

The role of the Beneish Model as a tool for forensic accounting in fraud detection in tourism industry

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Abstract:

The aim of the research is to study the role of Forensic accounting instruments in detecting the manipulation of financial disclosures in a case of the securities communities listed on the Iraqi Stock Exchange, and has represented the community of communities listed on the Iraqi Stock Exchange, ten communities in the tourism sector have been selected a case of research, while the data of eight communities were analyzed, due to the interruption of the activity of communities due to the security conditions passed by Iraq, financial statements were selected for the years 2017-2018, and Beneish Model has been used as a means of accounting. The researchers found that only two out of eight communities were manipulating financial disclosures, while the model did not indicate tampering with the remaining six communities.

Keywords: Beneish Model, Forensic Accounting, Manipulation.

Introduction:

Forensic Accounting has emerged due to the need of the Forensic authorities for the services of auditors to decide cases of accounting and financial status, to help the courts solve problems of a financial nature in order to reach the truth, and since then the roles of the Forensic auditor have multiplied and the role of the Forensic auditor has emerged in order to reach a technical and impartial opinion, like the auditor, but the beneficiaries here have differed in terms of the use of information, but the end result is the decision-making process, as well as the role of the Forensic accountant. Here he is an expert witness in the courts as he performs the task assigned to him by the court, as well as his role as a financial adviser.

Forensic accounting has become a demand for its services due to the high cases of manipulation and fraud, whether by individuals, communities or government units, so he has increased interest in the development of Forensic accounting procedures and tools to contribute to deterring fraud, money laundering and economic crimes, so it requires him to know the civil and criminal law and Forensic procedures, knowledge of applicable professional laws and standards, experience in the use of Benford law, data mining and software used in the analysis of electronic data.

Literature Review

Several studies have addressed the role of Forensic accounting in detecting fraud and administrative and financial corruption, Study (Al-Jalili , 2012) indicated that Forensic

accounting needs a range of multiple experiences because it covers a large area of specialists including investigations, judicial information technology, support for lawsuits, and dispute resolution. This requires that the auditor have excellent accounting skills and advanced skills in the investigation, as the auditor needs to be able to capture ideas and axioms quickly, the nature of the work requires that the judicial auditor have the knowledge of accounting as it is necessary to have a good concept about legal procedures and methods of investigation, and despite this specificity we find that the methods and methods of qualification of chartered auditors in the Arab world in general and Iraq in particular is unable to provide the necessary requirements for the qualification of chartered auditors to carry out Forensic accounting tasks. The study (Madumere & Onumah, 2013) aimed to measure the impact of judicial accountability on corporate fraud and performance outcomes in The Nigerian industry. Using a case of 306 industrial communities registered with the Nigerian Manufacturing Association, the results revealed that corporate fraud is on the rise in this sector, and the reason is that most administrator want to be independent at the expense of their employers. Most administrator include communities that supply goods to their communities at very high prices and thus increase the cost of production. including (Jabouri & Khalidi, 2013) which dealt with the role of Forensic accounting in the detection of financial fraud, and the study found that Forensic accounting supports evidence in fraud investigation.

The (Mahmoud & Daoud, 2014) study which linked the role of Forensic accounting to the quality of accounting information, the study found that Forensic accounting enhanced the quality of accounting information. Study of (Popoola, Ahmad & Samsudin, 2014) discussed the need for a judicial auditor-to assess the risk of fraud in the performance of tasks in the Malaysian public sector. It also creates an awareness of stakeholders struggling with fraud in the public sector to understand the fraud mechanism and how to deal with fraud. The aim of the study is to examine the relationship between knowledge and the performance of the fraud risk assessment function at the Public Auditor and Auditor General office in Malaysia, which has the ability to engage in global best practices in the fight against fraud in the Malaysian public sector.

The (Eliezer & Emmanuel study, 2015) highlighted how judicial auditors are hired to meet challenges. The study was a theoretical research dealing with the role of judicial auditors in combating fraudulent activities, as well as the difference between the judicial auditor and the traditional accountant, the characteristics of the judicial auditors well as the role of judicial auditors in detecting and preventing fraud. It was found that the services of the judicial auditor would assist members of the Audit Committee in the implementation of their oversight functions by providing them with assurances about the internal audit report.

