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Master's thesis

# ACCOUNTING FRAUD AND CORPORATE GOVERNANCE

## Critical variables in fraud prevention procedures. Theoretical and empirical investigation in Greek listed companies.

of

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## ABSTRACT

Accounting fraud prevention is an important tool for the financial stability, viability, and growth of an entity. Revealing a fraud has consequences not only for the economic environment but also for society as a whole. The present dissertation aims to examine the factors that affect the prevention of accounting fraud in organizations in Greece, since this topic has not been adequately studied both internationally and locally. Initially, a presentation and analysis of the international literature on the prevention of accounting fraud and the variables that affect it occurs, as well as the formulation of research hypotheses. The model consists of four factors: Internal auditor's characteristics, organizational commitment, fraud detection techniques, and corporate governance effectiveness. After the collection of 47 questionnaires answered by internal and external auditors, managers, accountants, and other business executives, a descriptive statistical analysis of the answers is performed, followed by exploratory and confirmatory factor analysis through SPSS 22 and AMOS 22. According to its findings, fraud detection techniques are positively and statistically significantly related to fraud prevention.

**Keywords:** Accounting Fraud, Corporate Governance, Characteristics of Internal Auditors, Organizational Commitment, Fraud Detection Techniques, Corporate Governance Effectiveness.

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# Chapter 1: Introduction

Corporate fraud has significant financial and non-financial implications for businesses. The effects of corporate fraud affect not only companies and their shareholders, but also employment, social stability, and the general public. Echoes of corporate fraud are evident in the cases of Enron, and many other companies. Among those who suffer from corporate fraud are those who rely on published information to evaluate the company's performance and make investment decisions, such as shareholders and the general public.

In a study conducted by Sadka (2006) in the United States and specifically in the telecommunications industry, the findings showed that fraud affects the actual profitability of business, industry profits, consumer surplus, and social welfare. It assumes that the operations and financial statements of the company must be consistent. Moreover, in the case where companies are price takers, profitability decreases, consumer surplus increases, in the short-term, and social well-being decreases.

The serious consequences of corporate fraud have led to the implementation of strong control and monitoring mechanisms, aimed at overseeing corporate and management activities. Separation of control and ownership increases the need for effective management monitoring and control to protect the interests of investors and stakeholders (Fama and Jensen, 1983). The interests of investors and stakeholders are usually protected using a three-tier system (Ramaswary, 2005).

The first level is the corporate governance code of the company. Among other things, the objectives of the code are to ensure that the company's policies are implemented, the objectives are achieved, the performance is monitored, and the disclosures of the company's activities are adequate. The second level is the company's internal control system. The objectives here are to provide reasonable assurance of the efficiency and effectiveness of the company's operations, the reliability of the financial report and compliance with laws and regulations.

The third level is the regulatory authorities such as the Hellenic Capital Market Commission. Regulators are responsible for overseeing the company's reporting system and ensuring compliance with notification standards, auditing standards, procedures and independence, ethical standards, and quality control standards.

Discussions about the integrity of financial reporting have intensified in recent years as the number of reported bankruptcy and fraud cases increases (Rezaee, 2005). This has become an issue for regulators as well as users of financial reports. It has therefore become clear that deficiencies in internal controls due to weaknesses in corporate governance structures have contributed to the increase in fraudulent activities.

The pressure to maintain company performance can motivate managers to manipulate financial reports (Ramaswary, 2005). Riahi-Belkaoui and Picur (2000) show that management's ability to circumvent internal controls is another contributing factor to fraud. In terms of increasing fraud, companies are called upon to strengthen their internal control systems by strengthening their corporate governance.

The increase in the number of fraud cases around the world has imposed more rules and regulations on the market, as well as strict enforcement measures by regulators. Corporate governance has been recognized as an important control and governance mechanism in the capital market. Therefore, it was mandatory for all companies to incorporate the approved corporate governance framework.

Therefore, in this new context, the purpose of this study is to examine the impact of corporate governance on detecting and avoiding accounting fraud. This study will add to the literature in this area and offer a unique multicultural dimension. More specifically, this paper will study the impact of the characteristics of internal auditors, corporate governance, fraud detection techniques and organizational commitment on fraud prevention and will contribute important information to policy makers and companies.

In addition, this study will help external users of published information to identify which companies are at risk of corporate fraud, thus helping them make better investment decisions. For company shareholders and other stakeholders, this study could help evaluate the performance and activities of a company that are necessary to protect their interest or investment. For auditors, this study could be considered a tool for assessing the risk of accounting fraud.

# Chapter 2: Theoretical framework

## 2.1. Accounting fraud

Accounting fraud differs from other fraud in that it is usually committed by management to deceive users of financial statements, especially investors and creditors (Guy and Pany, 1997). Accounting fraud is the intentional, material inaccuracy of financial statements or financial disclosures or the commission of an illegal act that has a material direct effect on the financial statements or disclosures. The classification of action as fraudulent may depend on the motive behind it (Brennan and Hennessey, 2001).

Young (2000) suggests that accounting fraud does not start with dishonesty. Instead, it may start with the pressure to achieve financial goals and the fear that failure to achieve those goals will be seen as unforgivable. Alternatively, the perpetrator of the fraud may be due to dishonesty and personal gain rather than pressure from the organization. This fits the fraud triangle that identifies three factors: private incentives or pressures that cannot be shared, opportunities to commit fraud, and the ability to rationalize fraud.

When a company detects an accidental accounting error, it makes every effort to correct it and generally has no adverse consequences. On the other hand, an accounting irregularity is not an accidental mistake, which means that someone is lying. The concept of false profits only makes sense if it is related to real profits. A true statement, for entrepreneurs, is something that corresponds to reality or facts. Usually, the profits reported by companies and used by investors and managers are inaccurate numbers based on multiple assumptions and subjective estimates. This does not mean that financial reports are not useful, but simply that it is important to set a standard for useful and high-quality profits. Accounting fraud can be committed through the following tools (Ajekwe and Ibiamke,2017)

- ❖ Falsification, alteration, or manipulation of important financial records, supporting documents, or business transactions.

- Significant intentional omissions, or misinterpretations of events, transactions, accounts, or other important information from which the financial statements are prepared.
- Deliberate misapplication of accounting principles, policies, and procedures used to measure, identify, report, and disclose financial events and business transactions.
- Deliberate omission of disclosures or presentation of inadequate disclosures regarding accounting principles and policies and regarding financial amounts.

## 2.2. Corporate governance

In recent years, many efforts have been made by European countries and the rest of the world to reduce accounting fraud and corporate fraud. In particular, after the financial scandals that shed light on the many gaps in the regulatory systems, the states decided that the time had come for a change. There have been notable corporate law reforms that have improved the internal governance mechanism and disclosure requirements and have strengthened public enforcement (Enriques and Volpin, 2007).

Corporate governance is a set of rules, regulations, and policies that companies must adhere to avoid fraud and misconduct. The states themselves are trying to establish certain controls through a regulatory system. These measures that companies decide to adopt mainly concern the organization and the board of directors. The role of corporate governance is to monitor and control the management and business activities of companies.

Beasley (1996) suggests that weak corporate governance structures lead to weak internal controls, which contribute to mismanagement, fraud, and unethical decision-making by managers. Studies on the effectiveness of independent board members in reducing earnings management have shown mixed results. A larger number of independent board members helps to reduce the incentive to manage profits, which means better control (Mulgrew and Forker, 2006). However, Hashim and Susela (2006) also found a positive relationship between the number of independent board members. board and earnings management practices.

Effective corporate governance should guide the board and management to act in the best interests of the company and its shareholders and to strengthen effective oversight. Unfortunately, there is no model of effective corporate governance. However, there are some key elements to effective corporate governance, as stated by Chen et al. (2007), the basic principles of effective corporate governance are to promote transparent and efficient markets, to protect and facilitate the exercise of shareholders' rights, to ensure the fair treatment of all shareholders and to ensure the timely and accurate disclosure of all essential issues.

Corporate governance frameworks depend on the legal, regulatory, and institutional environment in which companies are located. An effective corporate governance mechanism would minimize company costs and reduce the company's market value loss resulting from a potential conflict between managers and owners (Shleifer and Vishny, 1997). OECD (2004) provides the principles of corporate governance as follows:

> Corporate governance is one of the most important factors in improving the efficiency and growth of the economy and in increasing investor confidence.
>
> It includes the relationship between the management of a company, its board of directors, its shareholders, and other stakeholders.
>
> Provides the structure through which the company's goals are defined and the means to achieve it and determines how performance is monitored.
>
> Provides appropriate incentives for the board and management to pursue corporate goals and facilitate effective monitoring.
>
> An effective corporate governance structure should give confidence that the market is working well.
>
> The cost of capital will be lower and business resources will be used efficiently, thus encouraging growth.

These principles demonstrate the significance of corporate governance in businesses. The benefits companies receive will ensure business growth and a more stable and secure market /

economy. Corporate governance is a system that governs the best practices of individuals in a company, especially the management team, so that they perform their duties in the interest of all shareholders and stakeholders.

# Chapter 3: Literature review and hypothesis development

## 3.1. Accounting fraud prevention

Financial fraud can be defined as the crime of cheating someone to obtain money or goods illegally. The accounting fraud includes bribes, political donations, artificial prices, and frauds of all kinds. Ezejiofor et al. (2016) argued that financial fraud in organizations varies greatly in nature, character, and method of operation in general. Fraud can be classified in two ways, the nature of the fraudsters and the method used to execute the fraud.

Internal, external, and mixed fraud are the three types of fraud that can be classified based on the character of the perpetrators. Internal fraud is related to those committed by staff members and directors of organizations, while external fraud is committed by persons not affiliated with the organization and mixed fraud involves the connection of external partners with the staff and managers of the company. Identifying the causes of fraud is very difficult, as frauds in modern organizations usually involve a complex web of conspiracy and deception that often covers the real cause.

Ezejiofor et al. (2016) stated that at least ten of each staff member would look for ways to steal if given the chance and so, only four could be honest. Experienced auditors, accountants, and investigators of legal and financial records have been characterized as forensic accountants. They are hired to investigate possible suspicions of fraudulent activity within a company or hired by a company that may simply wish to prevent fraudulent activity. Forensic or investigative accounting services are employed in fields such as accounting, antitrust law, claims, analysis, valuation, and general consulting, according to Manning (2005).

Forensic accountants have also been used in bankruptcies, insurance claims, bodily harm claims, fraudulent claims, construction, rights checks and terrorism monitoring by investigating financial records. Sanusi (2010) presented the situation of some banks and provided the details of some banks. Five prominent banks were declared insolvent, revealing that they had largely eroded their shareholders' funds and virtually violated all indicators in the banking sector.

The role of forensic accountant is exercised by a person who, generally, has the same capabilities as an auditor. For this reason, sometimes the two elements can overlap. Thus, Digabriele (2009) begins to wonder if the forensic examiner's skills need to be added to the auditor to increase the likelihood of detecting accounting fraud. Given the ever-changing market, an analysis carried out in The United States on a random sample of academics concluded that forensic or investigative accounting plays a fundamental role in the audit process, and auditors themselves may need to add new knowledge or skills to their own.

Forensic accounting is about identifying and establishing facts to support a legal case Degboro and Olofinsola (2007). That is, the use of forensic techniques to locate and investigate an economic crime to uncover all the functions and identify the culprits. According to Howard and Sheetz (2006), forensic accounting is the process of interpreting, summarizing, and presenting complex financial issues with clear, concise, and factual data.

Forensic accounting is sufficiently thorough and extensive so that an accountant, in his or her considered independent professional judgment, can deliver a finding on accounts, stocks or the presentation of such quality that would be legally valid in certain legal proceedings, or a judicial or administrative review. According to Dhar and Sarkar (2010) forensic accounting is described as the application of accounting concepts and techniques to legal problems. It requires a report where fraud, bribery or embezzlement is found, and the report is considered as evidence in court or administrative proceedings.

The use of specialized investigative skills to conduct an investigation carried out in such a way that the result is applicable in court is called a forensic investigation. Investigative accounting is often linked to criminal investigations. Employee theft, securities fraud, insurance transactions, and proceeds of crime investigations are examples of typical investigative accounting assignments. Bhasin (2007) noted that the objectives of forensic accounting include assessing the damage caused by the negligence of an auditor, finding evidence to determine whether embezzlement has taken place, in what amount, and whether criminal proceedings should be instituted. criminal proceedings and the calculation of asset values.

Also, argues that the primary focus of forensic accounting is the explanatory analysis of the phenomenon of fraud, including the discovery of fraud and its implications for the accounting sector. Forensic accounting is a combination of auditor and private investigators according to Gray (2008). Research skills, legislation, quantitative methodologies, funding, auditing, accounting, and law enforcement are aspects of knowledge and skills.

Wanjiru and Ndegwa (2020) in a survey of listed companies in Kenya, showed that the prevention of accounting fraud reduces the incidence of fraud by 33.7%.

## 3.2. The characteristics of the internal auditor

Porter (1997) studies the evolution of auditors' responsibilities to detect and report fraud throughout time. The study shows that there is an evaluation of audit practices and a shift of the audit model to different stages. It also reveals that the primary goal of an audit in the pre-1920 phase was to uncover fraud. Until the 1930s, however, the primary purpose of an audit was to verify accounts. This is probably due to the increase in the size and volume of the companies' transactions, which in turn makes it unlikely that the auditors will be able to examine all the transactions. During this period,

Boynton et al. (2005) argue that auditors need to be more proactive in fraud detection during an audit. Their tasks include examining the motives as well as rationalizing that the fraudulent act is justified. Auditors are also expected to look more closely at reasons that fall into areas such as accounting errors, unusual transactions that appear to lack business logic, and a reluctance to correct intangible errors found in the audit.

The role and responsibility of internal auditors about fraud are set out in internal auditing standards. According to these standards, internal auditors must have sufficient knowledge to assess fraud risk and how the organization manages it, but they are not expected to have the experience of a person whose primary responsibility is to detect fraud. According to internal control standards, internal auditors must assess the likelihood of fraud and how the organization manages the risk of fraud.

In a study conducted in Indonesia by Handoyo et al. (2021) found that internal control contributes to the prevention and avoidance of fraud by 68.8%. Sarens et al. (2009)

demonstrate the importance of both general knowledge of the business world to be held by internal auditors and specialized auditing issues.

The initial or full investigation of suspected fraud, the analysis of the root causes and monitoring of the improvement of recommendations, the monitoring of an open reporting / complaint line, and the provision of ethics training sessions are some of the responsibilities of the internal auditor in correlation to fraud risk management. According to these standards, the chief audit executive must report periodically to senior management and the board of directors on significant risk exposures and control issues, including fraud risks, governance issues and other matters required or required by senior management; and the board (Rifai and Mardijuwono, 2020).

Carcello and Nagy (2004) also found that accounting fraud is more likely to occur during the first three years of the auditor-client relationship. Other factors related to the quality of auditors that have been associated with companies' likelihood of committing fraud include the auditor's level of expertise, the auditor's term of office, the auditor's experience (Hogan et al., 2008) and time pressure.

In turn, integrity in the form of ethics and control environment addresses two key issues related to fraud prevention (Hernandez and Groot, 2007). Integrity is one of the factors that can affect the quality of the performance of government auditors which is one of the parties that must play an active role in preventing fraud in the government environment. In carrying out their duties and supporting the improvement of their performance, auditors must adhere to the principle of integrity to act consistently with ethical values and to follow the applicable regulations to build the trust that provides the basis for a credible decision making.

Watson (2004) explains that an auditor must have a code of conduct as an ethical principle or a form of behavioral regulation that governs the relationship between auditors and communities. Thus, the attitude of integrity is a code of ethics where auditors must have an honest, courageous, wise, and responsible manner. An auditor with high integrity will always act suitable for the company, so it is about fraud prevention.

The integrity of an auditor will affect the performance of auditors and the results of quality inspection as supported by research conducted by Djalil (2016), where the results show that integrity is significantly related to the performance of auditors. Also, another study conducted by Bouhawia (2015) shows that integrity is significantly related to the quality of control, which is a critical element in fraud prevention.

Rifai and Mardijuwono, (2020) gathered empirical data on the impact of the auditor's integrity on fraud prevention. The survey was conducted using questionnaires distributed to all internal auditors working in the Internal Audit of the National Government of East Java. The result of this research found that the integrity of the auditor has a positive effect on fraud prevention.

