

CHALLENGES AND FORWARD-LOOKING ROLES OF FORENSIC ACCOUNTING IN COMBATING MONEY LAUNDERING: EVIDENCE FROM THE DEVELOPING MARKET

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Abstract

How to cite this paper: Shbeilat, M. K., & Alqatamin, R. M. (2022). Challenges and forward-looking roles of forensic accounting in combating money laundering: Evidence from the developing market. *Journal of Governance & Regulation*, 11(3), 103–120. <https://doi.org/10.22495/jgrv11i3art10>

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ISSN Print: 2220-9352
ISSN Online: 2306-6784

Received: 10.02.2022
Accepted: 20.07.2022

JEL Classification: M41, M42, M48, K13
DOI: 10.22495/jgrv11i3art10

The spread of money laundering operations and their negative effects on the national economy is a global challenge. Jordan, in which the overall risk of money laundering was assessed to be high (National Anti-Money Laundering and Terrorism Financing Committee [NAMLTFC], 2020), aims to intensify efforts to combat money laundering operations. This study shed light on the role of forensic accountants in combating money laundering, in addition to highlighting potential obstacles they face in performing their duties. The study employed a concurrent mixed method approach that data collection for both the questionnaire and the interviews was conducted simultaneously. The analysis of the study revealed that forensic accounting techniques contribute to combating money laundering operations. The findings also suggest that to better achieve this goal, forensic accountants must be familiar with contemporary techniques in data collection, process, and analysis. In addition, the study revealed several obstacles that limit the desire to work as forensic such as the disproportion of fees with the effort expended especially when the litigation period extends for several years, and loss of time due to non-attendance of witnesses to court. Given that draft companies law mandates companies to declare the real beneficiaries, regulators can invest the insights gained from this study to enhance anti-money laundering cooperation with the International Federation of Accountants (IFAC) by considering giving auditors greater power in examining related-party transactions (IAASB, n.d.) to better identifying real beneficiaries.

Keywords: Forensic Accounting, Auditors, Money Laundering, Concurrent Mixed Method, Forensic Accountant, Real Beneficiaries

Authors' individual contribution: Conceptualization — M.K.S.; Methodology — M.K.S. and R.M.A.; Formal Analysis — M.K.S. and R.M.A.; Investigation — M.K.S. and R.M.A.; Resources — M.K.S. and R.M.A.; Writing — Original Draft — M.K.S. and R.M.A.; Writing — Review & Editing — M.K.S.; Visualization — M.K.S. and R.M.A.; Supervision — M.K.S.; Project Administration — M.K.S. and R.M.A.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

Financial crimes and fraudulent activities have increased and created many challenges for the global economy because fraudulent practices and corruption negatively affect the national economy and social security alike. Financial crimes include oil bunkering bribery, looting, money laundering, fraud, tax evasion, and foreign exchange malpractice (Mukoro, Yamusa, & Faboyede, 2013).

Money laundering is one of the problems facing the global economy, and this problem has received great attention from many researchers and institutions. The importance of establishing an institutional framework that aims to identify the problem and address it through specific and organized steps to combat corruption in all forms became necessary to accelerate economic development (Enofe, Okpako, & Atube, 2013). Accordingly, there was a need for forensic accounting due to its important role in detecting and combating fraud, economic crimes, and money laundering crimes, because forensic accountants hold special capabilities and qualifications that enable them to investigate suspicious activities.

The existence of an institutional framework for forensic accounting is an important and modern field that holds many opportunities to meet future needs; it defines the required skills and basic requirements to be a forensic accountant. It also represents an integrated framework for accounting and law to work together to provide more in-depth and relevant investigations of legal issues, as it eases the way for the forensic accountant to be a legal counsel. Forensic accountants' efforts contribute to supporting lawsuits, enlightening the judiciary, and helping it to establish the right and achieve justice by providing them with a report prepared with the utmost accuracy and comprehensiveness and supported by sufficient legal evidence (Alshurafat, Beattie, Jones, & Sands, 2019).

In Jordan, National Anti-Money Laundering and Terrorism Financing Committee (NAMLTFC) prepared a summary of the national assessment report on the risks of money laundering and terrorist financing and concluded that the overall risk level rating is "high", with a total score of 4.1/7 (NAMLTFC, 2020). The summary also indicated that the level of risk of money laundering from local proceeds is "average" with a total value of 941 million JD (1 JD = 1.41 USD), of which the percentage of tax evasion crimes constituted 73%, burglary and criminal theft 8%, illicit trafficking in narcotic drugs 7%, corruption and bribery 4%, financial fraud 3%, and the rest of other crimes. It is noted from the report that the crime of tax evasion with its two parts (sales tax and income tax) has obtained the highest percentage of local proceeds of financial crimes, which confirms the importance of activating the role of tax auditors and forensic accountants in reducing tax evasion.

On the other hand, the Anti-Money Laundering and Counter Terrorist Financing Unit prepared a strategic analysis on "trends, patterns and indicators of money laundering and terrorist financing in Jordan through the database of the Anti-Money Laundering and Counter Terrorist

Financing Unit (AMLCTFU), stressing the importance of developing and exchanging knowledge to protect the financial system from threats and risks (AMLCTFU, 2020). The strategic analysis indicated that most of the domestic proceeds of financial crimes were generated in the form of cash and that most of the funds obtained from tax evasion crimes were laundered through the banking and financial service provider sectors. It is worth noting that the strategic analysis also indicated that the banking sector is the most reporting suspicious money laundering operations with 71% of the total notifications received to the Anti-Money Laundering Unit. This confirms the vital role of banks in combating money laundering and the importance of surveying their views in this study.

Corruption and cases of fraud spread in recent times have greatly reduced the credibility of financial statements. Therefore, users of financial statements need another party to depend on in auditing these financial statements. Hence, an important measure is to ensure the effectiveness of internal control through the direct supervision of the audit committee. Audit committees, as the liaison officer with the auditors, may play a role here by selecting internal and external auditors with experience in anti-money laundering methods (Shbeilat, 2018) and settling financial disputes using laws and regulations (Singleton & Singleton, 2010).

Khalifa (2012) indicated several reasons behind the spread of money laundering crimes at local, regional, and international levels: 1) the use of modern technological means in money transfers, 2) the exploitation of the secrecy of bank accounts to keep suspicions away from criminals, 3) weak internal control, 4) introducing new and innovative ways in the means of money laundering operations along with technological developments, 5) the lack of proper application of laws and legislation, and 6) lack of transparency and accountability.

Despite the great efforts being made to combat this money laundering, it requires the availability of a certain set of characteristics, skills, and qualifications that are commensurate with the nature and techniques of financial fraud and money laundering operations. Hence, the role of the forensic accountants in the anti-money laundering process may emerge because of their scientific qualifications in the fields of accounting, auditing, and investigation; this gives forensic accountants a unique characteristic in the field of analyzing and understanding numbers, because forensic accounting is concerned with what is behind deals and numbers and with detecting "money laundering schemes" (Ibex & Grippo, 2008, p. 131). This study aims to identify the role of the methods and techniques used by forensic accountants in identifying suspected cases of money laundering. Accordingly, the first research question of this study is:

RQ1: To what extent do forensic accounting techniques and procedures contribute to combating money laundering operations in Jordan?

