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Characteristics of Auditors and the Detection of Fraud in Financial Statements

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A B S T R A C T

This study aims to investigate how certain characteristics of auditors are linked to their ability to identify fraud in financial statements. The research involved selecting a sample size of 110 companies from 2013 to 2021 using a systematic method. A descriptive survey was used to gather data, and a regression model was estimated using panel data to analyze multiple regressions. The results of the study indicate that there is a strong association between audit tenure, auditor independence, industry expertise, and the size of the audit firm in the identification of fraud. Audit turnover was found to have a significant negative impact on fraud detection. However, there was no significant association between audit report delays and fraud detection.

Keywords

Audit Tenure, Auditor Independence, Expertise in The Industry, Size of The Audit Firm, Fraud

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1. Introduction

The concept of information asymmetry states that there is a conflict of importance between the owners and managers. The use of independent auditors reduced this conflict. Independent auditors are responsible for valuing financial statements, protecting shareholders' interests against managers, and controlling managers' activities (Jensen & Meckling, 2019; Rasouli, 2017). Audit quality can assure investors that an audit report is precisely presented; therefore, investors and users of financial statements can trust financial information. The role of independent auditors became significant after recent financial scandals and fraud reports (Such as Enron, WorldCom, Tyco, and International). (Romanus, Maher, & Fleming, 2008) found out in their research that trust in the capital market rests on investors' trust ((Kalantari, 2018) quoted by (Badawi, 2008)). The auditor's ability to detect distortion and fraud in financial statements has been doubtful owing to recent financial scandals (Derakhshan, 2020) quoted by (Enofe, 2010). This is because of the variation in the valuation of the company's financial reports. (Okolie, 2014) stated that companies' financial scandals are a serious challenge to the truth, accuracy, credibility, and use of financial statements. Therefore, audit quality is the most important regulatory mechanism for reducing agency costs and eliminating the conflict of importance between shareholders and managers (Abdullah Zadeh, Mohammadi Malqarni, Noravesh, & Amini, 2018). Audit quality is based on the auditor's independence and expertise. Therefore, a challenge in one of them results in challenges in audit quality and invalidates the results (Khaksar, Salehi, & Lari DashtBayaz, 2022). Audit quality depends on the auditor's expertise and independence in detecting financial fraud in financial statements. Experts allow the auditor to discover fraud (Zgarni, Hlioui, & Zehri, 2016), and their independence enables them to report these frauds (Jorjani & Safari Gerayeli, 2018). The auditor's independence is maintained if the company's governance mechanisms prevent the extension of the audit tenure and the permanent link between the auditor and the client. The long-term tenure of auditor professional skepticism reduces, and therefore, reduces the ability to detect fraud in financial reporting (Malek Shirabadi, Darabi, & Talebnia, 2021). Therefore, auditor tenure is a signal of fraud detection. Industry expert auditors require features to detect possible fraud. These features include general and specific expertise, skills, and competencies (Derakhshan, 2020). Therefore, applying industry-expert auditors in a company indicates a lack of fraudulent financial reporting (Khaksar et al., 2022). Therefore, this study seeks to determine whether there is a significant association between auditors' properties and the identification of fraud in the financial statements of companies listed on the Tehran Stock Exchange.

2. Literature Review

2.1. Theoretic

2.1.1. Fraud Detection

Fraud is the abuse of a person's position and influences the misappropriation of an organization's assets and resources. Fraud in financial statements includes any deliberate action by the company to mislead the users of these financial statements, especially investors and creditors, through the preparation and publication of financial statements containing material errors (Report of the Relationship of Official Fraud Examiners, 2002; quoted by (Hossein Zadeh, 2020)). The American Association of Certified Public Accountants, in audit standard statement No. 99, considered three characteristics of fraud and believed that these three factors cause fraud, which is known as the fraud triangle:

- Incentives or Pressures: perpetrators commit fraud, and they have incentives or pressures.
- Opportunities: Usually, there are chances of committing fraud intentionally or unintentionally.
- Attitudes or justifications: A set of moral values in the environment in which they operate that puts pressure on them or forces them to justify committing fraud. Finally, Audit Statement No. 99 defines fraud as an incorrect presentation or intentional omission of amounts or disclosures in financial statements ((Kassem & Higson, 2012) quoted (Gholami, 2017)).

2.1.2. Characteristics of Independent Auditors

The properties of the independent auditor, such as the fee, size, tenure of the audit firm, and the auditor's expertise in the profession as non-financial variables, can affect the likelihood of fraud detection.