The following research hypothesis is derived from the above:

*H1: There is a positive correlation between the characteristics of the internal auditor and the prevention of accounting fraud.*

## 3.3. Organizational commitment

Organizational commitment tends to be defined as a mixture of behaviors. Organizational commitment includes three attitudes, a sense of identification with organizational goals, a sense of involvement with organizational tasks, and a sense of loyalty to the organization (Ferris and Aranya, 1983). James et al. (1996) used two aspects of organizational commitment, efficiency and continuity. The results of his research revealed that commitment affects the organization in terms of professionalism, which is the commitment to the profession, while the continuation of organizational commitment is positively related to experience and negatively related to professionalism in terms of social obligations.

According to Oktaviani (2012) organizational commitment is individuals who are distinguished by the desire to act ethically towards the organization in order to achieve the desired goal. Organizational commitment is a justification for the attitude of loyalty in the company. Employees with high organizational commitment will expect the rules in the company to be able to reduce the level of fraud.

The idea of organizational commitment has been a widespread concern in organizational psychology research for many years. Organizational commitment refers to the degree to which employees of an organization consider themselves to belong to an organization and feel attached to it. Emotional commitment expresses the emotional connection of employees.

Mowday et al. (1982) suggest three aspects that form an emotional commitment, such as a firm belief in the organizational goal and the value and acceptance of employees by an organization, the willingness to provide support to the organization and the strong need of employees to maintain participation in the organization.

Emotional commitment is related to the emotional relationship of the member with his organization. An employee who is effectively highly responsible will continue to be a member of the organization because he has the desire for it. Continuing the commitment associated with raising the awareness of organizational members will suffer losses if it leaves the organization. An employee with a high level of commitment will continue to be a member of the organization because he or she must become a member of that organization.

A normal commitment is an employee's commitment to his organization, especially in relation to how much employees feel the need to stay in their company. It may reflect the moral obligation of the employees in the organization. The conventional view of regulatory commitment argues that these are employees who identify with and are involved with a particular organization. Reichers (1985) suggest that individuals and groups can also be foci of engagement. Normal commitment describes a sense of attachment to stay in the company. With some of these explanations, it can be said that an employee with high organizational commitment tends to keep the company where he works.

In other words, the employee will take positive steps to achieve the company's goals. Hikmet (2014) shows that organizational commitment is positively related to the auditor's ability to detect fraud. O'Reilly and Chatman (1986) go further in proposing that attitudes and behaviors are modified in three different ways to achieve distinct goals, first, through compliance behavior, which rewards and avoids punishment. Second, identification is sought through the adoption of attitudes and behaviors that facilitate good relations, and third, the internalization process takes place when the rules of organization are in line with personal values.

The success of the organization requires emotional involvement, sacrifice of an individual and an honest relationship with the organization. Organizational commitments can be demonstrated through commitment to attitude and behavior. The aspect of attitude is indicated by the involvement of an employee to show a loyal attitude towards the organization. On the contrary, the element of behavior is shown by the effort of an employee in the performance of his duty and the tendency to stay and maintain his profession.

Sarens et al. (2009) demonstrate the importance of interpersonal relationships between auditors and other employees. In addition, the study by Supriyadi, S. (2020) examines how individual and organizational characteristics affect the ethical courage of internal auditors to report fraud. Individual elements such as self-efficacy and resilience, as well as organizational factors such as the independence of the internal auditor and the perceived support of the audit committee, seem to have a favourable effect on the morale of internal auditors in reporting a fraud.

Organizational commitment is one of the critical factors in improving fraud prevention in auditor-reviewed services. An auditor who has a strong emotional connection to the organization tends to have the desire and motivation to stay and contribute to the business in which he works. Also, auditors who are afraid to leave the organization because they will not find the right job will always work according to the goals of the organization, in this case, fraud prevention. This feeling shows that a controller who is happy and has a psychological attachment to the body can positively influence efforts to increase fraud prevention (Rifai, and Mardijuwono, 2020).

Therefore, the hypothesis we are led to is the following:

*H2: There is a positive correlation between organizational commitment and accounting fraud prevention*

### 3.4. Fraud detection techniques

Financial fraud is becoming an increasingly serious problem. The total losses caused by financial fraud are incalculable. Detection of financial fraud is therefore vital to prevent the often-catastrophic consequences of financial fraud. Detection of financial fraud involves distinguishing fraudulent financial data from genuine data, thus revealing fraudulent behavior or activities and allowing decision-makers to develop appropriate strategies to reduce the impact of fraud.

Data mining plays an important role in detecting financial fraud, as it is often used to extract and reveal the hidden truth behind very large amounts of data. Gray and Debreceny (2014) investigated the application of data mining techniques to fraud detection in the control process. The authors proposed a classification to guide future research on the subject. The purpose of the investigation was to uncover patterns of fraudulent schemes. Some examples of data mining include financial statement data, text data, email data, and web data such as blogs, financial statements, and press releases.

In addition, data mining techniques include process mining and role mining. The above techniques are currently used in specialized controls, but the authors suggested applying the techniques to routine controls, identifying situations suitable for the use of data mining. Research by Gupta and Gill (2012) presented a framework for data mining to prevent and detect fraud. The authors examined the framework to provide empirical results on the validity of three data mining tools. The model presented included the selection of 62 financial ratio variables for import and the sample sample included data for organizations with reported fraudulent activity. The test used a monitoring rule to detect abnormalities.

Of the three data mining methods tested, the authors considered the decision tree method to be the most sensitive to fraud detection and the genetic programming method to provide the best specification for fraud detection. While Gupta and Gill (2012) focused on financial data mining, Goel and Gangolly (2012) conducted quantitative tests of the qualitative content of the annual reports. The authors examined the differences in the writing and presentation of annual reports between fraudulent and non-fraudulent companies.

The researchers intended to identify elements of fraud in the linguistics of the annual reports. The findings showed that the false reports use linguistics to paint a favorable picture of the company, including covering descriptive statements with non-informative wording. The authors provided information from studies showing improved accuracy with linguistic analysis. In this study, researchers used text mining to uncover hidden markers. Previous research has focused mainly on quantitative fraud indicators, with limited ability to accurately predict fraud cases.

The authors identified six categories of clues related to fraudulent reporting. This research is useful as a tool for auditors to understand the potential signaling that exists in the written part of the annual reports. Research is also useful for understanding non-financial data on fraudulent reporting. Extending previous studies, Li et al. (2014) combined data and text mining techniques to provide improved fraud detection capability.

The authors noted a lack of research on the combined use of techniques. The researchers used a genetic algorithm to determine the optimal parameters for the model, using economic and narrative data from archives. Li et al. (2014) found that combined techniques increased the interpretive and explanatory power of the models. Another widely researched area of fraud models is machine learning methods. Mangala et al. (2017) state that the use of information technology, timely control, regular control, and corporate rules and procedures are all important in reducing fraudulent practices in an organization. They, therefore, recommend that use in sustainable anti-fraud strategies should not be considered a cost.

Zhou and Kapoor (2011) and Ormerod et al. (2012) noted that fraud detection has become one of the most established data mining applications in both industry and government. According to Phua et al. (2005), the most commonly used techniques are neural networks, belief networks, and decision trees. Arens et al. (2012) argue that IT could improve a company's internal controls and affect overall risk, although its use poses other risks, such as those related to hardware and data protection or the possible introduction of new types of errors. These risks include systemic risk, unauthorized risk, and data loss risk.

Dowling (2009) and Chen et al. (2014) confirm that audit support systems are primary technology applications used by audit firms to audit, facilitate, and support their audit work. In addition, auditing firms promote these systems as necessary to facilitate and achieve audits of high-quality financial statements. The authors point out that if auditors do not use appropriate control support systems, then the quality of the audited financial statements could suffer and have a negative impact on the financial decisions of stakeholders (Halbouni et al., 2016).

According to the findings of Ramazani and Atani (2010) in research conducted in Iran and Bierstaker et al. (2006), firewalls, antivirus, and passwords, as well as the evaluation and improvement of internal control are regularly used to combat fraud. Despite high scores on performance, discovery sampling, data mining, forensic accountants, and digital analysis tools are not commonly used. Organizational forensics and digital analysis were the least commonly used anti-fraud methods and had the highest average effectiveness scores.

On the other hand, McKee (2006) argues that external controllers should use their imagination when choosing the most effective and efficient control techniques in a particular control approach, suggesting that external controllers use many irregulars, traditional techniques, and technological techniques. such as warning, observation, changing control techniques from previous years, and embedding a software screen. Finally, some of the techniques that seem to be important in detecting financial fraud, according to Eko et al. (2020), are the analysis of financial trends and financial indicators.

The following research hypotheses are derived from the above:

*H3: There is a positive correlation between the application of fraud detection techniques and the prevention of accounting fraud.*

## 3.5. Corporate Governance Effectiveness in Fraud Prevention and Detection

Corporate governance can overcome conflicts of interest and asymmetric information between assignors and agents to prevent and avoid fraud in financial statements. The detection of undisclosed financial statements can turn into a major scandal that hurts many places. Corporate governance has a significant negative effect on financial statement fraud, according to Rahman and Bremer (2016).

In contrast, Salim and Marietza (2017) found no positive effect of corporate governance on financial statement fraud. Financial statement fraud begins with the management of profits from financial statements that are considered intangible but eventually evolve into fraud and produce annual financial statements that are essentially misleading. Hogan et al. (2008) believe that inefficient corporate governance is related to the folding of high-profile companies and therefore raise questions about the integrity and ethical conduct of senior management, the adequacy and effectiveness of internal controls, the reliability of financial reports, the quality of of internal and external audits and the accuracy of stock exchanges.

Saidi (2011) points out that corporate governance reform in developed capital markets is often driven by investors, while the burden of improving corporate governance lies with regulators due to corporate ownership structures. The American Institute of Certified Public Accountants has implemented various indicators that measure the effectiveness of corporate governance in preventing and detecting fraud. These indicators include the effectiveness of the audit committee, the effectiveness of the internal audit, the effectiveness of the external audit, the training of employees and the presence / absence of a culture of honesty and strong ethics in senior management. Corporate governance is measured by scores in five dimensions.

In the United Arab Emirates, Halbouni et al. (2016) researched the importance of corporate governance and information technology in fraud prevention and detection (UAE). The authors conducted a survey of accountants, internal and external auditors in the UAE to analyze their perceptions of corporate governance performance as measured by the audit committee, internal and external audit functions, honesty culture, and fraud prevention and detection training programs.

Owuigbe et al. (2019) found a correlation between board rate and financial reporting fraud. Companies that commit fraud have a percentage of the external board, which is significantly lower compared to companies that do not commit fraud. This is consistent with the findings of Rahman and Bremer (2016), who found that organizations that do not commit fraud have a larger percentage of external and independent commissioners than companies that do. Mangala et al. (2017) consider corporate governance to be the most effective means of combating fraud.

Independent commissioners do not face pressure from the company. Therefore, they are more likely to act independently and as separators of interests between leaders and representatives.

With an independent commissioner, it can guarantee the transparency of financial statements so that shareholders receive higher quality information. Azwin et al. (2018) stated that having a special committee in a company will prevent executives from committing fraud.

Also, Owuigbe et al. (2019) stated that the existence of an audit committee reduces the likelihood of fraud. An increase in the number of independent auditors will tend to provide a positive return to minimize evidence of possible fraud in the company's financial statements. Finally, independent audit committees were found to be inversely linked with evidence of fraud by D'onza and Lamboglia (2011).

Therefore, the hypothesis we are led to is the following:

*H4: There is a positive correlation between the effectiveness of corporate governance and the prevention of accounting fraud.*

# Chapter 4: Research methodology and results

## 4.1. Introduction

The fourth chapter presents and analyzes the results of the research. After collecting the questionnaires, they were processed, and the results were extracted using IBM SPSS Statistics 22 and IBM AMOS 22. Descriptive statistics results are provided for each question included in the questionnaire. Then, an exploratory factor analysis is performed, followed by the confirmatory factor analysis by performing a regression with the least squares method, in order to examine the relationships of the independent variables with the dependent variable. Finally, regression is performed by introducing control variables into the model.

## 4.2. Population - Sample

Aiming to investigate the factors that affect the prevention of accounting fraud, internal and external auditors, managers, accountants, and other executives from 120 large Greek companies listed on the Athens Stock Exchange were selected as a sample. The answers collected are 47 with a response rate of 39.16%.

## 4.3. Descriptive statistics

The questionnaire (see Appendix) is separated in six parts. The first four questions are about demographic information of the respondents and belong in the first part. The next five parts relate to all the variables. More analytically, the second part is about the dependent variable, *Fraud Prevention*. The third part matches the first null hypothesis which is *Internal Auditor's Characteristics* with six questions, while the fourth part with *Organizational Commitment* with five questions. The fifth part relates to *Fraud Detections Techniques* with nine questions and, finally, the last part is about *Corporate Governance Effectiveness* with five questions.

### 4.3.1 Part A. Demographics

The first part of the questionnaire consists of four questions (1.1. To 1.4.) which are of a general information and concern the demographic data of the survey.

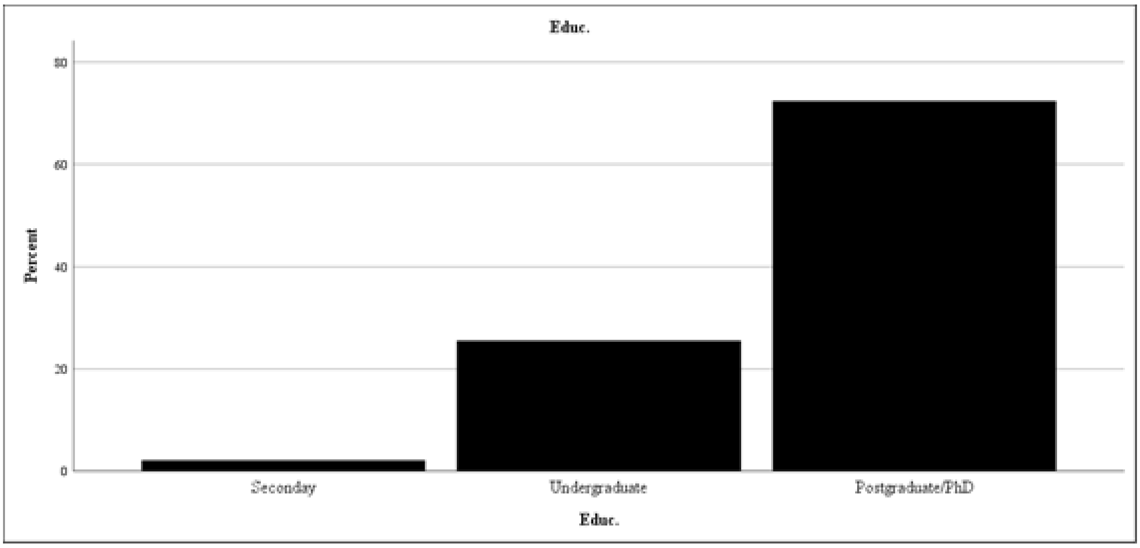
The first question of part A is related to the level of education that the respondent holds. The following table depicts the results of the question Q.1.1.

*Choose your level of education:*

| | Percent | Valid Percent | Cumulative Percent | Frequency |
|---|---|---|---|---|
| Secondary | 1 | 2.13% | 2.13% | 2.13% |
| Undergraduate | 12 | 25.53% | 25.53% | 27.66% |
| Postgraduate / PhD | 34 | 72.34% | 72.34% | 100.00% |
| Other | 0 | 0.00% | 0.00% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.1 1*

According to the results from the table above, 2.13% of the sample are high school graduates. 25.53% of the respondents hold a higher education degree, while the vast majority, 72.34%, hold a postgraduate or doctoral degree. None of the respondents chose the option "Other". The results are shown in the graph below.




