

The effect of personality indifference components on independent auditors' fraud risk assessment

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Abstract

The purpose of the research is to investigate the effect of personality indifference components on the fraud risk assessment of independent auditors with the structural equation approach. The target population of this research was the auditors who are members of the audit organization and private sector audit institutions, who were selected through random sampling and examined over 6 months. The research tool was standard questionnaires and Partial Least Squares (PLS) analysis was used to fit and test the research hypotheses. Despite the support provided by the legislator to discover and report unethical and illegal behaviors, this report also points out the costs to reporting organizations and individuals. As an example, it was shown in research that the nature and amount of retaliation or punishments imposed on the reporting person by the management and colleagues is perhaps the most important factor that influences the future decisions of the person reporting the fraud and violation.

Keywords: auditors' personality, indifference, fraud risk
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1 Introduction

In every society, different occupations and professions active in the society, in addition to the principles and rules of general ethics, follow a special value system that has been accepted by the workers of that profession, which is called professional ethics. From another point of view, it can be said that the written set of ethical rules that defines and explains the way of behavior and the responsibility of the members of the profession in front of the society, in front of each other and in front of the interested parties, is called adherence to the code of professional conduct, which is not observed and violated. In addition to the possibility of punishment, it can cause a lot of cultural damage to that profession and even society [18] universal behavioral norms in any society, which defines the behavior of that job and its employees. In the meantime, some jobs, such as those with more responsibility and accountability, will have a more considerate role from the point of view of observing professional behavior, because if they deviate from ethical principles, it can bring heavy social consequences. The auditing profession is considered as one of these jobs in today's societies, and any violation of its professional and behavioral principles can have irreparable consequences on the social status of the stakeholders' trust [7]. In fact, with the passage of time and the growing competition in the auditing profession, auditing service providers tried to provide services with different approaches compared

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to the past. Based on this, in line with the standards and code of professional conduct codified by the institutions and organizations that monitor auditors' performance, the institutions tried to create behavioral patterns based on the responsible characteristics of the auditing profession in society [22]. Also, the growth of theories such as social identity theory, non-dependence theory, professional commitment theories, etc., along with specific standards of the auditing profession, such as impartiality and professional skepticism, made the subject of ethics to be considered as an advantage in the competitive environment of the auditing market. that in the research field during the previous years, countless researches such as [2, 18, 31, 42]; It has been done by [1, 39]. But it can be said that in most of these researches, the main axis was ethical requirements and their compliance by auditors, and less research has paid attention to the impact of unethical behaviors of auditors in other institutions, especially by relying on behavioral theories such as power seeking and level of expectations. To develop new literature on this topic. Understanding this theoretical gap, this research focuses on providing a model to better understand the mental content and behavioral functions of auditors. In fact, the emergence of unethical behaviors in the auditing profession is considered a social concern, and the possibility of its institutionalization in the auditing profession can lead to functional immorality. Because the presence of negative behavioral incentives in auditors' performance causes the development of moral self-confidence that the auditing community is looking for, to be damaged and causes individual behaviors to suffer a crisis. On the other hand, the Pygmalion effect, as a theory based on expectation, plays a significant role in reducing these moral misconducts and its institutionalization in auditing. In fact, the Galatea effect defines the role of beliefs and expectations in strengthening adherence to ethical behaviors and refers to a series of individual expectations and society's expectations and beliefs from the auditor and his role in reviewing the financial performance of the owners, which can improve the performance of the auditor, and on the contrary, if this If the expectations are reversed and the perception of the auditor's capabilities is not optimal, the auditor's performance will decrease and this issue can directly affect the quality of the auditors' comments [16]. On the other hand, Machiavellianism is a type of approach based on the desire for functional power and deception in each person. In fact, Machiavellianism, as a term to describe the tendency to cheat and mislead others in order to achieve personal gain, is associated with violating the rights of others. People with high Machiavellianism ignore moral norms in order to achieve personal goals [38]. Auditing is a profession that is very similar to judging in courts. Both the judge and the auditor are faced with claims, they collect and evaluate the supporting evidence of the claims and finally give an opinion and judge based on the criteria they have. Professional judgment is the main gem of auditing. The value created by the audit of financial statements is the result of the auditor's judgment and generally results from the set of professional judgments that are made within the framework of accounting and auditing standards. In recent years, many researchers, students and accounting professors have paid attention to the subject of professional judgment. Auditors have been attracted. This attention-grabbing shows the importance of professional judgment. Therefore, identifying the factors that are effective on professional judgment can be of great help to independent auditors [37], if the auditors' judgment is based on professional principles and standards and away from any prejudice and bias, the reliability of More audit reports. In recent years, there have been many reviews and researches about professional judgment in auditing. Auditor's decision-making is affected by factors, among which we can mention factors of audit work environment, auditor's characteristics, evidence, decision-making process and auditor's personality characteristics. The role of factors in the decision-making process has received the most attention. Applying good judgment consistently in a business environment that is constantly increasing in complexity and dynamics, uncertainty and high pressure, requires a systematic process, therefore, common pitfalls and biases should be taken into account can influence professional judgments. Cognitive bias refers to the tendency of people to make systematic errors of judgment when making decisions. Judgmental errors are often the result of mental revelation behaviors or information processing shortcuts that are embedded in the human decision-making process. Also, various types of cognitive biases have been identified and categorized by psychologists, which become more important in the audit of some of them. Cognitive biases can affect human judgments in the decision-making process in any issue, but specifically in complex issues and systematic all-round pressures, they have more destructive effects and put pressure on auditors in their judgments in an independent audit work. Also, [43] states that emotions are important as a fundamental factor that may affect auditors' judgment and decision making with pressure and other situational and environmental variables. [48] proposed that spiritual intelligence is a key factor in dealing with emotions and pressure in audit work and stated that spiritual intelligence is an important mechanism that controls the joint effects of different types of pressure on the auditor's decision making. In general, so far, there have been studies on the factors of cognitive bias and spiritual intelligence with the auditor's decision-making, and each study has tried to examine the issue from a different perspective. Auditors have many reasons to appear good in the eyes of the client; therefore, they have strong incentives to confirm their customers' accounts; in this way, from the low-level executive group to independent auditors, the company's audit motivation to provide favorable audits deepens [3]. In this research, the effect of fraud risk of independent auditors as an external stimulus on the functions affecting value-oriented developments and the indifference components of the auditors' personality is investigated.

