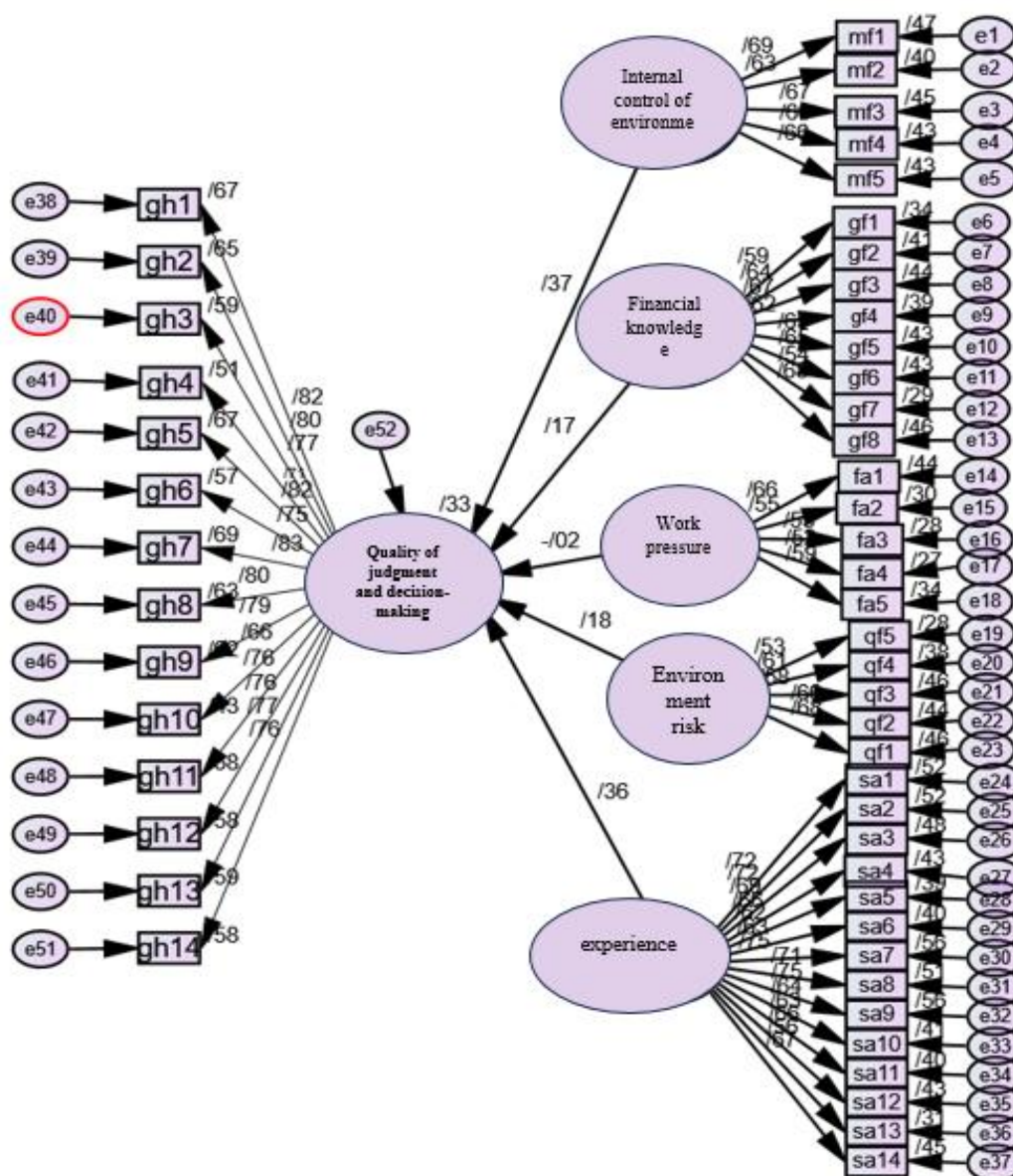
**Figure 13.** Structural model fitting for accountants