*Bar Chart Q.1 1*

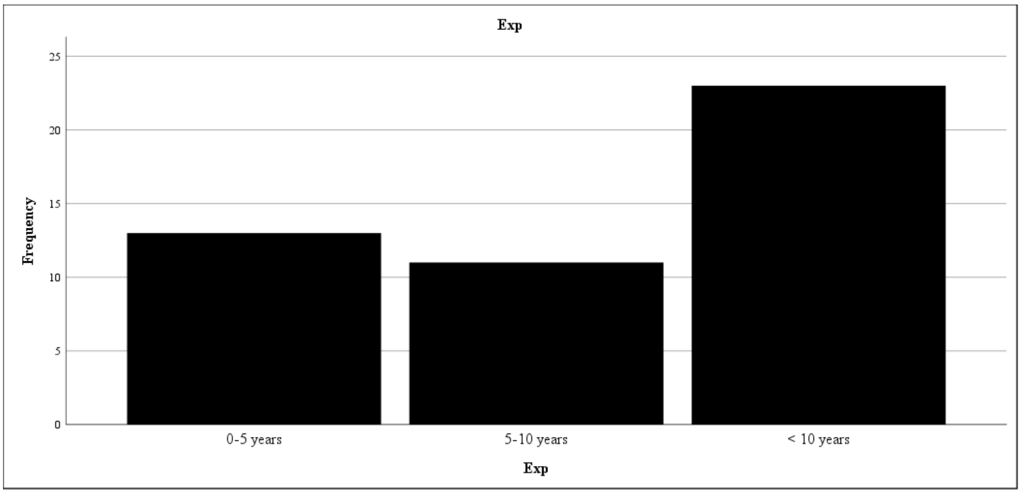
The second question of part A refers to the work experience of the respondent. The answers in question 1.2 are presented in the table below.

*Choose your work experience:*

| | Percent | Valid Percent | Cumulative Percent | Frequency |
|---|---|---|---|---|
| 0-5 years | 13 | 27.66% | 27.66% | 27.66% |
| 5-10 years | 11 | 23.40% | 23.40% | 51.06% |
| 10 years and over | 23 | 48.94% | 48.94% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.1 2*

The results show that 27.66% have work experience of zero to five years, 23.40% have worked from five to ten years, while most respondents, a percentage of 48.94% have more than ten years of work experience. The results are depicted in the graph below.




*Bar Chart Q.1 2*

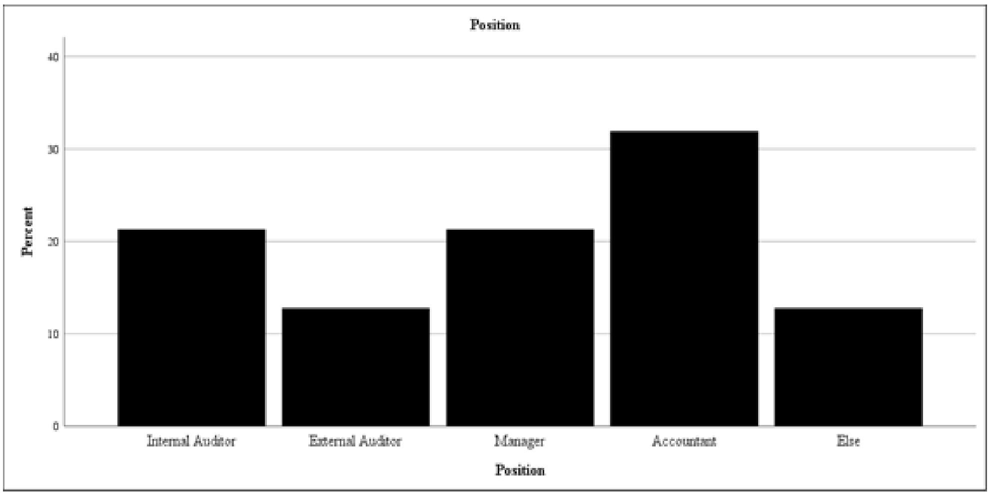
Then, the third question of part A explores the current position of the people who participated in the research, with the results appearing in the table below.

*The position you hold is:*

| | Percent | Valid Percent | Cumulative Percent | Frequency |
|---|---|---|---|---|
| Internal auditor | 10 | 21.28% | 21.28% | 21.28% |
| External auditor | 6 | 12.77% | 12.77% | 34.04% |
| Manager | 10 | 21.28% | 21.28% | 55.32% |
| Accountant | 15 | 31.91% | 31.91% | 87.23% |
| Other | 6 | 12.77% | 12.77% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.1 3*

As it can be seen from the table above, 21.28% of the participants are internal auditors. Respectively, 12.77% are external auditors, 21.28% hold the position of manager while 31.91% of the respondents are accountants. Finally, 12.77% hold other positions within the organizations. The results are shown in the graph below.




*Bar Chart Q.1 3*

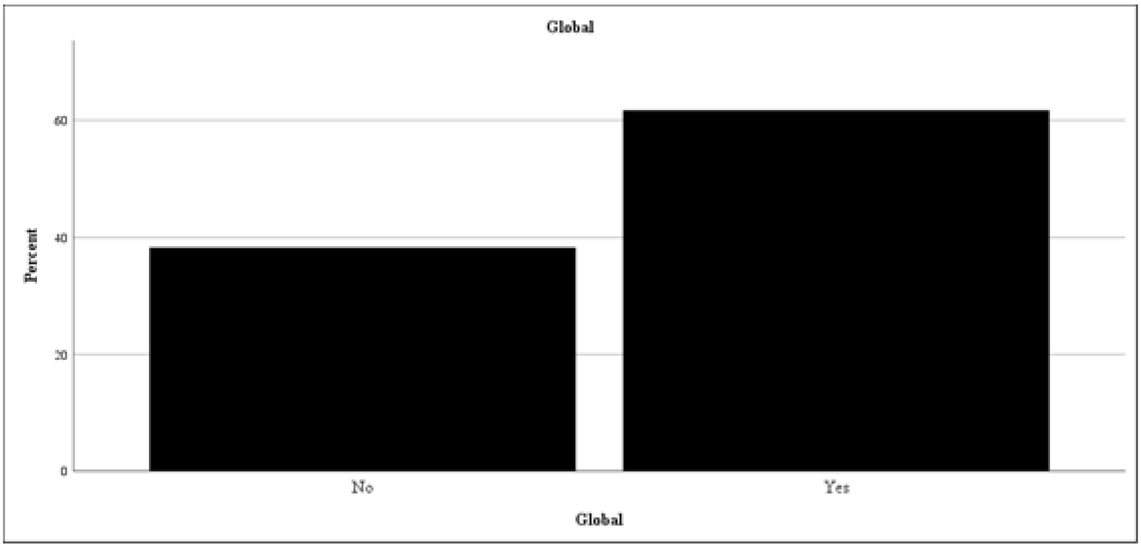
Part A of the questionnaire ends with the fourth question, which relates to whether the company or organization operates internationally. The results are displayed in the table below.

*The company (or organization) operates internationally:*

| | Percent | Valid Percent | Cumulative Percent | Frequency |
|---|---|---|---|---|
| Yes | 29 | 61.70% | 61.70% | 61.70% |
| No | 18 | 38.30% | 38.30% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.1 4*

The majority of the organizations operate on an international level with a percentage of 61.70%, while those that operate at the domestic level amount to 18 out of 47, or 38.30%. The results are shown in the graph below.




*Bar Chart Q.1 4*

### *4.3.2 Part B. Fraud Prevention*

The next two questions (2.1. To 2.2) constitute the second part of the questionnaire, which investigates the prevention of fraud by Greek companies and organizations.

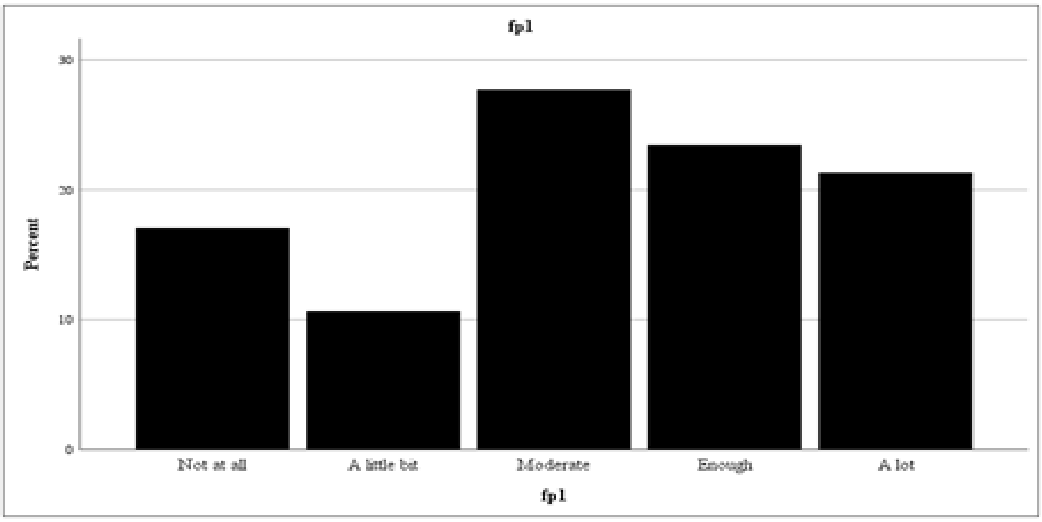
The first question is whether there is a policy of publishing a fraud by the company or organization. The following table presents the answers to question 2.1.

*In my firm: there is a policy of publishing a fraud*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 8 | 17.02% | 17.02% | 17.02% |
| A little bit | 5 | 10.64% | 10.64% | 27.66% |
| Moderate | 13 | 27.66% | 27.66% | 55.32% |
| Enough | 11 | 23.40% | 23.40% | 78.72% |
| Very | 10 | 21.28% | 21.28% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.2 1*

According to the table above, 44.68% of the participants state that the policy of publishing a fraud is applied either to an “Enough” extent (23.40%) or to “a lot”  (21.28%). Also, 17.02% state that there is no fraud publication policy at all. Finally, 10.64% answered "A little bit" while 13 of the 47 answered "Moderate". The results are shown in the graph below.




*Bar Chart Q.2 1*

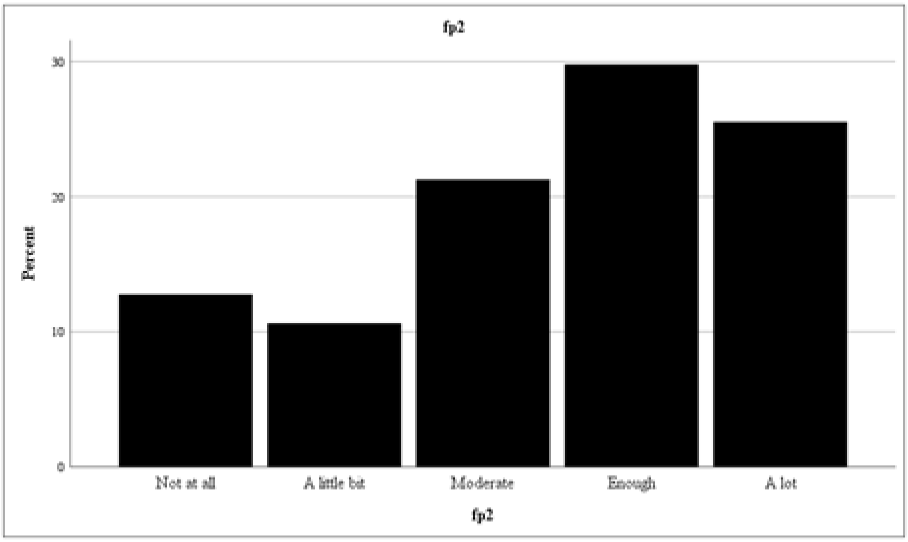
Part B concludes Question 2.2, which examines the extent to which there is a policy to prosecute all perpetrators of fraud. The results are displayed in the following table.

*In my firm: there is a policy to prosecute all perpetrators of fraud*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 6 | 12.77% | 12.77% | 12.77% |
| A little bit | 5 | 10.64% | 10.64% | 23.40% |
| Moderate | 10 | 21.28% | 21.28% | 44.68% |
| Enough | 14 | 29.79% | 29.79% | 74.47% |
| A lot | 12 | 25.53% | 25.53% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.2 2*

According to the table, in 25.53% of companies there is a policy of publishing fraud to an extent of "A lot" and 29.79% to "Enough". A total percentage of less than 24% answered, with 12.77% answering "Not at all", 10.64% answering "A little bit". Respectively 10 out of 47 (21.28%) said "Moderate".




*Bar Chart Q.2 2*

#### *4.3.3 Part C. Internal Auditor's characteristics*

The third part of the questionnaire consists of six questions (3.1. to 3.6.), which are related to the characteristics of the internal auditors of Greek companies and organizations.

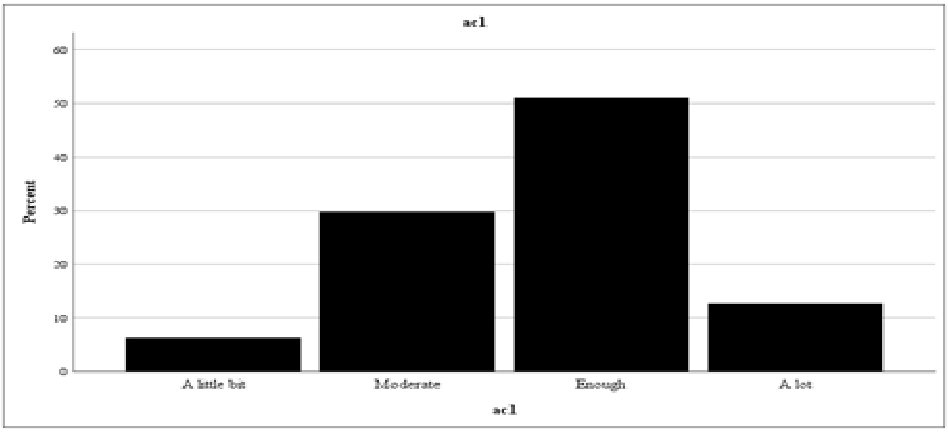
Question 3.1. examines whether internal auditors have the appropriate qualifications in both auditing and general business knowledge. The results are displayed in the following table.

*Internal auditors: Have the appropriate qualifications in both auditing and general business knowledge.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 3 | 6.38% | 6.38% | 6.38% |
| Moderate | 14 | 29.79% | 29.79% | 36.17% |
| Enough | 24 | 51.06% | 51.06% | 87.23% |
| A lot | 6 | 12.77% | 12.77% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.3 1*

In accordance with the table above, 63.83% of the sample considers that "internal auditors have the appropriate qualifications both in matters of auditing, but also in general knowledge of companies" to an "Enough" degree (51.06%) or to an "A lot" degree (12.77%). Given that, 36.17% agrees with the above statement either in a "Moderate" level (29.79%) or in "A little bit" (6.38%). The results are shown in the graph below.




*Bar Chart Q.3 1*

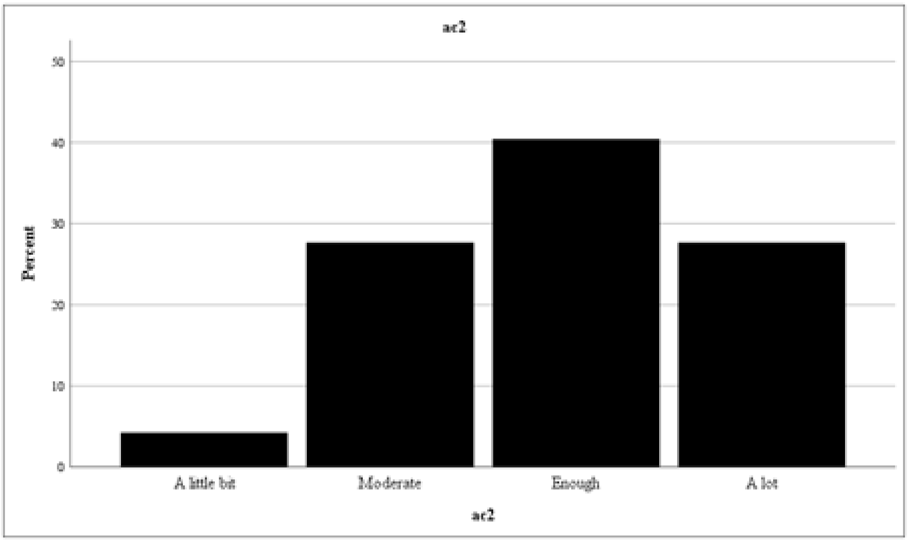
Question 3.2 then examines the extent to which internal auditors inform top management of risks that threaten the viability of organizations. The results are displayed in the following table.

*Internal auditors: Inform management of potential financial risks*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 2 | 4.26% | 4.26% | 4.26% |
| Moderate | 13 | 27.66% | 27.66% | 31.91% |
| Enough | 19 | 40.43% | 40.43% | 72.34% |
| A lot | 13 | 27.66% | 27.66% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.3 2*

The answers to the question 3.2. develop a relatively positive climate, as 68.09% of respondents answered that internal control uses "Enough" or "A lot" of risk assessment systems. On the other hand, 13 of the 47 responded "Moderate" and 2 answered "A little bit". The results are shown in the graph below.