A study (Ibrahim & Haroon, 2016) which linked the role of Forensic accounting in detecting profit management practices, found that Forensic accounting is one of the mechanisms for detecting administrative and financial corruption and profit management. The study (Saleh, 2016) used Forensic accounting in the disclosure of creative accounting practices, and concluded that Forensic accounting is aimed at employing accounting information in the field of Forensic and financial advisory areas in response to the need of the courts for financial irregularities and the need of investors, shareholders, lenders and tax and regulatory entities to be used for the correct information, so that Forensic accounting techniques can be used in the face of the challenges of creative accounting and its practices.

The study (Ehioghien & Atu, 2016) aimed to measure the relationship between Forensic accounting and fraud management in Nigeria, and the results suggest that judicial accountability has a significant impact on fraud detection and control, and there is a significant difference between the duties of professional criminal auditors and those of traditional external auditors. The researchers recommended that trained experts such as professional judicial auditors should conduct the investigation when there is evidence of fraud, appropriate

disciplinary measures should be implemented in accordance with the provisions of the rules, and the restructuring of corruption communities by the government to improve performance. Professional accounting bodies in Nigeria must ensure that judicial auditors are trained in the modern skills of Forensic accounting procedures, and the Financial Reporting Board must ensure that conflicting regulatory laws are coordinated and standardized that will ensure the best standards and regulations for best practices and service delivery.

A study (Repousis, 2016) aimed at empirically investigating the eight variables of The M-Model to identify the existence of falsification in financial statements or the tendency to manage profits and the results showed that 8,486 communities or 33 percent of the entire case got a score higher than 2.2, a sign that communities are likely to be manipulative. Also, for manipulators, results using F distribution showed that daily sales in the DSRI, Asset Quality Indicator (AQI), depreciation indicator, sales, General and Administrative Expenses Indicator (SGAI), total dues to the Total Asset indicator and leverage indicator (LVGI) are important at a 99 percent confidence level in its impact on Beneish. Also, there is a great relationship between profit management, as expressed by Beneish M-Score and each of the variables, DSRI, AQI, Gross Margin Indicator, Sales Growth Indicator, SGAI and LVGI. Most of all, DSRI explains 95.92% of the variation in The Beneish M statistically. The results indicate that they are important to the banking system, because financial data information affects credit decisions for banks. Debt agreements include requirements based on accounting figures. Also, using the Beneish model, it is a less expensive and easier way for auditors into any potential fraudulent activity. The implications are not only on banks but also on users of financial statement accounts such as investors, auditors, regulators, taxes and other state communities.

A study (Simeunović, Grubor & Ristić, 2016) found that the real digital judicial analysis of the regulatory fraud audit is being investigated using two different tools, Tableau TD3 Touch Screen Forensic Imager and Access Data FTK Imager. The study dealt with the investigation of the case of fraud in non-monetary misappropriation committed by both (employee, store keeper), and highlighted the usefulness of fraud audit, which can detect many forms of financial crimes and can be used in both public and private communities. Given the computerized accounting environment, fraud investigation requires a combination of auditing skills, computer crimes and digital judicial investigation, which can be achieved through joint efforts and collaboration between both the digital investigator and the fraud checker as proposed.

The Study (Barzan & Khalaf, 2016) aimed to identify methods that lead to control the performance of the external auditor and thus reduce the methods of accounting manipulation, as Forensic accounting looks beyond the figures to reveal facts and allegations through the interpretation of the concepts of fraud and accounting manipulation, and the concept of Forensic accounting, and the concept of Forensic accounting, and the research hypothesis was tested through the use of the questionnaire and distributed to a case of a group of users of information. The analytical analysis has been used to demonstrate the importance of Forensic accounting methods, and which is more important in application, and the results of the research have concluded that there are cases of fraud and manipulation of financial statements.