2 Theoretical foundations

2.1 Character indifference

Personality is certain patterns of thoughts, feelings and behaviors that make a person unique. It is believed that personality comes from inside the person and remains relatively constant throughout life. It includes behavioral, inherent and acquired characteristics that distinguish one person from another and can be seen in the relationships of people with the environment and social group. The term personality has been defined in many ways, but as a psychological concept two main meanings have been developed for personality. The first is related to the adaptive differences between people: in this sense, the study of personality focuses on the classification and explanation of relatively stable psychological characteristics of humans. The second meaning emphasizes those characteristics that make all people similar and distinguish humans from other species. This dichotomy may help to explain the two directions that personality studies have taken: on the one hand, the study of more specific characteristics in individuals, and on the other hand, the search for the whole of organized psychological functions that affect the interaction between members and events. It emphasizes the psychological within people and those social and biological events that surround them. It can be said that the study of personality is rooted in the basic idea that people are distinguished by their specific individual behavioral patterns [23]. During the last half century, personality psychology has focused mainly on the development of personality descriptions, mainly based on classifications created by factor analysis, and the use of descriptive models to examine outcomes with trait measures as well as how scores change over time. Time has been concentrated. In the last decade, personality researchers have become increasingly interested in investigating causal mechanisms and personality performance processes [34]. Traditionally, personality is conceptualized as a set of stable talents or personality traits. Following this concept, the main debates in the field of personality have been about the number of characteristic dimensions needed to show personality, or whether and under what conditions one should focus on broad traits versus subtle aspects. Most personality theories suggest that personality can be described using a number of entities, all of which have a unique stable component, personality traits, as well as variable personality states, which fluctuate from moment to moment. Personality describes relatively permanent cognitive, emotional and behavioral patterns of people that distinguish one person from another [20].

In recent years, failure to observe ethical values has led to several financial scandals. In this regard, [24] believes that although the effect of unprofessional behavior and ethical slips of auditors may be small, this issue leads to the collapse of the world's largest companies and causes the loss of hundreds of billions of dollars in shareholder value. Therefore, compliance with the principles of professional behavior and ethical standards by auditors, educated people, supervisory boards, regulatory boards and employers seems necessary [15]. Considering that impartiality originates from auditors' personality traits such as moral values, it seems necessary to focus on strengthening and applying it in this profession for financial statement reviews. In fact, the value criteria in the auditing profession are understood in the form of ethical culture in this profession. Ethical culture is considered one of the most important factors preventing unethical behavior against ethical behavior [12]. Despite the attention of some studies to the effect of moral culture on moral behavior, such as the research of [40, 41, 47] still have this mindset, to what extent can an auditor be expected to adhere to it in their professional practices, or to what extent can ethical values be used to enhance the quality of financial statement audits? The researches about the effect of ethical culture on the auditor's ethical behavior have focused more attention on the relationship between personal and social factors affecting ethical behavior. [47] found with little doubt in this regard that the organizational culture in audit firms affects the decision-making style of auditors, which in turn will affect their ethical decisions. They believe that acculturation processes in audit firms will lead to the emergence of bold and result-based values, which will limit the relationship between organizational culture and different styles in personal decision-making. [12] investigated the effect of ethical culture on auditor's individual values and also the combined effect of the two on how auditors judge ethical dilemmas. Their results indicate that ethical culture in auditing companies has an indirect relationship with ethical judgments, so that ethical culture affects individual values and these values, in turn, will affect the auditor's judgments. None of these findings provide a clear understanding of the existence of a relationship between ethical culture and auditor impartiality, but they point to reasons for the existence of such a relationship.

2.2 Fraud risk of independent auditors

Fraud according to Iran's auditing standards (Section 241), any intentional action by one or more executive directors, management bodies, employees or third parties, which involves deception to obtain an unfair or illegal advantage. Considering that in the last two decades, frauds have been discovered after 2 or 5 years later, that one of the main reasons for fraud is collusion between two or more managers or employees to access important parts of assets, including cash or non-cash assets. that there is too much trust in this system that there is no possibility of fraud by

managers at higher levels, that it has been observed that all detected frauds were from the managers, therefore, to control fraud, the risk of fraud in the audit, if fully implemented by the auditor, we will definitely reduce fraud [45].