*Bar Chart Q.3 2*

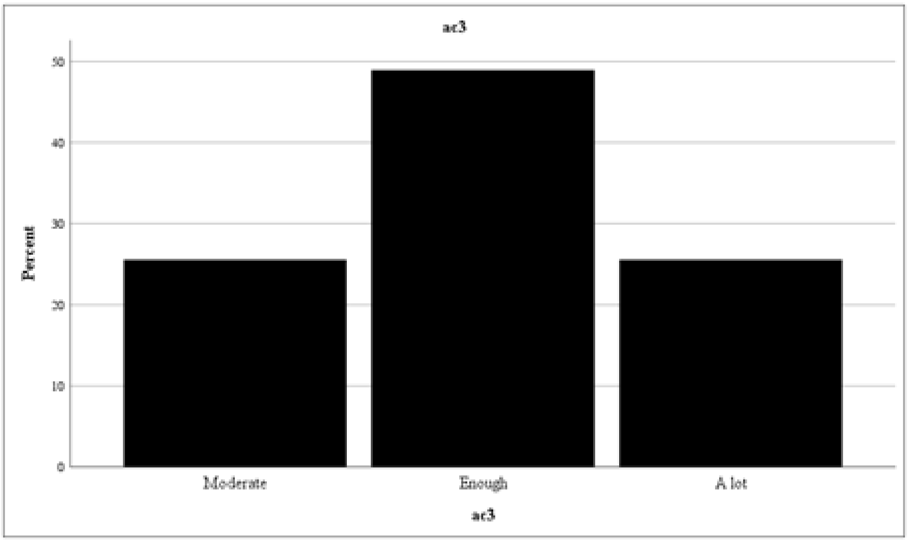
The third question in the second section examines the extent to which internal auditors are distinguished by diligence, honesty and responsibility, and the answers to it are contained in the table below.

*Internal auditors are distinguished by diligence, honesty, and responsibility.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 0 | 0.00% | 0.00% | 0.00% |
| Moderate | 12 | 25.53% | 25.53% | 25.53% |
| Enough | 23 | 48.94% | 48.94% | 74.47% |
| A lot | 12 | 25.53% | 25.53% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.3 3*

The two most common answers, accounting for 74.47%, are "Enough" and "A lot", indicating that in most organizations internal auditors are distinguished by diligence, honesty, and responsibility. Nevertheless, a total of 12 respondents, corresponding to a significant percentage of 25.53%, answered "Moderate", while none of the respondents answered, "A little bit" or "Not at all". The results are shown in the graph below.




*Bar Chart Q.3 3*

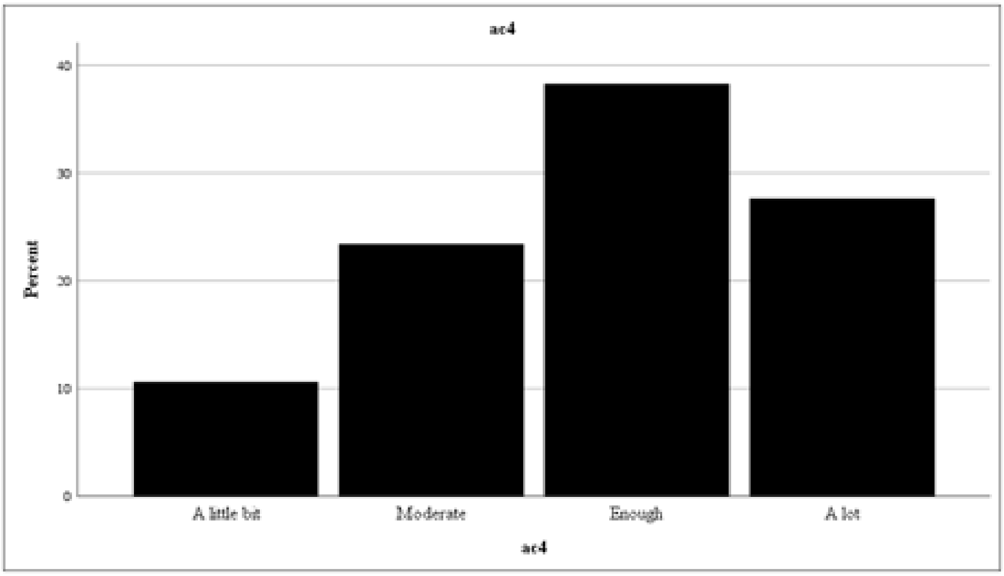
Question 3.4 explores the extent to which internal auditors have experience in financial, auditing, and financial matters. The results are displayed in the following table.

*Internal auditors: Are experienced in financial, auditing, and financial matters.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 5 | 10.64% | 10.64% | 10.64% |
| Moderate | 11 | 23.40% | 23.40% | 34.04% |
| Enough | 18 | 38.30% | 38.30% | 72.34% |
| A lot | 13 | 27.66% | 27.66% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.3 4*

According to the table above, the majority of the respondents, i.e., 38.30%, consider that the internal auditors are "Enough" experienced in financial, auditing and financial matters. The results of the "A lot" answer are particularly positive as it corresponds to the second most prevalent answer with a percentage of 27.66%.




*Bar Chart Q.3 4*

The 5th question that follows concerns the evaluation of the degree to which the internal auditors show willingness and persistence to find a solution to problems faced by the company, with the table below showing the corresponding results.

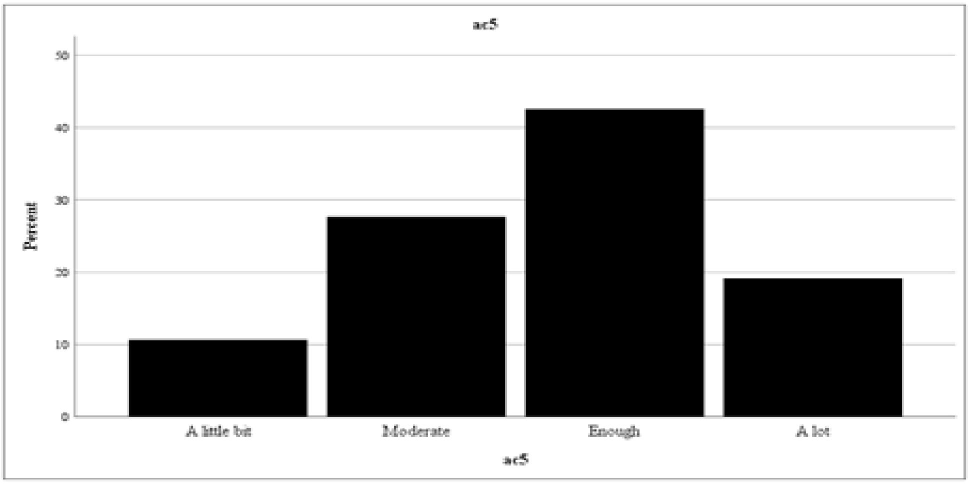
*To what extent do internal auditors: Show the will and perseverance to find solutions to problems facing the company.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 5 | 10.64% | 10.64% | 10.64% |
| Moderate | 13 | 27.66% | 27.66% | 38.30% |
| Enough | 20 | 42.55% | 42.55% | 80.85% |
| A lot | 9 | 19.15% | 19.15% | 100.00% |

| | | | |
|---|---|---|---|
| Total | 47 | 100.00% | 100.00% |

*Frequency Table Q.3 5*

Internal auditors show willingness and perseverance to solve problems in 42 of the 47 companies with 89.36% of the respondents answered to a "Moderate" level and above. 42.55% of the respondents argue that the internal auditors show the will and persistence to find a solution to problems to an "Enough" extent, while 19.15% chose the options "A lot" and 27.66% " Moderate ". Finally, to "A little bit" , was answered by 5 out of the 47 respondents, while no one said, "Not at all". The results are shown in the graph below.




*Bar Chart Q.3 5*

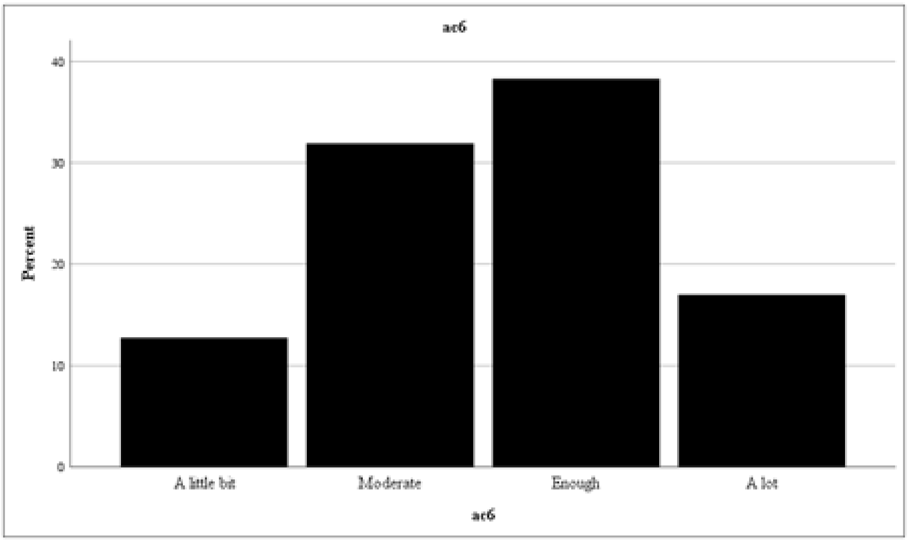
Part C ends with Question 6, which explores the extent to which internal auditors provide useful advice and suggestions to senior management. The following table shows the corresponding results.

*To what extent do internal auditors: Provide helpful advice and suggestions?*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 6 | 12.77% | 12.77% | 12.77% |
| Moderate | 15 | 31.91% | 31.91% | 44.68% |
| Enough | 18 | 38.30% | 38.30% | 82.98% |
| A lot | 8 | 17.02% | 17.02% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.3 6*

Considering the table above, it is observed that in a cumulative percentage of 55.32% of companies the degree to which the advice of internal auditors is characterized as useful "Enough" (38.30%), while 17.02% "A lot". Nevertheless, out of the 47 respondents, 15 stated a "Moderate" level with a percentage of 31.91%, while six stated "A little bit".




*Bar Chart Q.3 6*

### *4.3.4 Part D. Organizational Commitment*

The next five questions (4.1. To 4.5.) refer to the organizational commitment and constitute the fourth part of the questionnaire.

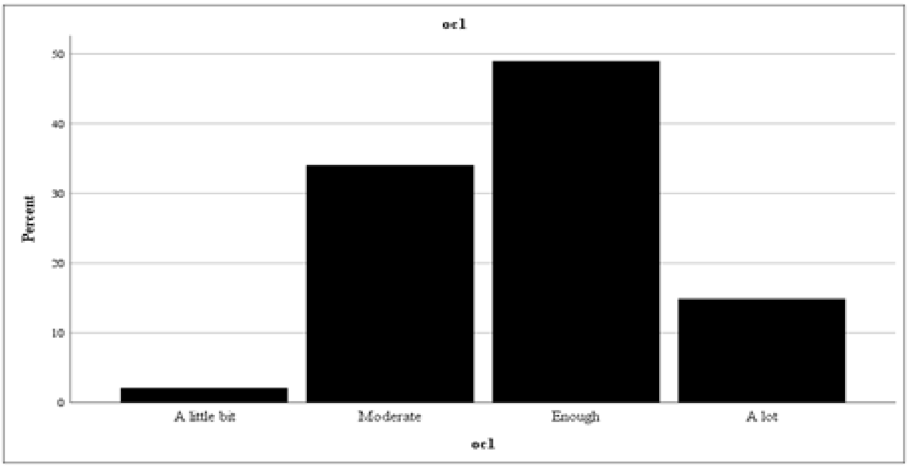
Question 4.1. examines the extent to which there is indepedence between the auditors. The answers to the question are presented in the table below.

*There is independence between the competent auditors.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 1 | 2.13% | 2.13% | 2.13% |
| Moderate | 16 | 34.04% | 34.04% | 36.17% |
| Enough | 23 | 48.94% | 48.94% | 85.11% |
| A lot | 7 | 14.89% | 14.89% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.4 1*

According to the table above, the largest percentage (48.94%) of the respondents consider that independence between the insiders is quite important. The options "Moderate" and "A lot" with a percentage of 34.04% and 14.89% respectively, highlight that the competent auditors must be in solidarity with each other. Only one respondent answered that the independence between the auditors exists to an "A little bit" degree. The results are shown in the graph below.




*Bar Chart Q.4 1*

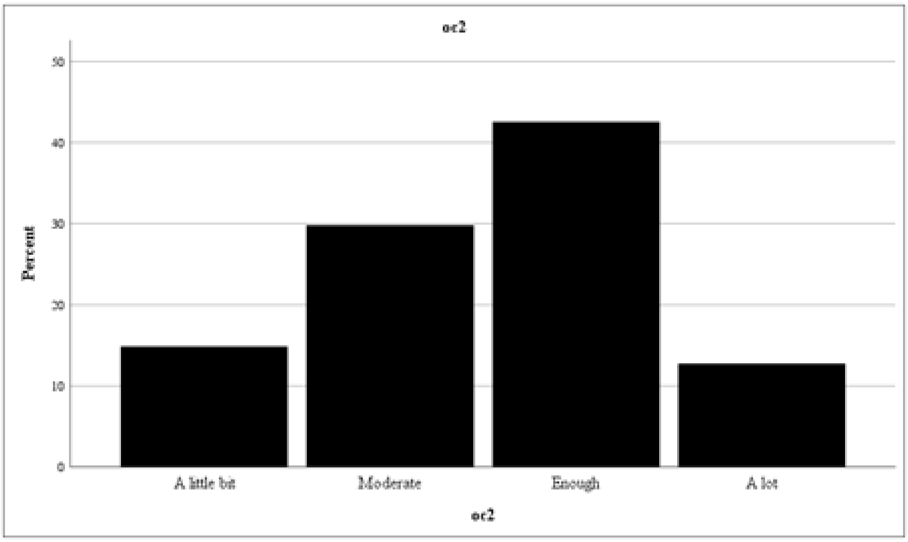
The second question in the fourth section concerns the extent to which internal auditors are satisfied with their work environment. The answers to question 4.2. are contained in the table below.

*Internal auditors are satisfied with their work environment.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 7 | 14.89% | 14.89% | 14.89% |
| Moderate | 14 | 29.79% | 29.79% | 44.68% |
| Enough | 20 | 42.55% | 42.55% | 87.23% |
| A lot | 6 | 12.77% | 12.77% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.4 2*

According to the results, the most common answer to this question is the "Enough" option, with 42.55%. The second most common answer is "Moderate" with a percentage of 29.79% while the answers "A little bit" and "A lot" follow, with a percentage of 14.89% and 12.77% respectively.




*Bar Chart Q.4 2*

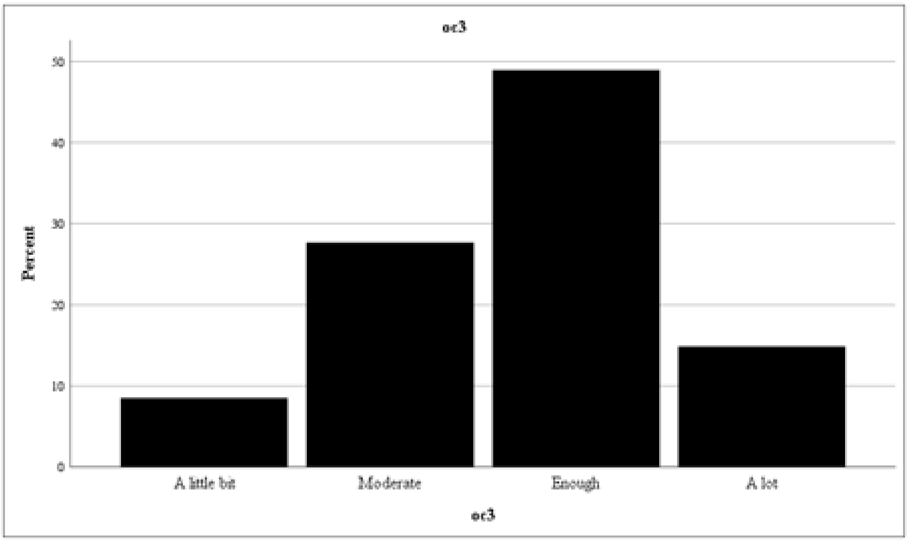
Question 4.3. is relevant to the extent to which internal auditors communicate effectively with external auditors and the results are reported in the following table of frequencies.