The (Tobaishat & Dulaimi, 2017) study in which they addressed the role of Forensic accounting in detecting fraud, the study found that the role of Forensic accounting aims to support physical evidence in the courts regarding fraud detection. As for the study (Amin & Saeed 2017) which aimed to study the role of Forensic accounting in raising the degree of credibility in financial disclosures, the study found that there is a difference between the skills of the auditor and the auditor and their responsibilities in controlling manipulation as well as the methods of carrying out such works. The study (Jassim, 2017) aimed to clarify the concept of Forensic accounting as a modern area of accounting and highlighted its importance and its role in detecting cases of fraud and fraud and fighting financial and administrative corruption after this phenomenon became a phenomenon prevalent in state institutions and its economically dangerous effects,

as the research shows the most important qualifications and characteristics of the auditor and its mechanisms of work and areas where Forensic accounting and the need of Iraqi courts and other state institutions can apply after other regulatory bodies became unable to detect and eliminate cases of corruption and fraud for its multiplicity of forms and images.

A study (Jassem, 2017) addressed the importance of Forensic Accounting in detecting financial irregularities and determining responsibility for them, and the study found that Forensic accounting provides support to other regulatory bodies.

The study (Amin, 2018) which dealt with the role of Forensic accounting and its techniques in reducing money laundering and smuggling, the study concluded that Forensic accounting can be used in the process of collecting information and then delivering the results about it to the concerned authority in order to reduce the effects of money laundering and reduce its smuggling.

Study of (Özcan, 2018) analyses the usefulness of Beneish Model in the forensic accounting practices. Logistic regression analysis is used to examine the empirical variables. Based on a case that includes 174 firms from 2005 to 2017, it has been concluded that Beneish Model aids effectively in the analyzing of quantitative characteristics of falsified financial statements.

Study (Obaid, 2018) aimed to reveal the relationship between Forensic accounting and the quality of financial reports, the research included a key hypothesis that Forensic accounting can be applied to improve the quality of financial reports, and a case of the gentlemen (external auditors) was selected, Tax experts, judges, university professors, shareholders) and 45 individuals, adopting the questionnaire that included (13) paragraphs, and the results were extracted using methods of descriptive statistics (mathematical medium, standard deviation), the most important of which was the increased demand for Forensic accounting services at present due to problems Real between the administration and the stakeholders that call for lawsuits in the courts.

A study (Radi & Al-Rawaziq, 2018) addressed the importance of judicial accountability and the urgent need to activate and develop its role in Iraq to help solve many financial and judicial problems. Iraq suffers from many problems as a result of the absence of the role of judicial accountability and the lack of use of its services and experts in many outstanding financial and judicial problems. This research was formulated by relying on five main hypotheses and three sub-hypotheses.

The study (Abbas, Muzhar & Hamid, 2018) aimed to show the nature of the complementary relationship between both Forensic accounting and corporate governance and their role together in reducing creative accounting methods, and the results showed a moral impact on the use of both Forensic accounting and corporate governance in reducing creative accounting methods, and the existence of a statistically significant complementary relationship between Forensic accounting and corporate governance and their role together to contribute to reducing creative accounting. The existence of a statistically significant complementary relationship between Forensic accounting and corporate governance and their role together to contribute to reducing creative accounting methods at the level of significance (0.05-0.01) by enhancing confidence in the information contained in the published financial statements and reports and strengthening the rule of law in addition to enhancing the level of disclosure and transparency in those communities, and both Forensic accounting and corporate governance and the complementary relationship between them have an impact on reducing those methods at the point of reference (0.04) and by a factor of 47% interpretation. The aim of the research was to show the nature of the complementary relationship between Forensic accounting and corporate governance, which is positively reflected in reducing creative accounting methods from the point of view of academics and auditors working in communities listed on the Iraqi Stock Exchange: Forensic accounting is a type of accounting that serves both internal and external parties by relying on two accounting and legal aspects. In light of the findings reached, the

analyst recommend the need to work on the establishment of training courses and programs by cadres concerned with Forensic accounting inside and outside Iraq, as well as the need to pay attention to judicial accountability and its objectives by adding them to the materials of the accounting department in institutes and colleges of management and economics.