2.3 High fraud risk reduction

We measure fraud risk using [4] M-score as well as [11] F-score. The M score in [4] method is calculated as follows:

$$pv = -4.840 + 0.920dsr + 0.528gmi + 0.404aqi + 0.892sgi + 0.115depi - 0.172sagi + 4.679acc - 0.327lvgi \quad (2.1)$$

which dsr: turnover of accounts receivable, which is measured by the difference in the ratio of receivables to sales from the current year to the previous year. gmi: gross profit index, which is measured by dividing the ratio of non-specialized profit of the previous year by the current year. agi: The asset quality index of the current year is divided by the asset quality index of the previous year, which the asset quality index of each year is equal to one minus the ratio of current assets plus property, machinery and equipment to the total assets. sgi: The sales growth index is calculated as the ratio of current carpets to sales of the previous year. depi: Depreciation index is calculated as the ratio of the previous year's depreciation to the sum of the previous year's depreciation plus the previous year's fixed assets divided by the ratio of the current year's depreciation to the sum of the current year's depreciation of the current year's fixed assets. sagi: The index of sales, general and administrative expenses is calculated as the ratio of sales, general and administrative expenses of the current year to the current year's sales divided by the ratio of sales, general and administrative expenses of the previous year to the sales of the previous year. acc index of total accruals is calculated as the difference between operating profit and operating cash flows on average total assets. lvgi: The leverage index is calculated as the ratio of the total debt of the current year to the total assets of the current year divided by the ratio of the total debt of the previous year to the total assets of the previous year. [4] observed observations with a predicted value greater than 1.78 were classified as potential manipulators. We also use it to identify samples at high risk of fraud [8, 11] and colleagues also presented their own measure of financial reporting manipulation using another measure. A higher F score indicates a higher risk of financial report manipulation. The F score is extracted using the following model:

$$pv = -7.893 + 0.790rsst_acc + 2.518ch_res + 1.191ch_inv + 1.979soft_assets + 0.171ch_cs - 0.932ch_roa + 1.029issue \quad (2.2)$$

Rsst_acc : the sum of three indicators

$$\Delta Awc + \Delta nco + \Delta finfin$$

It is divided by the average total assets. Wc: equal to current assets excluding cash investments minus current liabilities. Nco: is equal to total assets minus current assets, investments and advances and minus long-term liabilities, fin: is equal to short-term investments plus long-term investments minus the sum of long-term and short-term debt.

ch_rcc: change in accounts receivable divided by total assets during the period, *ch_inv*: change in inventory during the period divided by the average total assets, *soft_assets*: total assets minus fixed assets, cash and cash equivalents divided by Total assets.

ch_cs: percentage change in cash sales, *ch_roa*: percentage change in asset yield of the previous period, *issue*: a virtual variable that is equal to one if the company issues bonds or shares during the period, and zero otherwise. To calculate the F score, the predicted probability is extracted as $(epv/(epv + 1))$ divided by the error probability (0037%), where pv is the predicted value from the above model. [11] classified observations with an F-score greater than 1.85 as "substantial risk" or "high risk" of reporting errors. We also use an f-score of 1.85 or greater to indicate a high risk of fraud [8] We measure fraud risk at two points throughout the year. First, we measure fraud risk at the end of the second quarter, when auditors are usually still in the design, risk assessment, and control phase of the audit test. Then, at the end of the financial year, we calculate the risk of fraud using the audited year-end values obtained from the annual financial statements. By using two fraud risks at two points of the financial year, we created a separate sample limited to company-year observations for which the fraud risk is high at the end of the second financial quarter, but at the end of the financial year, the corresponding amount has decreased, which is The dummy variable is denoted zero and one [8].

Audit fee: equal to the natural logarithm of the company's annual audit fee (AF) which is mentioned in the administrative and general expenses section of the financial statements. BigN: a virtual variable that is equal to one if the size of the audit is large (the audit organization is equal to one and otherwise This form is zero. LnASSETS: natural logarithm of total assets. ROA: return on assets in the form of net profit divided by total assets. Loss: virtual variable that is equal to one if there is a net loss and zero otherwise. InvRce: inventory turnover and receivables

(inventory of goods and receivables divided by total assets). Leverage: long-term debt plus the current part of long-term debt divided by total assets. MTB ratio of market value to book, which is calculated as the market value of shares divided by the book value of shares. STDREV: standard deviation of sales revenue divided by total assets over the previous 5 years. STDCFO: standard deviation of operating cash flow divided by total assets over the previous 5 years. STDROA: standard deviation of return on assets divided by total assets over the previous 5 years. Delay: The interval between the ends of the year and the date of the Specialist audit report is a virtual variable that is equal to one if the auditor is an industrial expert and zero otherwise. Indsalesgrowth: The total sales of the industry in the current year divided by the values of the previous year. InstHoldings: percentage of shares held by institutions at the end of the year [8].