Jordan, like many Arab countries, lacks an official association concerned with organizing the profession of forensic accounting and granting the necessary license to its practitioners. In Egypt

and Saudi Arabia, Hamid, Mohammad, and Abdulkareem (2021) stated that the application of forensic accounting faces several difficulties such as the absence of legislation and standards that define the duties and responsibilities of forensic accountants, in addition to the absence of a professional association interested in facilitating the work of forensic accountants. In Libya, Masoud (2015) encouraged experts in the field of forensic accounting to join the membership of professional organizations interested in forensic accounting in developed countries, while Abdul Aziz (2018) criticized the limited role of Sudanese professional associations in activating the forensic accounting profession and also criticized the lack of legislation regulating the profession. In Iraq Al-Jalili (2012) indicated that the methods for qualifying certified public accountants are not able to provide the necessary requirements to carry out the tasks of forensic accounting. Finally, Al-Madhoun and Ahmed (2021) indicated that the legislation in Palestine did not single out articles regulating the work of the forensic accountant. They recommended the necessity of amending relevant laws and strengthening the role of professional associations in regulating and licensing the forensic accounting profession.

Every profession has difficulties and obstacles, whether because of legislation, standards, and procedures or due to the lack of skills and lack of experience of practitioners. Some professions require special skills and qualifications to overcome potential obstacles. This study also aims to identify any obstacles that limit the ability of forensic accountants in combating money laundering methods effectively. Accordingly, this study aims to answer the following question:

RQ2: What are the obstacles that may limit and affect the role of forensic accounting in combating money laundering?

This study seeks to contribute to highlighting the importance of coordination and cooperation between forensic accountants (represented by the Jordanian Association of Certified Public Accountants (JACPA)) and the judicial authorities in order to increase their effectiveness as expert witnesses in the investigation of white-collar crimes and money laundering crimes (Association of Certified Fraud Examiners [ACFE], n.d.). Most of the previous studies dealt with the role of the forensic accountant in reducing earning management (Suleiman & Ahmi, 2018; Hamid et al., 2021; Sule, Ibrahim, & Sani, 2019; Komal et al., 2021; Ezejiolor, Nwakoby, & Okoye, 2016; Ozumba, Ofor, & Okoye, 2016; Akenbor & Ironkwe, 2014; Mukoro et al., 2013) and in discovering cases of financial corruption and frauds (Blessing, 2015; Saleh, 2018; Al Samara, AL-Afeef, & Al Ali, 2017; Özcan, 2019; Siam & Abdullah, 2019). This study contributes to the literature by filling the gap on the role of forensic accounting in fighting money laundering operations, and also contributes to shedding light on the most important obstacles facing forensic accountants, which must be addressed through collaboration between the JACPA and regulators.

As for the structure of the study, it started with the introduction to the study motivation, in which

the study research questions were presented. The next Section 2 presents the relevant literature review focusing on the role of forensic accounting techniques in combating money laundering, followed by the research methodology in Section 3. Section 4 presents the analysis and discussion of both the quantitative and qualitative results. Finally, Section 5 summarizes the conclusions and practical implications of the study.

2. LITERATURE REVIEW

2.1. Concept, skills, and the economic demand for forensic accounting

Forensic accounting first appeared in the United States in the nineteenth century due to the emergence of financial corruption in the capital market and the banking credit sector (Rezaee, Lo, Ha, & Suen, 2016). The increase in business volume and diversity led to an increased interest in forensic accounting. Enofe et al. (2013) pointed out that there is an increasing demand for forensic accounting services as a result of the increase in financial fraud methods in companies around the world. Enofe et al. (2013) also added that forensic accountant plays the role of an expert witness in detecting fraud in financial statements because of their scientific and practical capabilities, thus, forensic accounting plays a prominent role in helping courts resolve disputes.

According to Al-Jalili (2012), the emergence of forensic accounting is due to several reasons: 1) the apparent multiplicity and complexity of jobs and the accompanying emergence of some cases of financial and administrative corruption, 2) divergence of financial operations between companies, and 3) a large number of cases of financial corruption, whether due to conflict of interest, negligence or complicity of auditors, which in turn led to an increase in the demand for forensic accounting services to support the performance of judicial courts.

Many researchers pointed out that forensic accounting is the result of integrating accounting, auditing, and investigation skills (Ozumba et al., 2016; Modugu & Anyaduba, 2013; Blessing, 2015; Tiwari & Debnath, 2017; Koh, Arokiasamy, & Lee Ah Suat, 2009; Oyedokun, 2015). The American Institute of Certified Public Accountants (AICPA) also emphasized the role of auditors in the forensic accounting profession, as it defined it as a “services generally involve the application of specialized knowledge and investigative skills possessed by CPAs to collect, analyze, and evaluate evidential matter and to interpret and communicate findings in the courtroom, boardroom, or other legal or administrative venue” (AICPA, n.d.), while the Association of Certified Fraud Examiners (ACFE), which is considered one of the main umbrellas of the forensic accounting profession, emphasized the effective role of integrating accounting expertise with investigative skills in support of legal cases, and the importance of having experts in forensic accounting within the staff of audit firms (ACFE, n.d.).

The main skills required for a forensic accountant can be summarized as follows (Crumbley, Heitger, & Smith, 2017; Alkubaisi, 2016;

Bhasin, 2013; ACFE, n.d.; Elder, Beasley, Hogan, & Arens, 2020):

- *The ability to think*: Enables them to practice other skills such as innovation, creativity, and judgment in fulfilling their work, and to be familiar with accounting, auditing, and commercial operations.

- *Investigative skills*: Forensic accountants must be able to discover conflicts of interest, search for truth, and conduct investigations related to financial corruption cases. This skill also helps the forensic accountant to simplify complex problems, making it easier to find solutions to them.

- *Professional skepticism*: To maintain appropriate professional skepticism forensic accountants are required to apply a “trust but verify” policy for all provided financial transactions and reports, regardless of how confident they are in the competence and integrity of the providers.

- *Computer & IT skills*: Forensic accountant has to use his/her skill to find financial statements and documents electronically as soon as they are needed. For example, he/she must have the skill of quickly accessing the necessary data, such as financial disclosures issued by the websites of the stock exchange, the securities commission, and the courts.

- *Arbitration skills*: These are the skills associated with the arbitration, providing legal advice, and the ability to interpret and derive indicators that help in resolving disputes of a financial nature.

- *Oral and written communication skills*: The ability to communicate effectively when writing reports, charts, and maps, and when presenting testimony as an expert in court to resolve a financial dispute.

