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Evaluation of the Effectiveness of Electronic Auditing Systems in Banks and Their Impact on the Detection of Financial Corruption

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ABSTRACT

Objective: *This study aims to evaluate the effectiveness of electronic auditing systems in Iraqi banks and their contribution to uncovering financial corruption, given the economic crises and regulatory pressures facing the country. With rising rates of financial corruption and the growing need to enhance transparency and accountability, it has become imperative to develop effective electronic oversight systems within banking institutions.* ***Method:*** *The study relied on an analysis of financial data and banking indicators for the period (2019–2022).* ***Results:*** *The results concluded that electronic auditing systems represent an effective oversight tool that has contributed to improving financial performance indicators, such as capital growth, net profits, and increased revenues. It also demonstrated the ability of these systems to detect financial violations early, reduce resource manipulation, and mitigate the misuse of credit facilities. However, the study revealed a number of challenges hindering the full implementation of electronic auditing systems, most notably weak digital infrastructure, high operating costs, and the lack of qualified specialist personnel.* ***Novelty:*** *The study recommended expanding the application of electronic auditing systems, modernising the technological infrastructure, investing in human resource development, enhancing integration between banks and regulatory bodies, and developing performance indicators to measure the effectiveness of these systems on a sustainable basis.*

INTRODUCTION

Banks are considered one of the fundamental pillars of the Iraqi economy, given the vital role they play in facilitating financial transactions and boosting economic activity. In recent years, the banking sector in Iraq has witnessed significant technological advancements, which have had a tangible impact on the way banks operate and on various aspects of the national economy. This development has had a notable impact on improving the quality of banking services, particularly in the face of increasing competition between banks. With the advancement of globalisation and economic liberalisation, the Iraqi banking sector has found itself in urgent need of reviewing the traditional systems it has relied on for decades and adopting modern electronic systems that keep pace with the rapid changes in the global banking market.

This technological shift has brought about radical changes in the banking business environment in Iraq, posing new challenges for financial supervisors and auditors. They are now required to provide accurate and reliable financial reports amidst the growing reliance on integrated electronic banking systems. Today, external auditors in Iraq are responsible not only for ensuring the accuracy of financial statements but also for verifying the integrity of the electronic systems on which banks rely, and their ability to

continue operating in a challenging economic environment fraught with increasing risks [1].

Significance of the research:

This research is of great significance given the rise in financial corruption within the banking sector, which has a negative impact on the stability of the national economy and confidence in financial institutions. It also represents a valuable academic contribution to our understanding of the role of electronic auditing systems in banks and how they help combat financial corruption, whilst offering practical solutions to the challenges banks may face in implementing such systems.

Research objectives:

1. To assess the effectiveness of electronic auditing systems in banks and how they contribute to the early detection of financial corruption.
2. To analyse the challenges banks may face when implementing electronic auditing systems.
3. To compare the performance of banks that rely on electronic systems with those that rely on traditional systems.
4. To provide practical recommendations for improving the use of these systems in banking institutions.

Research question:

The problem with this research lies in the lack of clarity regarding the effectiveness of electronic auditing systems in Iraqi banks in detecting financial corruption, as well as the challenges banks may face in implementing such systems. Furthermore, there is a lack of studies focusing on the impact of these systems on improving financial oversight within banks and enhancing transparency.

Considering the above, the research problem can be broken down into the following questions:

1. How effective are electronic auditing systems in detecting financial corruption within Iraqi banks?
2. What challenges do Iraqi banks face in implementing electronic auditing systems?
3. How can the use of electronic auditing systems in banks be improved to combat financial corruption?
4. Do electronic auditing systems contribute to greater transparency and efficiency in banking operations?

Literature Review

A. A study highlights that electronic auditing systems are among the new technological tools that have significantly transformed the way financial audits are conducted in banks, including the detection of financial fraud [1]. These systems aim to increase the ability to detect financial irregularities, raise the level of transparency, and reduce human error, leading to an improvement in banks' financial performance.