Table 18. Structural equation model fitting results for accountants

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
Ghezavat	<---	Danesh	0.245	0.079	3.102	0.002	0.171
Ghezavat	<---	Feshar	0.250	0.094	-0.268	0.789	-0.016
Ghezavat	<---	Kontrol	0.480	0.082	5.831	<0.001	0.370
Ghezavat	<---	Risk	0.348	0.113	3.075	0.002	0.183
Ghezavat	<---	Tajrobe	0.450	0.074	6.121	<0.001	0.356
gf8	<---	Danesh	1.000			<0.001	0.675
gf7	<---	Danesh	0.803	0.096	8.390	<0.001	0.536
gf6	<---	Danesh	1.030	0.103	9.982	<0.001	0.653
gf5	<---	Danesh	1.018	0.102	9.990	<0.001	0.654
gf4	<---	Danesh	0.978	0.102	9.599	<0.001	0.624
gf3	<---	Danesh	1.116	0.110	10.135	<0.001	0.665
gf2	<---	Danesh	1.016	0.104	9.775	<0.001	0.637
gf1	<---	Danesh	0.918	0.101	9.089	<0.001	0.586
gh14	<---	Ghezavat	1.000			<0.001	0.764
gh13	<---	Ghezavat	0.932	0.064	14.601	<0.001	0.765
gh12	<---	Ghezavat	1.010	0.070	14.480	<0.001	0.760
gh11	<---	Ghezavat	0.982	0.067	14.548	<0.001	0.763
gh10	<---	Ghezavat	0.721	0.059	12.208	<0.001	0.656
gh9	<---	Ghezavat	1.083	0.072	15.122	<0.001	0.788
gh8	<---	Ghezavat	1.155	0.075	15.330	<0.001	0.797
gh7	<---	Ghezavat	1.175	0.073	16.142	<0.001	0.831
gh6	<---	Ghezavat	0.936	0.065	14.349	<0.001	0.754
gh5	<---	Ghezavat	1.204	0.076	15.772	<0.001	0.816
gh4	<---	Ghezavat	0.835	0.062	13.387	<0.001	0.711
gh3	<---	Ghezavat	0.968	0.066	14.629	<0.001	0.766
gh2	<---	Ghezavat	1.144	0.074	15.492	<0.001	0.804
gh1	<---	Ghezavat	1.174	0.074	15.773	<0.001	0.816
fa5	<---	Feshar	1.000			<0.001	0.587
fa4	<---	Feshar	0.922	0.140	6.572	<0.001	0.522
fa3	<---	Feshar	0.849	0.129	6.598	<0.001	0.526
fa2	<---	Feshar	1.002	0.148	6.788	<0.001	0.550
fa1	<---	Feshar	1.168	0.157	7.422	<0.001	0.664
mf5	<---	Kontrol	1.000			<0.001	0.658
mf4	<---	Kontrol	0.878	0.094	9.362	<0.001	0.659
mf3	<---	Kontrol	1.009	0.107	9.467	<0.001	0.669
mf2	<---	Kontrol	1.047	0.115	9.077	<0.001	0.632
mf1	<---	Kontrol	1.070	0.111	9.637	<0.001	0.687
qf5	<---	Risk	1.000			<0.001	0.525
qf4	<---	Risk	1.307	0.179	7.320	<0.001	0.614
qf3	<---	Risk	1.393	0.181	7.681	<0.001	0.676
qf2	<---	Risk	1.390	0.182	7.617	<0.001	0.664
qf1	<---	Risk	1.494	0.194	7.690	<0.001	0.678
sa14	<---	Tajrobe	1.000			<0.001	0.674
sa13	<---	Tajrobe	0.752	0.081	9.259	<0.001	0.558
sa12	<---	Tajrobe	0.951	0.088	10.805	<0.001	0.659
sa11	<---	Tajrobe	0.858	0.082	10.420	<0.001	0.634
sa10	<---	Tajrobe	0.865	0.082	10.559	<0.001	0.643
sa9	<---	Tajrobe	1.135	0.094	12.088	<0.001	0.747
sa8	<---	Tajrobe	1.132	0.098	11.594	<0.001	0.713
sa7	<---	Tajrobe	1.187	0.098	12.086	<0.001	0.747
sa6	<---	Tajrobe	0.881	0.084	10.429	<0.001	0.634
sa5	<---	Tajrobe	0.864	0.084	10.232	<0.001	0.621
sa4	<---	Tajrobe	0.877	0.081	10.781	<0.001	0.658
sa3	<---	Tajrobe	1.022	0.091	11.277	<0.001	0.691
sa2	<---	Tajrobe	1.077	0.092	11.696	<0.001	0.720
sa1	<---	Tajrobe	1.138	0.098	11.672	<0.001	0.718

The fitted structural model for the auditors' data can be shown in Table 19 and Figure 14.