The services provided by the forensic accountant have become of importance to many parties, such as 1) shareholders to find out if there was fraud or misuse committed by senior management, 2) lenders to determine who is responsible for providing fraudulent financial statements that were relied upon when granting loans, 3) government to determine the correct amount of tax transferred to the treasury, 4) employees to identify those responsible for the misuse of employee savings and investment funds, and 5) judicial authorities that need the expertise of forensic accountant in detecting cases of financial corruption and the use of illegal funds. A forensic accountant can also perform the following tasks (Malusare, 2013; ACFE, n.d.; Alshurafat et al., 2019):

- *An expert witness providing advice in the litigation and dispute resolution field*: It is one of the major services provided by forensic accountants, as they are considered expert witnesses before courts in litigations involving accounting and financial corruption. They may also be asked to propose interrogation questions or assist in document interpretation based on their investigations.

- *Detecting fraud cases*: The forensic accountant examines financial and non-financial data to identify suspicious transactions and areas exposed to fraud risks and to identify responsible

persons for such fraud and persons who are cooperating with them.

- *Insurance claims settlement*: Insurance company's contract with forensic accountants to obtain an accurate assessment of claims that must be settled. Insurance policyholders also need the services of forensic accountants when they appeal against the settlement of claims made by insurance companies.

- *Expressing an opinion in assessing the damage resulting from misuse to determine the appropriate amount of financial compensation*: Forensic accountant is used for investigations and assessing the damage, by tracing, collecting, and critically analyzing financial information to determine the value of the damage caused by a person to another person.

- *Anti-money laundering operations and tracing illicit funds*: Forensic accounting plays a fundamental role in combating money laundering operations, by searching and investigating money laundering activities, identifying the persons or entities involved in such activities, pursuing money launderers' money, collecting evidence, and investigating.

2.2. Money laundering concept

The issue of money laundering has occupied great importance in the global economic field during the recent period in recognition of its negative effects on economic stability, especially on the climate of domestic and international investment. Similarly, international organizations and major financial centers needed to confront this phenomenon and limit its spread, given that it threatens the global economy and social security alike (Lagarde, 2021; Aluko & Bagheri, 2012).

Money laundering is one of the most serious financial crimes that threaten economic growth. It is one of the new economic crimes and has negative effects (Al-Jalili, 2012). Money laundering crime constitutes a major international challenge to any state because it is linked to many crimes and illegal activities such as terrorism and drug trafficking crimes, weapons, commissions and bribery, forgery, commercial fraud, counterfeiting money and funds resulting from financial and administrative corruption (Patel & Thakkar, 2012). Money launderers have one destination in their mind which is the legalization of funds acquired from illegal sources or activities through a series of operations and procedures with the intent to conceal the illegal source of those funds (Jayasree & Siva Balan, 2017; Georgieva, 2020).

The term money laundering is a modern term and it is an alternative to the hidden economy, black economies, or shadow economics. Money laundering means earning money from illegal sources, and sometimes these illegitimate funds are mixed with other money that is permissible and invested in activities that are legally permissible to conceal its forbidden source and get out of legal accountability after misleading security and supervisory authorities (Jayasree & Siva Balan, 2017).

2.3. Forensic accounting methods for combating money laundering

Reactive and proactive auditing; according to Cook and Clements (2009), the reactive audit is concerned with conducting extensive investigations about illegal activities to ascertain cases of suspected money laundering, and this requires gathering appropriate and sufficient evidence to support legal opinion before the courts to determine those responsible for financial fraud and money laundering. On the other hand, proactive auditing aims to prevent financial crimes by spreading a culture of public awareness of the importance of combating financial crimes and combating money laundering. Proactive auditing could be achieved by 1) verifying the extent of compliance with the internal control systems and evaluating the weaknesses and gaps in those systems, and 2) ensuring the extent of the institution's commitment to applying the provisions of laws and controls related to combating money laundering and that there are no violations or abuses in this regard.

Artificial intelligence techniques also help forensic accountants to accurately locate weaknesses and risks and facilitate access to the required data within the company's accounting information system, thus, facilitating the task of forming audit evidence (Hashem & Alqatamin, 2021; Al-Sayyed, Al-Aroud, & Zayed, 2021). Other forensic accounting methods that forensic accountants can use to combat money laundering operations can be summarized in the following (Tutino & Merlo, 2019; Alkubaisi, 2016; Saleh, 2018; Smith & Crumbley, 2009; Akenbor & Ironkwe, 2014; Prabowo, 2016; Kearns, Barker, & Danese, 2011):

- *Continuous monitoring*: Forensic accountant continuously monitors, documents, gather evidence, and track suspicious activities for a certain period to determine that they, in the aggregate, constitute a potential case of money laundering.

- *Analyzing the sources of funds and their uses*: It is concerned with obtaining information about the sources of large amounts of money deposited in the bank and verifying their proportionality with the financial position of the client. The forensic accountant is also interested in verifying that these funds were not used at any stage of money laundering activities.

- *Time series analysis and the use of tracking maps*: This method helps the forensic accountant in displaying all the details related to money laundering operations in terms of timing, movement, concentration, and identification of persons involved.

- *Tracking small deposits*: The perpetrators of money laundering crimes may make several financial movements in small amounts so as not to draw attention, and, therefore, the accountant must keep track of those small deposits that are repeated several times.

- *Chain of evidence and link analysis*: This method is concerned with the process of proving the source of this evidence that incriminates those involved in money laundering operations. A forensic accountant must document the method and timing of obtaining evidence to facilitate the task of linking

evidence to the perpetrators of money laundering crimes through their addresses, contacts, and means of communication found in the documents.

- *Investigate complaints and allegations related to money laundering operations*: Herein lies the importance of the forensic accountant possessing the following skills: investigative skills, the ability to critically read documents, the ability to identify forged documents, and the ability to draw conclusions that lead to the detection of those involved in fraud and money laundering cases.

2.4. Role of forensic accounting in fighting money laundering

There is a relationship between the money laundering crime and the accounting profession, where accounting is concerned with analyzing and recording financial transactions that occur with other subsidiaries, affiliates, and independent companies; these episodes of the accounting cycle may be used to pass suspicious financial activities and transactions related to money laundering (Prabowo, 2016). With the advent of globalization, the advancement of electronic money transfer methods, and the many cases of hacking financial and banking systems, legal and technical assistance among countries has become one of the most needed necessities to fight this crime, because this technological progress has led to an increase in the means and speed of money transfer from one country to another and from one continent to another. Accordingly, cooperation between countries has become the basis for an effective confrontation to combat this phenomenon, which is represented in the recognition of foreign judgments, extradition of criminals, and cooperation with international organizations concerned with combating money laundering by providing legal, cognitive, technical, and financial support, especially to developing countries (Ismail & Mostafa, 2020; Georgieva, 2020).

Law enforcement officials and lawyers work alongside forensic accountants during investigative periods because they are considered expert witnesses during trials (Suleiman & Ahmi, 2018). According to Okolie (2014), the skills of a forensic accountant include all the skills of accounting, financial analysis, and auditing during the investigation. Alao (2016) indicated that forensic accounting has an important and fundamental impact in combating financial fraud operations inside banks, in addition to the fact that forensic accounting reports greatly enhance and support litigation processes before courts regarding financial fraud operations. In Nigeria, Sorunke (2018) found a positive relationship between the adoption of investigation methods in forensic accounting and the success of litigation procedures in financial corruption cases. Sule et al. (2019) stated that forensic accounting has a major impact on the detection of financial fraud.