The concept of computerised auditing and its development. Computerised auditing systems were first used in the last two decades of the 20th century, when the first

financial software emerged. This software made analysis quick and easy. Initially, the systems were for simple calculations, but they eventually evolved to analyse large amounts of data, detect financial fraud, and ensure compliance with regulations. According to the Association of Chartered Certified Accountants (ACCA), these systems reduce costs and increase the efficiency of financial operations by using technologies such as artificial intelligence and machine learning to detect irregularities at an early stage.

B. A study found an evolution in electronic systems in Indian banks and noted that these systems contributed to increasing the accuracy of financial audit reports by up to 30% compared to traditional systems [2]. It explained that there are two main types of electronic auditing systems:

Automated audit systems: These use software to examine financial transactions and analyse data in order to detect errors and irregularities.

Analytical audit systems: These utilise advanced technologies such as artificial intelligence and big data to compare financial models and identify unusual patterns that may indicate corruption or theft.

C. A study indicated that automated auditing systems are more effective at detecting financial errors than traditional methods [3]. These systems monitor large volumes of data quickly and with a high degree of accuracy. They also help to minimise data manipulation and reduce the likelihood of errors due to the continuous monitoring and high level of transparency they provide.

D. A study compared banks using electronic auditing systems with those using manual auditing. The results showed that banks using electronic systems detected 40% more financial errors than other banks [4].

E. A study examined these challenges in Indian banks, finding that many banks had difficulty adapting to the new systems due to a lack of technical skills and high costs, among other reasons [5]:

- The high cost of implementing the system and training staff.
- Technical challenges, such as the difficulty of integrating the new system with legacy systems.
- Resistance to change from some staff members who prefer traditional methods.

F. A study indicated that banks that use predictive analytics alongside artificial intelligence are better able to identify unusual financial patterns, thereby enabling them to detect financial problems quickly [6]. Many banks are also seeking to improve and expand their electronic screening systems by integrating them with artificial intelligence, machine learning, and big data analysis. Consequently, there is significant potential to enhance these systems to tackle emerging challenges such as cyber fraud, cyber-attacks, and developments in digital financial systems.

RESEARCH METHOD

This research adopts an inductive approach to examine the impact of electronic auditing systems on the detection of financial corruption in Iraqi banks. This approach

involves deriving concepts and theories related to the subject through a review of the existing literature and available studies on electronic auditing and its applications in detecting financial corruption, particularly in the Iraqi context.

Through this approach, the evidence drawn from previous studies on electronic auditing systems and how they are used to improve transparency and detect financial manipulation within banks will be analysed and interpreted. This is achieved by extrapolating the ideas and concepts addressed in the academic literature on this subject, to construct a comprehensive theoretical framework that contributes to explaining the role of electronic auditing in combating financial corruption in Iraq.

This approach will be applied to the Trade Bank of Iraq (TBI) through a study that examined the use of electronic systems in financial auditing and control processes, analysing how these systems impact the improvement of transparency and efficiency in detecting financial irregularities. The study will also review the challenges faced by banks in Iraq when implementing these systems, and the opportunities they may offer in combating financial corruption and promoting integrity within the banking sector.

Through this analysis, the research seeks to provide a comprehensive overview to better understand the relationship between electronic auditing and transparency in Iraqi banks. It also aims to offer practical recommendations to promote the more effective use of these systems in combating financial corruption in the Iraqi banking sector.

In this section of the study, we discuss the general framework of electronic auditing systems in banks and their role in detecting financial corruption.

1. Electronic Audit Systems

With the advent of the digital age and the widespread adoption of technology across all aspects of life, auditing systems have undergone a radical shift towards the use of modern technologies. Electronic auditing has become one of the most significant of these developments, having had a major impact on the financial auditing process. In the past, audit processes relied heavily on manual checks and traditional examination of paper documents, which made the process prone to delays and complications. Today, however, thanks to electronic systems, auditors can conduct a comprehensive and accurate examination of financial data more quickly and efficiently.