Study (Niemah & Abdullah, 2019) Aimed to investigate whether there is an impact of Forensic accounting in strengthening the supervisory role of the Board of Directors, and to achieve this goal the research addressed the concept of Forensic accounting, its objectives, its benefits, and what are the requirements of judicial auditors of education, granting work licenses, knowledge, and skills The capabilities, standards, and definition of the Board of Directors as a mechanism for corporate governance, and the statement of how to benefit from judicial auditors in examining the board mechanism, and the survey of a case of academics and professionals was conducted to determine whether there is an impact of judicial accountability in strengthening the oversight role of the Management in the Iraqi environment. The research concluded through its theoretical and practical aspects, that judicial auditors have the ability and capabilities to examine the independence of the members of the Council and its president and the need of the Board of members, which in turn reflects on the strengthening of the supervisory role of the Board of Directors.

Study (Jassim, 2019) aimed to highlight the field of Forensic accounting as a new area of accounting that has been taken care of due to cases of fraud in the business environment and clarify the role of Forensic accounting in activating corporate governance objectives while highlighting the role of corporate governance in achieving the quality of accounting information over a period of five years (from 2005 to 2010), the researcher adopted the descriptive analytical approach by tracking and investigating the subject of research and analysis and drawing conclusions in addition to the approach of the content to study through the study of some references and sources Related to Forensic accounting and its impact on corporate governance and review of some studies and financial statements in the National Chemical and Plastic Industries Agency in Iraq to learn about the reality of Forensic accounting and its impact on governance.

The results of the research resulted in a relationship between the stakeholders and competitive association of the institution case study, enjoys the function of internal audit in the study case institution independent in the performance of its tasks, and has the necessary material and financial means to perform its tasks, and the auditor enjoys the rules of professional conduct contribute to the evaluation and improvement of the system of internal control, improve the system of internal control, promote the moral culture, discover mistakes and manipulation, and that it has an integrated relationship with the external auditor The work of the internal auditor is subject to an independent external evaluation.

The study (Agu & Okoye, 2019) aimed to ensure that Forensic accounting is applied as a way to fill the audit expectations gap in Nigerian deposit banks in Inugu state. The survey method was adopted to design the study. The study case of 2,885,855 (2,865) auditors in thirteen (13) banks, headquarters and workers in Inoju State, Nigeria. The case size of three hundred and fifty-one (351) auditors/responders was withdrawn using taro Yamane sampling method, but with the help of simple stratified sampling technology, twenty-seven (27) responders representing a layer of each bank were obtained, and the data was analyzed using the Pearson Moment Product Correlation Coefficient. The results showed that there is a significant correlation between litigation support services and the expectation gap between financial deposit banks in Nigeria.

The results showed that there was a significant relationship between the judicial investigation and the expectation gap between financial deposit banks in Nigeria. Finally, the results also proved that there is a significant relationship between judicial scrutiny and the expectation gap between the Nigerian Money Deposit Bank.

The concept of Forensic Accounting:

According to some, forensic accounting is one of the oldest professions and dates back to the Egyptians. The "eyes and ears" of the king was a person who basically served as a forensic auditor for Pharaoh, watchful over inventories of grain, gold, and other assets. The person had to be trustworthy, responsible, and able to handle a position of influence (Singleton & Singleton, 2010; Maseer & Flayyih, 2021). Many of the administrative parts of a forensic accounting or fraud investigation project are similar to those in a traditional auditing assignment. For those who have played an active role in managing audit engagements, some of this information may sound familiar. Yet when it comes to the actual performance of the engagement, distinct differences must be highlighted. Probably the biggest difference between a fraud investigation and a traditional audit is that each investigation is very strikingly different from the last one. There's not a standard roadmap for a fraud investigation, and each engagement will have many unique characteristics (Coenen, 2009; Hasan & Al-Ramadan, 2021; Alzabari et al., 2019). Audit firms should also place greater emphasis on developing forensic accounting skills. While most firms have experts in those skills, it is essential for an auditor to have training in techniques in fraudulent financial accounting and other unethical corporate practices (Alkafaji, Hussain, Khallaf & Majdalawieh, 2010; Al-taie & Flayyih, 2020; Ali & Flayyih, 2021).

As Price water house Coopers points out in a major report on forensic accounting: "Internal auditors should improve their fraud detection skills and should program fraud detection into their work plans. Internal auditors should also be ready to exercise integrity and courage when the situation calls for it." (Goldmann, 2010; Anwar et al., 2021).