2.2. Research Background

(Shams, 2022) investigated the moderating role of organizational doubts in the association between fraud detection risk and auditor professionalism. Using the statistical population of accredited auditors with at least 10 years of work experience and a bachelor's degree, 133 people were randomly chosen and their information was analyzed. The results indicate a significant association between the danger of fraud detection and auditors' professionalism. In addition, organizational doubt has a moderating role in that by strengthening organizational doubt, the association between fraud detection risk and auditors' professionalism is strengthened.

(Meskar, 2022) conducted research entitled, The Influence of Auditor Tenure on the association between audit quality and the Likelihood of Fraud. The statistical population consisted of 105 companies admitted to the Tehran Stock Exchange between 2013 and 2017. Correlation and systematic sampling methods were used in this study. The results show that during the study period, audit quality had no significant impact on the likelihood of fraud. However, the findings of the data analysis reveal that auditor tenure has a negative and significant impact on the association between audit quality and the likelihood of fraud in financial statements.

(Jamshidi, 2021) conducted research entitled The Influence of Audit Downward Rotation on the Likelihood of Fraud with institutional shareholders in mind. The statistical population comprises 114 companies admitted to the Tehran Stock Exchange between 2016 and 2021. Correlation and systematic sampling methods were used in this study. The findings show that institutional investors can monitor the audit process to ensure credibility. In addition, institutional owners are expected to demand more accountability because most of their capital is invested in the company, so any fraud or damage to the company's reputation can cause significant damage to them.

(Ghahtan, 2021) examined the association between auditor characteristics and the danger of Financial Reporting Fraud on the Iraqi Stock Exchange. The statistical population comprised 86 companies admitted to the Iraqi Stock Exchange. The research method used descriptive correlation and systematic sampling. The outcomes of the study showed that the fraud is still big enough to be noticed by anyone with a significant role, primarily external auditors.

(Pashaii, 2021) conducted research titled, modeling the influence of personality traits, moral dimensions, and experience on the auditor's ability to detect fraud. The statistical population was private and public sector auditors. The survey research method and sampling method were available. The outcomes of the research showed that the variables of professional ethics and

moral alignment of idealism, directly and indirectly (through the mediating variable of professional doubt), have a positive impact on the ability to detect fraud. However, the moral orientation variable of relativism hurts the ability to detect fraud, both directly and indirectly (through the mediating variable of professional skepticism). Also, the results indicated that the intuitive-logical and sensory-logical personality types compared to other personality types and experiences can have a positive impact on the ability to detect fraud directly and indirectly (through the mediator variable of professional doubt).

In research, (Bakhtiari, Hejazi, & Jorjor Zadeh, 2021) dealt with the identification of components affecting the psychological properties of auditors in audit judgment. The outcomes of the research show the extraction of more than 107 codes or key concepts from the interviews, as well as the statistics of 20 concepts and 6 categories, which in the form of a paradigm model include causal conditions with subcategories: individual characteristics, emotions and mental health of auditors and graphic demo factors, background conditions with Family sub-categories, legal factors, environmental factors, culture, and political environment, a central category with sub-categories: work-related stress, independence, and impartiality, intervening conditions: organizational factors and economic environment, solution/interaction with sub-categories: skills, auditor knowledge, the feeling of belonging to the profession and the decision-making power to the decision-making and monitoring institutions and the result with the subcategory: professional judgments.

(OHIDOA-TOLUWA & OHIDOA, 2021) investigated the mechanisms of corporate governance and financial statement fraud. The researchers used the Nish model to separate fraudulent and non-fraudulent companies and decided that institutional ownership, family ownership, independence of the board of directors, and expertise of the audit committee do not have much impact on the likelihood of fraud in financial statements.

(Coca, Marian, Veronica, & Dan-Andrei, 2021) conducted research in Romania and decided that the gross profit margin index had the greatest effect on the bite model, followed by the general and administrative expenses index variable. Also, to detect tax evasion, the model can be used, but in addition to financial variables, non-financial variables should also be considered. One of these variables is the high turnover of employees.

(Imen Abadi, 2020) have done research titled Investigating the association between internal and external properties of auditors with the likelihood of fraud in the financial statements of Tehran Stock Exchange companies. They selected a sample of 160 companies and used panel data using a logit approach. The outcomes of this research demonstrated that the investigated internal organizational characteristics (such as the structure of the board of directors) are significantly associated with the likelihood of fraud in financial statements. In addition, external organizational characteristics (such as auditor characteristics) significantly affect the likelihood of fraud in companies' financial statements.