*Internal auditors communicate effectively with external auditors.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 4 | 8.51% | 8.51% | 8.51% |
| Moderate | 13 | 27.66% | 27.66% | 36.17% |
| Enough | 23 | 48.94% | 48.94% | 85.11% |
| A lot | 7 | 14.89% | 14.89% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.4 3*

Regarding the cooperative relations developed by the internal auditors with the external auditors, the data show positive results, as more than 90% of the respondents consider that the degree of development of good relations is from "Moderate" to "A lot", with the highest percentage (48.94%) corresponds to the option "Enough". However, in some Greek companies (8.51%) the internal auditors develop a few good cooperative relations with the external auditors. The results are shown in the graph below.




*Bar Chart Q.4 3*

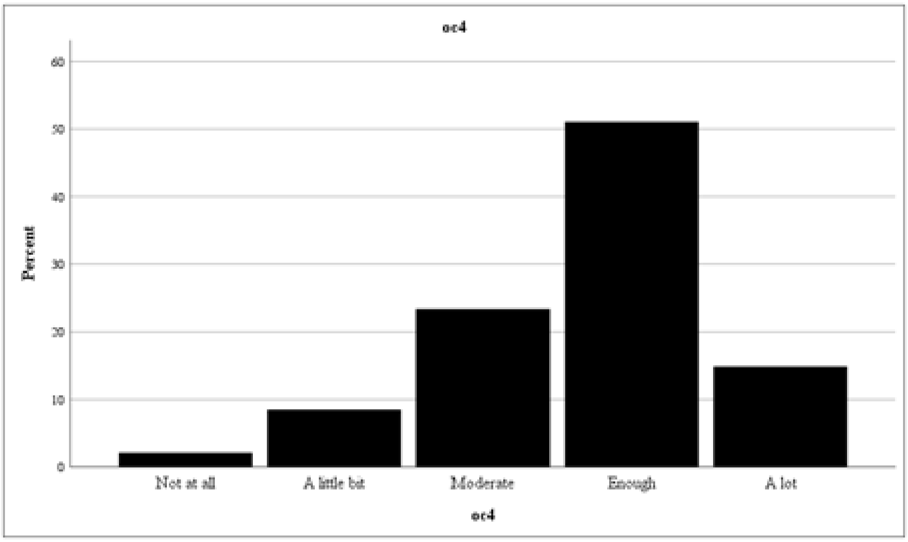
The fourth question of the third section relates to the extent to which Internal Auditors communicate effectively with the rest of the company's employees. The results of question 4.4. are presented in the table below.

*Internal auditors communicate effectively with the rest of the employees of the company.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 1 | 2.13% | 2.13% | 2.13% |
| A little bit | 4 | 8.51% | 8.51% | 10.64% |
| Moderate | 11 | 23.40% | 23.40% | 34.04% |
| Enough | 24 | 51.06% | 51.06% | 85.11% |
| A lot | 7 | 14.89% | 14.89% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.4 4*

The results show that 42 of the 47 respondents answered from "Moderate" to "A lot" with the predominant choice being "Enough" with a percentage of 51.06%. Out of the 47 respondents, 11 answered "Moderate" (23.40%), while seven respondents answered that the communication between internal auditors and other employees is very efficient. However, there were four respondents who answered that communication is "A little bit" efficient, while the "Not at all" option was chosen by just one respondent.




*Bar Chart Q.4 4*

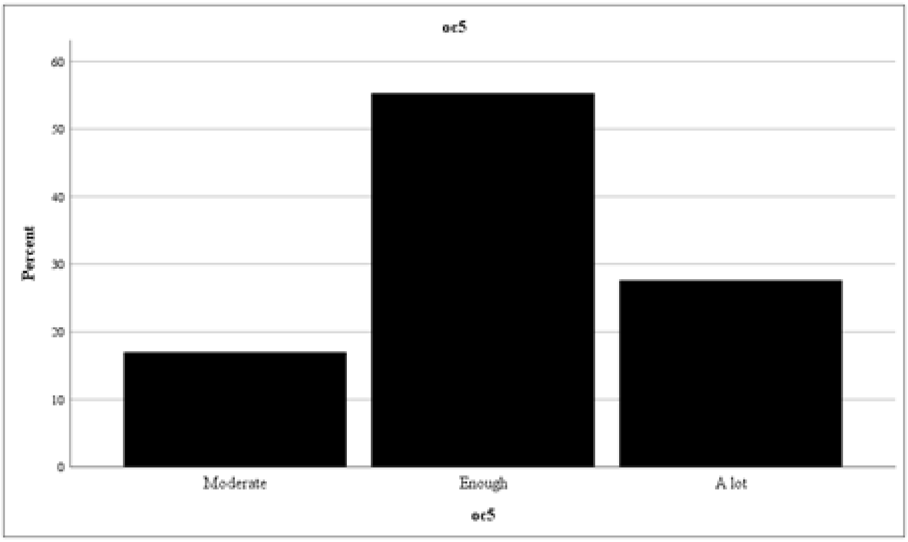
Question 4.5. completes the fourth part of the questionnaire and examines the extent to which internal auditors adapt to the legal framework. The results of the question are presented in the table below.

*To what extent are internal auditors: Internal auditors are adapted to the legal framework.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 0 | 0.00% | 0.00% | 0.00% |
| Moderate | 8 | 17.02% | 17.02% | 17.02% |
| Enough | 26 | 55.32% | 55.32% | 72.34% |
| A lot | 13 | 27.66% | 27.66% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.4 5*

We observe that 100% of respondents believe that internal auditors are moderately to very adapted to the legal framework. The most common answer is the option "Enough" which brings together 55.32% and we understand the importance of adapting internal auditors to the legal framework. This is followed by the "A lot" option with a percentage of 27.66% and finally the "Moderate" option with 17.02%. The results are shown in the graph below.




*Bar Chart Q.4 5*

### *4.3.5 Part E. Fraud Detection Techniques*

The next nine questions (5.1. To 5.9.) refer to the application of techniques related to the detection and prevention of accounting fraud and constitute the fifth part of the questionnaire.

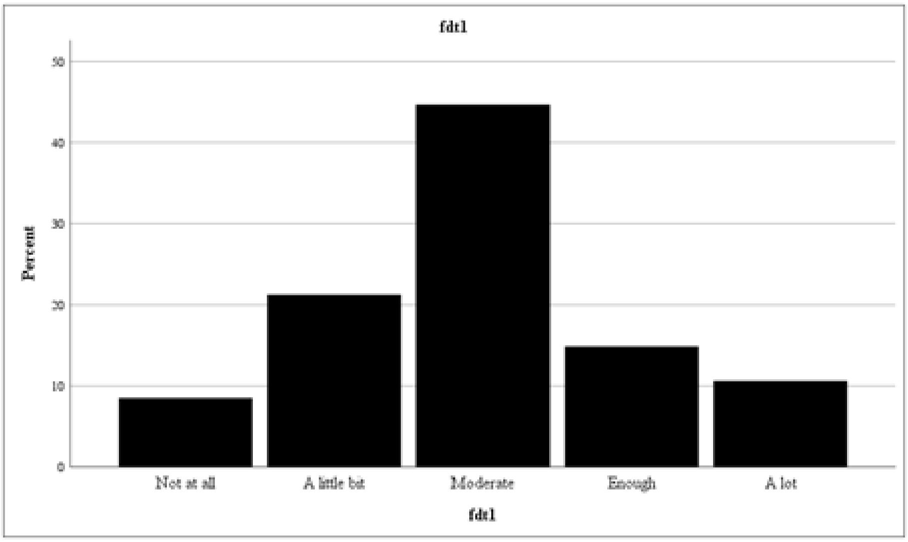
The first question of the fifth part examines the extent to which the company trains its staff in fraud prevention and detection and its answers are contained in the table below.

*Staff is educated on fraud prevention and detection.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 4 | 8.51% | 8.51% | 8.51% |
| A little bit | 10 | 21.28% | 21.28% | 29.79% |
| Moderate | 21 | 44.68% | 44.68% | 74.47% |
| Enough | 7 | 14.89% | 14.89% | 89.36% |
| A lot | 5 | 10.64% | 10.64% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.5 1*

The results show that 44.68% of respondents answered that staff training on fraud prevention and detection is moderate. 14.89% and 10.64% answered "Enough" and "A lot" respectively. 10 out of 47 respondents chose the answer "A little bit", while four respondents assess that there is no training in their company to prevent and detect fraud.




*Bar Chart Q.5 1*

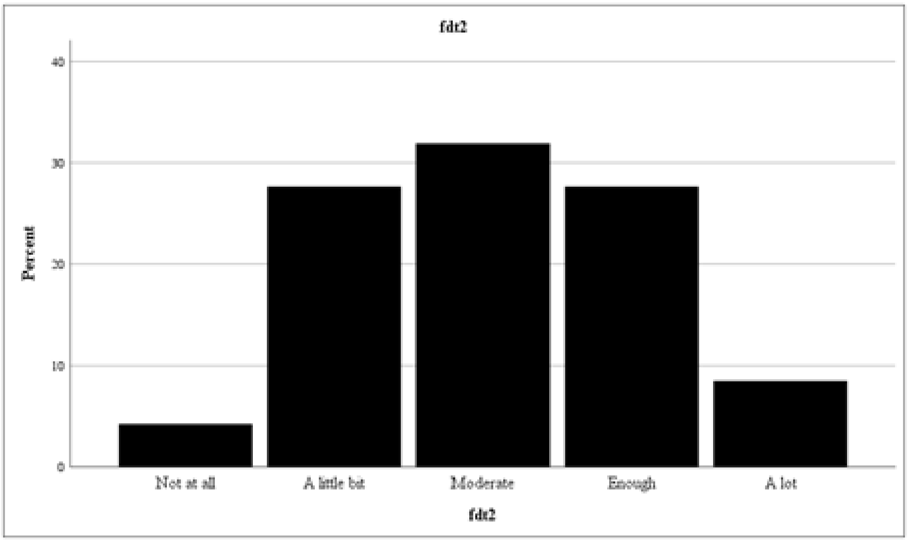
Question 5.2. investigates the extent to which the firm evaluates internal auditors on fraud detection. The answers to question 5.2. are presented in the table below.

*To what extent your business: Evaluates internal auditors on fraud detection.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 2 | 4.26% | 4.26% | 4.26% |
| A little bit | 13 | 27.66% | 27.66% | 31.91% |
| Moderate | 15 | 31.91% | 31.91% | 63.83% |
| Enough | 13 | 27.66% | 27.66% | 91.49% |
| A lot | 4 | 8.51% | 8.51% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.5 2*

Regarding the evaluation of the internal auditors, the option "Moderate" gathers the largest percentage (31.91%). "Enough" and "A little bit" options with 27.66% each, however, 2 out of 47 respondents said that their company does not evaluate internal auditors for fraud detection at all. The results are shown in the graph below.




*Bar Chart Q.5 2*

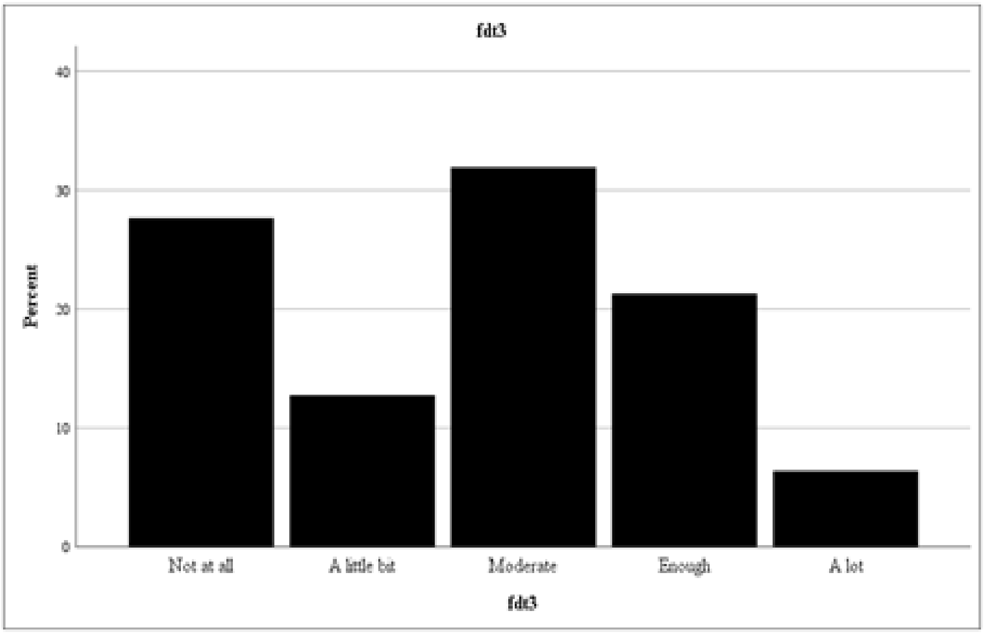
The next question examines the extent to which the company has anti-fraud software, and its answers are described in the table below.

*To what extent is your business: Has fraud detection software.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 13 | 27.66% | 27.66% | 27.66% |
| A little bit | 6 | 12.77% | 12.77% | 40.43% |
| Moderate | 15 | 31.91% | 31.91% | 72.34% |
| Enough | 10 | 21.28% | 21.28% | 93.62% |
| A lot | 3 | 6.38% | 6.38% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.5 3*

We observe that a significant percentage of companies has no available software for detecting fraud. That percentage is 27.66%, close to the one third of the sample. However, 60% of the sample has chosen the answers from "Moderate" to "A lot". Respectively, 6 of the 47 respondents answered, "A little bit".




*Bar Chart Q.5 3*

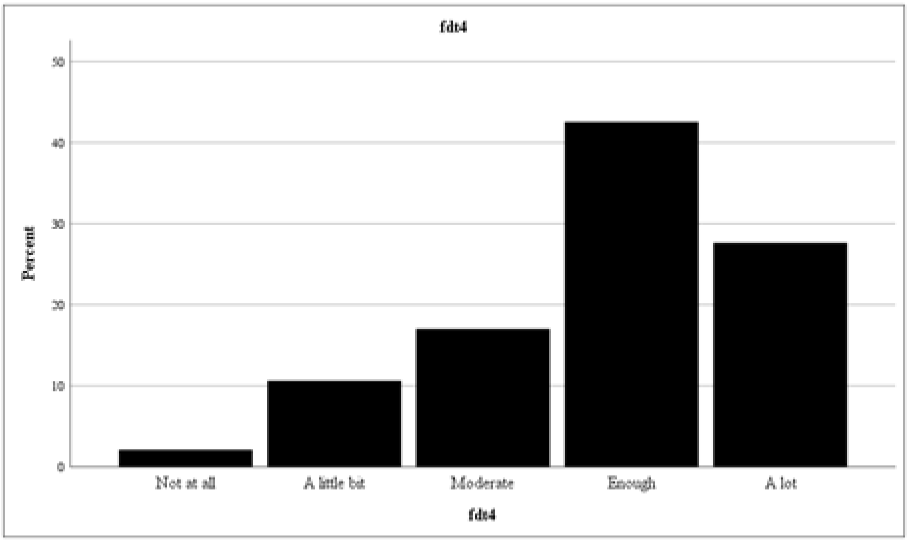
The fourth question of the fifth part examines the extent to which the company has the appropriate equipment at its disposal in order to preserve sensitive data. The answers to the question are described in the table below.

*To what extent your business: Has the appropriate equipment to store sensitive data.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 1 | 2.13% | 2.13% | 2.13% |
| A little bit | 5 | 10.64% | 10.64% | 12.77% |
| Moderate | 8 | 17.02% | 17.02% | 29.79% |
| Enough | 20 | 42.55% | 42.55% | 72.34% |
| A lot | 13 | 27.66% | 27.66% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.5 4*

The availability and use of appropriate equipment in order to preserve the sensitive data of the company is particularly important, since more than 87% of the sample assessed that the appropriate equipment exists at least to a moderate degree. Only 10.64% of the sample chose the answer "A little", while the choice "Not at all" was noted by a single respondent. The results are shown in the graph below.