2.4 Fraud risk from a mathematical perspective

$$\begin{aligned} LARGEDIFF(INDLARGEDIFF) = & \beta_0 + \beta_1 \text{Auditor Effort} + \beta_2 \text{Auditor Tenure} + \beta_3 \text{Auditor IndeExpert} \\ & + \beta_4 \text{ACCTenure} + \beta_5 \text{ACCIndeExpert} + \beta_6 \text{Size} + \beta_7 \text{OCF} + \beta_8 \text{Lev} \\ & + \beta_9 \text{Loss} + \beta_{10} \text{MTB} + \varepsilon \end{aligned} \quad (2.3)$$

LARGEDIFF: The variable is fraud risk, which is measured by the difference between non-financial measures and income, following the research done by [6]. For this purpose, the number of employees of the company is considered as a non-financial measure [5, 6, 11]. Therefore, first, the difference between the change in the percentage of income reported in the financial statements and the change in the percentage of non-financial criteria (the number of employees in a period) is calculated and if this difference is more than 20%, the LARGE DIFF variable is set to one and otherwise, will be assigned the number zero. It should be noted that the threshold of 20% is considered to identify a high risk of fraud (red flag) based on previous researches [5, 6, 11]. Independent variables: Auditor Effort: It is equal to the natural logarithm of the total audit fees in the current year's financial statements. The audit fee will be used as a measure of the auditor's work and effort because the actual effort of the auditor is not visible and several studies have shown that when auditors spend more effort on risk assessment, their fees increase [6]. Auditor Tenure: It is equal to the number of years that the company has kept an auditor until the end of the year [6]. Auditor expertise in the industry (Auditor IndeExpert): To calculate it, the ratio of the total sales of customers that an auditor audits in a specific industry is divided by the total sales of companies in that industry during a specific year [6, 25, 27].

The tenure of the audit committee chairman (ACCTenure): is equal to the total years of service of the audit committee chairman on the board of directors until the end of the year [6].

Expertise of the head of the audit committee in the industry (ACCIndeExpert): is an indicator variable that will be equal to one if the head of the committee has current or previous work experience in the company's industry and will be equal to zero otherwise [5].

2.5 Fraud risk measures

In this research, the combination of two variables is used to measure the risk of fraud in financial statements:

The first criterion: Altman's modified model is a representative of the risk of financial crisis or the risk of bankruptcy that these risks can be warning signs for potential collapse that will lead to fraud or manipulation [33].

$$Z - score = 0.291x_1 + 2.458x_2 - 0.301x_3 - 0.301x_4 - 0.079x_5 - 0.05x_5$$

where: x_1 : working capital to total assets; x_2 : Accumulated profit to total assets; x_3 : Profit before interest and tax to total assets; x_4 : book value of equity to total liabilities; x_5 : Net sales to total assets. In this model if:

- The first group: $Z \geq -0.14$, the probability of financial helplessness is very high
- Second group: $-0.14 \geq Z > 0.3$ area of weak helplessness probability
- The third group: $Z \leq 0.3$, the probability of financial helplessness is very low.

In this research, the limits of the Z-score model, in terms of predicting the risk of fraud in financial reporting, are divided into two categories: First Division; Financially helpless companies and in the range of helplessness and

bankruptcy, i.e. companies whose value is generally less than or equal to 0.3, it is assumed that they have the risk of fraud in financial reporting; Some of the second category; Companies with a very low probability of financial helplessness, i.e. companies whose value is greater than 0.3, are assumed to have no risk of fraud in financial reporting; The value is zero [19].

Second criterion: F-Score model of [11] was used to measure fraud risk.

$$\text{Predicted Value} = -7.893 + 0.790 \times Rsst + 2.518 \times \Delta Rec + 1.191 \times \Delta Inv + 1.979 \times SoftAssets \\ + 0.171 \times \Delta Cashsales - 0.932 \times Roa + 1.029 \times Issue$$

where:

$$RSST = \frac{(\Delta fin + \Delta wc + \Delta nco)}{\text{Average Total Assets}}$$

Δwc : equal to the changes [current assets - cash - short-term investments] - [current liabilities]

ΔNco is equal to changes [total assets - current assets - investments] - [total liabilities - current and long-term liabilities].

Δfin : equal to changes [short-term investment + long-term investment] - [total long-term debt].

ΔRec : It is equal to the change in accounts receivable during the current period divided by the average assets

ΔInv is equal to the change in inventories during the current period divided by the average assets.

Soft assets are equal to the total assets minus property, machinery and equipment and cash and its equivalent divided by the total assets.

$\Delta cashsales$ is equal to the percentage change in cash sales, which is calculated through the current period sales minus the change in accounts receivable.

ΔRoa is equal to the change in return on assets, which is obtained by dividing net profit by average assets.

Issue: It is an imaginary variable, in such a way that for a company that has issued debt bonds or ownership bonds, the number is one and otherwise it is zero.

3 Experimental background

[35] investigated the effect of auditor experience, workload, professional skepticism, personality type, on the auditor's ability to cultivate, the results showed that the variables of audit experience, workload, and professional skepticism had a positive effect on the auditor's ability to cultivate had fraud, while the personality type variable does not affect the auditor's ability to detect fraud.

[9] examined the effect of the five personality factors model (neuroticism, extroversion, conscientiousness, agreeableness, and agreeableness) on auditors' ability to assess the risk of fraud and determine the probability of fraud and found that none of the personality factors had an effect on The ability of auditors to assess the risk of fraud and their ability to determine the probability of fraud does not exist.

[44] showed that how to work with control mechanisms combined with prevention and deterrence measures (qualitative aspect of internal control) is more important to prevent fraud than only anti-fraud control measures.