(Boluo, Barzideh, & Alahyari Abhari, 2020) in their research investigated a model to assess the danger of fraud in the audit of financial statements. The outcomes of the research showed that out of the 162 indicators extracted from the theoretical bases and research conducted and interviews, in the form of 5 components, 146 indicators obtained the consensus of the Delphi group, and by conducting factor analysis, it was determined that 144 indicators were of sufficient importance. The factors affecting the evaluation of the danger of fraud in the audit of financial statements, in order of importance, are the properties of the employer, the properties

of the audit firm, the properties of the audit work, the environmental characteristics, and the personal properties of the auditor that auditors should use these indicators to assess the danger of fraud in the audit of financial statements appropriately.

In their research, (Masomi, Nikoomaram, & Talebnia, 2020) examined the identification and ranking of components affecting the identification of fraud in financial statements using a hierarchical process. The results showed that among the main conditions identified under the pressure dimension, the high likelihood of bankruptcy was the first factor, and commenting on the continuity of the basic activity and at least two consecutive years of negative cash flow of operations were ranked as the second and third priorities affecting fraud in financial statements. Among the dimensions of opportunity; The percentage of purchases from related parties has the priority, foreign sales have the second priority, and the family company has the third priority. Finally, from the dimension of justification, profit manipulation has the priority, and variations in the CEO have the second priority and were identified and ranked. Based on this, the findings of the research demonstrate that pressure is the priority, the opportunity is the second factor, and justification is ranked as the third effective factor in fraud detection.

(Lehenchuk, Mostenska, Tarasiuk, Polishchuk, & Gorodysky, 2020) conducted targeted research to detect the fraud of financial statements in Ukrainian companies using the bite model. They also evaluated the capability of the Benish model to detect financial statement fraud and decided that both models can detect financial statement fraud in Ukrainian companies.

(Uwuigbe et al., 2019) conducted targeted research to investigate the influence of board composition on financial statement fraud in Nigeria. Kuki used the bite-size model to identify fraudulent companies and decided that the composition of the board of directors, such as size, number of meetings held, independence, and gender of the board of directors, significantly decreased the likelihood of fraud in financial statements.

(Abdillah, Mardijuwono, & Habiburrochman, 2019) conducted research entitled, The Influence of Company Characteristics and Auditor Characteristics on the Delay of the Audit Report. The statistical population was the companies admitted to the Egyptian Stock Exchange from 2014 to 2018. The research method was descriptive-correlation and the sampling method was screening. The outcomes of the research showed that the properties of the company and the properties of the auditor had a significant impact on the delay of the audit report.

(Karim Pour, 2017) conducted research titled, investigating the Influence of Auditor Size on the Association between the Limitation of Internal Control and the Likelihood of Fraud in Financial Statements. The statistical population was the companies admitted to the Tehran Stock Exchange. The research method was analytical and the sampling method was screening. The research results showed that the board's internal control task is improved by using external managers, who have sufficient motivation to gain a reputation. On the other hand, the specific properties of external managers, such as the percentage of available capital, help to reduce fraud in financial reporting.

(Mashayekhi & Hosseinpour, 2016) conducted research entitled The Influence of Potential Drivers of Litigation Risk Arising from Mistakes and Distortions in the Financial Reporting of Business Owners on the Change in Audit Opinion. By examining the statistical population of 131 companies admitted to the Tehran Stock Exchange from 2012 to 2019, they used multivariable binary logit regression models. The results indicate that an increase in misstatement earnings management increases the likelihood of modified audit opinion. In

addition, the increase in annual adjustments resulting from mistakes and the likelihood of presenting a change statement increase the audit. Additionally, higher levels of abnormal accruals and abnormal actual activities reinforce the positive link between annual adjustments and adjusted audit opinions.

(Sultana, Singh, & Van der Zahn, 2015) investigated the association between audit committee characteristics and audit report delay in research. Their research sample included 100 companies listed on the Australian Stock Exchange. The results of their research indicate that the financial expertise of the members of the audit committee, previous experiences, and independent members in this committee have a significant negative relationship with the delay of the audit report.

3. Research Objectives

The main objective: investigating the association between auditor's characteristics and identifying fraud in financial statements.

3.1. Sub-Goals

3.1.1. Examining the association between auditor tenure and fraud detection.

3.1.2. Examining the association between auditor turnover and fraud detection.

3.1.3. Examining the association between auditor independence and fraud detection.

3.1.4. Examining the association between expertise in the auditor's profession and fraud detection.

3.1.5. Examining the association between the auditor's report delay and fraud detection.

3.1.6. Examining the relationship between the size of the audit firm and fraud detection.

4. Research Hypotheses

Main hypothesis: There is a significant association between the properties of auditors and the identification of fraud in the financial statements of companies listed on the Tehran Stock Exchange.