*Bar Chart Q.5 4*

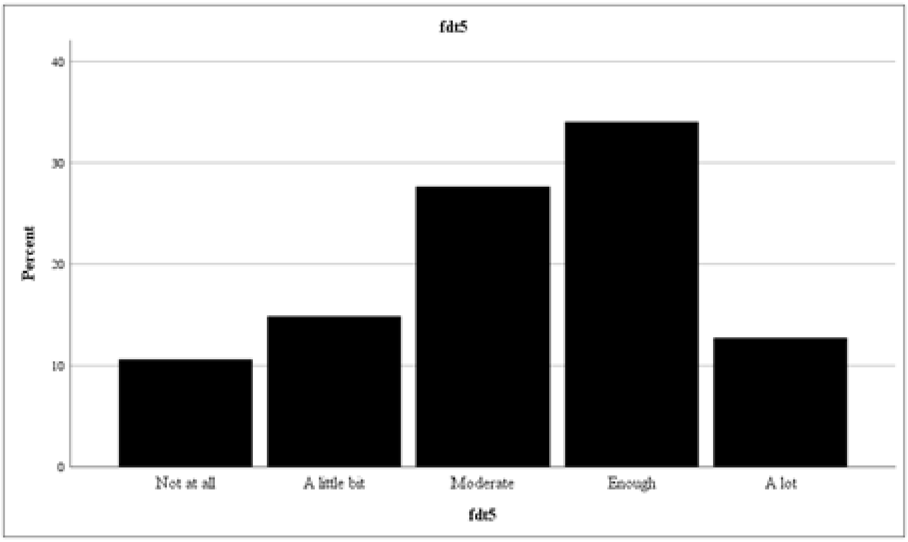
The next question examines the extent to which it analyzes financial ratios related to fraud detection. The answers to question 4.5. are presented in the table below.

*To what extent is your business: Analyzes financial ratios related to fraud detection.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 5 | 10.64% | 10.64% | 10.64% |
| A little bit | 7 | 14.89% | 14.89% | 25.53% |
| Moderate | 13 | 27.66% | 27.66% | 53.19% |
| Enough | 16 | 34.04% | 34.04% | 87.23% |
| A lot | 6 | 12.77% | 12.77% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.5 5*

The results of question 5.5. show that in 75% of the sample an analysis of financial ratios is applied at least moderately. More specifically, the answer "Moderate" corresponds to a percentage of 27.66%, "Enough" to 34.04% and "A lot" to 12.77%. 10.64% of the sample stated that no analysis of financial ratios is applied by their company and 14.89% stated "A little bit".




*Bar Chart Q.5 5*

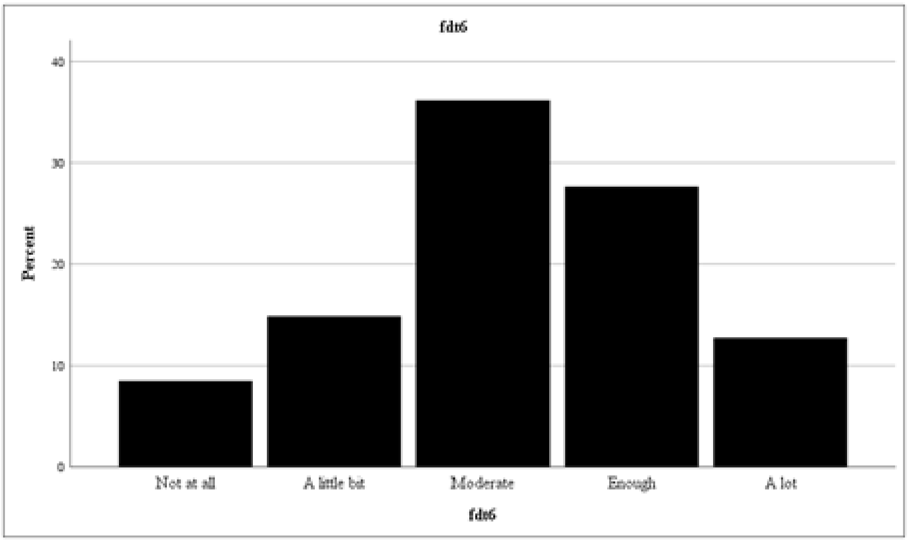
The sixth question examines the extent to which the business analyzes financial trends in to detect a fraud. The results are presented in the table below.

*To what extent your business has: Analyzes financial trends related to fraud detection.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 2 | 4.26% | 4.26% | 4.26% |
| A little bit | 7 | 14.89% | 14.89% | 19.15% |
| Moderate | 18 | 38.30% | 38.30% | 57.45% |
| Enough | 15 | 31.91% | 31.91% | 89.36% |
| A lot | 5 | 10.64% | 10.64% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.5 6*

According to the table, 36 out of 47 respondents report that the analysis of financial trends is either applied to a "moderate degree" (36.17%) or to a "sufficient degree" 27.66% or to a "very high degree" (12, 77%). On the contrary, 11 out of 47 respondents state that the analysis is either not applied "Not at all" (8.51%) or "Little" (14.89%). The results of question 5.6. are also presented diagrammatically.




*Bar Chart Q.5 6*

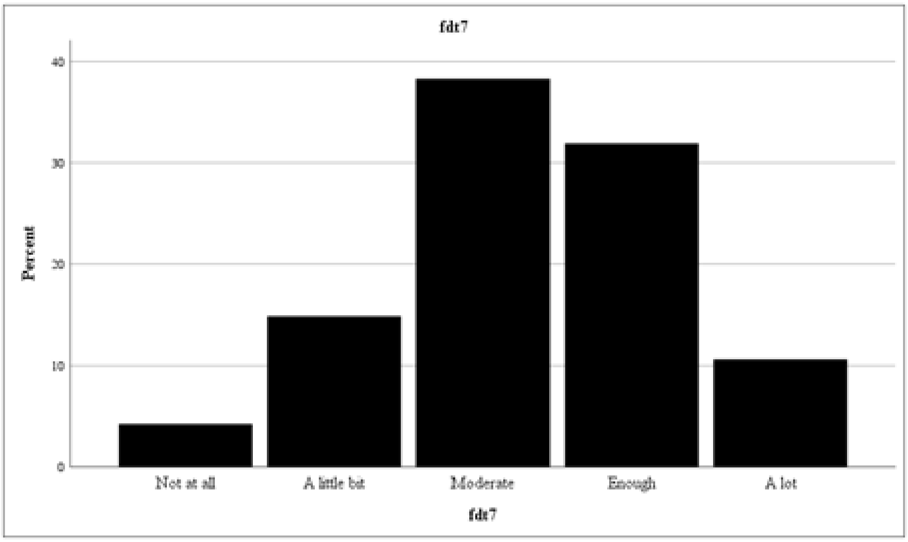
The seventh question of the fifth section investigates whether the company has a hotline at its disposal in order to be able to report a fraud that it has detected, and its results are contained in the table below.

*To what extent your business: Has a hotline so that someone can report a fraud they have detected.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 2 | 4.26% | 4.26% | 4.26% |
| A little bit | 7 | 14.89% | 14.89% | 19.15% |
| Moderate | 18 | 38.30% | 38.30% | 57.45% |
| Enough | 15 | 31.91% | 31.91% | 89.36% |
| A lot | 5 | 10.64% | 10.64% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.5 7*

The results of question 5.7. show that in almost 40% of the sample there is a contact line to be able to report a fraud that has been detected in "A lot" and "Enough" extent. However, the percentage of the sample (53%) who answered that the hotline exists to an "A little bit" or "Moderate" extent is important. Also, there are two answers to the "Not at all" option. The above answers are also presented on the graph below.




*Bar Chart Q.5 7*

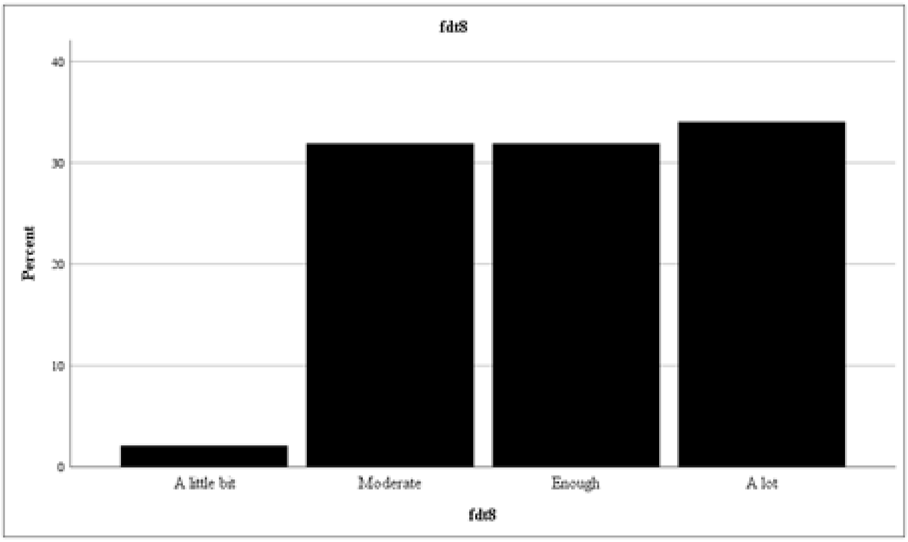
The next question of the fifth part investigates whether the company monitors the money transactions that take place, and its results are contained in the table below.

*To what extent your business: Monitors the money transactions that take place.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 1 | 2.13% | 2.13% | 2.13% |
| Moderate | 15 | 31.91% | 31.91% | 34.04% |
| Enough | 15 | 31.91% | 31.91% | 65.96% |
| A lot | 16 | 34.04% | 34.04% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.5 8*

The results of question 5.8. show that almost equal percentage (32-34%) receive the answers "Enough", "A lot" and "Moderate" regarding the degree to which the company monitors the money transactions that take place. Only one respondent out of forty-seven and with a percentage of 2.13% assessed that the monitoring is applied "A little bit", while no one answered, "Not at all". The above answers are also presented on the graph below.



*Bar Chart Q.5 8*

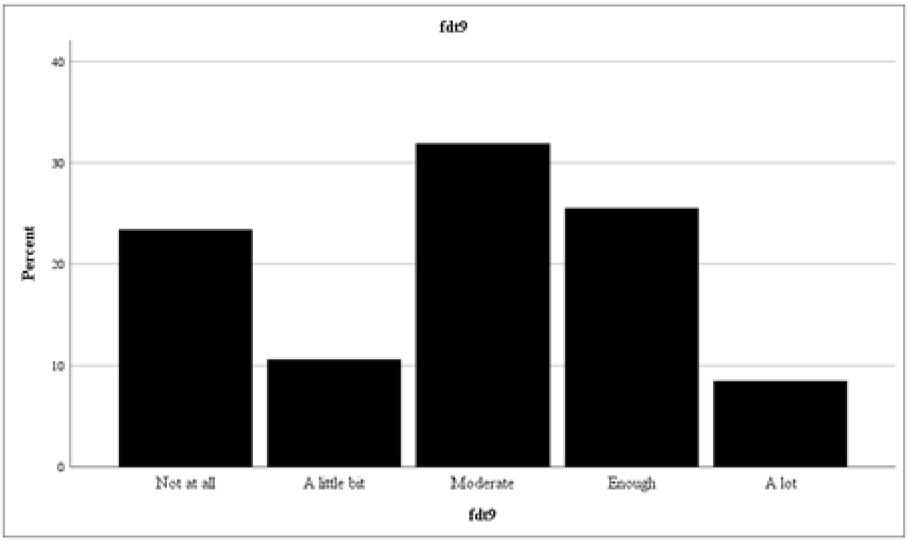
Question 5.9. investigates the extent to which the company regularly rotates positions and tasks between staff. (Staff rotation policy). Its results are described in the table below.

*To what extent your business: Regularly rotates positions and duties among staff. (Staff rotation policy)*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 11 | 23.40% | 23.40% | 23.40% |
| A little bit | 5 | 10.64% | 10.64% | 34.04% |
| Moderate | 15 | 31.91% | 31.91% | 65.96% |
| Enough | 12 | 25.53% | 25.53% | 91.49% |
| A lot | 4 | 8.51% | 8.51% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.5 9*

According to the table above, the policy of regular rotation of staff is not applied in almost the one fourth of the organizations. Five out of 47 respondents assessed that the above policy is applied "A little bit". 34% of the respondents answered that the policy of regular rotation of duties is applied to an "Enough" and "A lot" degree. The results are shown in the chart below.




*Bar Chart Q.5 9*

### *4.3.6 Part F. Corporate Governance Effectiveness*

The sixth and final part of the questionnaire consists of five questions (6.1. To 6.5.) and relates to the extent to which corporate governance contributes to fraud prevention.

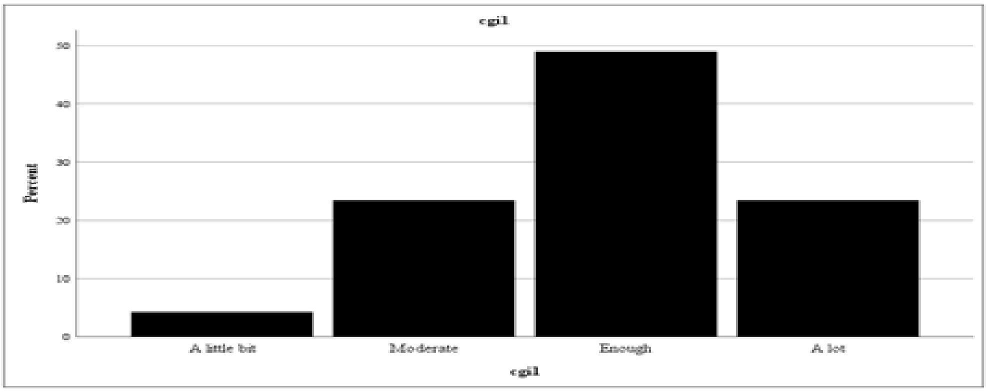
Question 6.1 examines the importance of external auditors in detecting and preventing fraud. The results are described in the table below.

*External auditors play an important role in detecting and preventing fraud.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 11 | 23.40% | 23.40% | 23.40% |
| A little bit | 5 | 10.64% | 10.64% | 34.04% |
| Moderate | 15 | 31.91% | 31.91% | 65.96% |
| Enough | 12 | 25.53% | 25.53% | 91.49% |
| A lot | 4 | 8.51% | 8.51% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.6 1*

The results are not very encouraging in terms of the extent to which external auditors have an important role to play in detecting and preventing fraud. 34.04% is concentrated in the answers "Not at all" and "A little bit" with 23.40% and 10.64% respectively. However, 65.96% of the sample assess that, external auditors play an important role in detecting and preventing fraud with respondents from "Moderate" to "A lot". The above results are also presented diagrammatically.




*Bar Chart Q.6 1*

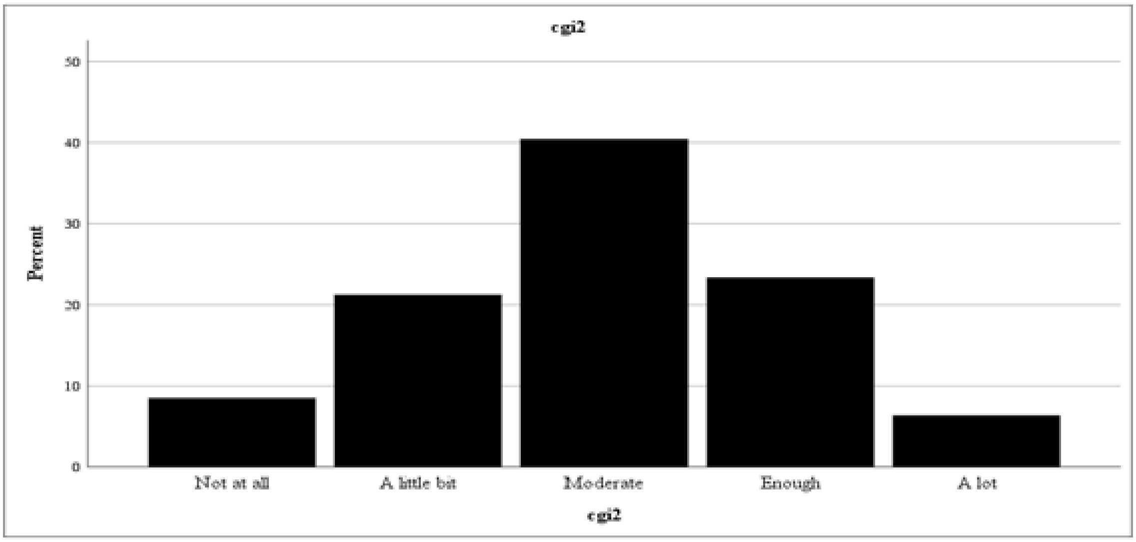
The second question examines the extent to which funding for the Internal Audit Department has increased over the last three years. The results are described in the table below.