The credential, certified in Financial Forensics (CFF), combines specialized forensic accounting expertise with the core knowledge and skills that make CPAs among the most trusted business advisers. The CFF encompasses fundamental and specialized forensic accounting skills that CPA practitioners apply in a variety of service areas, including: bankruptcy and insolvency; computer forensic; economic damages; family law; fraud investigations; litigation support; stakeholder disputes and valuations (Pedneault, 2010).

Forensic accounting refers to the comprehensive view of fraud investigation. It includes preventing frauds and analyzing anti-fraud controls. Forensic accounting would include the audit of accounting records in Research for evidence of fraud; a fraud audit. A fraud investigation to prove or disprove a fraud would be part of forensic accounting. It also includes the gathering of non-financial information, such as interviews of all related parties to a fraud, when applicable. Forensic accounting includes writing a report to management or court. Serving as an expert witness and litigation support are part of forensic accounting (Singleton & Singleton, 2010).

Forensic accounting has emerged as an increasingly important area for dealing with corporate frauds. The last two decades have witnessed high-profile corporate accounting scandals. The economic globalization and rapid technological change have mitigated the efficiency of traditional methods in the detection of accounting frauds occurred in the business environment. Forensic accounting has grabbed great attention in the recent years. Forensic auditors have played prominent roles in the detection of financial statement frauds. Forensic accounting includes a wide range of services such as investigation and litigation (Özcan, 2018).

Forensic accounting is a set of methods used in the process of collecting information and conducting the necessary analysis to detect fraud, and relies on the exploration of a large amount of data to identify unknown patterns and information on the accuracy of the data obtained, and the data mining technique includes three activities (Saleh, 2016):

1. Exploration: Is to detect or identify patterns in the data such as link, trends or variations without assuming the pattern to be detected, and the link is the existence of a relationship

between variables as in the case of one variable that leads to the other occurring or occurring together.

2. Prediction models: Prediction models adopt detected patterns to estimate the results to be obtained from new values.

3. Contrast analysis: The contrast is analyzed after it is selected and extracted by first identifying the standard and then identifying the items that change this standard.

Beneish Model

Various fraud prediction tools have been developed to detect financial statement fraud triggered by earnings manipulation. Among them is the Beneish Beneish Model as a financial forensic tool to gauge potential earnings manipulation in firms' financial statements, Beneish Model is a mathematical model that was created by Professor Messod Beneish (Abdul Rahman et al., 2021). Using 8 variables related to financial ratios, Beneish (1999) developed a powerful tool in distinguishing earnings manipulators and nonearning manipulators. Since the introduction of the original M-score, the model has been widely used in many financial statement academic researches, articles directed at auditors, certified fraud indicator and investment professionals, Beneish (1999) is built a set of eight indicators (DSRI, GMI, AQI, SGI, DEPI, SGAI, LVGI and TATA) (Talab, Flayyih & Ali, 2018), The eight indicators of every single non financial listed company are put in to the Beneish regression model. The results will show the Manipulation Score. If the M-score is greater than (-2.22) benchmark, the company should be flagged as earnings manipulators. The Beneish Model and its 8 indicators are listed below (Beneish, 1999):

1. Days Sales in Receivables Indicator (DSRI):
2. Gross Margin Indicator (GMI):
3. Asset Quality Indicator (AQI):
4. Sales Growth Indicator (SGI):
5. Depreciation Indicator (DEPI):
6. Sales General and Administrative Expenses Indicator (SGAI):
7. Leverage Indicator (LVGI):
8. Total Accruals to Total Assets (TATA):

Methodology of Research

The problem of research is the rise in cases of administrative and financial corruption in communities listed on the Iraqi Stock Exchange, which may affect the beneficiaries of those communities, which is the absence of a real characterization of Forensic Accounting in the local environment. There are no specialized studies in this regard, as well as the ignorance of many auditors in Iraq about the concept, importance and nature of Forensic accounting and their tools used to detect fraud.

Research hypothesis:

The research is based on a hypothesis derived from the origin of the Beneish model, where this model is that the study of the relationships between the variables in the model cannot give a clear picture if studied separately, so the study of the relationship between the research variables achieves an integrated combination of the detection of manipulation of financial statements, in particular that the Beneish model integrates the variables of income disclosure and the financial position list, and thus contributes to the process of detecting the defect of any indicator selected, as these indicators represent these indicators, representing these indicators. One of the most important items that can be manipulated, and on this basis the research is based on the following hypothesis:

"Beneish Model contributes to the detection of fraud in the financial statements of tourism communities listed on the Iraqi stock market."