4.1. Sub-Hypotheses

4.1.1. There is a significant association between audit tenure and fraud detection.

4.1.2. There is a significant association between audit turnover and fraud detection.

4.1.3. There is a significant association between auditor independence and fraud detection.

4.1.4. There is a significant association between expertise in the auditing profession and fraud detection.

4.1.5. There is a significant association between the delay of the audit report and the identification of fraud.

4.1.6. There is a significant association between the size of the auditing firm and fraud detection.

5. Methodology

According to the kind of research, the research method is descriptive-correlation research (regression model) and practical in terms of the kind of goal. The statistical population of this research is the companies admitted to the Tehran Stock Exchange during the years 2013 to 2021. The sample size of the research was obtained based on the systematic elimination method. For this purpose, the statistical sample includes companies that have the following conditions.

Table 1. The process of selecting the statistical sample size of the research

All companies admitted to the stock exchange in 2021	**622**
Companies that were admitted to the stock exchange after 2011	(92)
Companies that were suspended or delisted during the research period	(74)
Companies that were admitted to the stock exchange after 2011	(92)
Companies that were suspended or delisted during the research period	(74)
Companies whose financial year does not end on March 29 or have changed their financial year	(98)
Financial intermediation companies (investment, holding, leasing, and banks	(86)
Companies whose shares were not actively traded on the stock exchange during the considered period	(66)
Companies that had not submitted their 2019 financial statements at the time of conducting this research	(65)
Companies whose information was not enough to obtain some research variables	(31)
The total testable statistical sample discussing the defaults is	110

6. Regression Model and Variables

In the present study, the following model, which is obtained from the investigation of Khaksar et al. (2022), will be used:

$$Fraud_{it} = \alpha_0 + \beta_1 big_{it} + \beta_2 \text{atenure}_{it} + \beta_3 adchang_{it} + \beta_4 rest_{it} + \beta_5 AIS_{it} + \beta_6 Dealy_{it} + \beta_7 ROA_{it} + \beta_8 AGE_{it} + \beta_9 SIZE_{it} + \beta_{10} \ln fee_{it} + \beta_{11} mod\, i f_{it} + \beta_{12} find_{it} + \beta_{13} loss_{it} + \beta_{14} bsf_{it} + \beta_{15} bsi_{it} + \beta_{16} bind_{it} + \beta_{17} mchang_{it} + \beta_{18} mteurn_{it} + \varepsilon_{it}$$

6.1. The Dependent Variable

Fraud detection (FR): Most studies on fraudulent financial reporting detection have indicated that financial ratios are the most valuable and simple tools for predicting financial reporting fraud.

Accounts receivable to sales ratio (DSRI)

$$DSRI = \frac{\frac{REC_t}{SALES_t}}{\frac{REC_{t-1}}{SALES_{t-1}}}$$

Gross Margin Index (GMI)

$$GMI = \frac{\frac{[SALES_{t-1} - COG_{t-1}]}{SALES_{t-1}}}{\frac{[SALES_t - COG_t]}{SALES_t}}$$

In this equation, SALES is annual sales and COG is the cost of goods sold.

Asset Quality Index (AQI)

$$AQI = \frac{1 - \left[\frac{(CA_t + PPE_t)}{ASETS_t}\right]}{1 - \left[\frac{(CA_{t-1} + PPE_{t-1})}{ASETS_{t-1}}\right]}$$

Total current assets / total current assets. PPE includes property, machinery, and equipment; and ASSETS is total current assets / total assets.

Sales Growth Rate (CGI)

$$SGI = \frac{SALES_t}{SALES_{t-1}}$$

Depreciation Cost Index (DEPI)

$$DEPI = \frac{\frac{DEP_{t-1}}{PPE_{t-1}}}{\frac{DEP_t}{PPE_t}}$$

In this equation, DEP is the depreciation cost of tangible fixed assets and PPE is gross property, machinery, and equipment.

Selling, General and Administrative Expenses Index (SGAI)

$$SGAI = \frac{SGA.\frac{EXP_t}{SALES_t}}{SGA.\frac{EXP_{t-1}}{SALES_{t-1}}}$$

In this equation, SGA and EXP are sales, general, and administrative expenses, and SALES are annual sales.

Financial Leverage Growth Index (LVGI)

$$LVGI = \frac{LTD_t + \frac{CL_t}{SALES_t}}{LTD_{t-1} + \frac{CL_{t-1}}{SALES_{t-1}}}$$

In this equation, LTD is total long-term liabilities, CL is total current assets / total current liabilities, and ASSEST is total assets.