Forensic accounting contributes to strengthening judicial consultations by providing financial information of an analytical nature because some information needs to be scrutinized to ensure its accuracy and its ability to be proof among persuasive evidence for those interested in financial

issues. These services include legal advice, claims resulting from error, misconduct, insurance disputes, and other disputes that need to be referred to the generally accepted accounting principles and standards.

Forensic accounting is one of the modern and important mechanisms for preventing and limiting financial and administrative corruption. Widhoyoko, Payudha, Laya, and Immanuel (2017) revealed that the process of liquidation of the company is critical and fraught with financial risks, and prone to money laundering, the study concluded that "forensic accountants may be assigned to prevent and detect money laundering that may be occurred from fraudulent company liquidation" (p. 105). Ezejiofor et al. (2016) indicated that forensic accounting is considered an efficient tool to fight financial crimes in the banking system. Enofe et al. (2013) argued that forensic accounting provides companies with the tools that limit fraud activities. Izedonmi and Ibadin (2012) indicated that financial crimes negatively affect business organizations; therefore, the role of the forensic accountant emerges here in meeting the courts' need for experts in the field of judicial and legal financial disputes, in addition to their mastery and knowledge of accounting standards.

3. RESEARCH METHODOLOGY

The main objectives of this study are to investigate the roles and techniques of forensic accountants in fighting money laundering in addition to identifying potential obstacles that hinder the use of forensic accounting in fighting money laundering. The objectives of this study can be achieved through the use of a qualitative approach that results in intricate and deeper details of phenomena that may not be derived through single quantitative methods. On the other hand, the quantitative approach gives the results more credibility and generalizability. Thus, triangulation was adopted to better achieve the objectives of this study. Conducting mixed method research provides the advantages of both methods and offsets weaknesses of each other. Using mixed methods increases the generalizability of the study and deepens, enriches, and validates the study findings which allow researchers to obtain a better understanding of the phenomenon being studied (Morgan, 2014; Johnson & Christensen, 2019). This study utilized the concurrent mixed method type to achieve the study objectives. The concurrent type of mixed method entails collecting qualitative and quantitative data simultaneously followed by an independent analysis of the processed data (Schoonenboom & Johnson, 2017; Tashakkori, Johnson, & Teddlie, 2020).

3.1. Data collection methods

The required data for the study were collected through the following sources:

- *Secondary sources:* They include books and research published in periodicals related to the subject of the study. Fraud and money laundering literature were studied and analyzed to clarify roles, techniques, and obstacles facing

forensic accounting in combating money-laundering operations to help in the design of both the study instruments and the interview questions.

- *Primary sources:* A field study was also conducted to collect the primary data through questionnaires and interviews designed to meet the purposes of the study. The study questionnaire form was designed and divided into two main parts. The first part included demographic information such as (qualification, specialization, and years of experience) while the second part included statements that address the study research questions.

The second part is also divided into 2 sections. The first section is related to the roles of forensic accounting procedures and techniques and was measured through statements 1-19. Questionnaire statements related to the role of forensic accounting procedures and techniques in fighting money laundering operations were developed by referring to studies related to the techniques, procedures and skills required of the forensic accountant mentioned in the literature review (Crumbley et al., 2017; Bhasin, 2013; ACFE, n.d.; Elder et al., 2020; Cook & Clements, 2009; Hashem & Alqatamin, 2021; Al-Sayed et al., 2021; Tutino & Merlo, 2019; Saleh, 2018; Smith & Crumbley, 2009; Akenbor & Ironkwe, 2014; Prabowo, 2016; Kearns et al., 2011). The second section is related to the proposed obstacles that affect the role of forensic accounting in fighting money laundering operations and was measured through statements 20-24. These statements are mainly derived from the results of the meeting of the chairman of the board of directors of the Jordanian Association of Certified Public Accountants with the Jordanian Minister of Justice (JACPA, 2021) besides other studies such as Bargul (2015) and Alkubaisi (2016).

On the other hand, the interview protocol was designed to achieve the study objectives. The main questions asked during the interview were:

- 1) Does forensic accounting help in fighting money laundering? Please explain how?
- 2) What are forensic accounting methods used in fighting money laundering? Could you please give examples?
- 3) Are there any potential obstacles that hinder the use of forensic accounting in fighting money laundering?

In addition to the main questions asked, several prompt sub-questions were formulated and asked based on the responses of the interviewees.

3.2. Study population and sampling

The study population consisted of Jordanian certified public accountants and senior bank employees. 150 paper questionnaires were distributed to a random sample of external auditors and 150 to senior bank employees. 103 instruments were returned from auditors, 3 incomplete excluded, thus, 100 were approved for analysis. 112 instruments were returned from senior bank employees, 8 incomplete excluded, another 4 instruments were also randomly excluded to match the numbers of the two samples for better comparison purposes; i.e., 100 instruments were

analyzed for each category. Thus, the percentage of questionnaires used in the analysis is equivalent to 67% for each of them. On the other hand, 16 in-depth interviews were conducted equally between auditors and senior bank employees. Data collection for both interviews and questionnaire were conducted from June to August 2021.

3.3. Methods of data analysis

To achieve the study objectives, quantitative data were processed using the Statistical Package for Social Sciences (SPSS). Numerous tests related to descriptive statistics were carried out by finding some ratios, frequencies, means, and standard deviations to identify individual characteristics, and the extent of application of forensic accounting techniques. The t-test one sample was also used to study the impact of forensic accounting in detecting money laundering. On the other hand, arrangements were made for interviews based on the phone call, and they were held according to what suits them, either in their offices or in coffee shops. Interviews were manually transcribed carefully organized, categorized, and examined to identify main themes for ideas that appeared frequently as the focus on commonalities facilitated the process of the qualitative analysis and drawing the study conclusions (Saldana, 2015; Braun & Clarke, 2013).

3.4. Instrument validity

To ensure the validity of the study instrument before distribution, the questionnaire was displayed to several referees from teaching staff in Jordan universities, in addition to specializing in statistics and their recommendations were taken into consideration, then a pilot test was conducted by distributing the questionnaire to 6 random individuals of the study sample. Moreover, to ensure respondents' knowledge of the phenomenon of money laundering, they were asked, through the questionnaire, whether they have previously worked or attended courses related to money laundering.

3.5. Research reliability

Cronbach alpha was used. Cronbach alpha value ranges from 0 to 1. The zero value indicates that there is no reliability, while one is an indicator of excellent reliability. Any increment in Cronbach alpha means data reliability which in its turn enhances the use of the obtained results. Using the SPSS, the Cronbach alpha value of the entire instrument was 94.5% which indicates high

confidence in the reliability of participants' responses as shown in Table 1. Table 1 shows values of Cronbach alpha for each variable of the questionnaire and the entire questionnaire.

Table 1. Reliability of the scale's variables

Variables	Number of Items	Cronbach alpha
Forensic accounting techniques & procedures	19	0.919
Obstacles	5	0.864
The entire instrument	24	0.945

Furthermore, paired sample t-test was used to test non-response bias. The results revealed that t-value for each variable is not significant at 0.05 level. That means there is no non-response bias in the data as shown in Appendix C.

