

The Role of Artificial Intelligence in Enhancing Financial Transparency and Combating Corruption: A Supporting Mechanism For Achieving The Sustainable Development Goals.

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Abstract: This study aimed to examine the role of artificial intelligence in enhancing financial transparency and combating corruption as a supporting mechanism for achieving the Sustainable Development Goals, from the perspective of academics and external auditors. To achieve the study objectives, the descriptive analytical approach was adopted. The study population consisted of academics specializing in accounting and certified external auditors working in legally recognized audit offices in the Libyan state. A questionnaire was used as the main tool for collecting primary data. The study reached several key findings, most notably the existence of a fundamental role for artificial intelligence in enhancing financial transparency and combating corruption. The results also indicate a positive role of artificial intelligence, through strengthening transparency and anti-corruption practices, in supporting the achievement of the Sustainable Development Goals. In addition, the findings show no statistically significant differences between the views of academics and external auditors regarding the study variables. The study recommended the need to expand the adoption of artificial intelligence techniques within accounting and regulatory systems, given their proven role in enhancing financial transparency and reducing corrupt practices..

Keywords: Artificial Intelligence; Financial Transparency; Corruption; Sustainable Development Goals.

Introduction

Transparency is considered one of the fundamental pillars for the integrity and efficiency of institutions across various sectors, as it is based on providing relevant, reliable, and sufficiently adequate information regarding periodic performance, financial position, investment opportunities, governance structures, company value, and levels of associated risks (Bushman & Smith, 2003). Transparency also contributes to reducing opportunistic managerial behavior by enhancing the ability of external investors to monitor managers' actions, thereby ensuring that managerial decisions align with shareholders' interests. In this context, literature indicates that low levels of institutional transparency exacerbate agency problems and moral hazards resulting from information asymmetry, which increases the need for stricter governance mechanisms to address such imbalances (Bushman et al., 2004).

The importance of transparency becomes even greater at the institutional level in environments where the demand for information is high, particularly in countries suffering from weak institutional

frameworks, during periods characterized by high levels of investor uncertainty, and in institutions facing deficiencies in governance systems (Lang et al., 2012). Therefore, providing accurate, transparent, and timely financial information contributes to strengthening investor confidence, reducing perceived risk levels, improving access to financing sources, and supporting the quality of economic decisions and governance effectiveness, which positively reflects on business success and long-term sustainability (Peng & Li, 2025)..

On the other hand, corruption is considered one of the most significant challenges facing modern economies in both the public and private sectors due to its profound negative effects on public trust in governments and institutions, economic growth, rule of law, and political stability. Corruption weakens administrative efficiency, undermines investor confidence, and increases social inequality (Arayankalam et al., 2021; Dumchikov & Maletova, 2025). It takes multiple forms, including bribery, extortion, collusion, fraud, embezzlement, nepotism, money laundering, abuse of power, and obstruction of justice (Bhattacharjee & Shrivastava, 2018; Bahoo et al., 2020). Studies indicate that the spread of corruption is associated with weak institutions, ineffective law enforcement, lack of political will, and low levels of societal and media participation in accountability and oversight (DiRienzo et al., 2007).

In light of these challenges, digital transformation has emerged as one of the main pathways to enhance transparency and accountability in both the public and private sectors. The expansion of artificial intelligence applications in financial and accounting systems, particularly in the financial reporting of local governments, has improved operational efficiency, enhanced transparency, and strengthened accountability mechanisms (Darmawati et al., 2025). Artificial intelligence is regarded as a pivotal technological tool capable of improving institutional governance and enhancing decision-making quality, especially when explainable models are employed, enabling stakeholders to understand the outputs of intelligent systems and increasing trust in them (Shaban & Omoush, 2025).

Furthermore, the adoption of artificial intelligence technologies contributes to reducing information asymmetry by providing accurate and timely data to all relevant stakeholders, which enhances the transparency and accuracy of financial reporting and improves compliance (Bin Nashwan et al., 2025; Oleimat et al., 2025). In addition, literature demonstrates that artificial intelligence improves institutions' ability to optimize resource allocation, support financial and environmental performance, and contribute to creating long-term value with economic and societal dimensions (Elhady & Shohieb, 2025).

The role of artificial intelligence is not limited to improving financial transparency; it also extends to supporting anti-corruption efforts within institutions. AI technologies, such as predictive analytics and fraud detection systems, enable the analysis of large volumes of data to identify abnormal patterns, detect suspicious transactions, and provide early detection of manipulation and embezzlement (del Rey-Puech et

al., 2025; Aldemir & Uçma Uysal, 2025). With the increasing complexity of financial crimes and stricter regulatory requirements, artificial intelligence has become an essential component in enhancing financial security and supporting the integrity of financial systems (Lyeonov et al., 2024).