Total Accruals to Total Assets (TATA)

$$TATA = \frac{ACC_t}{ASSEST_t}$$

Accruals (ACC): The difference between operating profit and operating cash flow

6.2. Independent Variables

Tenure: The auditor's tenure is equal to the period that the auditor has constantly audited the company.

Auditor change (Ad-change): If the auditor has changed location in the year under review, it is equal to one and zero otherwise.

Market share (AIS): used as an indicator of the auditor's industry expertise; Because it shows the priority of the industry over other auditors. If the auditor's market share is high, his expertise and experience in the industry will be higher than other competition. Therefore, it is equal to one if an audit firm is specialized in the industry and zero otherwise.

Delay of the audit report (Delay): In the audit report, it is equal to the time interval between the end date of the financial year and the date of the auditor's report.

Auditor size (BIG): If the audit organization undertakes the audit of the company, the number is one, otherwise, the number is zero.

Financial independence of the auditor (FiInd): is equal to the sum of fees received from each client by each audit firm per year divided by the sum of fees received by auditors of each industry. If this ratio is greater than 0.5, it indicates a lack of independence and is equal to zero, but if it is less than 0.5, it is equal to one and indicates the financial independence of the auditor.

Board independence (B-Ind): is equal to the ratio of non-executive board members to the total number of board members.

Financial expertise of the board of directors (Bsf): If at least one member of the board of directors has a degree related to one of the financial trends, it is equal to one and zero otherwise.
Board Industry Expertise (Bsi): If at least one member of the board has a degree related to one of the industries used, it is equal to one and zero otherwise.
CEO's tenure (M-Tenure): The CEO has been in charge constantly until the year under review.
Change of CEO (M-change): if the CEO has changed during the year, it is equal to one and otherwise it is zero.
Type of auditor's opinion (Modify): If the auditor's opinion is not qualified, it is equal if the auditor's opinion is qualified. is equal to two; If the view of the auditors is unfavorable, it is equal to three, and if it is a disclaimer, it is equal to four.
Restation (REST): equals one if the business restates the previous years' financial statements in the year under review and zero otherwise.
Audit fees (LnAfee): equal to the natural logarithm of audit fees.
Company size (SIZE): logarithm of the sum of assets.
Return on assets (ROA): the ratio of profit to total assets.
Loss: If the company has a loss in the financial year, the number is one, otherwise, the number is zero.
Age of the company (AGE): The number of years that the company has been since its establishment.

7. Data Collection Tool and Data Analysis Method

All the financial information used in this research was taken from the published financial statements of the companies in Rahavard Novin and Tadbir Pardaz software. Data processing in the current research is in three levels:

1. Univariate analysis
2. Bivariate analyses
3. Multivariate analyses.

To estimate regression models with panel data, the Generalized Least Squares (GLS) method was used, and to detect the autocorrelation between the disturbance components of the regression model, the DW (Durbin-Watson) statistic was used.

8. Results

8.1. Descriptive Statistics

In this section, descriptive statistics indices that include central indices (maximum, minimum, mean) and dispersion indices including variance and standard deviation and skewness and elongation indices are presented in Table 2.

Table 2. Descriptive statistics of investigation variables in sample companies

Variable	Symbol	Average	Middle	Maximum	Minimum	Standard deviation
Fraud detection	FROUD	0.02	0.005	0.79	0.0001	0.08
The size of the audit firm	BIG	0.20	0	1	0	0.40
Auditor tenure	ATENUR	2.50	2	9	1	1.67
Change of auditor	ACHANG	0.49	0	1	0	0.50
Re-presentation	REST	0.09	0	1	0	0.28
Expertise in the auditing industry	AIS	0.41	0	1	0	0.28
Report delay	DEALY	1.42	1.44	1.69	1.14	0.12
size of the company	SIZE	14.32	14.22	20.30	10.49	1.51
return on assets	ROA	0.11	0.09	0.62	-0.60	0.15
Company age	AGE	1.56	1.61	1.86	1.11	0.17
Audit fees	LNFEE	6.90	6.90	9.50	4.67	0.81
assessment	MODIY	0.49	0	1	0	0.50
Financial independence of the auditor	FIND	0.41	0	1	0	0.49
Loss of the company	LOSS	0.16	0	1	0	0.36
Financial expertise of the board of directors	BSF	0.50	1	1	0	0.50
Board industry expertise	BSI	0.73	1	1	0	0.43
Independence of the board of directors	BIND	0.67	0.60	1	0.20	0.18
Change of CEO	MCHANG	0.24	0	1	0	0.43
CEO tenure	MTUNR	2.47	2	9	1	0.65

Source: Researcher's findings

8.2. Inferential Statistics

Inferential statistics include the techniques by which we generalize the data in the sample to the entire population.