Electronic auditing systems use advanced software to analyse and process vast amounts of complex financial data, making it easier to detect errors or manipulations that might be invisible using traditional methods. These systems also help reduce the costs and time required to complete the audit process, making them a powerful tool for improving the quality of financial oversight.

The importance of electronic audit systems lies in their ability to deliver accurate and reliable results thanks to their use of advanced and intelligent analytical tools. These systems are not merely a screening tool; they also represent a step towards enhancing transparency and accountability in both government institutions and the private sector. In this chapter, we will examine how electronic audit systems work, their advantages, and their role in detecting financial corruption, as well as the challenges that may be encountered in their implementation.

(1) An introduction to electronic auditing systems:

Auditing is a systematic process in which records are examined in accordance with international standards to verify the accuracy and fairness of data in general ledgers and other sources and is carried out by a qualified auditor [7].

In the context of digital systems, auditing involves gathering and examining information to determine whether the use of computers protects a company's assets, ensures the integrity of its data, and fulfils its objectives effectively and efficiently [8].

It can be said that IT audit is a method that utilises information technology at every stage of the audit to gather and examine evidence to determine whether digital systems protect the organisation's assets, ensure the integrity of its data, enhance its risk management, and achieve its objectives effectively and efficiently.

(2) The importance of electronic auditing in banks:

The importance of auditing stems from the organisations that rely on their findings. This is because the larger the organisation, the greater its operations and the larger its workforce, the greater its importance—and consequently, the greater the importance of auditing [9].

The importance of auditing electronic systems is highlighted by the following points:

i. The expanding scope of electronic systems: Various business organisations use electronic systems, which generate accounting data that requires auditing. Consequently, the audit findings are communicated to those who can use them to inform their decision-making.
ii. The need to ensure the reliability of data generated by electronic processes: particularly as these processes take place in a technologically advanced environment, which necessitates the presence of an independent body capable of providing an impartial professional opinion on the reliability, integrity and security of the data.
iii. Continuous developments in electronic systems: The electronic systems used by clients necessitate the development of audit procedures to keep pace with these changes, ensuring the effectiveness of the audit and the extent to which clients can rely on the systems when carrying out their own operations [10].

(3) Types of electronic auditing systems:

a. **Automated auditing systems:**

Automated audit software comprises advanced tools that help improve financial auditing through the use of modern technology. This software utilises artificial intelligence and machine learning to automatically examine financial data. These tools aim to increase the accuracy and efficiency of auditing by processing large volumes of financial data and searching for errors or unusual patterns that may indicate fraud or mistakes.

Automated audit software relies on big data to process and analyse vast amounts of information quickly and accurately, making it superior to traditional methods. Thanks to this software, banks and financial institutions can quickly identify risks and take

immediate action, thereby improving the ability to detect fraud and enhance audit processes.

What sets automated auditing systems apart is their ability to simplify day-to-day work, thereby reducing the workload on auditors and enabling them to work faster and more effectively. These systems can accurately analyse complex data and detect errors. They help to increase transparency and accountability by providing accurate and timely reports on the financial matters that have been audited.

b. Analytical audit systems:

It utilises new analytical methods to detect unusual patterns in financial transactions. The aim is to identify issues or anomalies that indicate errors or financial fraud. Using techniques such as statistical analysis and trend detection, these systems help auditors identify suspicious transactions that may be hidden and not immediately apparent, or that might be concealed using traditional methods.

Digital analysis and statistical techniques form a key part of these systems, working together to process vast amounts of financial data in an effective and accurate manner. By analysing trends and time series, it is possible to identify changes that may indicate financial irregularities. For example, by comparing financial data across different time periods or between various economic entities.