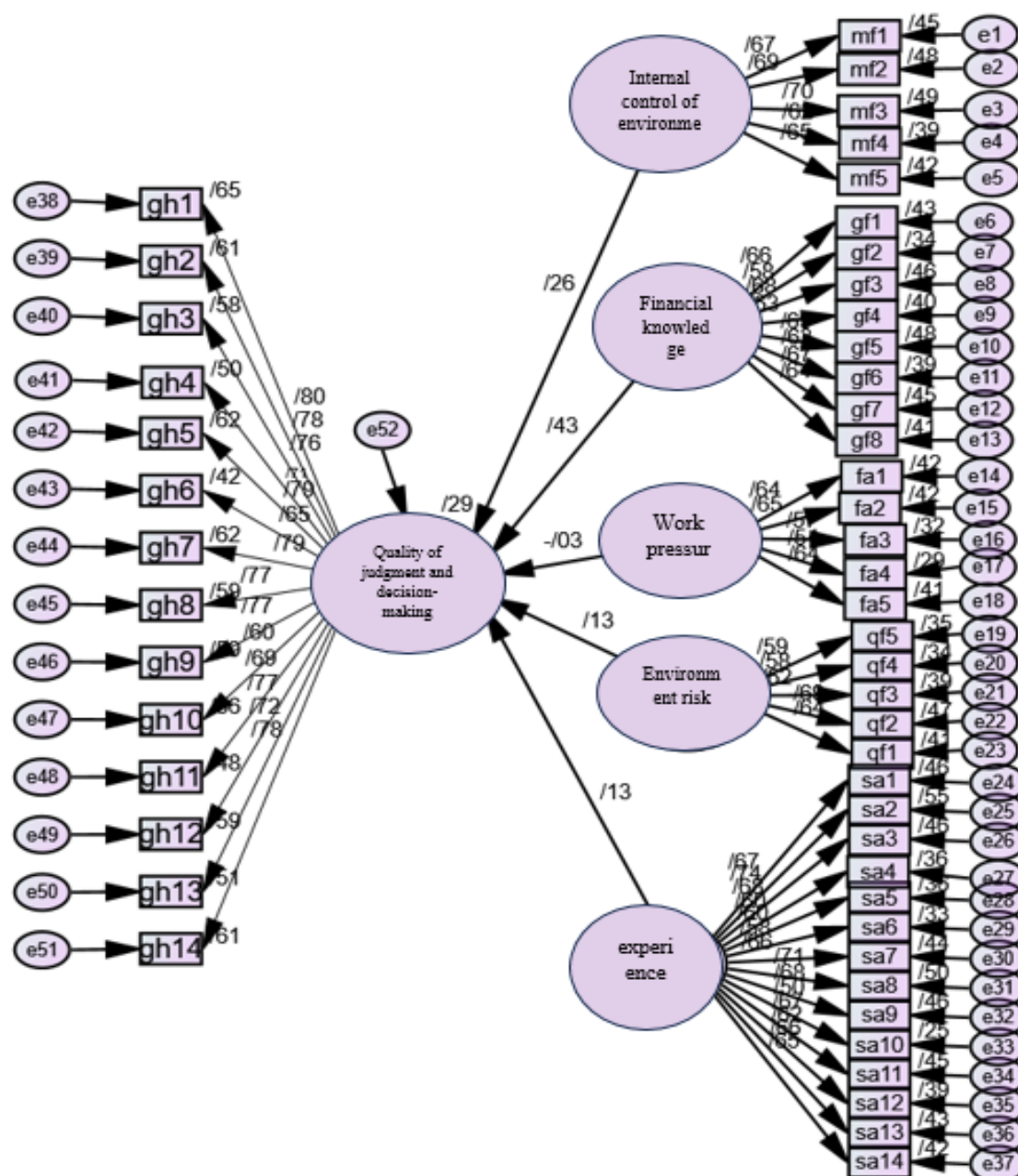


Figure 14. Structural model fitting for auditors

4.3.5 Goodness-of-Fit Indices for the Structural Model

The goodness-of-fit indices for the structural equation model are reported in Table 20, and these indices are in an acceptable range, indicating a good fit for the model.