8.2.1. Checking The Normality of Investigation Variables

The Jarque-Bera statistic signifies the normality of the error distribution because Prob>0.05.

Table 3. Normality test

Title of the model	Jarque-Bera	Significance level
The first model	1.65	0.12

Source: Researcher's findings

8.2.2. Mana Test

The outcome of the module root test for the model regression residual is as follows:

Table 4. Results of mana test of model variables

Variables	Fisher's Test	The Significance Level	Result
FROUD	372.91	0.0000	Mana
ATENUR	352.92	0.0000	Mana
BIND	233.12	0.0018	Mana
DEALY	508.73	0.0000	Mana
SIZE	525.49	0.0000	Mana
ROA	293.88	0.0006	Mana
AGE	429.09	0.0000	Mana
LNFEE	288.36	0.001	Mana

Source: Researcher's findings

The outcomes of the unit root test for the regression residual demonstrate that the significance level of the model variables is less than 0.05; Therefore, the mean for the variables of the model is established based on two tests, Fisher, Sons, and Shin, and the variables do not have a single root; Therefore, the estimated regression is not false.

8.2.3. Autocorrelation Test

According to Table 5, Prob > 0.05 indicates the lack of autocorrelation in the model.

Table 5. Godfrey's autocorrelation test

Title of the model	F statistic	Possibility
Model	1.41	0.3265

Source: Researcher's findings

8.2.4. Variance Heterogeneity Test

Before dealing with any estimation, the presence or lack of heterogeneity variance is researched.

Table 6. Test of heterogeneity of variance

Title of the model	Test	T statistic	Possibility
The first model	Breusch-Pagan LM	1365.26	0.0000
	Pesaran scaled LM	1069.32	0.0000

Source: Researcher's findings

Examining the chi-statistic values of the two performed tests demonstrates that the null hypothesis of equal variance is rejected; Therefore, the difficulty of heterogeneity of variance is apparent in the model; Therefore, the GLS test is applied to estimate the model.

8.2.5. Checking The Existence of Collinearity

Using Eviews 10 software, the presence or lack of collinearity is checked, and the results are shown in Table 7:

Table 7. Checking the existence of collinearity

Research Variables	Centralized Variance Inflation Factor (VIF)
BIG	1.225
ATENUR	2.61
ACHANG	1.02
REST	1.01
AIS	1.11

Table 7. Checking the existence of collinearity	
DEALY	1.03
SIZE	1.71
ROA	2.01
AGE	1.08
LNFEE	2.90
MODIY	1.04
FIND	1.50
LOSS	1.65
BSF	1.52
BSI	1.11
BIND	1.04
MCHANG	1.23
MTUNR	2.35
Source: Researcher's findings	

According to the results obtained from Table 7, the research variables are not collinear.

8.2.6. General Model Estimation

In this section, panel analysis is applied to check and estimate the general model.

Table 8. Model diagnosis test (Fixed effects test)

Title of the model	F statistic	Possibility	Compared to 0.05	Test result
Model	3.15	0.0000	Smaller	Null Hypothesis Verification - Mixed Model

Source: Researcher's findings

According to Table 8, the significance degree of the F statistic for the regression models of the investigation is less than 0.05. Thus, it can be concluded that hypothesis 1H (combined model) is confirmed.

After determining that the width from the origin is not the same for different years, the technique to be applied in the evaluation of the model (fixed or random effects) should be determined, for which the Hausman test is used.

Table 9. Hausman test

Title of the model	statistics X^2	Possibility	Test result
Model	19.95	0.0021	Rejection of the null hypothesis - mixed model with fixed effects

Source: Researcher's findings

According to the Hausman test in Table 9, fitting the regression models of this research using the evaluation of the mixed data model using the fixed effects method will be suitable for the model.

8.2.7. The Outcomes of Research Hypothesis Testing

Regarding the first hypothesis of the research, the null hypothesis and the opposite hypothesis are as follows:

H0: There is no significant association between audit tenure and fraud detection.

H1: There is a significant association between audit tenure and fraud detection.

According to Table 10, the level of significance between the two variables is equal to 0.003, which is lower than the level of significance considered in the current research (5%), as well as the absolute value of the t statistic which is equal to 2.91 from 1.96 which is equivalent to the distribution The normal standard is 0.95, it is more; Therefore, at the 95% confidence level, between tenures.

There is no significant association between audit and fraud detection, it is not confirmed and the first hypothesis is confirmed.

Regarding the second hypothesis of the research, the null hypothesis and the opposite hypothesis are as follows:

H0: There is no significant association between audit rotation and fraud detection.