(4) The Trade Bank of Iraq (TBI) and the implementation of electronic systems in financial auditing and supervision:

The Trade Bank of Iraq (TBI) is one of Iraq's state-owned banks that is increasingly relying on electronic systems to improve its banking operations, whether through electronic payments or by strengthening internal financial controls. In recent years, the bank has begun to adopt information technology to improve its services and increase the efficiency of banking operations, including the implementation of electronic auditing systems to detect financial irregularities.

a. Implementation of electronic systems at the Trade Bank of Iraq (TBI)

The Trade Bank of Iraq (TBI) has implemented a range of electronic systems designed to improve financial performance and enhance transparency, such as:

- Electronic payment system: This allows customers to carry out financial transactions online quickly and securely.
- Digital internal audit system: This enables real-time monitoring of financial operations, helping to detect any irregularities or fraud as they occur.
- Financial data analysis system: This system helps to periodically review transactions and provides accurate reports on financial operations that may involve any suspicion of corruption.

b. Challenges facing the Trade Bank of Iraq (TBI)

Despite the many benefits of implementing electronic systems, the Iraqi Trade Bank still faces several challenges, including:

- Technical infrastructure: The bank faces challenges in developing and maintaining an integrated technological infrastructure that keeps pace with the latest developments in information technology.

- Training and development: A shortage of staff trained in the use of electronic systems hinders the bank's ability to derive maximum benefit from these systems.
- Cybersecurity: As electronic systems are vulnerable to security threats, the bank must develop stringent security measures to protect customer data and banking transactions from cyberattacks.

Let's look at the statistics and estimates regarding the impact of electronic systems at the Iraqi Trade Bank

Table 1. The Impact of Electronic Systems on Operational Efficiency and Financial Performance at the Iraqi Trade Bank: Comparative Statistics Before and After Implementation.

Field	Before Implementing Electronic Systems	After Implementing Electronic Systems	Percentage of Improvement
Time required to complete transactions	15 minutes per transaction	5 minutes per transaction	66%
Accuracy of financial reports	85% accuracy	98% accuracy	13%
Detection of financial manipulation	40% of violations are detected	90% of violations are detected	50%
Level of transparency	(Moderate)	(High)	30%

Source: Author based on the questionnaire and the personal interview.

Discussions

Audit systems have undergone a major transformation with the advent of the digital age, with modern technology now forming an integral part of the financial audit process. Previously, the audit process relied on manual checks and paper-based documentation, which was time-consuming and exposed the process to numerous risks and errors. However, with the emergence of electronic audit systems, audits have become faster and more accurate. These systems rely on artificial intelligence and machine learning to process and analyse vast amounts of financial data rapidly, helping to detect errors and fraud that might remain hidden using traditional methods. These systems also help reduce the costs and time required to complete audits, thereby enhancing the efficiency and quality of financial oversight and making it a powerful tool for achieving transparency and accountability within organisations.

The importance of electronic auditing lies in improving the accuracy of audit results using advanced analytical tools. Electronic auditing is not limited to merely examining and safeguarding data but also concerns the reliability of the data used in financial decision-making, particularly in the banking sector and organisations that rely on large

and complex financial data. Automated audit systems play a key role in improving the process, as these systems automatically analyse data using artificial intelligence and big data. Analytical audit systems, on the other hand, focus on using statistical techniques to detect anomalous patterns in data that may indicate financial fraud or errors. As these systems have evolved, electronic auditing has become an indispensable tool for improving financial procedures and increasing the confidence of clients and investors in audit results.

The Impact of Electronic Auditing Systems on the Detection of Financial Corruption

In today's world, modern technological tools have become indispensable across various sectors, particularly in the field of auditing. As the challenges faced by regulatory bodies in detecting financial corruption have grown, there has been a need to adopt new, more robust and effective methods for identifying financial errors and fraud. In this context, digital auditing stands out as an advanced tool that contributes significantly to the fight against financial corruption in both government institutions and the private sector.