*Funding for the Internal Audit Department has increased over the last three years*.

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 0 | 0.00% | 0.00% | 0.00% |
| A little bit | 2 | 4.26% | 4.26% | 4.26% |
| Moderate | 11 | 23.40% | 23.40% | 27.66% |
| Enough | 23 | 48.94% | 48.94% | 76.60% |
| A lot | 11 | 23.40% | 23.40% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.6 2*

The results seem encouraging since 95.74% states that funding for the internal audit department has increased from a "Medium" to a "Very Large" extent. More specifically, the "Moderate" option gathered 23.40%, the "Enough" option, 48.94% and the "A lot" option, 23.40%. Two respondents believe that funding for the Internal Audit Department has increased "A little bit" in the last three years. The results are also presented graphically.




*Bar Chart Q.6 2*

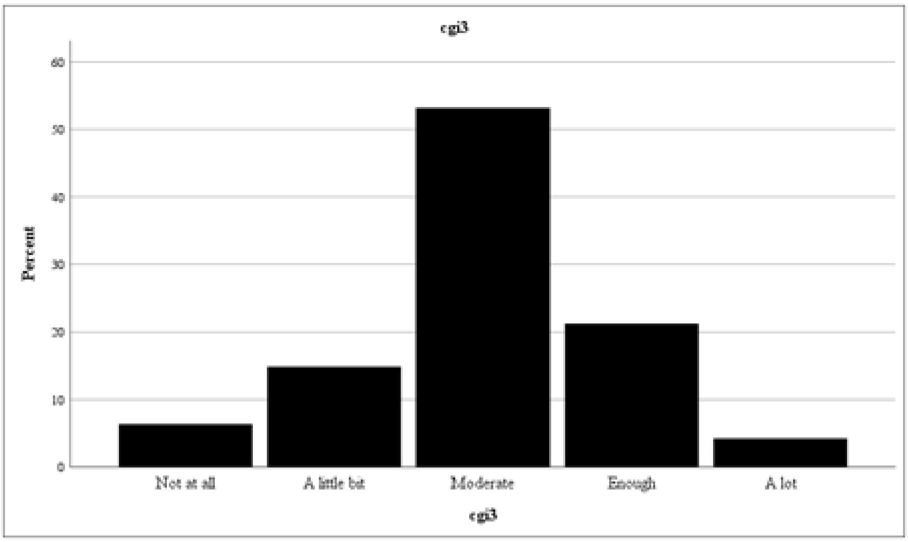
Question 6.3. investigates the extent to which there is no pressure on employees to achieve specific goals. The results are presented in the table below.

*There is no pressure on employees to achieve specific goals.*

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not at all | 4 | 8.51% | 8.51% | 8.51% |
| A little bit | 10 | 21.28% | 21.28% | 29.79% |
| Moderate | 19 | 40.43% | 40.43% | 70.21% |
| Enough | 11 | 23.40% | 23.40% | 93.62% |
| A lot | 3 | 6.38% | 6.38% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.6 3*

According to the table above, both the percentage of respondents who believe that there is pressure on employees to achieve specific goals, and the percentage of respondents who believe that there is no pressure is almost 30%. The remaining 40% of the sample answered that there is no pressure at "Moderate". The results of the question are also presented in the bar chart that follows.




*Bar Chart Q.6 3*

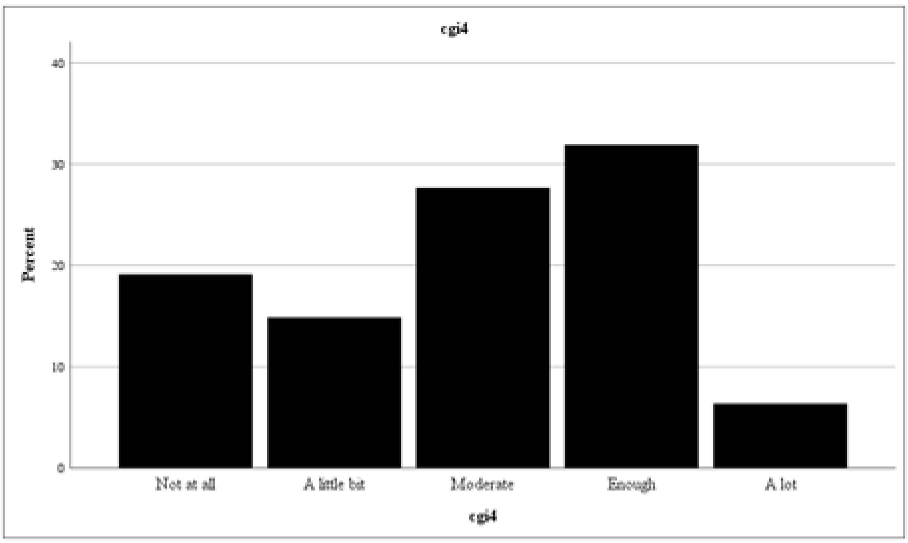
The fourth question in Part F explores whether funding for fraud prevention staff training has increased over the last three years and its results are described in the table below.

*Funding for fraud prevention staff training has increased over the last three years.*

| | Percent | Valid Percent | Cumulative Percent | Frequency |
|---|---|---|---|---|
| Not at all | 9 | 19.15% | 19.15% | 19.15% |
| A little bit | 7 | 14.89% | 14.89% | 34.04% |
| Moderate | 13 | 27.66% | 27.66% | 61.70% |
| Enough | 15 | 31.91% | 31.91% | 93.62% |
| A lot | 3 | 6.38% | 6.38% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.6 4*

The answers to question 6.4. showed that in 19.15% of companies there has been no increase in funding for fraud prevention staff training while 27.66% stated that funding has increased at least moderately. Most of the sample (31.91%) assessed that the funding has increased "Enough" and respectively "A lot" with a rate of 6.38%. Nevertheless, the percentage of 14.89% that the "A little bit" option receives is also important. The results are presented in the chart below.



*Bar Chart Q.6 4*

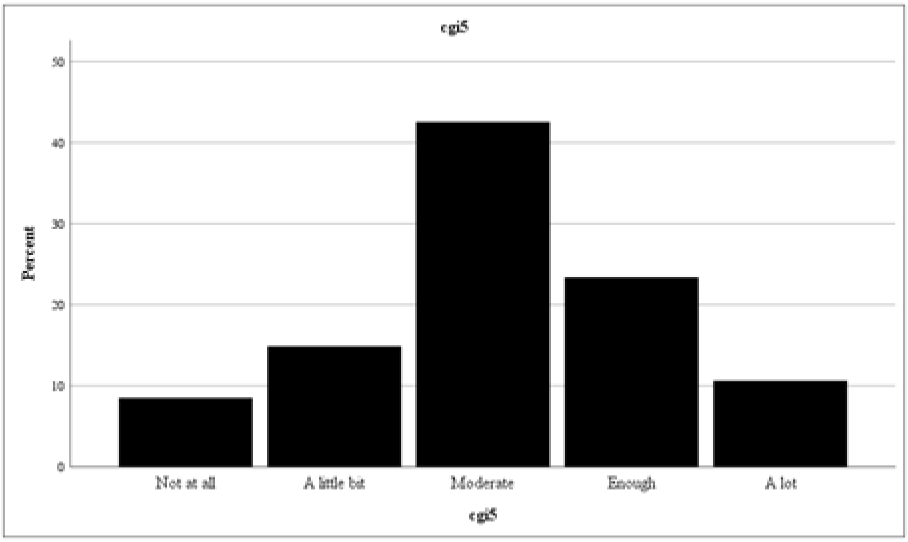
The fifth and final question in the questionnaire investigates the extent to which top management is responsible for the same fraud patterns as non-managers. The results of the question are described in the table below.

*Top management is responsible for the same fraud standards as non-managers.*

| | Percent | Valid Percent | Cumulative Percent | Frequency |
|---|---|---|---|---|
| Not at all | 4 | 8.51% | 8.51% | 8.51% |
| A little bit | 7 | 14.89% | 14.89% | 23.40% |
| Moderate | 20 | 42.55% | 42.55% | 65.96% |
| Enough | 11 | 23.40% | 23.40% | 89.36% |
| A lot | 5 | 10.64% | 10.64% | 100.00% |
| Total | 47 | 100.00% | 100.00% | |

*Frequency Table Q.6 5*

The results of question 6.5. are encouraging about the responsibility to the same extent to both members of management and non-managers regarding a fraud disclosure, with 76.59% of respondents saying at least "Moderate". However, the remaining 23.41% of the sample is particularly important, according to which the top management is responsible "a little" compared to non-managers in executives for fraud standards or "not at all". The above results are presented in the bar chart that follows.




*Bar Chart Q.6 5*

## 4.4. Exploratory Factor Analysis (EFA)

In this section the exploratory factor analysis is performed which examines the grouping of questions in the form of Likert using the program IBM SPSS Statistics 22. Initially, an exploratory factor analysis was performed. Through this analysis, the research questions are grouped and divided into factors according to the correlations - loads they present.

For easier analysis and presentation of the results the 27 questions of the questionnaire were named with the following shortcuts:

- Section B Questions: Accounting Fraud Prevention -> fp1 to fp2
- Section C Questions: Internal Controller Features -> ac1 to ac6
- Section D questions: Organizational commitment -> oc1 to oc5
- Section E Questions: Fraud Detection Techniques -> fdt1 to fdt9
- Section F questions: Corporate governance effectiveness -> cg1 to cg5

In order to carry out the analysis, some conditions were examined as to whether the data are suitable for the factor analysis (the results of the final model are presented after the removal of some variables). For this reason, two controls were used:

1. The Bartlett's Test of Sphericity (Bartlett's sphericity test) which examines whether the data table differs from the unit table and
2. The KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) criterion, which examines the adequacy of the sample.

Regarding the Barlett sphericity test, statistically significant values are desired when $p < 0.05$ and the KMO index has values greater than 0.6 (the KMO index takes values from 0 to 1). In this case we had KMO = 0.822 & Chi square (120) = 492,691, p = .000. It should be noted here that the research sample (N = 47) is small enough to carry out exploratory factor analysis although attempts were made to complete it by more individuals, it was sent to 120 individuals-organizations initially).

| Chi square / df | NFI | RFI | IFI | TLI | CFI | RMSEA |
|---|---|---|---|---|---|---|
| 1,236 | 0,797 | 0,736 | 0,954 | 0,936 | 0,951 | 0,072 |

Oblimin was used as a rotation method to categorize the questions into five factors. Based on this method, the factors are correlated with each other.

In addition, the communalities table examines the extent to which questions are related to factors. It is desirable to have values above 0.3 so that they do not need to be subtracted from the analysis. In this case the lowest value is equal to 0.641. In terms of question loads they are all (except oc4 which shows a value equal to -0.408) over 0.5 in the factors that theoretically have to charge.

**Pattern Matrix**

| | Component | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| fp1 | | | -, 912 | | |
| fp2 | | | -, 907 | | |
| ac1 | , 911 | | | | |
| ac2 | , 840 | | | | |
| ac3 | , 563 | | | | |
| ac4 | , 945 | | | | |
| ac5 | , 785 | | | | |
| ac6 | , 701 | | | | -, 310 |
| oc1 | | , 458 | | | -, 530 |
| oc2 | | | | | -, 549 |
| oc3 | | | | | -, 889 |
| oc4 | | | | , 378 | -, 408 |
| cgi1 | | | | , 951 | |
| cgi2 | | , 423 | | , 540 | |
| fdt7 | | , 859 | | | |
| fdt9 | | , 872 | | | |

*EFA Table 1 Pattern Matrix*

**Communalities**

| | Initial | Extraction |
|---|---|---|
| fp1 | 1,000 | ,922 |
| fp2 | 1,000 | ,926 |
| ac1 | 1,000 | ,737 |
| ac2 | 1,000 | ,839 |
| ac3 | 1,000 | ,651 |
| ac4 | 1,000 | ,784 |
| ac5 | 1,000 | ,888 |
| ac6 | 1,000 | ,842 |
| oc1 | 1,000 | ,798 |
| oc2 | 1,000 | ,641 |
| oc3 | 1,000 | ,723 |
| oc4 | 1,000 | ,600 |
| cgi1 | 1,000 | ,846 |
| cgi2 | 1,000 | ,717 |
| fdt7 | 1,000 | ,793 |
| fdt9 | 1,000 | ,780 |

*EFA Table 2 Communalities*

Based on the above results, five factors are created which explain 78.04% of the variability. The 16 questions are theoretically divided into five factors:

1. Auditors Characteristics (6 questions, ac1 - ac6),
2. Fraud Prevention (2 questions, fp1, fp2),
3. Organizational Commitment (4 questions, oc1 - oc4),
4. Fraud detection techniques (2 questions, fd7, fd9) and
5. Corporate governance effectiveness (2 questions, cg1, cg2).

## 4.5. Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis is then performed, through which it is investigated whether specific relationships between certain variables are also confirmed by the research data. Following is the CFA model from IBM AMOS 22.

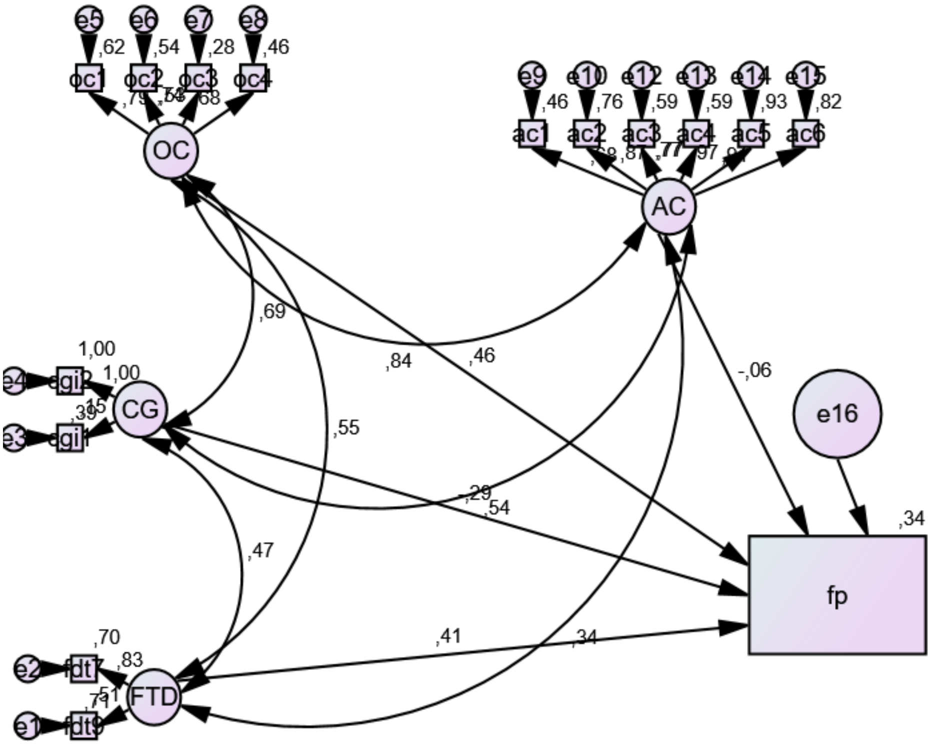



*Figure 1. CFA MODEL*

The model consists of four independent variables and one dependent one. The independent variables of the model are the characteristics of internal auditors, organizational commitment, fraud detection and prevention techniques and corporate governance effectiveness. On the other hand, the dependent variable of the model is the prevention of accounting fraud. Each of the above variables is determined by the questions that arose after performing the exploratory factor analysis.

At this point it is useful to list the four research hypotheses that emerged after analyzing the literature:

- *H1: There is a positive correlation between the characteristics of the internal auditor and the prevention of accounting fraud.*
- *H2: There is a positive correlation between organizational commitment and accounting fraud prevention.*
- *H3: There is a positive correlation between the application of fraud detection techniques and the prevention of accounting fraud.*
- *H4: There is a positive correlation between the effectiveness of corporate governance and in the prevention of accounting fraud.*

The regression results showed that the model has a satisfactory interpretive capacity R2 = 33.8%. This means that 33.8% of the value variability of the dependent variable can be interpreted through the model, i.e., based on the values of the independent variables. The following table shows the path coefficients that resulted from the regression.