H1: There is a significant association between audit turnover and fraud detection.

According to Table 10, the significance level between the two variables is equal to 0.00000, which is lower than the significance level considered in the current research (5%), as well as the absolute value of the t statistic, which is equal to 5.10 from 1.96, which is equivalent to The standard normal distribution is 0.95, it is more; Therefore, at the 95% confidence level, there is no significant association between audit rotation and fraud detection, it is not confirmed and the second hypothesis is confirmed.

Regarding the third hypothesis of the research, the null hypothesis and the opposite hypothesis are as follows:

H0: There is no significant association between audit independence and fraud detection.

H1: There is a significant association between audit independence and fraud detection.

According to Table 10, the significance level between the two variables is equal to 0.03, which is lower than the significance level considered in the present study (5%), as well as the absolute value of the t statistic, which is equal to 2.14 from 1.96. which is equivalent to the standard normal distribution of 0.95 is greater; Therefore, at the 95% confidence level, there is no significant association between audit independence and fraud detection, it is not confirmed and the third hypothesis is confirmed.

Regarding the fourth hypothesis of the research, the null hypothesis and the opposite hypothesis are as follows:

H0: There is no significant association between expertise in the audit industry and fraud detection.

H1: There is a significant association between expertise in the audit industry and fraud detection.

According to Table 10, the significance level between the two variables is equal to 0.031, which is lower than the significance level considered in the current research (5%), as well as the absolute value of the t statistic, which is equal to 2.15 from 1.96, which is equivalent to the distribution The normal standard is 0.95, it is more; Therefore, at the 95% confidence level, there is no significant association between expertise in the audit industry and fraud detection, it is not confirmed and the fourth hypothesis is confirmed.

Regarding the fifth hypothesis of the research, the null hypothesis and the opposite hypothesis are as follows:

H0: There was no significant association between audit report delays and fraud detection.

H1: There is a significant association between audit report delay and fraud detection.

According to Table 10, the level of significance between the two variables is equal to 0.302, which is higher than the level of significance considered in the current research (5%), as well as the absolute value of the t statistic, which is equal to 1.03 from 1.96. which is equivalent to the standard normal distribution of 0.95 is less; Therefore, at the 95% confidence level, there is no significant association between the delay of the audit report and the identification of fraud, it is confirmed and the fifth hypothesis is not confirmed.

Regarding the sixth hypothesis of the research, the null hypothesis and the opposite hypothesis are as follows:

H0: There is no significant association between the size of the audit firm and fraud detection.

H1: There is a significant association between the size of the audit firm and fraud detection.

According to Table 10, the significance level between the two variables is equal to 0.0402, which is lower than the significance level considered in the current research (5%), as well as the absolute value of the t statistic, which is equal to 1.99 from 1.96. which is equivalent to the standard normal distribution of 0.95 is greater; Therefore, at the 95% confidence level, there is no significant association between audit institute and fraud detection, it is not confirmed and the sixth hypothesis is confirmed.

According to the results obtained from Table 6, which indicates the lack of heterogeneity of variance in the model, the findings of hypothesis testing are presented in Table 10.

Table 10. The consequence of the first model test

Variable	**Coefficient**	**Z statistic**	**level**	**The significance**
C	0.010	1.76	0.0780	Not effective
BIG	0.001	1.99	0.0420	It is impressive
ATENUR	0.0005	2.91	0.0037	It is impressive
ACHANG	-0.001	-5.10	0	It is impressive
REST	-0.003	-3.75	0.0002	It is impressive
AIS	0.004	2.15	0.0314	It is impressive
DEALY	-0.002	-1.03	0.302	Not effective
SIZE	0.0005	0.75	0.4505	Not effective
ROA	-0.003	-1.22	0.2193	Not effective
AGE	0.004	3.005	0.0028	It is impressive
LNFEE	0.001	1.50	0.132	Not effective
MODIY	0.001	1.87	0.0608	Not effective
FIND	0.005	2.14	0.0322	It is impressive
LOSS	0.0065	2.85	0.0045	It is impressive
BSF	-0.003	-3.01	0.0027	It is impressive
BSI	-0.005	-2.44	0.0148	It is impressive
BIND	-0.001	-0.59	0.5503	Not effective
MCHANG	0.001	1.65	0.098	Not effective
MTUNR	-0.0001	-1.01	0.3117	Not effective
The coefficient of determination	0.55	F Statistic		6.73
Adjusted coefficient of determination	0.46	Significance (P-Value)		0.0000
		Durbin Watson statistics		1.89

Source: Researcher's findings

9. Discussion and Conclusions

The results obtained from the first hypothesis of the research demonstrate that there is a significant association between audit tenure and fraud detection. The outcomes of the first hypothesis test are explained in such a way that a long-term tenure helps the CEO to gain his reputation; Because the long-term tenure indicates that the CEO was safe from the previous decision of retention or dismissal by the board of directors; Therefore, long-term CEOs may refrain from exaggerating financial reporting. Therefore, it is assumed that long-term executives report lower profits than short-term executives; Therefore, with the increase in audit tenure, the likelihood of fraud detection will increase for auditors. The outcomes of the first hypothesis test are consistent with and supported by the research results of (Abdillah et al., 2019; Meskar, 2022).