Despite these capabilities, recent literature confirms that the effectiveness of artificial intelligence in promoting integrity and combating corruption to enable sustainable development remains conditional upon the availability of appropriate governance and regulatory frameworks, effective human oversight, and adherence to ethical principles, particularly transparency, explainability, and accountability (Vuković et al., 2020; Budak & Škrinjarić, 2024). When artificial intelligence is integrated

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within a strong institutional governance system and clear legal frameworks, it can serve as an effective tool for enhancing transparency, oversight, and institutional integrity (del Rey-Puech et al., 2025).

Sustainable development is addressed in contemporary literature as an institutional framework that seeks to improve resource allocation efficiency, strengthen accountability, and build institutions capable of supporting more inclusive and stable economic growth. In this context, financial transparency and reducing corruption practices are considered fundamental requirements for achieving sustainable development goals, particularly Goal 16, which focuses on building effective and accountable institutions. Some recent studies indicate that artificial intelligence technologies can contribute to this direction by improving transparency in financial systems, enhancing efficiency in access to services, and reducing information deficiencies, thereby strengthening the ability of financial systems to support sustainable development pathways (Marak & Ayyagari, 2025). In this regard, Truby (2020) emphasizes that maximizing the developmental impact of artificial intelligence requires sound governance based on the principles of transparency and accountability to ensure that institutional AI applications align with sustainable development goals while reducing regulatory risks. Other literature also demonstrates that AI applications in financial governance, especially in the public sector, can strengthen accountability and oversight mechanisms and reduce institutional risks associated with weak governance, thereby supporting financial transparency and improving institutional integrity (Aldemir & Uçma Uysal, 2025).

Accordingly, financial transparency and anti-corruption efforts represent fundamental pillars for the stability of political and economic systems, as well as essential conditions for achieving the Sustainable Development Goals (SDGs), especially Goal 16 related to effective and accountable institutions. With the growing complexity of financial flows and increasing volumes of data, traditional oversight tools face greater challenges in addressing contemporary corruption practices. This highlights the need to explore the role that artificial intelligence technologies can play in supporting transparency, enhancing governance, and strengthening anti-corruption mechanisms more effectively.

Research Problem

Financial transparency is considered one of the fundamental pillars of sound financial management, corporate governance, public trust enhancement, and sustainability. It remains a globally growing strategic issue, receiving increasing attention in recent literature, particularly in advanced economies such as the United States, the United Kingdom, and China. Meanwhile, contributions from developing countries in this field have increased in recent years, driven by corruption challenges, weak governance, and rising developmental pressures (Solihin et al., 2025).

Literature shows that enhancing financial transparency directly contributes to reducing corruption, improving the efficiency of public resource utilization, and building more accountable and trustworthy institutions, which positively influences citizens' and investors' confidence in the state (Monsalvo et al., 2025). In this context, digital technologies, especially information and communication technologies (ICT), are viewed as tools that enhance disclosure, support accountability, and contribute to uncovering illegal practices by expanding access to information and reducing its monopolization by limited stakeholder groups (Darusalam et al., 2021).

Despite this positive role of digital technology, empirical evidence suggests that the effectiveness of these tools varies according to economic and institutional contexts. Previous studies have shown that the spread of ICT can function as an effective tool in controlling corruption levels, particularly with improved institutional quality and trade openness. However, economic pressures such as rising price levels and inflation may increase bribery, especially in developing countries compared to developed

nations (Ali & Gasmi, 2017). This reflects the complexity of the relationship between transparency, corruption, and macroeconomic variables.

In this framework, corruption is considered one of the most significant barriers to sustainable economic and social development. Many studies and international organizations agree that reducing corruption is a fundamental prerequisite for achieving development goals, whether under the former Millennium Development Goals or the current Sustainable Development Goals (Andersen, 2009; Fadairo et al., 2014; Charoensukmongkol & Moqbel, 2014). Corruption is regarded as a factor that limits public policy efficiency, weakens institutional effectiveness, and undermines social justice, particularly in developing and least-developed economies.

In light of these challenges, artificial intelligence and digital automation have emerged as advanced tools capable of creating a qualitative transformation in enhancing financial transparency and combating corruption. This is achieved through reducing processing time, improving regulatory compliance, combating money laundering, and enhancing trust in financial systems, thereby contributing to long-term developmental outcomes in the digital economy (Nil et al., 2025).

