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Examining the Effect of Forensic Accounting Competence on the Detection of Financial Fraud: A Study in Türkiye

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Abstract

This study aims to reveal the leading role of forensic accounting in combating financial corruption, which is one of the main barriers to development. The article aims to show the relationship between improving forensic accounting skills of professionals and the level of prevention of financial corruption. Thus, aim to add depth to literature.

The survey first included questions aimed at defining demographic data. To analyze the subject of the research, "Expressions regarding the forensic accounting knowledge and techniques used in detecting and combating corruption" were tested. The third part of the survey included "Expressions regarding the determination of the skills required for accountants using forensic accounting". The survey items were created using a 5-point Likert scale. Survey items were created based on by utilizing the study conducted by Saleh et al. (2020). In this study, a survey was conduct on CPAs operating in Türkiye (Bitlis, Hakkari, Muş and Van) provinces. In this study, a survey was conducted on 243 CPAs and the results were analyzed. Descriptive analyses were performed on the research data using SPSS version 25.0 program. Structural equation modeling and path analyses were performed using LISREL 8.7 program.

The skills required for accountants using forensic accounting have a positive effect of 0.77 units on detecting and combating corruption, meaning that a one-unit improvement in the skills required for accountants using forensic accounting will result in a 0.77-unit increase in the level of detecting and combating corruption. It was determined that 59% of the level of detecting and combating corruption by forensic accountants is explained by the skills required for accountants using forensic accounting.

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The research results may lack generalizability because of the chosen research approach. Therefore, researchers are encouraged to further test the proposed propositions.

In the study, it is stated that increasing the forensic accounting competencies of accounting professionals plays a leading role in the fight against financial corruption. This article highlights the role of forensic accounting in combating financial corruption, one of the major obstacles to development

Key words: Forensic Accounting, Financial Corruption, Accounting Audit, Structural Equation Modeling

JEL Code: M40, M41

1. Introduction

In the mid-20th century, radical changes were experienced in some areas, in line with their needs. Financial crises and accounting scandals experienced in the economy are examples. The scandals of companies such as Enron, Worldcom, Xerox and Parmalat caused great global and local losses. The occurrence of these scandals paved the way for the idea that serious measures should be taken by all stakeholders of companies. All of these developments have also caused an increase in serious financial, tax, etc. frauds and corruption.

This corruption harms both individuals and society. The concept of corruption, which is reflected in social, political and economic life, has become a matter of importance in both public and private sectors. This situation, which negatively affects the concepts of trust, solidarity, and cooperation, among individuals, institutions and organizations in society, has paved the way for serious problems.

The concept of corruption, which is defined as individuals abusing public power in society to gain various gains or benefits from groups under their protection or to benefit themselves (Stapenhurst 2000: 9; Toplarlak and Eke, 2023: 871), has also revealed the importance of other concepts. It has also paved the way for the emergence of forensic accounting and forensic accounting professions, especially in the field of accounting. Forensic accounting, which is much more than traditional accounting, is seen as closer to auditing because of its functions such as detecting and preventing fraud and errors (Erdoğan, 2020: 3715). While accounting auditing examines whether financial statements are presented fairly based on a contract, forensic accounting focuses on the specific needs of those who use the information as a result of the audit and presents the findings to its users in line with their needs (Crain et al., 2015:4; Erdoğan, 2020: 3715).

The examination of these two closely related concepts by professionals and people specializing in forensic accounting and their contribution to the process has recently become a very important issue. In the face of the situations experienced,

accountants and auditors are sometimes seen as inadequate, and it has become inevitable for the issue of competence and expertise to be brought to the agenda. The forensic accounting and forensic accounting profession, which is closely related to legal transactions and requires a special education and area of expertise, has also started to become interesting in terms of issues such as applicability. Individuals working in the field of accounting or wanting to focus on the field of accounting have tried to become competent in forensic accounting and have started to show great interest in training, seminars, etc. related to these fields. In this context, this study examines the effect of forensic accounting competence on the detection of financial corruption and investigates the competence of professionals working in the TRB2 region**.** The main reason for choosing the TRB2 region is that there is a gap in the literature on this subject.

2. Conceptual Framework

The concept of forensic accounting, which brings together the expertise of more than one discipline under one roof, is used to support legal and judicial experiences in the fields of finance, accounting, and auditing due to recent financial crises and accounting scandals (Hamdan, 2018: 2). Therefore, it has become a subject of ongoing research. In this part of the study, information is given about forensic accounting and related corruption concepts, which have been to be intensively researched by both practitioners and academics.

2.1. Forensic Accounting

Forensic accounting is a concept that deals with the detection, recording, reporting and verification of financial data or accounting activities, and the resolution of existing or future legal disputes (Oyebisi et al., 2018: 2). According to another definition, it is defined as the accountability of administrative transactions that contribute to the use of investigation skills within the framework of accounting and accounting auditing (Eze and Okoye, 2019: 16). It is a branch of science that emerged in the 2000s to resolve commercial disputes and financial crimes that emerged as a result of global financial scandals and affected all countries of the world and is a sub-branch of accounting science. This concept, formed by the combination of the words forensic and accounting, exhibits a common formation of the legal and accounting system (Taştan, 2018: 3; Katı, 2023: 752). Forensic accounting, which uses investigative techniques, integrates with accounting skills, contributes to solving complex financial puzzles and helps businesses resolve financial disputes, is of great importance in this respect (Karacan, 2018:102). The characteristics of forensic accounting are as follows (Tezi and Şen, 2015: 479):

- It covers both social and professional activities,
- It has a structure that concerns society, especially in legal matters,
- It works with many fields such as law, accounting, auditing and valuation,
- It aims to keep social property rights at the forefront.

Forensic accounting, which has a history of more than 5,000 years, gained great importance as a research topic in the 1900s. Articles began to be written on the

subject, and in 1946, a study titled "Forensic Accounting: Its Place in Today's Economy" was conducted by Maurice Peloubet, a partner of an accounting firm in New York (Açık, 2016:1074). The concept of forensic accounting, which began to develop over time, gained professional importance, and the most important turning point in its professional development was the adoption of the (Sarbanes Oxley Act) SOX in 2002. With this law, the SEC (American Securities and Exchange Commission) stated that forensic accounting practices should be used in auditing studies (Akın and Onat, 2015: 35). In recent years, the increase in unethical behaviors in the public and organizations, inadequacy of accounting education, differences of opinion among experts, inadequacy of expert institutions, lack of or inadequate financial education provided in law faculties, and difficulties in revealing errors and frauds have revealed the need for forensic accounting (Usul ev Topçuoğlu, 2011:56). Other reasons for the necessity of forensic accounting are as follows (Pazarçeviren, 2005:3):

- As commercial transactions become increasingly complex, individuals and institutions have begun to apply to courts.
- Relations between individuals, institutions and the state are becoming increasingly problematic,
- Fraud and corruption committed by employees in businesses are increasing day by day,
- Increased business failures,

Lawyers and courts need experts in the financial problems they face.