[29] confirmed in a study that women working in the public sector have a lower tendency to disclose and report fraud compared to men. Meanwhile, in the private sector, there was no significant difference between the behavior of women and men in the moral report of fraud. Also, the researchers in this case believe that the personality traits of women such as their moral philosophy is one of the determining factors in their judgment and decision making in reporting fraud. Individual moral philosophy has a great impact on interpersonal relationships and personal performance.

[17] in a study on the mutual effects of the internal auditor and the audit committee in the field of discovery, paid fraud in Malaysia. The results of this research show that the involvement of the audit committee in approving the affairs of senior managers.

The contribution of internal auditors in the detection of fraud is insignificant. However, the involvement of the audit committee in reviewing the work of internal auditors has a significant impact on the contribution of internal auditors in fraud detection.

In their research, [46] investigated the supervision of the audit committee on the risk of fraudulent financial reporting and the honesty of managers, as well as how the supervision changes and transforms along with the social

relations of the audit committee, professional relations and its governance method. The findings showed that members of the audit committee who have social relations with managers have a negative relationship with the efforts of the audit committee to assess the risk of fraudulent financial reporting and the honesty of managers. In addition, the audit committee takes observable measures to reduce the risk of fraudulent financial reporting when the audit committee member has social relations with managers.

In a research, [14] investigated individual emotions, critical thinking and fraud risk assessment in auditing. The findings of this study show that the effectiveness of individual emotions in the auditor's critical thinking has a significant and positive effect in evaluating the risk of fraud in the audit. Also, a person's negative emotions have a positive and meaningful effect on critical thinking. The effects of positive emotions and negative emotions on audit judgment are not significant in fraud risk assessment. Also, the evidence of this research indicates that the auditor's critical thinking has a significant and positive impact on the auditor's judgment in fraud risk assessment.

[26] in a research investigated the relationship between the auditor's honesty and organizational commitment in order to prevent fraud. The result of this research showed that auditor honesty and organizational commitment have a positive and significant effect on fraud prevention. Using internal auditors, this study creates a new insight into the internal auditor's behavior within the organization.

[30] in a research investigated the relationship between personality type, experience and gender with the ability to detect auditor fraud (mediating role of professional skepticism). In order to analyze the research data, structural equation modeling based on partial least squares and PLS software have been used. The results of the research show that intuitive-logical and sensory-logical personality types can have a positive effect on the ability to detect fraud directly and indirectly (through the mediator variable of professional doubt) compared to other personality types and experience. But gender does not have a significant relationship with the ability to cultivate fraud.

[21] investigated the effect of auditor's professional skepticism on fraud risk assessment in a research, considering the intervening effect of communication skills and social weakening. The results of this study show that out of the six characteristics of professional doubt, only two factors of questioning mind and interruption in judgment are significant on the risk assessment. Communication skill has a positive and significant intervention effect with three indicators of professional doubt in the fraud risk assessment, i.e. search for knowledge, interruption in judgment and self-confidence. Social weakening has a negative and significant intervention effect on three indicators of professional doubt in fraud risk assessment, i.e. questioning mind, interruption in judgment and self-confidence.

[28] investigated individual characteristics and willingness to ethically report fraud in the auditing profession. The results of this research show that gender has a significant and negative relationship with moral reporting of cheating. In other words, compared to men, women are less inclined to report fraud in the auditing profession. Other results of the research show that there is no significant relationship between education, work experience and job rank with the moral report of fraud. Also, the research evidence shows that women's perception and understanding of individual responsibility, associated costs and consequences of questionable actions of reporting cases of fraud and violations are more than men in the auditing profession. Based on the findings of this research, the auditor's gender is a more important variable affecting fraud and work error reporting. This shows that gender is an important factor in audit judgment and decision making. Since ethical principles are important principles in the auditing profession, women should also participate in the development of principles and the policy makers of the auditing profession should provide this possibility.

Based on the theoretical foundations presented above, the research hypotheses are:

1. The indifference of independent auditors has a significant impact on the conditions of their industry.
2. The indifference of independent auditors has a significant effect on the risk of the employer.
3. The indifference of independent auditors has a significant effect on audit methods.

4 Research methodology

The present research is practical in terms of the type and nature of the problem and research objectives. According to the descriptive data collection method, this research is survey-correlation type. In other words, the required data were collected based on a survey. Based on this, a questionnaire was used because it is an effective way to collect data from a large sample according to previous research [32]. Also, library method was used to collect the theoretical foundations and study the theoretical foundations of similar researches, and it was distributed to 1400 target communities in the first 6 months. The research data collection tool was a questionnaire. Based on this, the standard questionnaires of Arifodin and Indrijavati [35] were used. The questions of both questionnaires were

arranged on a 5-point Likert scale from completely agree to completely disagree. As much as possible, the tools used (questionnaires) in this research are valid measures whose validity and reliability have been confirmed in previous researches. Higher scores indicate the higher level of each of the variables used in this research. Also, the researcher gave an ethical commitment to the participants to maintain and publish information on ethical issues and confidentiality. Also, during the distribution of the questionnaires, while explaining the nature of the research, they were asked to freely choose their desired answers because there are no right or wrong options. The noteworthy point is that all the data were collected from the same source and in the same time period (each participant completed all the predictive and criterion questionnaires at the same time). In the following, the method of measuring the research variables is presented:

4.1 Statistical population and sample size

The statistical population of this research is auditors working in auditing organizations and private sector auditing institutions in the year 1400. Considering that the statistical population in this research is unlimited, therefore, the following relationship was used to determine the sample size:

$$n = \frac{Z_{\alpha/2}^2 \cdot \sigma^2}{e^2} = \frac{1.96^2 \times 0.683^2}{0.1^2} = 179$$

in the above relation:

n : represents the sample size; $Z_{\alpha/2}$ = standard normal value, i.e. 1.96; σ^2 : represents the population variance, which is obtained by using the pre-test and checking the standard deviation of a sample of 30 because it is not known; e : the desired accuracy in the research, which is usually considered equal to 0.1 [38]. According to the above relationship, the sample size was 179 people, and in order to increase the credibility of the research, 250 questionnaires were randomly distributed among the auditors, and finally, 192 questionnaires were received and became the basis of statistical analysis. The final analysis of the collected data has been done using structural equation modeling method and PLS software. The steps of structural equation modeling are as follows: first, model fit is checked (including measurement model fit, structural model fit, and overall model fit) and then research hypotheses are tested.

5 Research findings

In this section, Partial Least Squares (PLS) analysis is used for statistical tests and model fitting. Therefore, in order to measure the reliability of the questionnaires, Cronbach’s alpha method, which is a type of internal consistency, has been used. Normally, the range of Cronbach’s alpha capability coefficient is from zero, meaning no positive relationship, to one, meaning complete relationship, and the closer the number is to one, the higher the reliability of the questionnaire [10]. As shown in Table 1, the alpha value above 0.7 for each questionnaire indicates the appropriate reliability of all three questionnaires used in this research.

Table 1: reliability measurement of the questionnaire

Cronbach’s alpha (<i>Alpha</i> > 0.7)	Local variables
0.77	Machiavellianism
0.76	Narcissism
0.81	Relativism
0.79	Idealism
0.82	Industry conditions
0.92	Employer risk
0.94	Auditing methods

5.1 Conceptual model test and research hypotheses

Structural equation modeling method with partial least squares approach and Smart-PLS were used to analyze the research data. Softwares that use structural equation modeling based on this statistical method are compatible with conditions such as collinearity of independent variables, non-normality of data and small sample size [24]. The output of the software, after testing the conceptual model of the research, is shown in Figures 1 and 2. Below are the results of the two sections of the measurement model test and the structural model test.

Structural equation models are typically a combination of measurement models (representing subcomponents of dependent variables) and structural models (representing relationships between independent and dependent variables).

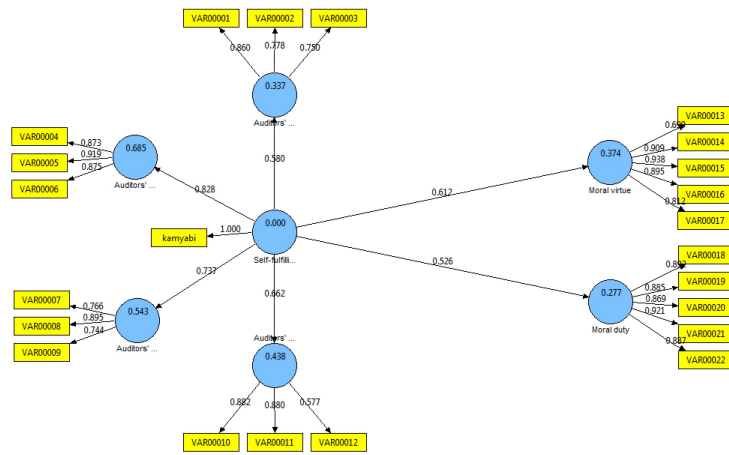


Figure 1: Conceptual model of research in standard mode

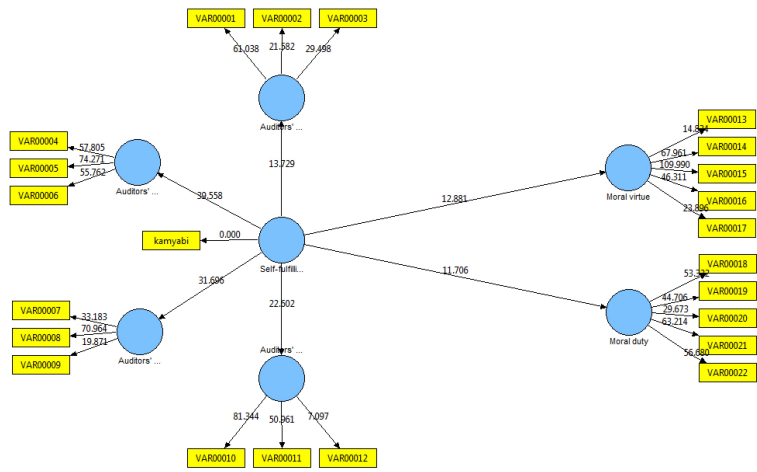


Figure 2: Conceptual research model with significant coefficients (T-values)

5.2 Examining the measurement model test

Index reliability, convergent validity and divergent validity were used to measure the fit of the measurement model. To check the validity of the constructs [10], introduced three criteria, which include the validity of each item, composite reliability (CR) of each construct, and average variance extracted (AVE). Values greater than 0.4 for the coefficients of factor loadings, greater than 0.5 for average variance extracted (AVE) and greater than 0.7 for composite reliability (CR) indicate the appropriate fit of the measurement models and convergent in terms of reliability and validity. The results of these indicators are shown in Table 2.