Case Research:

Representing the research community of communities listed on the Iraqi Stock Exchange, tourism communities were selected and 10 communities case for research, and the data of eight communities were analyzed while two communities were excluded because of the interruption of their activity for the years analyzed, and the data of the income list and the financial center list for the years 2017-2018 were analyzed.

Results and discussion

Under the research hypothesis drawn up by the researchers, as well as the researchers analyzed previous studies, the researchers found that the financial variables used in the Beneish model enable Forensic auditors to effectively detect fraud in financial statements, as the Beneish model, created by Messod Beneish, can be considered a contemporary method of detecting accounting fraud.

Beneish Model helps Forensic auditors conduct comprehensive corporate financial disclosure analyses, and the beneish Model formula suggests that if the result is greater than -2.22, the company is likely to engage in fraud in its financial statements. According to Beneish Model, the following variables have important potential for detecting corporate financial statement fraud, and the model includes the following indicators:

1. (DSRI): $(\text{Net Receivables } t / \text{Sales } t) / (\text{Net Receivablest-1} / \text{Salest-1})$
2. (GMI): $[(\text{Salest-1} - \text{Cost of Goods Soldt-1}) / \text{Salest-1}] / [(\text{Sales } t - \text{Cost of Goods Sold } t) / \text{Sales } t]$
3. (AQI): $[1 - (\text{Current Assets } t + \text{Property } t + \text{Plant } t + \text{Equipment } t + \text{Securities } t) / \text{Total Assets } t] / [1 - (\text{Current Assetst-1} + \text{Propertyt-1} + \text{Plantt-1} + \text{Equipmentt-1} + \text{Securitiest-1}) / \text{Total Assetst-1}]$
4. (SGI): $(\text{Sales } t / \text{Salest-1})$
5. (DEPI): $[(\text{Depreciationt-1} / (\text{Propertyt-1} + \text{Plantt-1} + \text{Equipmentt-1} + \text{Depreciationt-1})) / ((\text{Depreciation } t / (\text{Property } t + \text{Plant } t + \text{Equipment } t + \text{Depreciation } t))]$
6. (SGAI): $(\text{Sales, General and Administrative Expenses } t / \text{Sales } t) / (\text{Sales, General and Administrative Expensest-1} / \text{Salest-1})$
7. (LVGI): $[(\text{Current Liabilities } t + \text{Total Long Term Debt } t) / \text{Total Assets } t] / [(\text{Current Liabilities t-1} + \text{Total Long Term Debt t-1}) / \text{Total Assets t-1}]$
8. (TATA): $(\text{Current Assets } t - \text{Cash } t - \text{Taxes Payable } t - \text{Depreciation } t - \text{Amortization } t) / (\text{Total Assets } t)$

Taken together, these eight indicators represent a model that effectively detects financial data fraud:

$$\text{Beneish model} = -4.84 + 0.920 \cdot \text{DSRI} + 0.528 \cdot \text{GMI} + 0.404 \cdot \text{AQI} + 0.892 \cdot \text{SGI} + 0.115 \cdot \text{DEPI} - 0.172 \cdot \text{SGAI} + 4.679 \cdot \text{TATA} - 0.327 \cdot \text{LVGI}$$

Table 1 presents the results of the applied study of the model for research case communities.

Table 1. Results of the Beneish model

Beneish Model	Code								Results
	DSRI	GMI	AQI	SGI	DEPI	SGAI	LEVI	TATA	
	0.893	0.705	0.938	1.453	2.038	0.507	1.400	0.259	-2264.5
	0.825	5.726	1.000	1.271	0.981	0.754	1.075	0.676	-502.049
	0.789	0.992	0.979	1.057	0.972	1.176	1.161	0.007	-3936.4
	0.782	0.825	1.000	1.289	0.924	0.622	0.791	0.941	857.668
	1.296	0.716	1.000	0.549	1.009	0.340	0.848	0.049	-3936.5
	1.521	32.281	0.996	0.649	0.938	1.226	1.013	0.839	-350.365
	0.738	0.534	0.959	1.297	0.000	0.662	0.808	0.247	-2518.9
	0.831	1.456	8.929	0.865	0.924	1.109	1.325	0.309	466.54

Source: Data Analysis Output (Excel)

DSRI is used to analyze the relationship between receivables and sales revenue, and in normal activities the amount of sales and receivables is expected to follow a stable trend.