2.2. Financial Corruption

The concept of corruption is expressed as individuals in society abusing public power to gain various gains or benefits from groups that they will benefit from or are under their protection (Stapenhurst 2000: 9; Toparlak and Eke, 2023: 871). According to another definition, corruption is "the use of public power in line with individual interests (Oral, 2011:403). Another concept that emerges in connection with corruption is financial corruption. The concept of financial corruption, which is generally included in the literature at the point of taxation, is defined as the emergence of gaining private benefits in the tax process (Ackerman, 1997: 56). It is also expressed as corruption, which occurs as a result of excessive state intervention in the economy. Tax evasion, tax legislation and the informal economy are indicators of financial corruption (Toparlak and Eke, 2023: 871).

Tax evasion, which has a global basis, is a situation in which individuals, or institutions, or organizations that are obliged to pay taxes avoid fulfilling this obligation (Çomaklı and Turan, 2016: 323). According to another definition, it is the efforts of taxpayers to partially or completely avoid paying taxes in violation of the law (Eker and Bülbül, 2013:177; Bülbül and Özay, 2016:53). Tax legislation is also indicator of financial fraud. The complexities in tax legislation should be examined as an important problem by the tax office, which regulates taxes and plays an active role in regular payments. Carrying out examinations regarding this will both eliminate the complexity and ambiguities in legislation and will greatly contribute to the detection of corruption (Tanzi and Davoodi, 2000: 39). Most of the time, taxpayers ask for help from tax officers because of the complexity of the

legislation, and this creates grounds for some negative situations. For these reasons, presenting laws in a clear and understandable manner will play an active role in ensuring a healthier taxation process (Toparlak and Eke, 2023: 872). Economic transactions are carried out by bypassing all regulations regarding taxation by executive power in a country, and the income obtained from these transactions is referred to as the informal economy (Williams and Schneider, 2013: 23). The most effective issue in preventing the informal economy is that tax ethics and awareness are well instilled in society. Because tax legislation is transparent in a country, the active and efficient operation of tax administration will not be very important. The most effective way to acquire ethics to ensure that taxpayers who carry their responsibilities in paying taxes act appropriately is to increase the general level of education in the society (Akdoğan, 2013: 189). Financial corruption occasionally rises to higher levels in Turkey, as in every country.

In all countries and Turkey, methods such as reducing tax rates, limiting tax exemptions and exceptions, simplifying tax legislation in a more understandable way, implementing tax penalties in a deterrent manner, efficiency in tax auditing, taxation at source and the principle of declaration, activating accountability, creating tax awareness and morality, tax amnesty and developing tax culture can be effective in reducing financial corruption (Toparlak and Eke, 2023: 874).

3. Literature Review

In recent years, forensic accounting, an important concept in the field of accounting, has begun to be included among the topics being researched both in the practice of the profession and in accounting education. In this context, academic studies have been conducted on many subjects such as forensic accounting and its applicability, importance, fields of activity, its position within the audit mechanism, its effectiveness during the audit of frauds and forensic accounting education. In this context, in this part of the study, academic studies and results conducted in the national and international fields on forensic accounting will be discussed.

This part of the study includes national studies on forensic accounting.

Pazarçeviren (2005) conducted a case study in which forensic accounting and its profession of forensic accounting were theoretically addressed. As a result of the analysis, it was concluded that crime rates were increasing and, therefore, the importance of forensic accountants increased. Auditors and forensic accountants had different functions, and forensic accountants should go beyond documents. Another important conclusion reached in the study was that accountants should go beyond numbers and forensic accountants should go beyond numbers.

Usul and Topçuoğlu (2011) emphasized that forensic accounting is a necessary profession in terms of torts and their detection and concluded that it is important for the detection of financial crimes. They also drew attention to the fact

that this profession serves judicial authorities in terms of the detection of financial markets and contributes to the provision of justice.

Çabuk and Yücel (2012) included 92 capital market independent audit authorized institutions and 683 certified public accountants' companies in their study examining the development potential of the forensic accounting profession in Turkey. Frequency analysis of the research data was conducted using SPSS 17 and 18 programs. The results obtained from the research indicate that current auditing system, the necessary infrastructure for forensic accounting, and education system in Turkey are inadequate.

Terzi and Gülten (2014), in their study, revealed that the laws regarding the forensic accounting profession are implemented in countries such as the USA, Canada, England, and Australia, addressing issues such as the importance of forensic accounting and the forensic accounting profession, its applicability, and inclusion in the legislation. They touched upon the issue that legislation on the subject exists in the countries in question and should also exist in Turkey. However, they defended the view that Turkey should take its own values into consider its own values in the formation of legislation.

Kıllı and Çeviren (2017), in at study aiming to reveal awareness of the members of the profession in Mersin province regarding forensic accounting, 304 members of the profession participated in the research. Analysis of the research data was performed using the SPSS package program. The empirical findings obtained as a result of the research are that the members of the profession have heard of forensic accounting and the forensic accounting profession, but do not have sufficient knowledge.

Özdemir and Yıldırım (2017) aimed to reveal the perspectives of professional accountants, judges, and lawyers on forensic accounting, in which they aimed to reveal the importance and role of forensic accounting in tax cases. Within the scope of the study, 22 large cities from seven geographical regions of Turkey were selected and the survey data of 426 participants were analyzed. As a result of the study in which statistical analyses were used with the help of SPSS analysis program, it was determined that there were significant differences in terms of profession, years of services, and age variables. Karslıoğlu and Karavardar (2019) aimed to reveal professional accountants regarding the forensic accounting profession in their study. In this context, a survey was conducted with 253 participants in the study where professional accountants operating in Trabzon Province were taken as a sample. Statistical analyses were performed SPSS software. As a result of the study, it was determined that professional accountants had heard about forensic accounting and forensic accounting profession before, but most of them had very little knowledge on this subject. The study also concluded that members of the profession are of believe that audit activities are inadequate in preventing fraud and corruption, that legal regulations regarding forensic accounting are insufficient, and that the training provided on forensic accounting is inadequate.

Öztürk et al. (2019) examined the perspectives of academics who provide accounting education at associate and undergraduate levels at universities on forensic accounting and education. Universities located in the TRA2 region (Ardahan, Ağrı İbrahim Çeçen, Iğdır, and Kafkas) were included in the study. In the study where Frequency, Mann-Whitney U, and Kruskal Wallis one-way variance analysis were used, it was found that the courses on auditing and forensic accounting in the curriculum were insufficient and there were no plans to integrate the forensic accounting course into their curricula. Apart from this, the conclusion that it is essential to eliminate the inadequacy of infrastructure for training is also among the results. Kadooğlu et al. (2021) use at survey technique in their study to evaluate the restrictive factors of professional members in forensic accounting practices. A total of 112 people participated in the study, and professional members in Şanlıurfa Province were selected as the sample. As a result of the study using factor, reliability, validity, and correlation analyses, no statistically significant difference was found between the restrictive factors and demographic characteristics. However, a statistically significant relationship was found between restrictive factors.