According to Table 21, the results of Hypothesis 1 indicate a significant and positive relationship between financial knowledge and the quality of judgment and decision-making in accountants (p-value less than 0.05), with a path coefficient or effect size of 0.171, suggesting a direct relationship.

Table 19. Structural equation model fitting results for auditors

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
Ghezavat	<---	Danesh	0.607	0.092	6.610	<0.001	0.431
Ghezavat	<---	Feshar	0.530	0.093	-0.564	0.572	0.330
Ghezavat	<---	Kontrol	0.370	0.086	4.322	<0.001	0.262
Ghezavat	<---	Risk	0.231	0.103	2.233	0.026	0.132
Ghezavat	<---	Tajrobe	0.174	0.075	2.331	0.02	0.125
gf8	<---	Danesh	1.000			<0.001	0.644
gf7	<---	Danesh	1.034	0.103	10.017	<0.001	0.674
gf6	<---	Danesh	0.998	0.105	9.465	<0.001	0.628
gf5	<---	Danesh	1.105	0.108	10.203	<0.001	0.690
gf4	<---	Danesh	1.089	0.114	9.512	<0.001	0.632
gf3	<---	Danesh	1.070	0.106	10.105	<0.001	0.682
gf2	<---	Danesh	0.867	0.098	8.891	<0.001	0.583
gf1	<---	Danesh	1.152	0.117	9.826	<0.001	0.658
gh14	<---	Ghezavat	1.000			<0.001	0.783
gh13	<---	Ghezavat	0.847	0.062	13.758	<0.001	0.715
gh12	<---	Ghezavat	0.999	0.066	15.094	<0.001	0.770
gh11	<---	Ghezavat	0.811	0.061	13.280	<0.001	0.695
gh10	<---	Ghezavat	0.668	0.060	11.193	<0.001	0.600
gh9	<---	Ghezavat	0.939	0.062	15.093	<0.001	0.770
gh8	<---	Ghezavat	0.969	0.064	15.030	<0.001	0.768
gh7	<---	Ghezavat	1.092	0.070	15.552	<0.001	0.789
gh6	<---	Ghezavat	0.736	0.060	12.207	<0.001	0.647
gh5	<---	Ghezavat	1.041	0.067	15.486	<0.001	0.786
gh4	<---	Ghezavat	0.852	0.062	13.654	<0.001	0.711
gh3	<---	Ghezavat	0.961	0.064	14.920	<0.001	0.763
gh2	<---	Ghezavat	1.064	0.069	15.328	<0.001	0.780
gh1	<---	Ghezavat	1.084	0.068	15.941	<0.001	0.804
fa5	<---	Feshar	1.000			<0.001	0.639
fa4	<---	Feshar	0.839	0.114	7.362	<0.001	0.539
fa3	<---	Feshar	0.905	0.118	7.645	<0.001	0.567
fa2	<---	Feshar	1.092	0.131	8.333	<0.001	0.649
fa1	<---	Feshar	1.102	0.133	8.307	<0.001	0.645
mf5	<---	Kontrol	1.000			<0.001	0.646
mf4	<---	Kontrol	0.916	0.103	8.882	<0.001	0.623
mf3	<---	Kontrol	1.107	0.115	9.647	<0.001	0.700
mf2	<---	Kontrol	1.121	0.117	9.569	<0.001	0.691
mf1	<---	Kontrol	1.095	0.117	9.371	<0.001	0.671
qf5	<---	Risk	1.000			<0.001	0.593
qf4	<---	Risk	1.113	0.146	7.600	<0.001	0.580
qf3	<---	Risk	1.168	0.147	7.953	<0.001	0.622
qf2	<---	Risk	1.289	0.154	8.393	<0.001	0.687
qf1	<---	Risk	1.336	0.165	8.091	<0.001	0.641
sa14	<---	Tajrobe	1.000			<0.001	0.646
sa13	<---	Tajrobe	0.936	0.091	10.295	<0.001	0.658
sa12	<---	Tajrobe	0.951	0.097	9.815	<0.001	0.622
sa11	<---	Tajrobe	0.998	0.095	10.462	<0.001	0.670
sa10	<---	Tajrobe	0.693	0.085	8.123	<0.001	0.501
sa9	<---	Tajrobe	1.065	0.101	10.523	<0.001	0.675
sa8	<---	Tajrobe	1.180	0.108	10.964	<0.001	0.709
sa7	<---	Tajrobe	1.060	0.103	10.326	<0.001	0.660
sa6	<---	Tajrobe	0.810	0.088	9.208	<0.001	0.577
sa5	<---	Tajrobe	0.870	0.092	9.489	<0.001	0.598
sa4	<---	Tajrobe	0.875	0.092	9.469	<0.001	0.596
sa3	<---	Tajrobe	1.025	0.097	10.591	<0.001	0.680
sa2	<---	Tajrobe	1.202	0.105	11.389	<0.001	0.744
sa1	<---	Tajrobe	1.141	0.108	10.522	<0.001	0.675