4. RESULTS & DISCUSSION

4.1. Quantitative results

The analysis of the demographic data of the auditors' respondents showed that their experiences ranged from 9 to 22 years, while their qualifications showed that 71% of them hold bachelor's degrees in accounting and 29% have a master's degree in accounting. The demographic data of the respondents of bank employees indicated that their experiences ranged from 7 to 28 years, their specializations were varied in the following fields: 38% financial and banking sciences, 29% accounting, 11% business administration, 8% economics, 5% risk management and insurance, 3% marketing, and 6% others. The job position of bank employees was represented in the following areas (2% branch manager, 3% assistant director, 8% head of the operation, 6% head of customer service, 13% head of tellers, 9% internal auditor/control, 19% customer services, 5% supervisor, 3% quality control, 26% tellers, and 6% for others). The analysis of demographic characteristics shows that respondents have high qualifications and experience, which increases confidence in the results of the survey.

Quantitative data obtained through the questionnaire were coded and analyzed using the SPSS. Descriptive statistics were used to obtain frequencies, percent of demographic variables, while central tendency measures (means and standard deviations) were also computed to find out the relative importance of sample responses on the questionnaire statements. Additionally, a t-test was used to further address study research questions at ($\alpha \leq 0.05$).

Table 2. Means and standards deviations for sample's responses regarding forensic accounting techniques and procedures

	Statements	Auditors		Bank employees	
		Mean	SD	Mean	SD
1	Check the presence of detailed written policies and procedures are in place to combat money laundering.	3.93	0.807	3.72	0.830
2	Clear definition of duties and responsibilities of employees to facilitate the application of the principle of segregation of duties.	4.21	0.715	3.92	0.720
3	Ensure that there are two specific procedures to identify suspicious financial transactions.	3.98	0.752	3.74	0.719
4	Examination of transactions made through clients in countries that do not have effective anti-money laundering systems.	3.85	0.788	3.79	0.856
5	Examination of unusual and unexplained operations.	3.84	0.929	4.16	0.692
6	A detailed review of the operations carried out by the organizations being investigated.	3.65	0.999	3.84	0.654
7	A detailed review of the operations carried out with major executives and stockholders.	4.13	0.734	3.73	0.941
8	Maintain records and documents to determine the extent of money laundering operations.	3.95	0.786	3.82	0.757
9	Investigating the extent of adherence to the internal control procedures related to the prevention of money laundering.	4.15	0.757	3.64	0.835
10	Assessment of weaknesses and gaps in internal control systems.	4.15	0.809	4.00	0.816
11	Availability of using modern information technology to combat money laundering.	4.30	0.644	3.97	0.810
12	Examination of unusual operations for operations that involve suspected money laundering.	4.00	0.791	3.93	0.807
13	Conducting necessary investigations for illegal activities.	4.07	0.742	3.92	0.787
14	Reporting gaps in the implementation of anti-money laundering instructions to the independent audit committee and higher authorities.	4.05	0.869	3.83	0.637
15	Monitoring related-party transactions, customer deposits and transfers.	3.84	0.961	3.72	0.911
16	Verify the real reasons behind the decision to liquidate companies, and ensure that the values of the assets are not tampered with.	3.90	0.718	3.71	0.769
17	Continuous supervision of the resources and uses of funds and follow-up of their movements.	3.74	0.895	3.64	0.785
18	Conduct surprise audits and investigations on suspicious activities to ensure the existence of money laundering practices.	3.96	0.864	3.62	1.090
19	Obtaining information related to large sums deposited in the banks and investigating the suitability with customer financial positions.	3.68	0.888	3.60	0.932
	Average	3.97	0.563	3.80	0.597

Three levels of ranks are assigned to responses based on the 5-point Likert scale with 1.33 as the interval between the levels; thus, low from 1 to 2.33, moderate from 2.34 to 3.67, and high level from 3.68 to 5.

Table 2 shows that auditors' perceptions concerning forensic accounting procedures and techniques in combating money laundering ranged between 3.65–4.30. The vast majority of auditors' responses gain high levels except for statement No. 6 "A detailed review of the operations carried out by the organizations being investigated" gained a moderate level. Auditors' point of view could be explained as that they believe that implementing comprehensive and detailed audit procedures for most of the operations of the company requires great time and effort and that the verification process may extend for several years, and it is better to focus on auditing suspicious operations. The highest level of auditor responses is statement No. 11, which reflects the importance of enabling auditors to follow recent and contemporary developments in the field of information technology to keep pace with modern methods that may be developed by perpetrators of money laundering crimes. This was also confirmed by Hashem and Alqatamin (2021) and Al-Sayyed et al. (2021).

Similarly, Table 2 also shows that means of bank employees' responses concerning forensic roles in combating money laundering ranged between 3.60–4.16. The highest one is statement No. 5 which indicates the great interest in examining unusual and unjustified operations. In fact, this is one of the most basic requirements of a forensic

accountant. Attention to detail, critical analysis of operations, and the collection and evaluation of appropriate evidence are among the most important tools of the forensic accountant in identifying suspicious money laundering operation, as confirmed by the Association of Certified Fraud Auditors (ACFE, n.d.). However, this may also be explained by the fact that Jordanian banks are subject to strict control by the Central Bank concerning any unusual and suspicious operations. The lowest level was for statement No. 19, which gained a moderate degree. The statement is concerned with obtaining information related to large sums deposited in banks and investigating the suitability of customer financial positions. This low rank could be explained from the point of view of bank employees, either because of the fear of losing major customers, especially since large deposits are from major customers, or perhaps because of their conviction that this has become a traditional method and that money launderer may resort to other methods for money laundering.

Statements No. 9 and 10 reflect the importance of having effective internal control in combating money laundering by addressing weaknesses and deficiencies in internal control and thus ensuring that the company follows an effective and robust internal control system. To further ensure effective internal controls are in place, statement No. 14 emphasizes the importance of communicating critical and key audit matters with those charged with governance and audit committees, especially those related to deficiencies in internal control and gaps that may provide an outlet for money

launderers. This coordination and communication with those charged with governance are in line with the objectives of international auditing standards, especially standards: No. 260 "Communication with Those Charged with Governance", No. 265 "Communicating Deficiencies in Internal Control to Those Charged with Governance and Management", and No. 701 "Communicating Key Audit Matters in the Independent Auditor's Report"

(International Auditing and Assurance Standards Board [IAASB], n.d.)

Although levels of responses ranged from moderate to high, the vast majority of responses from both auditors and bank employees are high. The high level of the general mean (3.97 & 3.80) respectively also indicates a positive attitude towards the roles of forensic accounting procedures and techniques in combating money laundering.