Altunay (2021) examined theses with the help of bibliometric analysis in at study that examined postgraduate theses on forensic accounting. Within the scope of this study, 52 master's theses and 11 doctoral theses were examined. As a result of the analysis, it was determined that the keywords "forensic accounting" and "expert testimony" were used the most in theses on the subject of forensic accounting. It was also concluded that the "forensic accounting awareness" was the highest and the subject of "forensic accounting education" was the lowest.

Koçyiğit et al. (2022) conducted a survey study in 2021 in which 310 people participated, aiming to evaluate the forensic accounting profession by faculty members who provide forensic accounting education and to reveal the forensic accounting awareness of faculty members. Statistical analyses such as Kruskal-Wallis H, Mann-Whitney U were used in the analysis of the obtained data. The results showed that there was a significant difference between age factor and foreign accounting awareness, and there was no significant difference between awareness and factors such as gender, educational status, and academic title. In at bibliometric analysis of postgraduate theses written on the subject of forensic accounting in Turkey was carried out, 69 theses registered in the National Thesis Center were examined. The type, publication language, subject, research method, university, institute, department, advisor title, year of publication, and page range criteria were considered, and the results were evaluated. The results obtained are that the most preferred subject title is “Forensic Accounting Profession”, the most data collection method is the survey method, the most theses were prepared within Istanbul Okan University and Marmara University, and the most theses were prepared in 2019.

This section addresses international studies conducted within the scope of forensic accounting.

Oyebisi (2018) examines the role of forensic accountants in preventing and detecting fraud in the Nigerian banking sector. In the study, where the survey research design was adopted, the data source was primary data and the obtained data were compiled from copies of the survey applied to the selected banks. Three (3) hypotheses were formulated and tested using simple regression, an independent T-test and One-Way Anova at a significant level of 5%. The findings reveal a negative and significant relationship between IFRS adoption and foreign direct investment in Nigerian banks. Additionally, forensic accounting has a significant effect on the prevention and detection of fraud and forensic accounting awareness is low in the Nigerian banking sector.

Hamdan (2019) used a survey as a data collection tool in his study where he wanted to examine the effect of forensic accounting on detecting and reducing fraud. A two-part survey study consisting of two parts was conducted. The author collected information about the requirements of forensic accounting in the first section and the role of forensic accounting in detecting fraud in the second section. Confirmatory factor analysis was used to understand the contribution of different items to forensic accounting variables and their contribution to detecting fraud. The results obtained from the research show that forensic accounting is an effective tool for detecting fraud if the general requirements for preparing professional forensic accountants.

Okoye et al. (2019) focused on forensic accounting and investigation processes. The aim was to examine the forensic accounting and interview process in detecting financial fraud in some selected ministries in Anambra State. This study adopted a descriptive survey design. The study, which included 320 account personnel from the Ministry of Commerce, concluded that forensic accounting practice is an effective way to detect fraud.

Chukwu et al. (2019) assessed the impact of basic forensic accounting skills, namely communication, technical and analytical, accounting and auditing and psycho-social skills, on the reliability of financial reporting of listed entities in Nigeria. The scope of the research consists of firms listed on the Nigerian Stock Exchange as of January 2018, while the universe consists of users and auditors of the financial reports produced by these entities. Users of financial reports are represented by investment advisors, a division of capital market operators as of January 2018, while auditors are represented by the Big Four Audit Firms operating in Nigeria. The research design used is a survey approach where primary data were collected. To highlight the impact of the selected independent variables on financial reporting, the sample participants were collected while conducting multivariate analysis. Except for communication skills, which exhibited a negative but significant impact, all other basic forensic accounting skills were found to have a positive and significant impact on the methods of reporting an entity's financials. It is anticipated that candidates for forensic accountants must have sufficient education to perform the profession satisfactorily.

Dada and Jimoh (2020), in their study prepared to reduce financial crimes in the Nigerian public sector and to evaluate the impact of litigation support service on reducing financial crimes in the Nigerian public sector. They adopted a survey research design and linear regression technique to analyze the empirical data collected through survey and oral interview and tested the formulated hypothesis. As a result, it was concluded that the employment of forensic accounting experts and assignment of more forensic accountants in Nigeria is mandatory.

Alshurafat et al. (2021) reviewed published forensic accounting studies in their study aimed to provide an understanding of the strengths and weaknesses of forensic accounting education and profession and explored the strengths and weaknesses of forensic accounting. As a result of the study, the strengths were identified as the benefits provided to students and accounting professionals, significant need and increasing demand, new career channels and reduction of fraud, including lack of regulation, lack of control in entering the profession, lack of agreement on how to teach forensic accounting, lack of specialized research journals, misunderstanding of its main purpose, lack of highly qualified practitioners and forensic accounting. In addition, the lack of recognition by educators and the public and the lack of reputation in the profession were also found to be weaknesses.

Owolabi and Ogunsola (2021) In their study on the detection and prevention of fraud in deposit banks using branches in Ibadan, 20 participants were selected. The survey method was used in this research, and data was collected through the survey. Regression analysis, variance analysis, and Pearson's moment correlation were used. The results obtained indicate that procedural knowledge, forensic accounting skills, legal infrastructure and forensic accounting knowledge should be audited as elements that help prevent fraud and that an effective audit mechanism will help them.

Jaya and Narsa (2021), in their study where they wanted to provide a new logic by considering that fraudulent financial statements are also related to tax evasion or fraud purposes, they also wanted to reveal the level of tax judicial knowledge for the prevention of tax evasion. Partial Least Squares (PLS) analysis was preferred in research where a survey was conducted with 300 auditors. The research revealed that forensic accounting and judicial tax knowledge positively affected the prevention of fraudulent financial statements in this new normal period in Indonesia.

Amin et al. (2022) emphasized the importance of forensic accounting, a new technique in fraud detection, and addressed, accounting and financial fraud in Nigerian deposit banks. In study with where a sample size of 143 people, external auditors, senior management personnel, users and academicians constituted the universe of the research. The sampling technique was used to select the sample size, and a binomial test was used to analyze the data. The study concluded that forensic accounting should be increased in financial fraud control, financial reporting quality

should be improved, and the effectiveness of forensic accounting in improving internal accounting quality should be increased.