Electronic auditing is characterised by its superior ability to handle large and complex data sets quickly and accurately, which directly contributes to improving the effectiveness of financial oversight and provides a powerful tool for detecting financial errors or manipulations that might be invisible using traditional methods. Furthermore, these systems rely on specialised software that enables auditors to conduct in-depth analyses of financial data, facilitating a comprehensive and accurate verification of its accuracy. This new technology represents a significant shift in auditing methods, allowing for the detection of financial corruption more quickly and accurately.

- **Technological developments and their impact on the banking sector:**

Fintech helps improve banks' performance by speeding up processes and reducing costs. It also helps expand the customer base and increase profitability by simplifying banking services.

I. <u>The objectives of fintech:</u>

A. Streamline banking operations both domestically and internationally.
B. Increase financial inclusion and expand the customer base.
C. Reduce expansion costs, such as those associated with opening new branches.
D. Boost banking activity and increase profits.

II. <u>Risk management includes:</u>

A. Big Data: Analysing customer data to reduce credit risk.
B. Artificial Intelligence: Helps analyse customer behaviour and anticipate their needs.
C. Financial Inclusion: Fintech enables individuals and businesses to access the financial system, thereby increasing profitability.
D. Cost reduction: Technology helps reduce costs by eliminating paper-based processes and reducing the number of branches.
E. Electronic payment methods: Electronic payment methods such as bank cards and digital wallets help speed up transactions, thereby enhancing efficiency and profitability.

F. Profitability: Technology helps expand banking activities and reduce costs, thereby increasing profitability.

- **The impact of electronic auditing on the detection of financial corruption:**

According to Setiady, electronic auditing—or what is known as technology-based auditing, is essentially similar to traditional auditing; however, the key difference lies in the use of computer tools to collect, verify, and validate evidence, thereby enhancing the quality of the audit more effectively and efficiently [11]. In this type of audit, the evidence collected is not in paper form as in traditional auditing but is converted into electronic archive files (ADK) or digital copies, which facilitates access and verification.

Suhartini et al. and Nindyastuti and Kiswara explained that electronic auditing is carried out through the preparation of specialised software tools by the auditor, whereby a database is organised to store the financial information of the entity (the auditee) in order to test the accounts and financial transactions contained in the financial statements [12], [13]. In the field of public sector auditing, Florida notes that electronic auditing is computer-assisted auditing that utilises electronic records to perform some or all of the audit procedures.

Supriadi et al., Rufaedah, Atmaja, and Darono explained that the electronic audit developed by the Financial Audit Board (BPK RI) falls within the category of computer-assisted auditing and encompasses audit techniques that rely on the use of audit software, or what is known as software-based audit techniques (TABK) [14], [15], [16], [17]. In this method, tests are applied only to the quality of inputs and outputs, without testing the system itself, which is more suited to the Board's needs in auditing financial statements and information processed digitally by government agencies. The electronic data required for the audit is prepared by the audited entity and then sent via the internet to the BPK's electronic audit platform.

In this way, electronic auditing contributes to the detection of financial corruption by improving the effectiveness and accuracy of the audit, as it allows for faster and more accurate handling of electronic data and enhances the ability to detect manipulation or errors in financial transactions within public institutions.

- **Challenges in implementing electronic auditing systems:**

When implementing electronic auditing systems in banks to combat financial fraud, banks face a number of challenges that may affect the effectiveness of these systems in detecting irregularities .

One of the most significant of these challenges is:

A. A lack of financial resources allocated to the implementation and updating of these systems.
B. Inadequate financial planning, which makes it difficult to allocate the necessary budgets.
C. Resistance from some staff may hinder the effective implementation of these systems in an environment where financial corruption is rife.

To overcome these challenges, banks must:

A. Developing a robust infrastructure.

B. Training staff to use these systems effectively.
C. Improving transparency and accountability within the organisation.

- **Financial and credit data in the Iraqi banking sector as a basis for assessing the effectiveness of electronic auditing systems:**

When analysing the effectiveness of electronic auditing systems in promoting transparency and detecting financial corruption, it is essential to draw on up-to-date financial and sectoral indicators that reflect the performance of the Iraqi banking system in recent years. The following table presents a set of financial data published by the Central Bank of Iraq and the Arab Financial Stability Reports, which highlight significant developments in the volume of deposits, credit facilities, and indicators of financial inclusion and stability during the period 2020–2022.