At the governmental level, recent years have witnessed accelerated adoption of artificial intelligence in public institutions to improve service quality and operational efficiency (Phan et al., 2026). There has also been growing interest in integrating AI into Environmental, Social, and Governance (ESG) frameworks, particularly in the financial sector, amid stricter regulations and increased stakeholder awareness. AI is viewed as a tool capable of addressing the complex interaction between financial activities, sustainability requirements, and sound governance (Xu, 2024). However, this integration also raises ethical and regulatory challenges related to transparency, bias, and accountability, which has led to the incorporation of AI principles into governance frameworks to mitigate these risks (Batool et al., 2023; Batool et al., 2025).

Artificial intelligence has also gained increasing attention in literature as an enabling tool that contributes to accelerating progress toward achieving the Sustainable Development Goals, due to its potential to enhance economic growth, improve decision-making efficiency, and support data-driven public policies (Gupta et al., 2021; Mhlanga, 2022; Kulikov et al., 2023; Ozili, 2025).

Nevertheless, recent United Nations reports indicate that progress toward achieving the Sustainable Development Goals remains below expectations, with nearly half of the goals off track and significant gaps in data and implementation, especially in governance, justice, and inequality reduction goals (Gohr et al., 2025). Despite the broad potential of artificial intelligence in supporting the SDGs, comprehensive studies evaluating its integrated impact across all seventeen goals remain limited. Furthermore, its application in the social and institutional dimensions of development, including Goal 16 (Peace, Justice, and Strong Institutions), is still underutilized (Vinuesa et al., 2020; Nasir et al., 2023).

Based on the above, despite the notable progress in scientific literature examining artificial intelligence as a driver of digital transformation and growing interest in its potential role in supporting governance and enhancing transparency, the systematic and integrated linkage between artificial intelligence, financial transparency, and anti-corruption within an institutional framework supporting sustainable development goals remains limited. Existing literature also suffers from conceptual fragmentation and methodological inconsistency, particularly regarding AI applications as a financial governance tool in environments characterized by complex systems and weak traditional oversight frameworks, especially in developing countries. This highlights the need for field studies that examine this interaction more comprehensively and in greater depth.

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Accordingly, the research problem lies in identifying and understanding the role of artificial intelligence in enhancing financial transparency and combating corruption from the perspective of academics in accounting and external auditors, and how this role can serve as a supportive mechanism for achieving sustainable development goals.

In light of this, the study seeks to answer the following main research question:

What is the role of artificial intelligence in enhancing financial transparency and combating corruption, and to what extent does it contribute to supporting the achievement of sustainable development goals from the perspective of academics and external auditors?

To answer this main question, the following sub-questions were formulated:

To what extent does artificial intelligence contribute to enhancing financial transparency?

What is the role of artificial intelligence in supporting institutional anti-corruption efforts?

To what extent does artificial intelligence contribute to achieving sustainable development goals through enhancing financial transparency and combating corruption?

To what extent do academics and external auditors differ in their evaluation of the role of artificial intelligence in enhancing financial transparency, combating corruption, and supporting the achievement of sustainable development goals?

3. Significance of the Study

This study derives its importance from the following theoretical and practical dimensions:

A. Theoretical (Scientific) Significance

Filling a gap in academic literature, as according to the researcher, this is considered among the first studies that directly address the relationship between three modern dimensions: **artificial intelligence, financial transparency and anti-corruption, and sustainable development goals, particularly Goal 16.**

Providing an integrated theoretical framework that explains the causal relationship between the adoption of artificial intelligence and the achievement of development goals, which may benefit future researchers in governance and financial technology fields.

Presenting a comparative analysis of the opinions of two major groups (**academics and external auditors**) to enrich discussions on the theoretical and practical challenges of implementing artificial intelligence.

Offering practical evidence on the relationship between artificial intelligence, financial transparency, and anti-corruption, rather than limiting the discussion to theoretical perspectives.

B. Practical (Applied) Significance

Assisting governmental and regulatory bodies (such as anti-corruption authorities and financial regulatory institutions) in evaluating the effectiveness of artificial intelligence tools and making informed decisions regarding investment in these technologies.

Supporting local efforts toward achieving sustainable development goals, especially those related to transparency, accountability, and the protection of public funds.

Providing results that may contribute to the development of academic curricula to include artificial intelligence applications in monitoring and governance.

Objectives of the Study

This study primarily aims to evaluate the role played by artificial intelligence in enhancing financial transparency and combating corruption as a supporting mechanism for achieving sustainable development goals from the perspective of academics and external auditors. This objective is pursued through the following sub-objectives:

Identifying the role of artificial intelligence in financial transparency.

Determining the role of artificial intelligence in reducing institutional corruption practices.

Examining the role of artificial intelligence in supporting the achievement of sustainable development goals, particularly Goal 16.