After conducting confirmatory factor analysis, the results of which are shown in Table 2, it was found that all items have a factor loading above 0.4, average extracted variance above 0.7, and composite reliability above 0.5, which shows the appropriateness of this criterion and the appropriate reliability of the measurement models.

Acceptable divergent validity of a model indicates that a construct in the model interacts more with its indicators than other constructs. Fornell and Larcker [13] state. Divergent validity is acceptable when the AVE for each construct is greater than the shared variance of the measure between that construct and other constructs in the model [36]. This is checked by a matrix whose houses contain the values of the correlation coefficients between the structures and the square root of the AVE values for each structure. Based on the results of correlations and the square root of AVE which was placed on the diameter of table 3, we can conclude the divergent validity of the model at the structure level in terms of Fornell-Larker criteria.

Table 2: Descriptive statistics and results of confirmatory factor analysis (CFA)

Current variable	Explicit variables	Average	Standard deviation	load factor (FL)	AVE	CR
Machiavellianism	1	45.3	0.77	0.81	0.62	0.82
	2			0.78		
	3			0.78		
Narcissism	4	59.4	02.1	0.89	0.78	0.88
	5			0.97		
	6			0.92		
Relativism	7	21.3	62.1	0.79	0.67	0.81
	8			0.92		
	9			0.82		
Idealism	10	25.4	0.78	0.74	0.78	0.91
	11			0.91		
	12			0.52		
Industry conditions	13	36.4	0.73	0.71	0.81	0.98
	14			0.93		
	15			0.97		
	16			0.78		
	17			0.83		
Employer risk	18	01.4	0.88	0.86	0.73	0.93
	19			0.98		
	20			0.81		
	21			0.83		
	22			0.85		
Auditing methods	23	4.04	0.76	0.78	0.78	0.91
	24			0.87		
	25			0.97		
	26			0.78		
27	0.87					
Character indifference	Character indifference	78.3	0.57	1.00	1.00	1.00

Table 3: Correlations between variables and AVE values

	Machiavellianism	Narcissism	Relativism	Idealism	Industry conditions	Employer risk	Auditing methods	Character indifference
Machiavellianism	0.81							
Narcissism	0.23	0.82						
Relativism	0.34	0.27	0.78					
Idealism	0.27	0.59	0.41	0.84				
Industry conditions	0.69	0.34	0.32	0.32	0.79			
Employer risk	0.45	0.42	0.27	0.51	0.35	0.85		
Auditing methods	0.43	0.39	0.33	0.48	0.49	0.59	0.87	
Character indifference	0.57	0.62	0.66	0.51	0.53	0.61	0.71	1.00

5.3 Structural model evaluation

After measuring the validity and reliability of the measurement model, the structural model was evaluated through the relationships between the underlying variables. In the current research, two criteria of determination coefficient (R^2) and prediction power coefficient (Q^2) have been used.

Determination coefficient (R^2) and predictive power coefficient (Q^2):

(R^2) is a measure that shows the effect of an exogenous variable on an endogenous variable. According to figure 2, the value of (R^2) has been calculated for the endogenous structures of the research, which can confirm the appropriateness of the fit of the structural model. In addition, in order to check the predictive power of the model, a measure named (Q^2) was used. According to the results of this criterion in Table 4, it can be concluded that the model has "strong" predictive power.

After fitting the measurement and structural part of the current research model, in order to control the overall fit of the model, a criterion called FOG was used, for which three values of 0.01, 0.25 and 0.36 were introduced as weak, medium and strong values. This criterion is calculated through formula (5.1):

$$GOF = \sqrt{Communalities \times R^2} \tag{5.1}$$

Table 4: Values of coefficient of determination (R^2) and coefficient of predictive power (Q^2)

Criteria	(R^2)	(Q^2)
Machiavellianism	0.41	0.17
Narcissism	0.59	0.31
Relativism	0.59	0.31
Idealism	0.48	0.29
Industry conditions	0.31	0.23
Employer risk	0.38	0.27
Auditing methods	0.47	0.26

The average shared values of the variables of the research are obtained.

Table 5: Results of fitting the general model of research variables

Local variables	Communality	R^2	Communalities	R^2	GOF
Machiavellianism	0.61	0.33			
Narcissism	0.69	0.54			
Relativism	0.63	0.43			
Idealism	0.77	0.74			
Industry conditions	0.76	0.29	0.72	0.49	0.59
Employer risk	0.74	0.37			
Auditing methods	0.79	0.45			
Auditing methods	1.00				

Considering that the GOF criterion of 0.59 was obtained, the overall fit of the model is confirmed as "strong".

5.4 Testing the research hypotheses

After examining the fit of the measurement models and the structural model and having the appropriate fit of the models, the research hypotheses were examined and tested. In the following, the results of the significant coefficients for each of the hypotheses, the standardized coefficients of the paths related to each of the hypotheses, and the results of the hypothesis examination at the 95% confidence level are presented in Table 6.