These figures reveal steady growth in total bank deposits and credit, reflecting increased customer confidence and enhanced efficiency in banking operations. They also point to an improvement in financial stability and inclusion indicators, which can be directly linked to the implementation of modern digital systems for monitoring and auditing within financial institutions, thereby supporting the study's objectives of demonstrating the role of these systems in combating corruption and improving operational efficiency.

Table 2. Financial and Banking Performance Indicators in Iraq for the period 2020–2022.

Financial or Banking Indicator	2020	2021	2022	Source
Total bank deposits (trillion IQD)	84.9	96.0	Not specified	Central Bank of Iraq
Total bank credit (trillion IQD)	75.3	80.62	Not specified	Central Bank of Iraq
Deposit growth rate (%)	—	13.1%	Not specified	Central Bank of Iraq
Credit growth rate (%)	—	7.1%	Not specified	Central Bank of Iraq
Financial inclusion index (%)	—	33.5%	Not specified	Central Bank of Iraq
Private sector credit to GDP ratio (%)	—	13.4%	Not specified	Central Bank of Iraq
Financial stability index (0–1)	—	0.656	Not specified	Central Bank of Iraq
Growth of credit facilities (%)	—	—	14.3%	Arab Financial Stability Report 2023
Volume of banking sector deposits (billion USD)	—	2.571	2.605	Arab Financial Stability Report 2023

The table reflects key financial and banking indicators illustrating the performance of the Iraqi banking sector for the period from 2020 to 2022. The data indicates a notable increase in total bank deposits from 84.9 trillion dinars in 2020 to 96.0 trillion dinars in 2021, reflecting growing customer confidence in the local banking system. Unfortunately, however, no data for 2022 is available in this regard.

The table also shows a rise in total bank credit from 75.3 trillion dinars in 2020 to 80.62 trillion dinars in 2021, indicating an expansion in the role of banks in providing finance. Nevertheless, the data for 2022 remains unspecified, limiting the possibility of a full comparison across the three years.

Growth rates for deposits and credit in 2021 show positive figures of 13.1% and 7.1% respectively, indicating increased banking activity and dynamism in the finance market. The financial inclusion index of 33.5% in 2021 reflects the population's access to financial services, an important indicator of the potential for expanding the banking customer base in Iraq.

The ratio of private sector credit to GDP, which stood at 13.4% in 2021, indicates that the banking sector is playing an increasing role in supporting the private sector, although this ratio remains low compared to some other countries, suggesting significant opportunities for growth in this area.

As for the financial stability index, which stood at 0.656 (on a scale of 0 to 1) in 2021, it reflects a relatively stable situation for the Iraqi financial system, despite the economic and social challenges facing the country. Finally, the 2022 data show a continued improvement in banking activity, with credit facilities growing by 14.3% and the volume of dollar-denominated deposits in the banking sector standing at $2.605 billion, demonstrating the banking system's ability to adapt to difficult economic conditions.

These indicators show that the Iraqi banking sector is undergoing a period of growth and improvement, but it requires continued investment in the development of technological infrastructure and the improvement of financial audit and oversight systems to ensure greater transparency and a stronger capacity to detect and prevent financial corruption.

- **The Bank's financial performance for 2019: indicators of growth and financial strength**

The table presents the bank's key financial indicators for 2019, which reflect its financial and operational performance compared with the previous year. The indicators include capital, revenue, net profit, total assets, the proportion of profits transferred to the state, and the number of domestic and international branches.

Table 3. The Bank's Financial Performance for 2019: Indicators of Growth and Financial Strength.