Comparing the views of academics and external auditors regarding the role of artificial intelligence in enhancing transparency, combating corruption, and contributing to sustainable development goals.

Providing proposals and recommendations that may contribute to achieving sustainable development goals through enhancing financial transparency and combating corruption.

Study Hypotheses

The study hypotheses were divided into two main hypotheses in addition to several sub-hypotheses as follows:

First Main Hypothesis

Null Hypothesis (H0):

There is no statistically significant effect of artificial intelligence on enhancing financial transparency and combating corruption in Libyan institutions as a supporting mechanism for achieving sustainable development goals, from the perspective of academics and external auditors, at a significance level of $\alpha \leq 0.05$.

Alternative Hypothesis (H1):

There is a statistically significant effect of artificial intelligence on enhancing financial transparency and combating corruption in Libyan institutions as a supporting mechanism for achieving sustainable development goals, from the perspective of academics and external auditors, at a significance level of $\alpha \leq 0.05$.

First Sub-Hypothesis

H0: There is no statistically significant effect of artificial intelligence applications on enhancing financial transparency in Libyan institutions, from the perspective of the study sample, at $\alpha \leq 0.05$.

H1: There is a statistically significant effect of artificial intelligence applications on enhancing financial transparency in Libyan institutions, from the perspective of the study sample, at $\alpha \leq 0.05$.

Second Sub-Hypothesis

H0: There is no statistically significant effect of artificial intelligence applications on combating corruption in Libyan institutions, from the perspective of the study sample, at $\alpha \leq 0.05$.

H1: There is a statistically significant effect of artificial intelligence applications on combating corruption in Libyan institutions, from the perspective of the study sample, at $\alpha \leq 0.05$.

Third Sub-Hypothesis

H0: There is no statistically significant effect of using artificial intelligence in supporting sustainable development goals through enhancing financial transparency and combating corruption at $\alpha \leq 0.05$.

H1: There is a statistically significant effect of using artificial intelligence in supporting sustainable development goals through enhancing financial transparency and combating corruption at $\alpha \leq 0.05$.

Second Main Hypothesis

H0: There are no statistically significant differences between the views of external auditors and academics regarding the role of artificial intelligence in enhancing financial transparency and combating corruption in Libyan institutions to support and achieve sustainable development goals at $\alpha \leq 0.05$.

H1: There are statistically significant differences between the views of external auditors and academics regarding the role of artificial intelligence in enhancing financial transparency and combating corruption in Libyan institutions to support and achieve sustainable development goals at $\alpha \leq 0.05$.

First Sub-Hypothesis

H0: There are no statistically significant differences between the views of external auditors and academics regarding the role of artificial intelligence in enhancing financial transparency in Libyan institutions at $\alpha \leq 0.05$.

H1: There are statistically significant differences between the views of external auditors and academics regarding the role of artificial intelligence in enhancing financial transparency in Libyan institutions at $\alpha \leq 0.05$.

Second Sub-Hypothesis

H0: There are no statistically significant differences between the views of external auditors and academics regarding the role of artificial intelligence in combating corruption in Libyan institutions at $\alpha \leq 0.05$.

H1: There are statistically significant differences between the views of external auditors and academics regarding the role of artificial intelligence in combating corruption in Libyan institutions at $\alpha \leq 0.05$.

Third Sub-Hypothesis

H0: There are no statistically significant differences between the views of external auditors and academics regarding the role of artificial intelligence in achieving sustainable development goals through enhancing financial transparency and combating corruption in Libyan institutions at $\alpha \leq 0.05$.

H1: There are statistically significant differences between the views of external auditors and academics regarding the role of artificial intelligence in achieving sustainable development goals through enhancing financial transparency and combating corruption in Libyan institutions at $\alpha \leq 0.05$.

Study Methodology

The study adopted the **descriptive analytical method with a quantitative approach**, as it is suitable for analyzing contemporary institutional phenomena related to the role of artificial intelligence

in enhancing financial transparency, combating corruption, and supporting sustainable development goals.

This methodology allows for the study of professional actors' perceptions, the analysis of patterns of agreement and disagreement among them, and the evaluation of relationships between the study variables within the context of rapid digital transformation. The study falls under **quantitative field research based on primary data**, where data were collected directly from respondents using a specially designed questionnaire to achieve the study objectives and test its hypotheses.

6.1 Data Collection Tool

The study relied on a **questionnaire form** to collect primary data, which was designed according to the study questions, hypotheses, and previous studies. It consisted of two main sections:

Section One: Collected demographic information about the study sample and included **3 items**.

Section Two: Examined participants' opinions regarding the role of artificial intelligence in enhancing financial transparency and combating corruption to support sustainable development goals.