Tong et al. (2023) evaluated models consisting of multiple regression in their study where they aimed to examine the effect of forensic accounting tools in the investigation of white-collar crimes in Malaysia. As a result of the study, they found that Encase software, Computer Aided Audit Tools (CAAT), Forensic Toolkit (FTK) and ProDiscover Forensics had a significant relationship with the investigation of white-collar crimes in Malaysia.

4. Methodology

In this part of the study, information was provided about the research model created to determine the effect of the skills required for accountants using forensic accounting on detecting and combating corruption and the hypotheses created for this model. First, the survey included questions to collect demographic data. It was deemed appropriate by the decision of Bitlis Eren University Rectorate, Ethical Principles and Ethics Board with the number 2023/03-21 and E.3596. The informed consent was obtained verbally from the participants. The reason for obtaining verbal consent is that the study directly concerns the members of the profession.

In order to analyze the subject of the research, “Expressions regarding forensic accounting knowledge and techniques used to detect and combat corruption” were examined. In the third part of the survey, “Expressions regarding the skills required for accountants using forensic accounting” were included. The survey items were created using a 5-point Likert scale. The survey items were created by using the study conducted by Saleh et al. (2020). In this study, a survey was conducted to CPAs operating in TRB2 (Bitlis, Hakkari, Muş and Van) provinces. In this study, a survey was conducted on 243 CPAs, and the results were analyzed.

3.1. Model of Research

"While creating the research model, the skills required for accountants using forensic accounting were considered the independent variable (X), while the ability to detect and combat corruption was considered the dependent variable (Y). The model developed by the researcher for this study is shown in Figure 1."

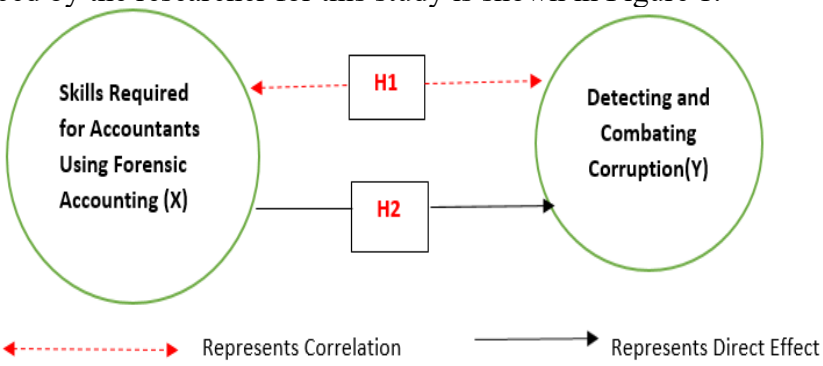

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Figure 1: Research Model

"Figure 1 presents the research model designed to measure the relationship between the independent and dependent variables and to determine the impact of the independent variable on the dependent variable. A detailed literature review was conducted while developing the study model, and relevant previous studies were utilized.

3.2. Hypotheses of Research

The research hypotheses, which were created to determine the relationship between the independent variables and the dependent variable based on the study model of the study and the effect of the independent variable on the dependent variable, are listed below:

H1: There is a significant relationship between forensic accounting skills and the ability to detect and combat corruption.
H2: Forensic accounting skills significantly impact the detection and prevention of corruption.

3.3. Statistical Analyses Used in Research

The data obtained within the scope of the research were analyzed using SPSS 25.0 and LISREL 8.7. In the research.
• Frequency and percentage analyses were performed using SPSS to determine the demographic characteristics of the participants.
• Explanatory factor analysis (EFA), item-scale correlation, and Cronbach's alpha analysis were performed using the SPSS program to examine the validity and reliability of the scales, and confirmatory factor analysis (CFA) was performed using the LISREL program to determine whether the explained factor structures were confirmed.
• Mean and standard deviation values were obtained from descriptive analyses using SPSS to examine the levels of the participants belonging to the measurement tools.
• Mean and median values were examined from central tendency measures using the SPSS program to examine the distribution of the data, while the kurtosis-skewness values of the measurement tools were examined.
• Pearson correlation analysis was performed using the SPSS program to determine whether there was a relationship between the independent and dependent variables.
• Structural equation model analysis was performed using the LISREL program to examine the effect of the independent variables on the dependent variable

4. Findings

4.1. Descriptive Statistics on Demographic Variables

This part of the study included statistical information on the demographic variables of the individuals who voluntarily participated in the survey. The demographic information of the individuals who participated in the survey is presented in Table 1.

Table 1: Findings Regarding Demographic Characteristics of Participants

Demographic	**Group**	**n**	**%**
Gender	Kadın	52	21,40
	Erkek	191	78,60
Age	25-35	73	29,92
	36-44	67	27,46
	45-54	59	24,18
	55 ve üstü	45	18,44
Educational Status	Associate degree	27	11,07
	Bachelor's degree	147	60,25
	Master's Degree +	70	28,69
Professional Experience	1-5 year	35	14,40
	6-10 year	51	20,99
	11-15 year	40	16,46
	16-20 year	34	13,99
	20-24 year	39	16,05
	25 year +	44	18,11
	Toplam	**243**	**100,00%**

A total of 243 participants were reached within the scope of the research, and 21.40% of the participants were female (n=52) and 78.6% were male (n=191). The participants were mostly between the ages of 25-35 (%29.92; n:73), had a bachelor's degree (%60.25; n:147) and had 6-10 years of professional experience (%20.99; n:51).

4.2. Validity and Reliability Analyses of the Scales Used in the Study

4.2.1. Validity and Reliability Analyses of the Detection and Combating of Corruption Scale

The results of the item analysis, reliability levels and explanatory factor analysis regarding the validity and reliability of the scale for detecting and combating corruption are presented in Table 2. It is expected that the relationship between the items in the scale and other items will not be below 0.30 (Büyüköztürk, 2009).

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Table 2: Factor Analysis Results of the Scale of Detecting and Combating Corruption

Items	Faktor Loading	Item Correlation
Data mining and information disclosure of uncertain transactions are important.	0,896	0,847
Ability to continuously monitor for evidence collection	0,683	0,588
Ability to use financial and accounting analysis to detect cases of financial fraud	0,667	0,574
Ability to analyze resources and determine funding allocation methods	0,695	0,602
Ability to analyze chronology and identify details about manipulations using tracking maps	0,699	0,609
Ability to use technology to accelerate audit activities	0,690	0,597
Regular analysis	0,735	0,646
Sufficient technical skills regarding cash flow indices and stocks	0,691	0,600
Ability to use investigation methods using document verification methods	0,690	0,598
Reliability	0,883	
Core VAkue	4,658	
Explained Variance	51,753	
KMO:0,916; Bartlett's Test of Sphericity (X^2):907,04; p=0.001<0.05		

Source: Authors' calculations

To examine the prerequisites required applying factor analysis, in order to determine whether the number in the data is sufficient for factor analysis, KMO and Bartlett Sphericity tests were used to examine the existence of the relationship between the variables (Tabachnick and Fidel, 2014). As shown in Table 2, the KMO value was found to be greater than 0.60, and the Bartlett sphericity test was found to be significant ($p<0.05$). According to these results, the obtained data are suitable for factor analysis and that the obtained data come from a multivariate normal distribution (Kan and Akbaş, 2005). In this study, the criterion of a factor loading value higher than 0.45 was used to decide whether an item should be stopped from the scale (Büyüköztürk, 2009). As a result of the factor analysis, it has a single-factor structure and the total variance value explained by this single factor for the scale with an eigenvalue of 4.658 is 61.753%, and this value is above 40%, indicating that it provides sufficient explanatory power (Durmaz, 2020). Since the scale consists of a single factor, no rotation could be performed.