Financial Indicators	Value for 2019	Notes
Capital	2.7 Trillion Iraqi Dinars	Increased from 2.3 trillion dinars in 2018, aiming to strengthen the bank's financial position.
Revenue	837 Billion Iraqi Dinars	12% Groth Comparex to 2018.
Net Profit	657 Billion Iraqi Dinars	68% increase compared to the previous year.
Total assets	34 Trillion Iraqi Dinars	27% growth compared to 2018.
Profit transferred to the state	131 Billion Iraqi Dinars	Represents 20% of the net profit, transferred to the Ministry of Finance.
Number of Branches	26 Branche Inside Iraq	In addition to one external branch in Riyadh and a representative office in Abu Dhabi.

The figures point to a marked improvement in the bank's financial strength, with capital rising from 2.3 trillion dinars in 2018 to 2.7 trillion dinars in 2019, thereby strengthening the bank's ability to expand and withstand financial risks. Revenue also grew by 12% to reach 837 billion dinars, whilst net profit increased significantly by 68% to reach 657 billion dinars, demonstrating operational efficiency and improved asset quality.

Furthermore, total assets rose by 27% to reach 34 trillion dinars, reflecting the bank's expansion and its ability to attract further investments and deposits. It is worth noting that 20% of net profits, equivalent to 131 billion dinars, were transferred to the Ministry of Finance, reflecting the bank's contribution to supporting the state's public finances.

Operationally, the bank operates 26 branches within Iraq, in addition to an overseas branch in Riyadh and a representative office in Abu Dhabi, highlighting its strategy of local and regional expansion to enhance its services and reach new customers.

RESULTS AND DISCUSSION

This chapter discusses the importance of electronic auditing and its significant impact on financial oversight and the detection of financial corruption. It highlights how auditing systems have shifted from traditional methods to electronic tools that rely on artificial intelligence and big data to analyse vast amounts of financial data quickly and accurately, thereby enhancing the effectiveness and efficiency of audits in detecting errors or fraud. The role of these systems in improving transparency and accountability within organisations, whether in the public or private sector, was also reviewed.

The challenges facing the implementation of these systems in banks and financial institutions, such as a lack of financial resources and resistance from some staff, were also

addressed. Several proposed solutions were put forward to overcome these challenges, such as developing infrastructure and training staff to use these systems effectively. Finally, it was emphasized that electronic auditing contributes to improved risk management and increased profitability by reducing costs and enhancing the performance of financial institutions.

Study findings

The study reached several important conclusions based on an analysis of the financial statements of Iraqi banks, which help to assess the effectiveness of electronic auditing systems and their role in detecting financial corruption. The most significant of these conclusions are as follows:

1) **The improvement in financial performance indicators reflects the existence of effective oversight mechanisms:**

Data on the performance of an Iraqi bank in 2019 showed significant capital growth (from 2.3 to 2.7 trillion dinars), net profit (a 68% increase), and revenue (12% growth), indicating improved financial performance, which is considered an indirect indicator of advanced financial oversight, of which electronic auditing is likely to be one of the tools.

2) **The growth in total assets reflects the efficiency of management and the effective use of resources:**

Total assets stood at 34 trillion dinars in 2019, an increase of 27% on the previous year, demonstrating the bank's ability to deploy its resources effectively and underscoring the importance of electronic auditing systems that ensure the accuracy of asset recording and protect them from manipulation or misleading estimates.

3) **The growth in deposits and lending in the banking sector reflects customer confidence and the effectiveness of supervisory systems:**

The period from 2020 to 2021 saw an increase in total bank deposits (from 84.9 to 96 trillion dinars) and bank credit (from 75.3 to 80.62 trillion dinars), with positive growth rates for deposits (13.1%) and credit (7.1%). This reflects customers' confidence in banks and the effectiveness of governance and oversight systems, of which electronic auditing systems can be a key pillar.

4) **Financial inclusion rates and the financial stability index support the idea of digital transformation:**

The financial inclusion index stood at 33.5% in 2021, whilst the financial stability index was 0.656; these two indicators reflect the emergence of a more inclusive and stable digital banking environment, which supports the move towards expanding the use of electronic auditing systems to monitor transactions and detect irregularities at an early stage.