Table 3. Means and standards deviations for sample's responses regarding obstacles to implementing forensic accounting

	Statements	Auditors		Bank employees	
		Mean	SD	Mean	SD
20	No related scientific and practical qualifications for forensic accounting practitioners.	4.01	0.772	3.87	0.939
21	Lack of interest in working as forensic accountants because it requires intense efforts.	4.02	0.785	3.50	0.927
22	Less awareness of forensic accounting role in combating money laundering.	3.83	0.779	3.90	0.798
23	The absence of an official professional body that acts as an umbrella for forensic accounting practitioners.	3.88	0.782	3.85	0.833
24	The lack of specialized training institutes in the fields of contemporary forensic accounting techniques such as artificial intelligence applications.	4.10	0.718	3.71	0.988
	Average	3.97	0.604	3.77	0.732

Table 3 shows the sample's perceptions regarding the obstacles that hinder the proper implementation of forensic accounting in combating money laundering. The average auditors' responses ranged between 3.83-4.30, while the average bank employees' responses ranged between 3.5-3.9, which reflects a high degree of both auditors' and bank employees' agreement with the instrument statements regarding the posited obstacles. Statement No. 22 "Less awareness of forensic accounting role in combating money laundering" ranked first from bank employees' point of view and ranked last based on auditors' perception. A possible explanation of the bank employees' opinion is that they got used to certain measures in combating money laundering through full compliance with the anti-money laundering instructions issued by the Central Bank and the international organizations to which Jordan is bound. In addition to that, the Central Bank, Association of Banks in Jordan, and the Institute of Banking Studies hold courses for bank employees on how to investigate money laundering activities, and thus this may have an impact on their awareness of the role of forensic accounting in combating money laundering. Furthermore, what supports this point of view is also the belief of bank employees that the lack of scientific and practical qualifications limits the ability of forensic accountants in combating money laundering as statement No. 20 gained a high degree of bank employees' opinions.

On the other hand, auditors believe that the lack of specialized training institutes in

the fields of contemporary forensic accounting techniques is one of the most important obstacles, and, therefore, the Association of the Jordanian CPAs should pay high attention to raising the level of its affiliates in the field of modern technological applications. The table reveals that the general mean of the auditors' sample (3.97) is slightly higher than the mean of bank employees (3.77). However, both ranked high indicating their agreements on the importance of these posited obstacles toward the proper implementation of forensic accounting.

Finally, it can be observed that answers given by bank employees are in most cases slightly lower than those given by auditors, i.e., the responses of the bank employees are somewhat conservative compared to the auditors. Although banks are the most involved in auditing money laundering and the most notifying about suspicious money laundering operations to the authorities (AMLCTFU, 2020), the questionnaire of this study is designed to identify the role of forensic accounting in combating money laundering and to identify the obstacles facing the forensic accounting profession. Perhaps the reason for the difference between the answers is that the auditors are more familiar with forensic accounting techniques and they are the most aware of the problems and obstacles of the forensic accounting profession.

One sample t-test was also used to further substantiate the general means revealed by the descriptive analysis. Tables 4 and 5 below also address the two study research questions at ($\alpha \leq 0.05$).

Table 4. Testing RQ1

Variable	Mean	Deviation	T	Df	Sig.
Forensic accounting procedures and techniques	3.89	0.613	21.388	199	0.000

Table 4 indicates that Sig. value = 0.000 which is less than 0.05, this means that there is a statistically significant role of forensic accounting

procedures and techniques at $\alpha \leq 0.05$ in fighting money laundering operations in Jordan from auditors and bank employees' perception.

Table 5. Testing RQ2

Variable	Mean	Deviation	T	Df	Sig.
Obstacles	3.8660	0.67700	18.090	199	0.000

Table 5 also indicates that Sig. value = 0.000 which is less than 0.05, suggesting that there are statistically significant obstacles preventing the proper implementation of forensic accounting at $\alpha \leq 0.05$ in fighting money laundering operations from Jordanian auditors and bank employees' perception.

4.2. Qualitative results

This section presents the main themes obtained from the interviews. 16 qualitative interviews were conducted with the study sample as follows: 8 with auditors and 8 with bank employees. The duration of the interviews ranged between 42-61 minutes. The practical experience of the interviewees ranged between 11-22 years for auditors, and between 8-16 years for bank employees.

The responses and opinions of the participants were collected and summarized to find out where the opinions of the interviewees are concentrated and to identify the frequencies of their opinions and notes which reflect their importance. Based on the analysis, seven major themes were drawn from the interviews: 1) low [forensic accounting] fees, 2) waste of time, 3) lack of interest and related legislations, 4) absence of official association for forensic accountants, 5) professional skepticism, 6) related-party transactions, and 7) the real beneficiary.

4.2.1. Auditors' viewpoints

The auditors unanimously agreed on the importance of the profession's role in combating money laundering. They pointed out that the forensic auditor must exercise the highest degree of professional skepticism to detect fraud and methods used in money laundering operations. In addition, auditors indicated that this era requires auditors to know modern technological applications such as the use of artificial intelligence techniques, data mining, and cloud accounting to facilitate the process of searching for loopholes that may be exploited for account manipulation and money laundering.

It is worth noting that all interviewees have indicated that they had previously discussed some problems related to the mechanism applied by the Ministry of Justice in determining the approved list to serve as an expert witness (JACPA, 2021). Accordingly, the board of directors of the JACPA met with the Minister of Justice to raise these problems, the most important of which are: 1) the disproportion of the fees with the effort expended by the forensic auditor, 2) loss of time resulting from the presence of forensic auditors to the court and not discussing their report due to the postponement of the session, 3) non-compliance with the electronic expertise system in selecting the experts and 4) the court's selection of experts who are not licensed as certified public accountants, and this may involve some risks due to their lack of knowledge of international auditing standards.

The interviews revealed that auditors unanimously agreed that several issues hinder their interest in working for the Jordanian courts as accredited experts, such as low fees, wasting their

time, it requires maintaining the highest levels of professional skepticism and huge efforts when performing forensic audit tasks, and the necessity of writing the expert report very carefully and properly because every written word may cause harm to others, and, therefore, the need for further clarification and investigations.

Participant F: *"Low fees paid to CPAs in comparison with the amount of workload expended, affected their decision to work as certified experts in courts"*.

Participant G: *"One of the cases spanned more than five years and required effort, time and multiple attendances at the courts in return for fees that were not commensurate with the effort expended on the case"*.

Participant A: *"Writing the expert's report submitted to the court has conditions and must be adhered to, and, therefore, the auditors must know them and give great importance to the drafting of the report, because this report may form the basis for issuing a judgment from the court"*.

There was also an agreement by the auditors that they were disturbed by the number of times they went to court, and then the session was postponed more than once, which they considered a waste of time.

Participant B: *"Sometimes we go to the court based on its summons, and then the session is adjourned before we discuss our report"*.

Participant H commented on the importance of the role that the Jordanian Accounting Auditors Association can play in regulating the forensic accounting profession.