This section included **three main questions** covering the study hypotheses using evaluative statements to determine the importance of respondents' answers:

The first question included **7 items** related to the role of artificial intelligence in enhancing financial transparency.

The second question focused on the contribution of artificial intelligence to combating corruption and included **8 items**.

The third question included **7 items** to examine the role of artificial intelligence in supporting sustainable development goals, with particular focus on **Goal 16 related to effective and accountable institutions**.

Thus, the total number of questionnaire items was **22 closed-ended statements**, presented using a **five-point Likert Scale**.

6.2 Population and Sample of the Study

The study population consisted of **academics specialized in accounting and auditing at Libyan universities and institutes**, in addition to **external auditors working in accredited legal auditing offices in Libya**. These two groups were selected because of their theoretical knowledge and professional expertise, enabling them to evaluate issues related to financial transparency, reporting quality, corruption risks, and artificial intelligence applications within institutional environments.

The study sample was selected using a **purposive sampling method**, ensuring the inclusion of participants with direct experience and scientific/professional relevance to the study topic.

A total of **85 questionnaires** were distributed. Later, **78 questionnaires** were returned, all of which were valid for statistical analysis. The response rate reached **92%** of the total distributed questionnaires, while the valid questionnaires represented **100%** of the returned questionnaires, as shown in **Table (1)**.

This percentage is considered adequate for conducting the necessary statistical analyses on participants' responses and generalizing the derived findings to the target study population.

Table (1): Distributed, Received, and Valid Questionnaires for Analysis

Questionnaires	Total Number	Percentage (%)
Distributed	85	100%
Returned	78	92%
Not Valid for Statistical Analysis	-	-
Valid for Statistical Analysis	78	92%

6. Data Analysis

6.3.1 Reliability and Validity Test of the Questionnaire

To determine the suitability of the questionnaire as a tool for collecting the data required for the current study and to ensure its reliability, **Cronbach's Alpha test** was used to measure the reliability of the measurement instrument. This test indicates the strength of correlation and internal consistency among the questionnaire items.

The overall reliability coefficient of the questionnaire, according to **Cronbach's Alpha**, reached **0.954**, which is considered a high level of reliability and can be confidently relied upon.

Table (2) presents the reliability coefficients of the research instrument for the study dimensions. The first dimension, related to **the role of artificial intelligence in enhancing financial transparency**, obtained a reliability coefficient of **0.911**. The second dimension, concerning **the contribution of artificial intelligence in combating corruption**, achieved a coefficient of **0.912**. The third dimension, related to **the role of artificial intelligence in supporting the achievement of sustainable development goals**, recorded a reliability coefficient of **0.863**.

These high values indicate the instrument's strong ability to achieve the objectives of the study

Table (2): Reliability Coefficients of the Study Instrument

No.	Study Dimensions	Number of Items	Reliability Coefficient (Cronbach's Alpha)
1	Role of Artificial Intelligence in Enhancing Financial Transparency	7	0.911
2	Role of Artificial Intelligence in Combating Corruption	8	0.912
3	Role of Artificial Intelligence in Supporting the	7	0.863

	Achievement of Sustainable Development Goals		
	Overall Reliability Coefficient for All Questionnaire Items	22	0.954

Additionally, the **validity of the questionnaire** was tested to ensure its effectiveness in measuring the intended concept. This was done by calculating the **square root of the overall reliability coefficient** of the questionnaire, resulting in a **validity coefficient of 0.977**, which is considered a high value. This indicates that the instrument effectively measures the concept targeted by the study.

6.3.2 Descriptive Analysis of Demographic Data

This part of the study is concerned with analyzing the characteristics and attributes of the individuals participating in the study according to the questionnaire. The results were as follows:

First: Distribution of Participants According to Their Affiliated Institution

Table (3) illustrates the distribution of participants in the study sample according to each category. The largest proportion consisted of **academics specialized in accounting**, with **46 participants representing 59%** of the total sample. **External auditors** ranked second, accounting for **41%** of the participants.

The study attributes this distribution to the participants' awareness and understanding of the importance of the role of artificial intelligence in enhancing transparency and combating corruption to support the achievement of sustainable development goals.

Table (3): Distribution of Study Participants According to the Study Sample

No.	Category	Number	Percentage (%)
1	External Auditors	32	41%
2	Academic Accountants	46	59%
	Total	78	100%

Second: Distribution of Participants According to Educational Qualification

The results presented in **Table (4)** show that **Master's degree holders** represented **64.1%** of the total participants in the study sample, followed by **PhD holders**, who accounted for **24.4%**, while **Bachelor's degree holders** represented **10.3%**. It is also observed from the table that **88.5%** of the participants held higher academic qualifications (**PhD or Master's degrees**), which suggests that the majority of the participants had a high educational background. This likely enabled them to understand the questionnaire items and provide accurate responses, thereby increasing the reliability and quality of the information obtained from the study participants.