The customer index has a significant impact on the predictability of fraud in the financial statements. If the value of the DSRI exceeds 1, it is an indication of fraud.

Therefore, the forensic accountant should review the documents related to this indicator, and it is noted that two out of seven companies have a DSRI value greater than the standard value of the indicator.

While the GMI results are used to determine if there is a decrease in the profit margin of companies, when the profit margin index of the company approaches 1. It can be concluded that the profit margin of the company has decreased for the current year. It is noted from the results presented in Table 1 that the results box is close to the standard value of the GMI index, with the exception of only one company, and the AQI index shows the presence of fraud in the financial statements.

Since the increase in the AQI index may be due to additional expenses being capitalized to mitigate the total expenses, this indicator has a significant impact on the predictability of fraud in the financial statements.

High growth in sales can lead to an expectation that many of them will be discontinued. But companies with high sales growth are more likely to commit financial statement fraud

Because the financial position of companies and their performance may decline significantly, and therefore the management of companies does not achieve gains related to administrative incentives, so the SGI index is important in predicting fraud in financial statements.

The DEPI index reveals that companies with more than 1 mean that the value of the company's assets decreases at a slower rate than the previous year. or reduce its profits.

Thus, the depreciation index has a significant impact on the predictability of fraud in the financial statements. It is noted from the results that the highest value of the DEPI index reached 2.038, which is a very large value, which requires the judicial examiner to obtain additional information in this regard.

As for SGAI, it shows the relationship between sales and the general and administrative expenses index and the possibility of fraud in the financial statements. If the result of the SGAI index is greater than 1, it indicates poor administrative efficiency for the company's administrators.

Also, whenever the index is more than 1 it means that the company is trying to reduce profits by increasing operating expenses.

On the contrary, this indicator could lead to an attempt to postpone expenses in order to increase profits.

Therefore, this indicator should be noted the amount of rise and fall by comparing its result with the results of previous years to see if this percentage is somewhat stable.

In the event of a fluctuation in the ratio, the reasons for the rise and fall should be reviewed, taking into account the company's overall activity level. An increase in the LEVI index above 1 indicates an increase in debt financing. It can be an indicator for the judicial examiner in analyzing the total debts to the total assets. The LEVI index may provide evidence of the possibility of raising debt financing and thus the company's bankruptcy, and anything greater than 1 is a dangerous indicator for the company. While the last indicator TATA shows the extent to which the company's management uses discretionary accounting policies in changing profits, the high level of accruals may increase the possibility of manipulating corporate profits. The results of these indicators as a whole are calculated to extract

Beneish Model has been used in the applied study of the income list and the financial position list, for communities listed on the Iraq Stock Exchange for the tourism sector research case, which includes ten communities have been excluded two communities to stop their activities, and the results in table (1) when applying the Beneish model, indicate that the communities that did not engage in financial fraud were six communities, in which the Beneish Model indicator was less than -2.22, while two out of eight communities were the highest of the 2.2

indicator. This means that the fraud rate for the tourism sector is 25%, which is large compared to the research community as a whole, and from the above results it can be said that Beneish Model contributes to the detection of fraud in the financial statements of tourism communities listed on the Iraqi stock market, which achieves the main research hypothesis.

Recommendations:

The aim of the research to study the role of Forensic accounting instruments in detecting the manipulation of financial disclosures in a case of the securities communities listed on the Iraqi Stock Exchange, the researchers found that only two out of eight communities are manipulating financial statements, while the model did not indicate the existence of manipulation in the remaining six communities, and based on the results reached using the model, the researchers recommend more attention by the auditors as well as the supervisory bodies and the supervisory body of the communities in the market Iraq Securities should exercise its supervisory role to reduce the manipulation of financial statements by using more auditing methods to detect irregularities in financial statements, thereby protecting the rights of users of financial statements.

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