Participant H: *There is no special association concerned with regulating the affairs of forensic accountants.*

Interviewer: *Do you support the existence of an association of forensic accountants in Jordan?*

Participant H: *Yes, and it must be born from the womb of the Auditors Association because they are the most capable of auditing financial reports and are trained to collect appropriate audit evidence for decision-making.*

Interviewer: *Do you agree with the necessity of having legislation that gives the forensic auditor the status of judicial police to facilitate the process of investigation and summoning?*

Participant H: *I do not support that, because this may increase the burden on the forensic auditor, as it may cause social problems that we do not need. It is better to leave this power to the courts.*

Interviewer: *What is the extent of auditors' desire to join the list of experts accredited by the Ministry of Justice?*

Participant H: *The desire is low compared to the number of Jordanian auditors for several reasons, the most important of which are: the lack of fees compared to the fees for auditing and non-audit services, and the length of the litigation period, which often takes a lot of time at the expense of other works.*

Participants A, D, C, F, G, and H highlighted the importance of the related-party transactions that may be exploited to pass fake or suspicious deals that help them in money laundering. For this reason, the international standards on auditing set out a special standard for auditing transactions with related parties.

Participant D: *“A critical point that companies may exploit to pass fake and suspicious deals is the transactions with related parties, especially with affiliates and subsidiaries”*.

Another issue that auditors view as related and close to the concept of related party transactions is the *real beneficiary*. Participants A, B, D, E, F, G, and H indicated that a special clause has been added to the draft of the new companies' law, which is the identification of the real beneficiary. Under this clause, companies will be obligated to identify the real beneficiary of the shares in the company to meet the instructions of the Anti-Money Laundering and Terrorist Financing Law. A further review of the phenomena of the real beneficiary revealed that the Companies General Comptroller has indicated that companies have become obligated under the amendment of Article 273 of the draft law to keep electronic records that include information about real beneficiaries and any changes to their data available to the public. The Companies General Comptroller also stated that “the amended Companies Law came intending to strengthen the anti-money laundering system” (Al-Armouti, 2021).

4.2.2. Bank employees' viewpoints

The views of bank employees also agree on the importance of the role of auditors and forensic accounting techniques in reducing money laundering operations. However, the most important point that distinguished their point of view was that they indicated that auditors' interest is focused on auditing financial statements following international auditing standards and they are not interested in examining the possibility of the existence of cases of suspected money laundering.

Participant C [Bank Employee]: *“Lack of interest from auditors to audit the possibility of suspected money laundering, perhaps because they think this is not among their main duties... However, they might perform the job [investigating money laundering cases] as an expert in the area of finance and accounting when requested”*.

In this context, the participants indicated that auditors have extensive experience in the fields of accounting and auditing, but they lack experience and knowledge of the standards and instructions related to combating money laundering, whether issued locally by the Central Bank of Jordan and the Anti-Money Laundering Commission or those issued by international organizations such as the international standards issued by the Financial Action Task Force (FATF) for combating money laundering.

Interestingly, Participant E, who is currently preparing for JACPA exams to become a licensed public accountant, indicated that the relative weight of the marks allocated for the Anti-Money Laundering Law is very low and amounts to 1.25% of the total marks allocated to the legislations.

The participant pointed out that marks allocated for both tax and company laws are almost 50%.

The industry experience is viewed by the participants as an important quality that forensic accountants must possess to fulfill their tasks effectively. The participants stressed that forensic accountants who audit cases related to bank transactions must have extensive experience in auditing banking transactions because they have multiple standards and instructions, sometimes overlapping, as Jordanian banks are subject to strict control by the Central Bank. Finally, the bank employees pointed out that checking the presence or suspicion of money laundering operations is a very sensitive issue and must be carried out in a highly confidential manner, for fear of losing any client who suspects that he/she is under investigation or monitoring by the bank's employees.

5. CONCLUSION

Auditors may provide non-audit services such as forensic accounting services, especially to the court as an expert witness. In Jordan, the courts benefit from the services of forensic accounting in facilitating the litigation process in financial fraud cases. As experts in the field of accounting and finance forensic accountants help provide the court with evidence that proves those involved in financial crimes. For this, the court accredits a group of accountants and auditors as professional experts to give their opinions in financial cases. The study findings showed that forensic accounting techniques and procedures play a significant role in combating money laundering operations. Moreover, the combination of survey interviews with auditors and bank employees shed deeper insight on the major obstacles that hinder the proper implementation of forensic accounting in Jordan.

Lack of interest in following-up money laundering operations by auditors was one of the results of this study. Participants attributed this to the fact that this task is not their primary responsibility and even the JACPA allocates a relatively small mark to the anti-money laundering in the auditing practice exam, although auditors can, significantly, contribute through their extensive experience in accounting and auditing standards in tracking money laundering operations. It is highly recommended that the JACPA hold continuous training for auditors on modern forensic accounting techniques in combating money laundering as part of its annual mandatory continuing education (JACPA, 2006). This training may focus on the applications of artificial intelligence techniques, data mining, and cloud accounting in facilitating the discovery of money laundering operations. In addition, skills of maintaining the highest level of professional skepticism and the mechanism of writing effective and appropriate expert reports must also be included in the training workshops held by the JACPA, especially for those who wish to join the accredited list of expert witnesses to work as a forensic auditor.

The study also concluded that the absence of an official professional body that acts as an umbrella for forensic accounting practitioners has led to the reluctance of many professionals to work as forensic accountants. Therefore,

cooperation with the Ministry of Justice became necessary to solve such problems, especially the issue of fees not being proportional to both the effort exerted and the length of the litigation period. This study recommends that the JACPA be requested to establish a professional committee to grant auditors the right to practice forensic accounting services. In this regard, auditors who wish to serve as forensic accountants are subject to passing specialized courses in contemporary methods in combating money laundering, financial corruption, earning management methods, in addition to the skills of scrutinizing related-party transactions and identifying real beneficiaries.

Given that the interest in combating money laundering is an international issue, this study recommends that the International Federation of Accountants (IFAC), through the International Auditing and Assurance Standards Board (IAASB), amend the international auditing standard No. 550 (Related Parties) (IAASB, n.d.) to consider giving the auditor the right to determine the real beneficiaries, and thus the auditor becomes obligated to investigate and follow up the operations that take place between related parties and the real beneficiaries alike, which contributes to reducing the risk of money laundering operations. This, however, might be achieved through interaction and exchange of views in the open public projects put forward by the IAASB to communicate with professionals through its website (IAASB, n.d.). Locally, since the new draft companies law requires companies to declare the real beneficiaries, this study recommends that forensic auditors be given broad powers to identify real beneficiaries and link them with all related parties (as specified in the International Standard on Auditing No. 550). A bylaw can be issued under the proposed companies law, thus giving the auditor clear and wider powers in tracking potential money laundering operations.