The results obtained from the second hypothesis demonstrate that there is a significant association between financial uncertainties and the auditing industry. The outcomes of the second hypothesis test are explained in such a way that the managers may change the auditor to reduce the likelihood of discovering fraud in the financial statements. The faster the audit changes, the more likely fraud is detected decreases. The research results are consistent with and supported by the research results of (Jamshidi, 2021; Lehenchuk et al., 2020).

The results obtained from the third hypothesis of the research demonstrate that there is no significant association between auditor independence and fraud detection. It was expected that any increase in the percentage of audit member’s independence would lead to an increase in fraud detection. It is generally believed that auditors when they have more independence, exercise more effective control over financial statements. Effective supervision will increase the quality of the audit and, as a result, increase the identification of fraud. In this way, non-obligatory auditors, with their expertise, independence, and legal power, are considered a powerful mechanism that increases audit quality. The outcomes of the third hypothesis test are consistent with and supported by the research results of (Masomi et al., 2020; Sultana et al., 2015).

The results obtained from the fourth hypothesis of the research demonstrate that there is a significant association between expertise in the audit industry and fraud detection. The outcomes of the fourth main hypothesis test are explained as follows: when the auditor has more expertise than the employer's industry, the likelihood of discovering fraud in financial statements is higher owing to the auditor's experience and expertise and his impartiality. The outcomes of the fourth hypothesis test are consistent with and supported by the research results of (Boluo et al., 2020; Uwuigbe et al., 2019).

The results obtained from the fifth hypothesis of the research demonstrate that there is no significant association between the delay of the auditor's report and the identification of fraud. The reason for this issue can be seen in the newness of the audit committee in Iran; In addition, it should be noted that in the early years, owing to the absence of experience of the members of the audit committee and the absence of sufficient familiarity with the duties of the committee, in many responsibilities related to the audit committee, trial, and error took place and in the early years of formation, the expectation Reducing the delay in the audit report along with increasing the member experience is a little far from It is expected; Therefore, the delay of the audit report does not affect the identification of fraud. The outcomes of the fifth hypothesis test

are consistent with and supported by the research results of (Bakhtiari et al., 2021; Coca et al., 2021).

The results obtained from the sixth research hypothesis demonstrate that there is a significant association between the size of the audit firm and the identification of fraud. The outcomes of the sixth main hypothesis test are explained as follows: in companies that are audited by large institutions, the likelihood of high fraud risk is lower. This means that audited companies with larger auditors have higher audit quality and a lower likelihood of high fraud risk. Great auditors are more motivated to provide quality reports because they value their reputation. The outcomes of the sixth hypothesis test are consistent with and supported by the research results of (Karim Pour, 2017; Uwuigbe et al., 2019).

10. Research Limitations and Suggestions

The disadvantages of the investigation are as follows:

The measure of experience and identification of fraud can be done through other psychological measures, so there is a likelihood that it may not fully extract the desired components.

In the period of research, there have been many economic fluctuations in the country, owing to the absence of consideration of inflation and other economic indicators, caution should be taken in interpreting the results and generalizing them.

In agreement with the outcomes of the research, the following suggestions are made:

Due to the influence of the auditor's expertise in the industry on the quality of auditors' work, auditors should know the specific issues of the industry, know the key organizations in that industry, and be active in that industry.

Independent audit applicants, at the auditor selection stage, among the audit quality criteria, more than the size of the audit institute and expert auditors in the industry according to the definitions presented in this research.

pay attention; This position can be useful for users because the financial statements of companies that have been examined by large audit institutions are of higher quality. After all, large audit institutions have a significant effect in reducing the danger of fraud, and users can rely on the findings of audit reports. Do It is also proposed for future research:

- The link between auditors' personality traits and environmental variables such as ethical culture in auditing institutions and auditor's work quality should be investigated.
- Use other tools such as interviews to collect data and conduct this research qualitatively.
- The impact of manager’s narcissism in detecting fraud should be investigated.
- The role of court accountants in detecting fraud should be investigated.

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