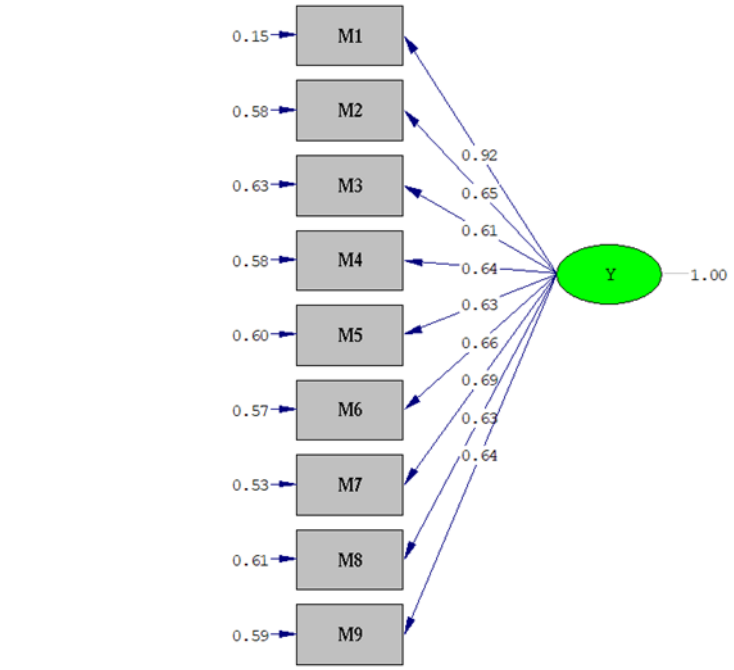
As seen in Table 2, because the item correlation in the scale was not below 0.30, it was decided that there was no need to remove the statement. The range of

Cronbach's alpha coefficient values was expressed as follows (Yıldız, Uzunsakal, 2018):

0 < CR< 0.40 is not reliable,
0.40 < CR< 0.60 is low reliability,
0.60 < CR< 0.80 is quite reliable,
0.80 < CR< 100 is high reliability.

In light of this information, it was determined that the internal consistency (reliability) of the scale was high (Cronbach's alpha = 0.883). Confirmatory factor analysis was performed using the LISREL 8.7 program to determine whether the explained factor structure of the scale was confirmed, and the results of the factor analysis are shown in Figure 2.

Figure 2: Path Diagram of Standardized Factor Loadings of the Detection and Combating Corruption Scale as a Result of CFA



Source: Authors' calculations

Figure 3: Path Diagram of T Values of Standardized Factor Loadings of CFA Result of Detecting and Combating Corruption Scale

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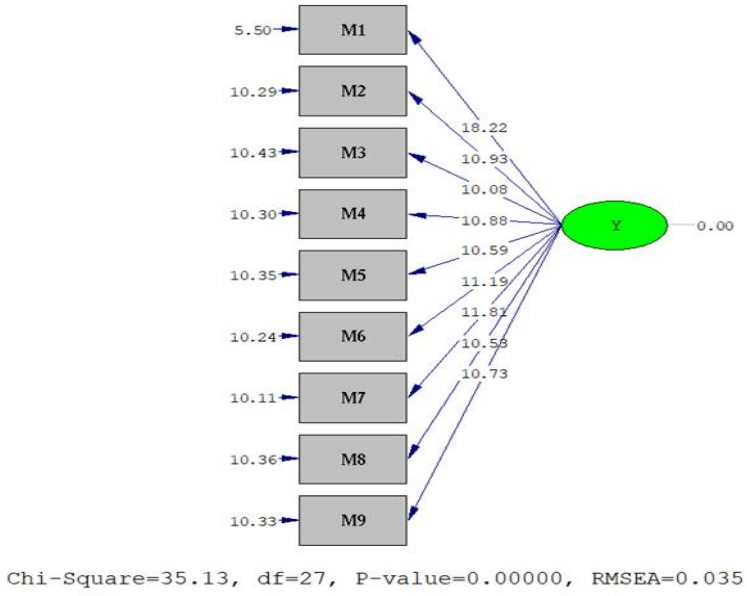


Y: Detecting and Combating Corruption

Source: Authors' calculations

According to the CFA result of the corruption detection and combating scale, it was determined that the standardized factor loading values of the items were between 0.61-0.92 (Figure 2). The factor loadings were statistically significant at the 95% confidence level (t>1.96), therefore, the effects of the factor loading values of all items on the scale dimensions were significant at the 95% confidence level (Figure 3). The result of the fit index are presented in Table 3.

Tablo 3: Detecting and Combating Corruption Scale Goodness of Fit Values

Compliance Criteria	**Perfect Match**	**Acceptable Compliance**	**Research Result**
$\chi 2/sd$	≤3	≤5	1,301
RMSEA	0 < RMSEA <0.05	0.05 ≤ RMSEA ≤ 0.10	0,035
SRMR	0 ≤ SRMR <0.05	0.05 ≤ SRMR ≤ 0.10	0,032
NFI	0.95 ≤ NFI ≤ 1	0.90 ≤NFI ≤ 0.95	0,99
NNFI	0.95 ≤ NNFI ≤ 1	0.90 ≤NNFI ≤ 0.95	0,99
CFI	0.95 ≤ CFI ≤ 1	0.90 ≤CFI ≤ 0.95	0,99
GFI	0.95 ≤ GFI ≤ 1	0.90 ≤GFI ≤ 0.95	0,97
IFI	0.95 ≤ CFI ≤ 1	0.90 ≤IFI ≤ 0.95	0,95
RFI	0.95 ≤ RFI ≤ 1	0.90 ≤RFI ≤ 0.95	0,99

AGFI	0.90 ≤ AGFI ≤ 1	0.85 ≤ AGFI ≤ 0.90	0,99

Source: (Schermelleh-Engel, Moosbrugger, & Müller, 2003)[3]

When the fit values were examined, it was determined that all fit criteria of the explained factor structure were within the perfect fit levels. This result confirmed the explained factor structure.