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APPENDIX A. AUDITORS' SURVEY

Part 1: Demographic information

Please answer the following questions:

- | | | |
|-----------------------------|--|--|
| 1. Gender: | <input type="checkbox"/> Male | <input type="checkbox"/> Female |
| 2. Age: | <input type="checkbox"/> Less than 30 years old | <input type="checkbox"/> 30-less than 40 years old |
| | <input type="checkbox"/> 40-less than 50 years old | <input type="checkbox"/> 50 years old + |
| 3. Academic qualifications” | <input type="checkbox"/> Diploma | <input type="checkbox"/> B.Sc. |
| | <input type="checkbox"/> M.Sc. | <input type="checkbox"/> Ph.D. |
| 4. Years of experience: | | |
| 5. Job title: | <input type="checkbox"/> Partner | <input type="checkbox"/> Senior auditor |
| | <input type="checkbox"/> Junior auditor | <input type="checkbox"/> Other |

Part 2: Questionnaire statements

Please rank whether you agree or disagree on the following statements concerning your expectations on a scale from 1 to 5: Strongly agree = 5; Agree = 4; Neither agree nor disagree = 3; Disagree = 2; Strongly disagree = 1

No.	Statements	1	2	3	4	5
	For each of the following proposed forensic accounting procedures and techniques , please indicate the extent to which they contribute to combating money laundering operations					
1	Check the presence of detailed written policies and procedures are in place to combat money laundering.					
2	Clear definition of duties and responsibilities of employees to facilitate the application of the principle of segregation of duties					
3	Ensure that there are two specific procedures to identify suspicious financial transactions					
4	Examination of transactions made through clients in countries that do not have effective anti-money laundering systems.					
5	Examination of unusual and unexplained operations.					
6	A detailed review of the operations carried out by the organizations being investigated.					
7	A detailed review of the operations carried out with major executives and stockholders.					
8	Maintain records and documents to determine the extent of money laundering operations.					
9	Investigating the extent of adherence to the internal control procedures related to the prevention of money laundering.					
10	Assessment of weaknesses and gaps in internal control systems.					
11	Availability of using modern information technology to combat money laundering.					
12	Examination of unusual operations for operations that involve suspected money laundering.					
13	Conducting necessary investigations for illegal activities.					
14	Reporting gaps in the implementation of anti-money laundering instructions to the independent audit committee and higher authorities.					
15	Monitoring related-party transactions, customer deposits and transfers.					
16	Verify the real reasons behind the decision to liquidate companies, and ensure that the values of the assets are not tampered with.					
17	Continuous supervision of the resources and uses of funds and follow-up of their movements					
18	Conduct surprise audits and investigations on suspicious activities to ensure the existence of money laundering practices.					
19	Obtaining information related to large sums deposited in the banks and investigating the suitability with customer financial positions.					
	Please indicate your opinion on the effect of the following obstacles that may prevent the proper implementation of forensic accounting in fighting money laundering operations.					
20	No related scientific and practical qualifications for forensic accounting practitioners.					
21	Lack of interest in working as forensic accountants because it requires intense efforts					
22	Less awareness of forensic accounting role in combating money laundering.					
23	The absence of an official professional body that acts as an umbrella for forensic accounting practitioners.					
24	The lack of specialized training institutes in the fields of contemporary forensic accounting techniques such as artificial intelligence applications.					

Thanks for your time and consideration!

APPENDIX B. BANK EMPLOYEES' SURVEY

Part 1: Demographic information

Please answer the following questions:

1. Gender: Male Female
2. Age: Less than 30 years old 30-less than 40 years old
 40-less than 50 years old 50 years old +
3. Academic qualifications" Diploma B.Sc.
 M.Sc. Ph.D.
4. Years of experience:
5. Specialization: Banking sciences Accounting
 Business administration Other
 Branch manager Assistant director
 Head of operations Head of customer service
 Head of tellers Internal auditor/control
 Customer services Supervisor
 Quality control Tellers
 Other
7. Does your current or previous position require you to be familiar with money laundering instructions?
 Yes No
8. Have you attended training courses related to money laundering operations?
 Yes No

Part 2: Questionnaire statements

Please rank whether you agree or disagree on the following statements concerning your expectations on a scale from 1 to 5: Strongly agree = 5; Agree = 4; Neither agree nor disagree = 3; Disagree = 2; Strongly disagree = 1

No.	Statements	1	2	3	4	5
	For each of the following proposed forensic accounting procedures and techniques , please indicate the extent to which they contribute to combating money laundering operations					
1	Check the presence of detailed written policies and procedures are in place to combat money laundering.					
2	Clear definition of duties and responsibilities of employees to facilitate the application of the principle of segregation of duties					
3	Ensure that there are two specific procedures to identify suspicious financial transactions					
4	Examination of transactions made through clients in countries that do not have effective anti-money laundering systems.					
5	Examination of unusual and unexplained operations.					
6	A detailed review of the operations carried out by the organizations being investigated.					
7	A detailed review of the operations carried out with major executives and stockholders.					
8	Maintain records and documents to determine the extent of money laundering operations.					
9	Investigating the extent of adherence to the internal control procedures related to the prevention of money laundering.					
10	Assessment of weaknesses and gaps in internal control systems.					
11	Availability of using modern information technology to combat money laundering.					
12	Examination of unusual operations for operations that involve suspected money laundering.					
13	Conducting necessary investigations for illegal activities.					
14	Reporting gaps in the implementation of anti-money laundering instructions to the independent audit committee and higher authorities.					
15	Monitoring related-party transactions, customer deposits and transfers.					
16	Verify the real reasons behind the decision to liquidate companies, and ensure that the values of the assets are not tampered with.					
17	Continuous supervision of the resources and uses of funds and follow-up of their movements					
18	Conduct surprise audits and investigations on suspicious activities to ensure the existence of money laundering practices.					
19	Obtaining information related to large sums deposited in the banks and investigating the suitability with customer financial positions.					
	Please indicate your opinion on the effect of the following obstacles that may prevent the proper implementation of forensic accounting in fighting money laundering operations.					
20	No related scientific and practical qualifications for forensic accounting practitioners.					
21	Lack of interest in working as forensic accountants because it requires intense efforts					
22	Less awareness of forensic accounting role in combating money laundering.					
23	The absence of an official professional body that acts as an umbrella for forensic accounting practitioners.					
24	The lack of specialized training institutes in the fields of contemporary forensic accounting techniques such as artificial intelligence applications.					

Thanks for your time and consideration!

APPENDIX C. NON-RESPONSE BIAS TEST

Paired sample t-test was used to test non-response bias, it found that t-value for each variable is not significant at 0.05 level. That means there is no non-response bias in the data, as shown in the following tables:

Table C.1. Paired samples statistics

		<i>Mean</i>	<i>N</i>	<i>Std. deviation</i>	<i>Std. error mean</i>
Pair 1	a_E	4.1286	50	0.54755	0.07743
	a_L	3.9686	50	0.41072	0.05808
Pair 2	b_E	3.1857	50	1.36414	0.19292
	B_L	2.8829	50	1.00517	0.14215

Table C.2. Paired samples correlations

		<i>N</i>	<i>Correlation</i>	<i>Sig.</i>
Pair 1	a_E & a_L	50	0.173	0.230
Pair 2	b_E & B_L	50	0.144	0.318

Table C.3. Paired samples test

		<i>Paired differences</i>					<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
		<i>Mean</i>	<i>Std. deviation</i>	<i>Std. error mean</i>	<i>95% confidence interval of the difference</i>				
					<i>Lower</i>	<i>Upper</i>			
Pair 1	a_E & a_L	0.16000	0.62509	0.08840	-0.01765	0.33765	1.810	49	0.076
Pair 2	b_E & B_L	0.30286	1.57345	0.22252	-0.14431	0.75003	1.361	49	0.180