Table (4): Distribution of Study Participants According to Educational Qualification

No.	Educational Qualification	Number	Percentage (%)
1	PhD	19	24.4%
2	Master's Degree	50	64.1%
3	Bachelor's Degree	8	10.3%
4	Higher Diploma	1	1.3%
	Total	78	100%

Third: Distribution of Participants According to Years of Experience

Table (5) indicates that **75.6%** of the study participants had **more than 10 years of experience**, which means they possessed considerable experience in the field of study, thereby enhancing confidence in the study findings. In contrast, participants with **less than five years of experience** represented only **5.1%** of the sample.

Table (5): Distribution of Participants According to Years of Experience

No.	Years of Experience	Number	Percentage (%)
1	Less than 5 years	4	5.1%
2	From 5 to 10 years	15	19.2%
3	From 11 to 15 years	16	20.5%
4	16 years and above	43	55.1%
	Total	78	100%

6.3.3 Descriptive Analysis of Questionnaire Items

In this part of the study, **descriptive statistical methods**, represented by **means and standard deviations**, were used to analyze the opinions and trends of participants regarding the questionnaire items. The responses of the sample participants were classified into **five alternatives ranging from "Strongly Agree" to "Strongly Disagree."**

The hypothetical mean was set at **3**. Accordingly, if the calculated mean of the items was greater than **3**, this indicated agreement among the sample participants regarding those items.

First: Analysis of Participants' Responses Regarding the Role of Artificial Intelligence in Enhancing Financial Transparency

The results presented in **Table (6)** indicate that all responses of the study sample participants tended toward agreement regarding the role of artificial intelligence in enhancing financial transparency.

Overall, the findings showed that the **mean score of participants' responses was 4.2051**, with a **standard deviation of 0.55952**. It is observed that this overall mean is greater than the hypothetical mean adopted in this study (**3**), indicating that the participants had positive attitudes toward the role

of artificial intelligence in enhancing financial transparency.

Therefore, it can be concluded that **artificial intelligence plays a role in enhancing financial transparency from the perspective of the study sample.**

Table (6): Analysis of Participants' Responses Regarding the Role of Artificial Intelligence in Enhancing Financial Transparency.

No.	Statement	Mean	Standard Deviation	Rank
1	The use of artificial intelligence technologies contributes to improving the quality of the institution's financial disclosure.	4.21	0.671	5
2	Artificial intelligence helps facilitate access to financial reports and data for relevant users.	4.27	0.596	1
3	Artificial intelligence contributes to standardizing financial reporting procedures, thereby enhancing transparency.	4.15	0.704	6
4	The use of artificial intelligence increases the ability to track the movement of funds within the institution.	4.08	0.769	7
5	Artificial intelligence enables faster and more flexible access to financial information by regulatory authorities.	4.23	0.663	4
6	Artificial intelligence tools help reduce human errors when presenting financial data.	4.24	0.724	3
7	Artificial intelligence contributes to shifting from periodic transparency to real-time transparency in financial reporting.	4.26	0.711	2

Overall Mean = 4.2051

Overall Standard Deviation = 0.55952

Second: Analysis of Participants' Responses Regarding the Contribution of Artificial Intelligence in Combating Corruption

Table (7) shows the results of participants' responses regarding the contribution of artificial intelligence in combating corruption.

Overall, the **mean score of participants' responses was 4.0337**, with a **standard deviation of 0.61127**. It is noted that this overall mean is greater than the hypothetical mean adopted in this study (3), indicating that the participants had positive attitudes toward the contribution of artificial intelligence in combating corruption.

Accordingly, it can be concluded that **artificial intelligence contributes to combating corruption.**

**Table (7) ... Analysis of Participants' Responses Regarding the Role of Artificial Intelligence
in Combating Corruption**

No.	Statement	Mean	Standard Deviation	Rank
1	Artificial intelligence contributes to detecting abnormal patterns associated with suspected financial corruption.	4.08	0.786	4
2	Reliance on artificial intelligence technologies reduces the opportunities for unlawful human intervention in monitoring activities.	3.95	0.866	7
3	Artificial intelligence contributes to enhancing compliance monitoring with financial laws and regulations.	4.15	0.685	1
4	Artificial intelligence technologies provide effective tools for detecting cases of financial fraud.	4.10	0.656	2
5	Artificial intelligence contributes to reducing tax and customs evasion within the organization.	4.01	0.764	5
6	Artificial intelligence helps detect errors or manipulation in financial records.	4.10	0.749	3
7	The use of artificial intelligence reduces opportunities for abuse of authority within the institution.	3.90	0.891	8
8	Integration between artificial intelligence and blockchain technologies contributes to reducing manipulation in public expenditure.	3.97	0.789	6