**Path coefficients**

| | | | Estimate | SE | CR | P |
|---|---|---|---|---|---|---|
| ac1 | <--- | AC | 1,000 | | | |
| ac2 | <--- | AC | 1,414 | 0.261 | 5,416 | *** |
| ac3 | <--- | AC | 1,058 | 0.217 | 4,867 | *** |
| ac4 | <--- | AC | 1,406 | 0.290 | 4,854 | *** |
| ac5 | <--- | AC | 1,664 | 0.282 | 5,906 | *** |
| ac6 | <--- | AC | 1,592 | 0.284 | 5,611 | *** |
| oc1 | <--- | OC | 1,000 | | | |
| oc2 | <--- | OC | 1,159 | 0.224 | 5,182 | *** |
| oc3 | <--- | OC | 0.769 | 0.215 | 3,572 | *** |
| oc4 | <--- | OC | 1,079 | 0.228 | 4,726 | *** |
| cg1 | <--- | CG | 1,000 | | | |
| cg2 | <--- | CG | 3,295 | 1,725 | 1,910 | 0.056 |
| Ftd9 | <--- | FTD | 1,000 | | | |
| Ftd7 | <--- | FTD | 0.908 | 0.243 | 3,739 | *** |
| Fp | <--- | OC | 1,035 | 1,215 | 0.852 | 0.394 |
| Fp | <--- | CG | -1,209 | 1,060 | -1,140 | 0.254 |
| Fp | <--- | FTD | 0.590 | 0.322 | 1,830 | 0.067 |
| Fp | <--- | AC | -0,138 | 0.897 | -0,154 | 0.877 |

| | | | | | | |
|---|---|---|---|---|---|---|
| FP | <--- | Constant | 3,330 | 0.190 | 17,515 | *** |

*CFA Table 1 Path Coefficients*

Through the above table, we can derive the regression equation, which is of the form y = bo + b1x1 + b2x2 + b3x3 + b4x4. Taking into account the values of the beta coefficients, the following model emerges:

$$\boldsymbol{fp} = 3{,}330 - 0{,}138 * ac + 0{,}590 * fdt + 1{,}035 * oc - 1{,}209 * cge$$

where:

fp = fraud prevention

ac = the characteristics of the internal auditors (auditors characteristics)

oc = organizational commitment

fdt = fraud detection techniques

cg = corporate governance effectiveness

Table 4.4.1 shows based on the model that the FTD coefficient is statistically significant (b = 0.590, p = 0.067 at a significance level of 10%). This means that the null hypothesis 3 of subsection 3.4 is confirmed:

*H3. There is a positive correlation between the application of fraud detection techniques and the prevention of accounting fraud.*

Regarding the other three cases, they are not confirmed. This is probably due to the small size of the research sample. More specifically, it is observed that the following variables are not statistically significant: Auditors Characteristics (b = -0.138, p = 0.877, null hypothesis 2 is not verified), Corporate governance (b = -1.209, p = 0.254, null hypothesis is not verified 1) & Organizational Commitment (b = 1.035, p = 0.394, null hypothesis 4 is not verified).

Finally, the measurement of the reliability of the internal consistency of the factors of the model, which is determined through the Cronbach's_alpha index, becomes especially important. This index receives satisfactory values if they are greater than 0.7. It is observed that for all factors there are quite good values (above 0.7) except for corporate governance effectiveness. This is probably due to the small number of questions that belong to this factor.

| | Cronbach's alpha | N |
|---|---|---|
| Fraud Prevention | 0.928 | 2 |
| Organizational Commitment | 0.776 | 4 |
| Fraud detection techniques | 0.731 | 2 |
| Corporate governance effectiveness | 0.550 | 2 |
| Auditors Characteristics | 0.930 | 6 |

*CFA Table 2 Cronbach's Alpha Table*

## 4.6. Confirmatory factor analysis with control variables (Exploratory Factor Analysis - EFA)

It would be interesting to examine the correlation between internationalization of business and fraud prevention. The control variable *Global* was introduced in the research model. This model is shown in Figure 2. For the confirmatory factor analysis, the statistical program IBM AMOS 22.0 was used which is an extension of SPSS. The chi square / df, NFI, RFI, IFI, TLI, CFI & RMSEA indices were used to examine the good fit of the data in the model. The numbers found in our case are 1,266, 0.768, 0.707, 0.940, 0.920, 0.937 & 0.076.

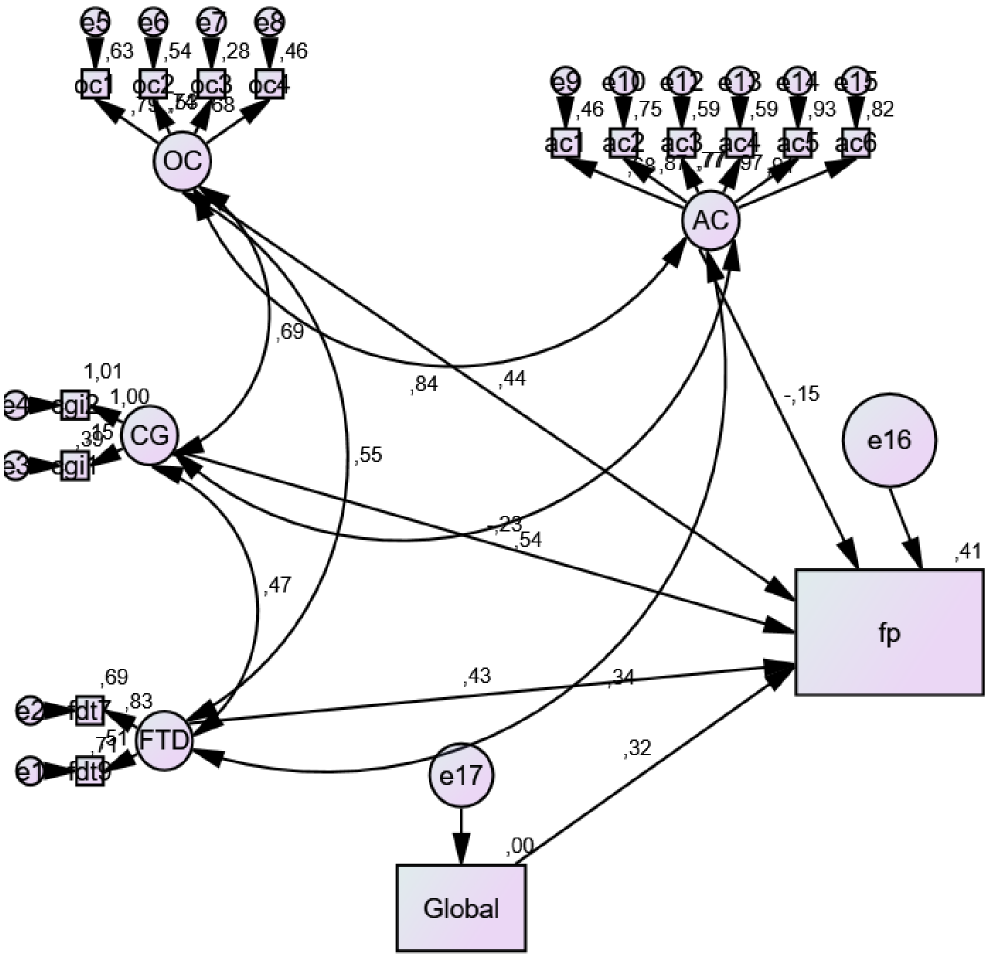



*Figure 2. EFA MODEL*

**Path Coefficients**

| | | | Estimate | SE | CR | P |
|---|---|---|---|---|---|---|
| ac1 | <--- | AC | 1 | | | |
| ac2 | <--- | AC | 1,414 | 0.262 | 5,398 | *** |
| ac3 | <--- | AC | 1,059 | 0.218 | 4,854 | *** |
| ac4 | <--- | AC | 1,407 | 0.291 | 4,841 | *** |
| ac5 | <--- | AC | 1,668 | 0.283 | 5,891 | *** |
| ac6 | <--- | AC | 1,596 | 0.285 | 5,602 | *** |
| oc1 | <--- | OC | 1,000 | | | |
| oc2 | <--- | OC | 1,156 | 0.222 | 5,198 | *** |
| oc3 | <--- | OC | 0.764 | 0.214 | 3,565 | *** |
| oc4 | <--- | OC | 1,073 | 0.227 | 4,724 | *** |
| cg1 | <--- | CG | 1,000 | | | |
| cg2 | <--- | CG | 3,313 | 1,759 | 1,884 | 0.060 |
| Ftd9 | <--- | FTD | 1,000 | | | |
| Ftd7 | <--- | FTD | 0.906 | 0.237 | 3,822 | *** |
| Fp | <--- | OC | 0.985 | 1,122 | 0.877 | 0.380 |
| Fp | <--- | CG | -0,935 | 0.935 | -1,001 | 0.317 |
| Fp | <--- | FTD | 0.596 | 0.305 | 1,952 | 0.051 |
| Fp | <--- | AC | -0,363 | 0.846 | -0,429 | 0.668 |
| Fp | <--- | Global | 0.828 | 0.313 | 2,645 | 0.008 |
| FP | <--- | Constant | 2,819 | 0.263 | 10,731 | *** |

The new model is as follows:

$$\boldsymbol{fp} = 2.819 - 0.363 * ac + 0.596 * fdt + 0.985 * oc - 0.935 * cge + 0.828Global$$

We observe that for the variable *Global* there is a positive correlation with fraud prevention and even high. This results from the coefficient of the dummy-variable with the dependent variable equal to 0.828. In addition, the *Global* rate is statistically significant at a significance level of 5%. We, therefore, conclude that companies operating abroad have a higher level of fraud prevention than companies not operating.

# Chapter 5: Conclusions, Restrictions and Suggestions for future research

The present study initially researched the theoretical distribution of 27 Likert questions into five factors: Fraud Prevention (two questions), Auditors Characteristics (six questions), Organizational Commitment (five questions), Fraud detection techniques (nine questions), and Corporate governance effectiveness (five questions). From the exploratory factor analysis, through many tests that were performed, 11 questions were removed from most factors. More specifically, from the Fraud Detection Techniques factor, seven questions were removed. Then, from the Organizational Commitment factor, one question was removed and, finally, from the Corporate Governance Effectiveness factor, four questions were removed.

Based on the remaining questions, a five-factor model emerged that explained 78.04% of the variability of 16 of the 27 initial questions. The theoretical distribution of the 16 questions of the five factors was, Auditors Characteristics (six questions, ac1 - ac6), Fraud Prevention (two questions, fp1, fp2), Organizational Commitment (four questions, oc1 - oc4), Fraud detection techniques (two questions, fd7, fd9) and corporate governance effectiveness (two questions, cg1, cg2). It should be noted that the reliability of the factors was very good for almost everyone, apart from Corporate Governance Effectiveness which was low.

The second part of the factor analysis examined whether the factors Auditors Characteristics, Organizational Commitment, Fraud detection, and Corporate Governance Effectiveness can predict Fraud Prevention. Path analysis was used for this purpose. The model turned out to be statistically significant with the FTD rate at a significance level of 10%. This means that null hypothesis 3 has been confirmed, i.e., fraud detection techniques are positively related to fraud prevention. The other three hypotheses were not confirmed, and this may be due to the small sample size of the research. Then, we came to the same results using path analysis and as a control variable whether the companies operate abroad or not. In addition, it should be noted that companies operating abroad have a higher level of fraud prevention than companies not operating. Possibly, this is since companies operating abroad must implement more complex procedures for conducting their transactions, as a result of which forces them to have a stricter level of control in the prevention of fraud. In addition, the fact that they are more likely to be exposed to risks due to non-domestic transactions makes it imperative to have the best level of fraud prevention. This is since companies operating abroad must implement more complex procedures for conducting their transactions, as a result of which this forces them to have a stricter level of control in the prevention of fraud. In addition, the fact that they are more likely to be exposed to risks due to non-domestic transactions makes it imperative to have the best level of fraud prevention.

Assuming that the results are reliable, based on the sample size, we can estimate that fraud prevention is based almost exclusively on detection techniques. It may also be positive that fraud prevention is not linked to the auditor's characteristics as this probably means that there is no bias and that the auditors are credible and have similar skills. Also, if the organizational commitment in the companies we examined is almost the same level, then it makes sense that there is nothing to do with fraud prevention. Similar reasoning can be expressed with the mechanism of good corporate governance. However, if the organizational commitment and the mechanism of good corporate governance are satisfactorily differentiated within the companies in the sample, this means that these factors do not play any role in the prevention of fraud. Fraud prevention is based solely on prevention techniques. These are the ones that have a positive effect on fraud prevention.

About the limitations of the research, not only the small sample size previously mentioned but also the timing of data collection should be emphasized. Given the prevailing pandemic and the recent traffic ban, this may have negatively affected people's responses in relation to their psychological state or at least in terms of their degree of interest in consistently answering research questions.

It would be interesting in a future survey to gather a larger number of companies in order to make the results of the survey more reliable. It would also be interesting to gather the information that may play a significant role in the model. For example, it would be interesting to consider whether or not companies participate in public works projects if they are export-oriented, what is the period time that occurs, the people who answered the questionnaire, what is their position in the company, what is their education and whether they are internal or external controllers (some of this information was also collected in this study but due to the small sample size it was impossible to perform the analysis given a large number of variables). These confounding variables may prevent the ability of the researcher to observe the real correlations between the variables.

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## Appendix : Research questionnaire

Part A: General questions

1.1. Choose your academic education:
❑ Secondary ❑ Undergraduate
❑ Postgraduate / PhD ❑ Other

1.2. Choose your work experience:
❑ 0-5 years ❑ 5-10 years
❑ 10 years and over

1.3. The position you hold is:
❑ Internal Auditor ❑ Manager
❑ External Auditor ❑ Accountant ❑ Other

1.4. The company (or organization) operates internationally.
❑Yes ❑No

Part B: Fraud prevention.

| In my firm: | N ot at all | A litt le bit | M od er ate | En ou gh | A lot |
|---|---|---|---|---|---|
| 2.1. There is a policy of publishing fraud in your business. | | | | | |
| 2.2. There is a policy to prosecute all perpetrators of fraud. | | | | | |

Part C: The characteristics of the internal auditor.

| Internal auditors: | Not at all | A little bit | Moderate | Enough | A lot |
|---|---|---|---|---|---|
| 3.1. Have the appropriate qualifications both in matters of auditing, but also in general knowledge of companies. | | | | | |
| 3.2. Inform the management about possible financial risks. | | | | | |
| 3.3. Are distinguished by diligence, honesty, and responsibility. | | | | | |
| 3.4. Are experienced in economics, auditing, and financial matters. | | | | | |
| 3.5. Show the will and perseverance to find a solution to problems that the company faces. | | | | | |
| 3.6 Provide useful tips and suggestions | | | | | |

Part D: Organizational commitment.

| In my firm: | Not at all | A little bit | Moderate | Enough | A lot |
|---|---|---|---|---|---|
| 4.1. There is independence between the competent auditors. | | | | | |
| 4.2. Internal auditors are happy with their work environment. | | | | | |
| 4.3. Internal auditors communicate effectively with external auditors. | | | | | |
| 4.4. Internal auditors communicate effectively with the rest of the company's employees. | | | | | |
| 4.5. Internal auditors are adapting to the legal framework. | | | | | |

Part E: Fraud Detection Techniques and Procedures.

| To what extent your business: | N ot at all | A litt le bit | M od er ate | En ou gh | A lot |
|---|---|---|---|---|---|
| 5.1. Educates staff on fraud prevention and detection. | | | | | |
| 5.2. Evaluates internal auditors on fraud detection. | | | | | |
| 5.3. It has anti-fraud software. | | | | | |
| 5.4 Has the appropriate equipment to store sensitive data. | | | | | |
| 5.5. Analyzes financial ratios related to fraud detection. | | | | | |
| 5.6. Analyzes financial trends related to fraud detection. | | | | | |
| 5.7 Has a hotline so that someone can report a fraud they have detected. | | | | | |
| 5.8 Monitors the money transactions that take place. | | | | | |
| 5.9 Regularly rotates positions and duties between staff. (Staff rotation policy) | | | | | |

Part F: Corporate Governance Effectiveness.

| In my firm: | N ot at all | A litt le bit | M od er ate | En ou gh | Ve ry |
|---|---|---|---|---|---|
| 6.1 External auditors play an important role in detecting and preventing fraud. | | | | | |
| 6.2. Funding for the Internal Audit Department has increased over the last three years. | | | | | |
| 6.3. There is no pressure on employees to achieve specific goals. | | | | | |
| 6.4 Funding for staff training on fraud prevention has increased over the last three years. | | | | | |
| 6.5. Top management is responsible for the same standards of fraud as non-managers. | | | | | |