Table 20. Goodness-of-Fit indices for the structural equation model

Index	Accountants	Auditors
χ^2	1297.128	1306.535
χ^2/df	1.064	1.072
GFI	0.869	0.868
AGFI	0.858	0.857
RMR	0.087	0.085
CFI	0.989	0.986
RMSEA	0.014	0.015

4.3.6 Examining research hypotheses

Table 21. Goodness-of-Fit indices for the structural equation model

Path			Non-standard coefficient	SD	Test statistic	P-value	Standard coefficient
<i>H1</i> : There is a significant relationship between financial knowledge and the quality of judgment and decision-making of accountants.							
Ghezavat	<---	Danesh	0.245	0.079	3.102	0.002	0.171
<i>H2</i> : There is a significant relationship between experience and the quality of judgment and decision-making of accountants.							
Ghezavat	<---	Tajrobe	0.450	0.074	6.121	<0.001	0.356
<i>H3</i> : There is a significant relationship between environmental risk and the quality of judgment and decision-making of accountants.							
Ghezavat	<---	Risk	0.348	0.113	3.075	0.002	0.183
<i>H4</i> : There is a significant relationship between internal controls in the environment and accountants' quality of judgment and decision-making.							
Ghezavat	<---	Kontrol	0.480	0.082	5.831	<0.001	0.370
<i>H5</i> : There is a significant relationship between work pressure and the quality of judgment and decision-making of accountants.							
Ghezavat	<---	Feshar	-0.025	0.094	-0.268	0.789	-0.016
<i>H6</i> : There is a significant relationship between financial knowledge and the quality of judgment and decision-making of auditors.							
Ghezavat	<---	Danesh	0.607	0.092	6.610	<0.001	0.431
<i>H7</i> : There is a significant relationship between experience and the quality of judgment and decision-making of auditors.							
Ghezavat	<---	Tajrobe	0.174	0.075	2.331	0.02	0.125
<i>H8</i> : There is a significant relationship between environmental risk and the quality of judgment and decision-making of auditors.							
Ghezavat	<---	Risk	0.231	0.103	2.233	0.026	0.132
<i>H9</i> : There is a significant relationship between internal controls in the environment and auditors' quality of judgment and decision-making.							
Ghezavat	<---	Kontrol	0.370	0.086	4.322	<0.001	0.262
<i>H10</i> : There is a significant relationship between work pressure and the quality of judgment and decision-making of auditors.							
Ghezavat	<---	Feshar	-0.053	0.093	-0.564	0.572	-0.033

The results of Hypothesis 2 show a significant and positive relationship between experience and the quality of judgment and decision-making in accountants (p-value less than 0.05), with a path coefficient or effect size of 0.356, indicating a direct relationship.