4.2.2. Validity and Reliability Analyses of the Skills Required for Accountants Scale

The item analysis results regarding the validity and reliability of the required accounting skills scale, reliability levels, and explanatory factor analysis results are given in Table 4.

Table 4. Factor Analysis Results of the Required Accounting Skills Scale

Items	Factor Loading	Item Correlation
Diversified experience in the field of accounting and auditing accounts with a scientific and professional background.	0,792	0,731
Communication skills (such as writing and reading).	0,758	0,692
Scientific and practical experience and legislative knowledge on financial and accounting issues	0,788	0,726
Knowledge of field court proceedings and litigation in financial and commercial disputes	0,722	0,652
Knowledge of the judicial system, laws and regulations	0,730	0,661
To have knowledge of the accounting system and financial controls and to organize the preparation of final accounts and budget.	0,744	0,676
Public communication skills	0,770	0,705
Ability to analyze and examine beyond the numbers presented in documents when financial and commercial disputes arise	0,750	0,682
Ability to monitor and control cases of fraud, manipulation, financial and administrative corruption	0,752	0,684
Advanced knowledge of standards, fundamentals, rules and intellectual and scientific frameworks for accounting and auditing	0,728	0,659

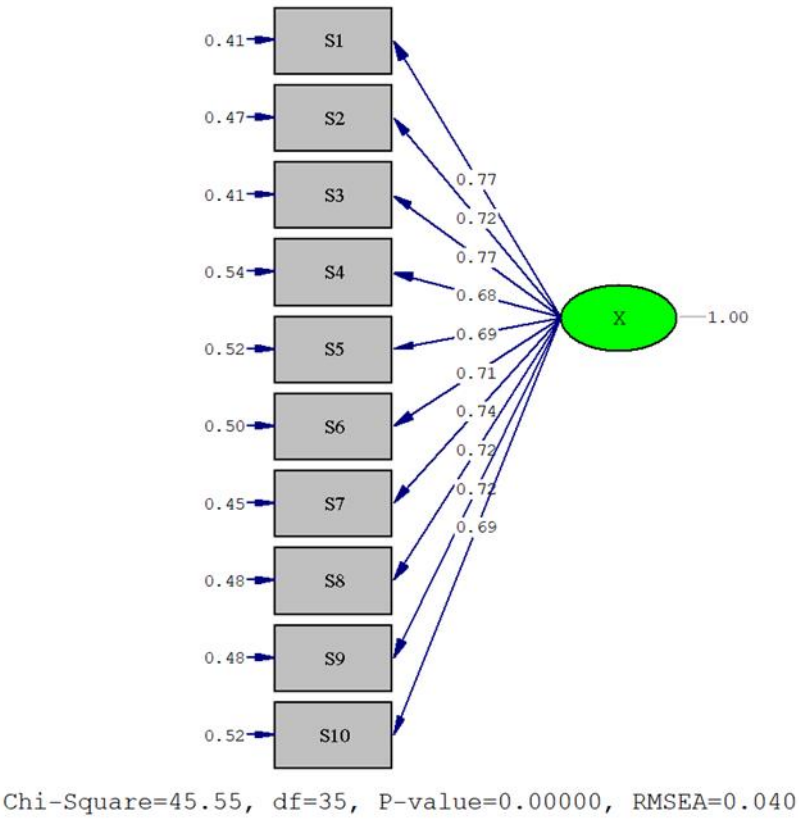
[3] When Table 3 is examined, it was determined that the χ2/sd, (RMSEA, SRMR, NFI, NNFI, GFI, AGFI, IFI, RFI) values of the innovation scale were within the acceptable fit criteria.

Reliability	0,915
Core Value	5,681
Variance Explained	56,813
KMO:0,952; Bartlett's Test of Sphericity (X^2):1200,923; p=0.001<0.05	

Source: Authors' calculations

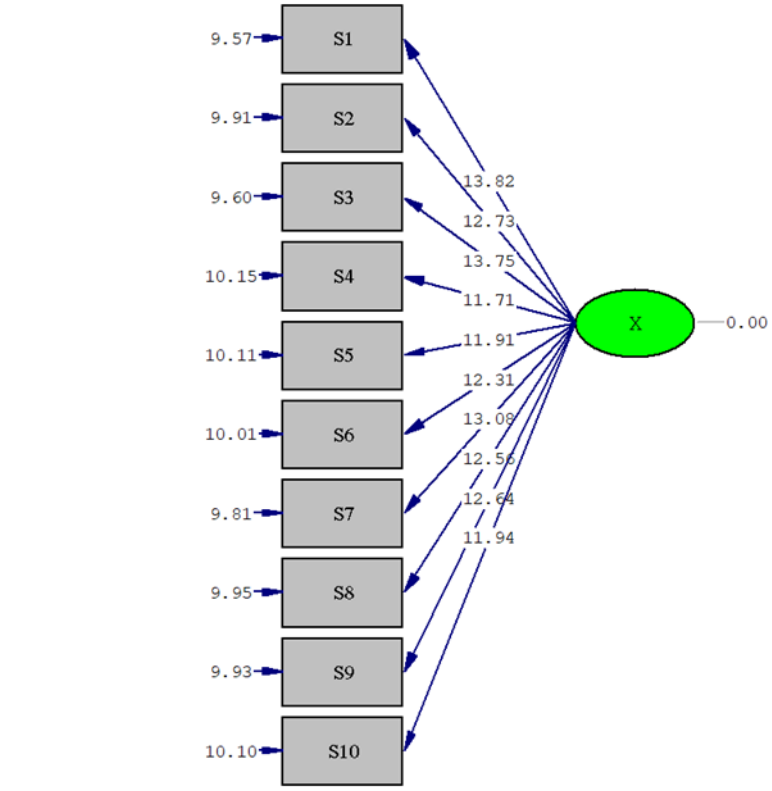
As shown in Table 4, the KMO value was found to be greather than 0.60, and the Bartlett sphericity test was found to be significant (p<0.05). As a result of the factor analysis, it was determined that there was a single-factor structure and that the total variance value explained by this single factor for the scale was 56.813% with an eigenvalue of 5.681. As seen in Table 2, since the item correlation in the scale was not below 0.30, it was determined that there was no need to remove any statements and that the internal consistency (reliability) level of the scale was high (Cronbach's alpha = 0.915). To determine whether the explained factor structure of the scale was confirmed, confirmatory factor analysis was performed using LISREL 8.7 program and the results of the factor analysis are shown in Figure 4 and 5.