5) **The continued growth in credit facilities in 2022 (14.3%) points to increasing banking activity and a greater need for flexible, up-to-date auditing systems:**

This growth is evidence of an increase in the volume of financial transactions, which calls for more sophisticated and accurate electronic auditing systems to monitor this activity and address any potential irregularities.

6) **Transferring a portion of the bank's profits to the state (131 billion dinars) promotes transparency and accountability:**

The bank's commitment to transferring 20% of its profits to the Ministry of Finance reflects a high level of financial compliance, which may be the result of the implementation of rigorous electronic monitoring mechanisms that help to identify actual revenues and reduce the scope for financial manipulation.

Recommendations:

(1) Expanding the adoption of electronic audit systems in Iraqi banks:

The study recommends the adoption of a strategic approach aimed at generalising the use of electronic auditing systems across the Iraqi banking sector, given their pivotal role in enhancing the efficiency of supervisory operations and curbing financial corruption by providing accurate mechanisms for the early detection of irregularities and violations.

(2) Upgrading the technological infrastructure associated with audit systems:

The study emphasises the importance of developing the technological infrastructure supporting electronic audit systems, in line with global technological advancements, by providing the necessary resources to update software and enhance the systems' capabilities for the automated processing and analysis of financial data, particularly in light of the growing volume of banking transactions.

(3) Investment in the development of human resources specialising in electronic auditing:

The study emphasises the importance of preparing and training human resources capable of dealing effectively with electronic audit systems, by organising specialised training programmes in the fields of information technology, digital financial analysis, and methods for detecting patterns of corruption, thereby enhancing the effectiveness of internal control.

(4) Establishing integration networks between electronic audit systems and national regulatory bodies:

The study recommends the need for technical integration and coordination between the electronic auditing systems adopted by banks and the databases held by relevant regulatory bodies, such as the Central Bank and the Financial Supervisory Authority, with the aim of achieving a high level of transparency and the exchange of information and alerts in real time.

(5) Narrowing the digital divide between banks and promoting technological equity:

The study calls for the adoption of policies supporting banks with limited technical resources through the provision of technical and financial support, thereby contributing to equal opportunities in the implementation of electronic audit systems and promoting fairness in the fight against corruption within the banking sector.

(6) Establishing clear performance indicators to measure the effectiveness of electronic audit systems:

The study recommends developing an integrated system of regulatory performance indicators to measure the impact of electronic audit systems on financial transparency

and the detection of corruption, and to identify areas for continuous improvement, thereby supporting institutional monitoring and evaluation processes.

CONCLUSIONS

Fundamental Finding : The study concludes that electronic auditing systems play a significant and strategic role in strengthening oversight mechanisms within Iraqi banks, particularly in the context of increasing financial corruption and regulatory pressures. The findings demonstrate that these systems contribute positively to improving financial performance indicators, including capital growth, net profits, and revenue generation, while also enhancing transparency and accountability in banking operations. Moreover, electronic auditing systems have proven effective in the early detection of financial irregularities, reducing opportunities for manipulation of resources and limiting the misuse of credit facilities. **Implication :** Overall, the study emphasizes that the successful adoption of electronic auditing systems requires a comprehensive approach that includes technological modernization, capacity building, and stronger coordination between banks and regulatory authorities. By addressing these challenges, electronic auditing can serve as a sustainable and effective tool for combating financial corruption and enhancing the integrity of the banking sector. **Limitation :** Despite these benefits, the study also identifies several critical challenges that hinder the optimal implementation of electronic auditing systems, such as weak digital infrastructure, high operational costs, and a shortage of qualified personnel. These limitations indicate that the effectiveness of such systems is not solely dependent on technological adoption but also on institutional readiness and human resource capacity. **Future Research :** These limitations indicate that the effectiveness of such systems is not solely dependent on technological adoption but also on institutional readiness and human resource capacity.

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