The results of Hypothesis 3 demonstrate a significant and positive relationship between environmental risk and the quality of judgment and decision-making in accountants (p-value less than 0.05), with a path coefficient or effect size of 0.183, suggesting a direct relationship.

The results of Hypothesis 4 present a significant and direct relationship between internal controls in the environment and the quality of judgment and decision-making in accountants (p-value less than 0.05), with a path coefficient or effect size of 0.37, indicating a direct relationship.

The results of Hypothesis 5 indicate that there is no significant relationship between work pressure and the quality of judgment and decision-making in accountants (p-value greater than 0.05).

The results of Hypothesis 6 show a significant and positive relationship between financial knowledge and the quality of judgment and decision-making in auditors (p-value less than 0.05), with a path coefficient or effect size of 0.431, suggesting a direct relationship.

The results of Hypothesis 7 present a significant and positive relationship between experience and the quality of judgment and decision-making in auditors (p-value less than 0.05), with a path coefficient or effect size of 0.125, indicating a direct relationship.

The results of Hypothesis 8 represent a significant and positive relationship between environmental risk and the quality of judgment and decision-making in auditors (p-value less than 0.05), with a path coefficient or effect size of 0.132, suggesting a direct relationship.

The results of Hypothesis 9 show a significant and direct relationship between internal controls in the environment and the quality of judgment and decision-making in auditors (p-value less than 0.05), with a path coefficient or effect size of 0.262, indicating a direct relationship.

The results of Hypothesis 10 indicate no significant relationship between work pressure and the quality of judgment and decision-making in auditors (p-value greater than 0.05).

5. Discussion and conclusion

This study examined judgment and decision-making in accounting and auditing, considering the perspectives of the individual, task, and environment. The research variables include auditor financial knowledge, auditor experience, audit environment risk, internal controls in the audit environment, time-budget pressure in auditing, and the quality of judgment and decision-making. In testing the first hypothesis, the study investigated whether there is a significant relationship between financial knowledge and the quality of judgment and decision-making by accountants. Statistical results showed a positive and significant relationship (at a 95% confidence level) between financial knowledge and the quality of judgment and decision-making by accountants. Thus, the first hypothesis of the study is confirmed. These results suggested that financial knowledge gained through repetition may significantly impact the quality of judgment and decision-making by accountants. Repetition leads to the automation of procedures, which reduces the demand on the accountant's information processing capacity, freeing up resources to complete other parts of the task, increasing efficiency and enhancing effectiveness in cases of time pressure. In such cases, cognitive structures become more accurate, allowing judges to better distinguish important information, provide further explanations about the processed information, and easily retrieve information, thereby increasing efficiency. These relationships indicate that the quality of judgment and decision-making by accountants improves as the quality of financial knowledge increases. Additionally, the research findings showed a significant positive relationship (at the 95% significance level) between experience and the quality of judgment and decision-making by accountants. Therefore, the second hypothesis of the study is accepted. These results suggested that individuals with more experience, whether derived from years of service or job rank, make better judgments. Furthermore, their judgment and decision-making quality are enhanced because they interact more with the ethical environment. In other words, experience gained by providing the necessary skills or knowledge to perform such tasks can improve efficiency. Consequently, accountants can make further improvements in the quality of their judgments.

Furthermore, this specific work experience significantly enhanced accountants' decision-making abilities. In other words, experienced accountants tend to act more effectively in problem-solving, making better judgments, and crafting more precise decisions because they apply general principles