Overall Mean = 4.0337

Overall Standard Deviation = 0.61127

Third: Analysis of Participants' Responses Regarding the Role of Artificial Intelligence in Supporting the Achievement of Sustainable Development Goals

The results presented in Table (8) indicate that all responses of the study sample tended toward agreement regarding the existence of a role for artificial intelligence in supporting the achievement of sustainable development goals. Overall, the findings showed that the mean score of participants' responses was **4.1300**, with a standard deviation of **0.51389**. It is evident that the overall mean is higher than the hypothetical mean adopted in this study, which is **3**, indicating that the participants held positive attitudes toward the role of artificial intelligence in supporting the achievement of sustainable development goals. Accordingly, it can be concluded that artificial intelligence supports the achievement of sustainable development goals.

Table (8): Analysis of Participants' Responses Regarding the Role of Artificial Intelligence in Supporting Sustainable Development Goals

No.	Statement	Mean	Standard Deviation	Rank
1	Enhancing AI-based financial transparency contributes to building effective and accountable institutions.	4.17	0.633	2
2	The use of artificial intelligence contributes to reducing manifestations of corruption and bribery in the financial sector.	3.96	0.692	7
3	Financial transparency resulting from artificial intelligence supports stakeholders' right to access information.	4.13	0.671	6
4	Reducing financial waste resulting from corruption contributes to directing resources toward essential development sectors.	4.17	0.813	3
5	AI-supported financial transparency enhances investor confidence and attracts investments.	4.15	0.704	5
6	Reducing illicit financial flows contributes to strengthening national economic stability.	4.18	0.716	1
7	Reducing financial waste caused by corruption, through the use of artificial intelligence technologies, enhances the efficiency of directing public resources toward socially-oriented programs.	4.15	0.605	4

Overall Mean = 4.1300

Overall Standard Deviation = 0.51389

The results of the descriptive statistics showed that the arithmetic means of all study dimensions exceeded the neutral value (3), ranging between **4.03** and **4.21**, with relatively low standard deviation values. This indicates relative consistency in participants' responses and clearly reflects their positive attitudes toward the role of artificial intelligence. These descriptive indicators provide statistical justification for proceeding to hypothesis testing using inferential statistical methods.

6.3.4 Inferential Data Analysis and Hypothesis Testing

This aspect of the study focused on testing the research hypotheses using inferential statistical methods in order to obtain more accurate and reliable results. To determine the appropriate test, the **Kolmogorov-Smirnov test** was conducted, as shown in Table (9). The results revealed that the significance values for all study dimensions were lower than the significance level (**0.05**). Therefore, the data did not follow a normal distribution, and parametric tests could not be applied.

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Table (9): Kolmogorov-Smirnov Test for Determining Data Distribution

Dimension	Statistic	df	Sig.
First Dimension	0.156	78	0.000
Second Dimension	0.137	78	0.001
Third Dimension	0.151	78	0.000

Accordingly, the **Wilcoxon Signed Rank Test** was used to test the study hypotheses. This is a non-parametric alternative to the paired-sample **t-test**, suitable when data are not normally distributed.

Table (10): Wilcoxon Signed Rank Test for Paired Samples – First Main Hypothesis

Variable	Significance	Result
Role of Artificial Intelligence in Enhancing Financial Transparency	0.000	Accept the Alternative Hypothesis
Role of Artificial Intelligence in Combating Corruption	0.000	Accept the Alternative Hypothesis
Role of Artificial Intelligence in Supporting Sustainable Development Goals	0.000	Accept the Alternative Hypothesis

The results shown in Table (10) indicate that the significance values (**Sig.**) for all null hypotheses related to the three study dimensions were **0.000**, which is significantly lower than the significance threshold of **0.05**. This means that the null hypotheses, which assume that the median of participants' responses equals the neutral point (3), are rejected.

Consequently, it can be concluded that there is a significant and statistically strong role for artificial intelligence in enhancing financial transparency, contributing to combating corruption, and consequently supporting the achievement of sustainable development goals, from the perspective of the study sample.

These findings confirm the broad awareness among participants regarding the importance of artificial intelligence as an effective tool for supporting good governance and sustainable development in the financial and accounting context.

equals the neutral point (3). Therefore, it can be concluded that there is a substantial and statistically significant role for artificial intelligence in enhancing financial transparency and contributing to combating corruption, thereby supporting the achievement of sustainable development goals, from the perspective of the study sample. These findings confirm the broad awareness among participants regarding the importance of artificial intelligence as an effective tool in promoting good governance and sustainable development within the financial and accounting context.