Figure 4. Path Diagram of Standardized Factor Loadings of the CFA Result of the Skills Scale Required for Accountants Using Forensic Accounting



Source: Authors' calculations

Figure 5: Path Diagram of T Values of Standardized Factor Loadings of CFA Result of Skills Scale Required for Accountants Using Forensic Accounting



X: Skills Required for Accountants Using Forensic Accounting

Source: Authors' calculations

According to the CFA result of the skills scale required for accountants using forensic accounting, it was determined that the standardized factor loading values of the items were between 0.68-0.77 (Figure 4). The factor loadings were statistically significant at the 95% confidence level (t>1.96); therefore the effects of the factor loading values of all items on the scale size were significant at the 95% confidence level (Figure 5). The results for the fit indices are presented in Table.

Table 5. Goodness of Fit Values of the Skills Scale Required for Accountants Using Forensic Accounting

Compliance Criteria	**Perfect Match**	**Acceptable Compliance**	**Research Result**
$\chi 2/sd$	≤3	≤5	1,302
RMSEA	0 < RMSEA <0.05	0.05 ≤ RMSEA ≤ 0.10	0,040
SRMR	0 ≤ SRMR <0.05	0.05 ≤ SRMR ≤ 0.10	0,023

NFI	0.95 ≤ NFI ≤ 1	0.90 ≤NFI ≤ 0.95	0,99
NNFI	0.95 ≤ NNFI ≤ 1	0.90 ≤NNFI ≤ 0.95	0,99
CFI	0.95 ≤ CFI ≤ 1	0.90 ≤CFI ≤ 0.95	0,99
GFI	0.95 ≤ GFI ≤ 1	0.90 ≤GFI ≤ 0.95	0,98
IFI	0.95 ≤ CFI ≤ 1	0.90 ≤IFI ≤ 0.95	0,96
RFI	0.95 ≤ RFI ≤ 1	0.90 ≤RFI ≤ 0.95	0,99
AGFI	0.90 ≤ AGFI ≤ 1	0.85 ≤ AGFI ≤ 0.90	0,99

Source: (Schermelleh-Engel, Moosbrugger, & Müller, 2003)[4]

The fit values of the models are listed in Table 5. The fit values indicate whether the created model is suitable. In structural equation modeling, the evaluation of model fit is not as simple as in statistical approaches based on error-free measured variables. As there is no single statistical significance test that defines a correct model when sample data are given. It is necessary to consider more than one criterion and evaluate the model fit based on various criteria simultaneously. For each estimation procedure, a large number of goodness-of-fit indices were used to evaluate whether the model was consistent with the empirical data. The choice of estimation procedure depends on the type of data included in the model (Schermelleh-Engel et al., 2003: 31).

When the fit values were examined, it was determined that all fit criteria of the explained factor structure were within perfect fit levels. This result confirmed shows that the explained factor structure.

4.3. Descriptive Findings and Distribution of Data

In this part of the study, the distribution of the research data and the descriptive findings of the measurements were included.

Table 6. Distribution of Data and Descriptive Findings of Measurement Tools

Variables	Central Tendency			Kurtosis-Skewness	
	Ort.	Medyan	s.s	Kurtosis	Skewness
Detecting and Combating Corruption	3,61	3,89	0,82	-1,44	1,14
Accounting Skills	3,59	3,90	0,87	-1,55	1,18

Source: Authors' calculations

For the scales, a 0.8-point range (4/5=0.80) is used for the interpretation of the participants' general levels on a 5-point Likert scale, and this scale is added to the starting score of 1 point, which is the scale's 0.8 point range, and the lower and upper limits of the scores were calculated for each measurement level. In this case,

[4] When Table 5 is examined, it was determined that the χ2/sd, (RMSEA, SRMR, NFI, NNFI, GFI, AGFI, IFI, RFI) values of the innovation scale were within the acceptable fit criteria.

the "1-1.80 range is very low", "1.81-2.6 range is low", "2.61-3.4 range is medium", "3.41-4.2 range is high" and "4.21-5.0 range is very high" (Durmaz, 2020). It was determined that the participants' level of detecting and combating corruption was high (3.61±0.82) and their accounting skill level was high with (3.59±0.97).

In order to determine on the distribution of the data obtained as a result of the research, first, the mean and median values from the central tendency measures were examined, and it was determined that the mean and median values were close to each other. Then, it was checked whether the kurtosis and skewness levels were between the lower limit of -2 and the upper limit of + 2. The kurtosis values of the data were between the lower limit of -2 and the upper limit of +2 (George and Mallery 2010). Another method used to determine the on the normality of the distribution is the central limit theorem and since the number of samples should be 30 or more (n≥=30) according to this theorem, it was decided to use statistical analysis techniques including parametric methods, which are stronger than non-parametric measurements, because the distribution of the data is normal within the scope of a different statistical perspective based on this theorem (Ghasemi and Zahediasl, 2012).

4.4. Testing Hypotheses

This part of the study included statistical information on the research hypotheses. The findings of the Pearson correlation and structural equation model results regarding the testing of the hypotheses created in line with the research were included.

4.4.1. Findings of Correlation Analysis

Correlation analysis is a statistical method that provides descriptive information about the relationship between the variables in the study, the direction of the relationship, and the intensity of the relationship (Tanrıkul, 2023). The following values are known for the interpretation of the Pearson product-moment correlation coefficient (Köklü et al., 2006):

r= 0.00 No relationship
r=0.01-0.29 Low level of relationship
r=0.30-0.70 Moderate level of relationship
r=0.71-0.99 High level of relationship
r=1.00 Perfect relationship

Table 7 presents the results of the correlation analysis between the independent and dependent variables.

Table 7: Findings Regarding Correlation Analysis

Variables		Detecting and Combating Corruption	Accounting Skills
Detecting and Combating Corruption	r	1	0,814
	p		0,001*
Accounting Skills	r	0,814	1
	p	0,001*	
*p<0.05			

Source: Authors' calculations

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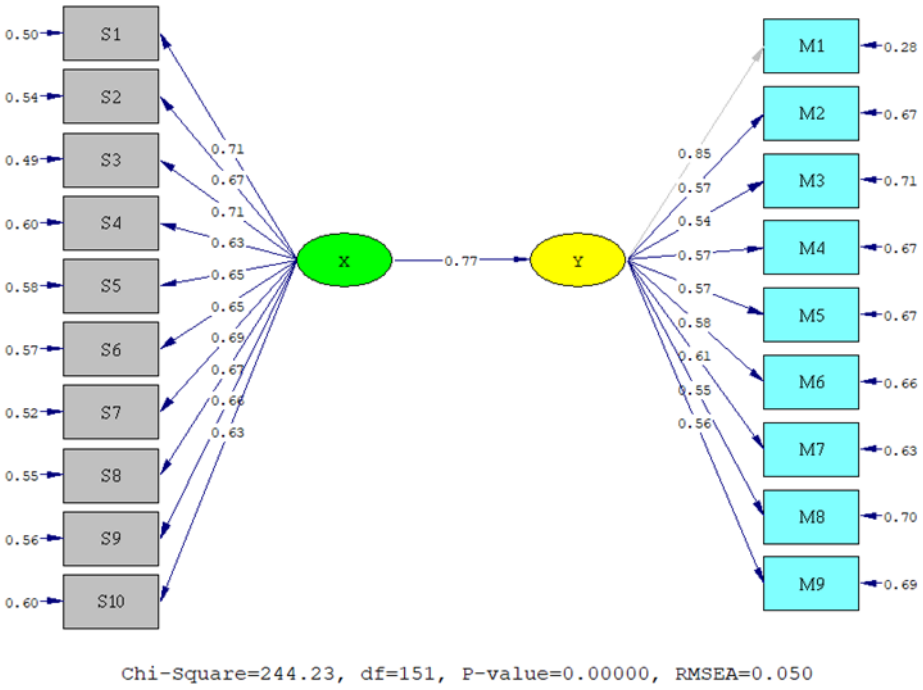
There was a significant positive correlation of 0.814 between the skills required for accountants using forensic accounting and detecting and combating corruption (r=÷0.814; p=0.001<0.05). As a result, when the skills required for accountants using forensic accounting increase, there is a high level of increase in the level of detecting and combating corruption. This result indicates that the first hypothesis of this study is accepted.