and highly relevant conditions for solving such issues. At the same time, less experienced accountants cannot use general principles and, consequently, cannot make accurate judgments. On the other hand, the results showed a significant positive relationship (at a 95% confidence level) between environmental risk and the quality of judgment and decision-making by accountants. Thus, the third hypothesis of the study is confirmed. These results suggested that environmental risk is one of the key factors influencing decision-making and judgment in accountants. The level of tolerance for environmental risk indicates the willingness of accountants to make decisions in uncertain conditions. Accountants' perception of environmental risk affects their behavior, and their perspective on environmental risk positively influences their judgment and decision-making. Therefore, their tolerance for environmental risk influences accountants' judgment and decision-making. When this factor is combined with other individual components, such as personality traits, it has a more significant impact. The results also showed a significant positive relationship (at the 95% significance level) between internal controls in the environment and the quality of judgment and decision-making by accountants. Hence, the fourth hypothesis of the study is accepted. These results indicated that the effectiveness of internal controls helps business units achieve their core objectives, and effective internal controls can equip accountants with information about progress or lack thereof in achieving those objectives. Furthermore, they help improve the quality of judgment and decision-making regarding uncontrollable events or phenomena. Consequently, accountants' demand for better internal control systems and performance reporting increases. With further attention, internal controls serve as a valuable tool for solving potential problems and improving judgment and decision-making quality.

This study revealed that internal controls are related to accounting and financial matters and encompass all units and their activities. Additionally, the results showed a negative and non-significant relationship (at a 95% confidence level) between work pressure and accountants' quality of judgment and decision-making. Therefore, the fifth hypothesis of the study is not confirmed. These findings indicated that higher work pressure reduces cognitive capacity, eroding the individual's control abilities and ultimately diminishing the quality of accountants' judgment. In other words, the depletion of mental capacity due to increased workload reduces the brain's energy reserves because of engaging in various mental tasks, including decision-making and self-regulation, to prevent emotional and behavioral outbursts. This issue is associated with a disruption in cognitive abilities, as the work pressure affects the capacity to process information, thereby reducing the quality of judgment and decision-making by accountants. Additionally, the results demonstrated a positive and statistically significant correlation between accountants' financial expertise and the accuracy of their judgment and decisions at the 95% significance level. Thus, the study's sixth hypothesis is validated. Based on these results, accountants' judgment and decision-making could be much improved by practicing what they know about finance. Automating repetitive tasks through repetition frees up the accountant's information processing capacity, allowing them to focus on other aspects of the task at hand, which in turn increases efficiency and, in situations where time is of the essence, effectiveness. As a result, decision-makers are able to more accurately segregate key information, offer additional explanations about processed data, and retrieve information easily, all of which contribute to even greater efficiency. According to these correlations, the quality of accountants' judgment and decision-making is directly correlated with the quality of their financial knowledge. Additionally, the results demonstrated a positive and statistically significant correlation between accountants' level of expertise and the accuracy of their judgment and decisions at the 95% significance level. So, the seventh research hypothesis is accepted. These results implied that the greater the amount of time spent interacting with the ethical environment, the better judgments are made by those with more experience, whether that be

measured in terms of years of service or job rank. Thus, efficiency and decision-making are both enhanced by the experience obtained from learning the skills and information needed to do such activities. Accountants' decision-making skills are greatly improved by this particular work experience.

As stated, experienced accountants make more accurate assessments and excel in problem-solving since they can apply broad ideas and situations that are quite pertinent to address such problems. Less experienced accountants lack the necessary knowledge, cannot use general concepts and make correct decisions. Furthermore, the findings revealed a noteworthy positive correlation (at the 95% significance level) between environmental risk and the quality of judgment and decision-making by accountants. Consequently, the eighth theory of the research is verified. These results revealed that environmental risk is among the main elements affecting accountants' judgment and decision-making. The degree of tolerance for environmental risk represents the readiness of accountants to make choices under doubtful circumstances. The accountant's view regarding environmental risk influences their behavior, so their judgment and decision-making improve from this perspective. Thus, it is reasonable to assume that accountants' risk tolerance affects their decision-making and judgment, but the combined effects of this and other individual factors, including traits, will be much stronger. Accounting professionals' ability to use sound judgment and sound decision-making is positively correlated with environmental restrictions at the 95% significant level.