Table 6: Test of research hypotheses

Hypothesis	Causal relationships between research variables	Path coefficient (β)	T-Value	Test result
H_1	The indifference of independent auditors has a significant impact on the conditions of their industry	0.63	12.84	confirm
H_2	The indifference of independent auditors has a significant effect on the risk of the employer.	0.68	12.97	confirm
H_3	The indifference of independent auditors has a significant impact on audit methods.	0.53	11.85	confirm

The significant coefficients of the variables are shown in Table 6. Considering that the significance coefficients of the variables are more than the absolute value of 1.96, the hypotheses are confirmed.

6 Discussion and conclusion

The purpose of this research is the effect of personality indifference components on independent auditors' fraud risk assessment. All organizations need new ideas and fresh ideas to survive. New thoughts and opinions are breathed into the body of the organization like a spirit and save it from destruction. In general, it can be said that the productivity and development of any organization depends to some extent on the correct use of human resources. In fact, employees who can respond to the challenges of the environment and are not afraid of others sharing their information and knowledge. Therefore, the purpose of this research is to investigate the impact of auditor personality types on auditors' professional performance.

In fact, the more committed people are, the professional performance increases, which is consistent with the theories in this field; Because today, accounting and management thinkers, taking into account the continuous changes that organizations or companies are facing, have come to the conclusion that the most important factor in gaining a competitive advantage in the audit job is human resources. Commitment is a kind of perspective about people's loyalty

to the organization or company and the continuous process through which auditors show their interest in success and efficiency. In addition, the commitment of auditors can be their sense of satisfaction, belonging, attachment and attachment to the organization or company, more favorable job performance, reducing auditors' departure from the organization or company, active social behavior, absence from work, altruism and helping colleagues and Reduce work stress and financial success and increase the effectiveness and productivity of the organization.

Commitment is an attitude about people's loyalty to the organization or company and a continuous process through which auditors show their interest in success and efficiency. In addition to these cases, the commitment of auditors can be their sense of satisfaction, belonging, attachment and attachment to the organization or company, better job performance, reducing auditors' departure from the organization or company, active social behavior, absence from work, altruism and helping colleagues. and reduce job stress as well as financial success and increase the effectiveness and productivity of the organization.

Critical thinking as a cognitive style is an important factor and variable in auditors' judgment. In fact, it can be claimed that the quality of auditors' judgments will improve if auditors' critical thinking is improved and promoted. The auditor uses critical thinking to identify the problems in the work, design the appropriate audit program and implement the program, which should lead to the desired results. The audit process along with critical thinking has become a flexible tool and guarantees the high quality of audit work. Critical thinking in all scientific disciplines combines the basic elements of logical reasoning with the elements necessary to reach correct judgments. In this way, critical thinking often takes the form of problem solving or analysis in each discipline. However, both logical reasoning and problem solving take different forms in the context of different academic disciplines they take. It is a wrong view that critical thinking is a general skill and can be used in any situation. But to do critical thinking in a specific field, one needs sufficient knowledge in that field. Therefore, the auditor may be able to evaluate the opinions of people in specific audit fields, but this issue cannot be generalized to the evaluation of opinions in all disciplines.

One of the legal duties of the auditing profession is to provide assurance to the users of the financial information of economic units and enterprises. Parallel to professional ethics and audit conduct, audit employees are required to work hard to protect the profession and public interests by reporting fraud regarding the violations of their colleagues. Despite the support provided by the legislator to discover and report unethical and illegal behaviors, this report also points out costs to reporting organizations and individuals. As an example, it was shown in a research that the nature and amount of retaliation or punishments imposed on the reporting person by the management and colleagues is perhaps the most important factor that influences the future decisions of the person reporting the fraud and violation). Individual moral philosophy has a great impact on interpersonal relationships and personal performance. The authors believe that there is a significant and negative relationship between people's assessment of the costs associated with reporting fraud and the willingness to report it. They are also of the opinion that women have a conservative assessment of the mentioned expenses due to their conservative behavior.

6.1 Practical suggestions for research

1. According to the findings of this research, it is suggested to the auditing organization, the community of certified accountants and auditing institutions that in the selection process of auditors, in addition to their familiarity with accounting and auditing standards, they should also consider their personality traits. Given that among the auditors' personality traits, "agreement" has a significant relationship with almost all the provisions of the code of professional conduct.
2. According to the results of this research, it is suggested to the audit organization and member institutions of the Association of Certified Auditors to include standard personality type questionnaires in the employment forms of accountants and auditors, in order to determine the compatibility of the job with their spirit and individual characteristics. Distribution and their results to be evaluated.
3. This makes it effective in increasing the productivity and efficiency of accountants and auditors while matching the personality of people with the desired job and leads to an increase in their mental health and ultimately the success of an organization both in terms of management and financial efficiency. Open the way for promotion or more profitability.
4. Personality is one of the important factors that show which job each person is most compatible with. Because, each personality trait has conditions that are suitable for a specific job. Since the audit profession has a high level of risk and credibility, it is suggested that the personality dimensions of each member of the audit group be reviewed and specified by a responsible person, and the members of the group are selected in such a way and the responsibilities of each person are determined in such a way. To minimize the tendency to reduce the professional performance of auditing.
5. Also, audit institutions are suggested to pay attention to their personality dimensions when hiring new auditors and choose the right people.

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