4.4.2. Findings of the Second Hypothesis of Research

Figure 6: Path Diagram of Standardized Parameter Estimates in the Research Model



X: Skills Required for Accountants Using Forensic Accounting; Y: Detecting and Combating Fraud

Source: Authors' calculations

When the model established to test the second hypothesis of the model research in Figure 6 is examined, it is determined that it is in "perfect fit" with X2/sd: 1.617, and when other fit indices are examined, it is determined that they are within the limits of "perfect fit" and "acceptable fit" with RMSEA: 0.050, SRMR: 0.036 , NFI: 0.99, NNFI: 0.99, CFI: 0.99, GFI: 0.92 , AGFI: 0.90, IFI: 0.99 and RFI: 0.99. These results render the path coefficient in the model interpretable. The results of the second hypothesis of the research are as follows.

Table 8: Model Results on the Impact of Skills Required for Accountants Using Forensic Accounting on Detecting and Combating Fraud

Roads	S.P.T	*t*	R^2	Result
(X)→(Y)	0,77	15,85*	**0,59**	**Confirmed**

***P<0.05; X: Skills Required for Accountants Using Forensic Accounting; Y: Detecting and Combating Corruption**

Source: Authors' calculations

5. Discussion

Financial corruption remains one of the most significant obstacles to economic development and transparency worldwide. Various instruments, including tax policies, financial discipline practices, and forensic accounting, have been employed to combat this issue. This study focused on the role of forensic accounting in detecting and preventing financial corruption, particularly by examining the awareness levels of professionals and the skills required for accountants utilizing forensic accounting techniques. The findings provide valuable insights into the effectiveness of forensic accounting in addressing financial corruption and offer implications for both practice and future research.

The results of this study highlight the critical role of forensic accounting skills in detecting and combating financial corruption. As demonstrated in Table 8, the second hypothesis of the research, which posits that the skills required for accountants using forensic accounting significantly impact the detection and prevention of corruption, was supported at the 95% confidence level (β=0.77; t=15.85>1.96). This finding indicates that enhancing the skills of accountants in forensic accounting can lead to a substantial improvement in their ability to identify and address corrupt practices. Specifically, a one-unit increase in these skills results in a 0.77-unit increase in the effectiveness of detecting and combating corruption. Furthermore, the model explains 59% of the variance in the level of forensic accountants' effectiveness in addressing corruption (R^2=0.59), underscoring the importance of these skills in the fight against financial misconduct.

These findings align with previous studies that emphasize the role of specialized skills and training in forensic accounting as a tool for combating corruption (Jaja and Narsa, 2021). However, this study contributes to the literature by quantifying the impact of these skills and providing empirical evidence of their significance. The use of structural equation modeling (SEM) and descriptive statistics adds methodological rigor to the analysis, offering a robust framework for understanding the relationships between forensic accounting skills and corruption detection. This methodological approach can serve as a foundation for future research in other accounting branches, enabling researchers to explore similar relationships and develop strategies to prevent financial corruption.

The implications of this study extend beyond academic literature. For practitioners, the findings underscore the need to invest in the education and training of accounting professionals in forensic accounting techniques. Enriching undergraduate and graduate curricula with courses focused on forensic accounting, fraud detection, and ethical practices can equip future accountants with the necessary skills to combat financial corruption effectively. Additionally, professional development programs and certifications in forensic accounting can help current practitioners enhance their expertise and contribute to the fight against corruption.

Despite its contributions, this study has certain limitations. First, the sample was limited to professionals with awareness of forensic accounting, which may affect the generalizability of the findings. Future research could expand the sample to include a broader range of accounting professionals and organizations. Second, the study relied on self-reported data, which may be subject to biases. Future studies could incorporate objective measures of corruption detection and prevention to validate the findings. Finally, the cross-sectional design of the study limits the ability to establish causal relationships. Longitudinal studies could provide deeper insights into how the development of forensic accounting skills over time impacts the effectiveness of corruption prevention efforts.

In conclusion, this study highlights the critical role of forensic accounting skills in detecting and combating financial corruption. The findings demonstrate that enhancing these skills can significantly improve the ability of accountants to address corrupt practices, contributing to greater transparency and accountability in financial systems. By enriching education and training programs in forensic accounting, policymakers, educators, and professional bodies can play a pivotal role in equipping accountants with the tools needed to combat one of the most pressing challenges to economic development. Future research should build on these findings to explore additional factors that influence the effectiveness of forensic accounting and develop comprehensive strategies for eliminating financial corruption.

6. Conclusions

Various instruments have been used to fight financial corruption. The use of these instruments is sometimes provided by tax policies and financial discipline practices. In this study, the awareness levels of professionals with forensic accounting awareness in preventing financial corruption were revealed using descriptive statistics and structural equation modeling.

When Table 8 is examined, the second hypothesis of the research, the effect of the skills required for accountants using forensic accounting on detecting and combating corruption is statistically significant at the 95% confidence level (β=0.77; t=15.85>1.96). This result means that the skills required for accountants using forensic accounting have a positive effect of 0.77 units on detecting and

combating corruption, and that a one-unit improvement in the skills required for accountants using forensic accounting will cause a 0.77-unit increase in the level of detecting and combating corruption. It was determined that 59% of the level of forensic accountants in detecting and combating corruption is explained by the skills required for accountants using forensic accounting (R2=÷0.59).

This study will contribute to the literature in terms of the methods used. This will provide new horizons for researchers in terms of determining the relationships in other accounting branches to prevent financial corruption. To eliminate financial corruption, which is one of the biggest problems in front of development and forms the basis of informality, the education that the members of the profession will receive at undergraduate and graduate levels can be enriched.

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