So, the study's eighth hypothesis is accepted. According to these findings, business units are able to accomplish their primary goals with the support of efficient internal controls. To better make judgments and choices about things beyond their control, accountants might benefit from having information about the progress (or lack thereof) in achieving those objectives provided by effective internal controls. As a result, there has been a rise in the demand from accountants for performance reporting and better internal control systems. In light of the fact that internal controls cover all units and their activities, not just accounting and finances, they are an effective tool for preventing problems and enhancing judgment and decision-making. Additionally, accountants' judgment and decision-making quality were negatively correlated with work pressure, but this was not statistically significant (at the 95% confidence level). Thus, the study's tenth hypothesis remains unproven. According to these results, accountants' judgment suffers as a result of increasing mental strain, which in turn lowers their control abilities. Therefore, the brain's ability to make decisions and self-regulate to avoid behavioral and emotional outbursts is negatively impacted by the depletion of mental capacity caused by increased workloads. Since accountants' ability to process information is severely affected by work pressure, the quality of their judgment and decision-making is reduced, and this issue is linked to a disturbance in cognitive abilities.

6. Suggestions for future research

After completing the stages of a scientific study, when the research is conducted systematically and scholarly, the researcher can provide insights based on the findings and results and propose strategies and suggestions for the improvement and expansion of future research. Therefore, the following suggestions are presented in alignment with the research findings and for future studies.

6.1 Practical Recommendations

1. *Based on the results of the incremental effect of financial knowledge on the quality of judgment and decision-making by accountants*, it is recommended that accountants increase their specialized knowledge to enhance their skills. With this increase in expertise, the accuracy of data entry and information processing in their minds will improve, and the speed of these

processes will increase. This characteristic will reduce negative effects on the quality of their judgments and decisions due to specialized financial knowledge.

2. *Based on the incremental effect of work experience on the quality of judgment and decision-making by accountants*, it is recommended that managers pay more attention to highly experienced individuals when making accounting and financial decisions for the company. Experienced individuals are less likely to be influenced by the form and presentation of information and are less affected by initial impressions, which could increase behavioral biases in judgments. Consequently, the quality of judgment and decision-making by experienced accountants will be better than that of less experienced accountants.
3. *Based on the positive relationship between environmental risk and the quality of judgment and decision-making by accountants*, it is recommended that accountants recognize the impact of different environmental risks on their emotions and motivations. The analysis of their information is influenced by the environment in which they are situated, and their confidence level increases when dealing with complex issues, reducing the difficulty and uncertainty in judgment and decision-making. Therefore, accountants should prefer working in a secure environment, free from peripheral or risky issues that could impair the quality of their work.
4. *Based on the results of the incremental effect of internal controls on the quality of judgment and decision-making by accountants*, it is recommended that managers create conditions where the company maintains strong internal controls, both administrative and financial. A robust internal control environment will enhance the input of proper and accurate information into accountants' minds, increasing their information processing capacity. As a result, the quality of judgment and decision-making will be improved, contributing to the company's achievement of its core objectives.
5. *Based on the results of the effect of reducing work pressure on the quality of judgment and decision-making by accountants*, it is recommended that accountants take a break after periods of high work pressure to restore their analytical decision-making abilities, thus preventing any negative impact on the quality of their judgment. Consequently, it is advised that managers avoid subjecting accountants to excessive work pressure during critical periods when the company requires optimal decision-making.

6.2 Suggestions for future research

To further enhance the results of the research, it is suggested that the following topics be explored:

1. A study examining the effect of accountants' self-confidence on the quality of judgment and decision-making.
2. A study investigating the impact of financial and non-financial incentives on the quality of judgment and decision-making by accountants.
3. A study exploring the effect of career advancement and professional development on the quality of judgment and decision-making by accountants.
4. A study analyzing the effect of social and environmental relationships on the quality of judgment and decision-making by accountants.

6.3 Limitations of the study

All research studies inherently have limitations. These limitations provide opportunities for future and new research. This study is no exception to this rule. The results of scientific research should be evaluated in light of the existing limitations. The limitations of this study are as follows:

1. The central and most crucial restriction in research grounded on inferential statistics is

connected to extending its conclusions to other situations and times. Likely, the links found in this study could not hold at other times or under different circumstances than those taken into account in this study, or the nature of these relationships would vary. Consequently, great care should be used while extending the findings of this research.

2. The replies to the questionnaire were from people at a particular moment. Hence, it is likely that elements like carelessness, tiredness, or other diseases affected the responses. Therefore, these elements should be considered while extending the findings to different periods.

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