The **Mann-Whitney U Test** was applied as a non-parametric alternative to the independent samples **T-test**, in order to assess whether there were statistically significant differences between the opinions of the two study groups (**academics and external auditors**) regarding the role of artificial

intelligence across the three study dimensions.

Table (11) Mann–Whitney U Test for Two Independent Samples – Second Main Hypothesis

Variable	Significance	Result
Role of Artificial Intelligence in Enhancing Financial Transparency	0.073	Accept the Null Hypothesis
Role of Artificial Intelligence in Combating Corruption	0.069	Accept the Null Hypothesis
Role of Artificial Intelligence in Supporting Sustainable Development Goals	0.397	Accept the Null Hypothesis

Table (11) presents the results of the **Mann–Whitney U Test**, where the significance values (**Sig.**) for each of the study dimensions were **0.073**, **0.069**, and **0.397**, respectively. All of these values are greater than the significance threshold of **0.05**. Accordingly, the null hypotheses, which assume that there are no statistically significant differences between the views of academics and external auditors, were accepted.

These findings indicate convergence in perspectives between the two groups, both professionally and academically, regarding the assessment of the role of artificial intelligence in relation to the study dimensions. This suggests that the participants' professional background did not have a significant influence on their evaluations.

Study Results and Recommendations

Following the application of descriptive and inferential statistical analyses to the study sample and the testing of its hypotheses, this section presents a summary of the key findings reached by the study, along with the appropriate recommendations derived from these findings.

7.1 Study Findings

The main findings of the study are presented as follows:

1. The study demonstrated a substantial role of artificial intelligence in enhancing financial transparency through the following aspects:

a. The use of artificial intelligence technologies contributes to improving the quality of financial disclosure within institutions, thereby facilitating access to financial reports and data for relevant users.

b. Artificial intelligence contributes to standardizing financial reporting procedures, which enhances transparency and supports the transition from periodic transparency to real-time transparency in financial reporting.

c. Artificial intelligence enables faster and more flexible access to financial information by regulatory authorities and increases the ability to track the movement of funds within institutions.

d. Artificial intelligence tools help reduce human errors in presenting financial data.

2. The findings of the study revealed that artificial intelligence contributes to combating corruption through the following aspects:

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a. Artificial intelligence contributes to detecting abnormal patterns associated with suspected financial corruption and reduces opportunities for unlawful human intervention in monitoring activities.

b. Artificial intelligence enhances compliance monitoring with financial laws and regulations, thereby reducing opportunities for abuse of authority within institutions.

c. Artificial intelligence technologies provide effective tools for detecting cases of financial fraud and contribute to reducing tax and customs evasion within organizations.

d. Artificial intelligence helps identify errors or manipulation in financial records, while integration with blockchain technologies contributes to reducing manipulation in public expenditure.

3. The study found a positive role of artificial intelligence, through enhancing transparency and combating corruption, in supporting the achievement of sustainable development goals. These contributions include:

a. AI-supported financial transparency contributes to building effective and accountable institutions and supports stakeholders' right to access information.

b. AI-supported financial transparency enhances investor confidence and contributes to attracting investments.

c. The use of artificial intelligence reduces manifestations of corruption and bribery in the financial sector, thereby reducing financial waste caused by corruption and directing resources toward essential development sectors and socially oriented programs.

d. Artificial intelligence contributes to reducing illicit financial flows and strengthening national economic stability.

4. The study found no statistically significant differences between the opinions of academics and external auditors regarding the role of artificial intelligence in enhancing financial transparency, combating corruption, and supporting the achievement of sustainable development goals. This indicates a general consensus between both groups regarding the importance of artificial intelligence in these areas.

7.2 Study Recommendations

Based on the theoretical framework of the study and the findings reached, the study recommends the following:

Expanding the adoption of artificial intelligence technologies within accounting and monitoring systems due to their proven role in enhancing financial transparency and reducing corrupt practices.

Legislative and regulatory bodies should establish institutional governance frameworks to regulate the use of artificial intelligence in the financial field, ensuring the responsible and transparent use of these technologies.

Developing academic and training programs to adequately prepare accountants and auditors to deal with artificial intelligence applications, thereby aligning professional practice with modern technological developments.

Linking artificial intelligence applications with sustainable development goals so that they are not viewed as isolated technological solutions, but rather as strategic tools for supporting transparency, sustainability, and good governance.

The study recommends conducting future research to examine the relationship between artificial

intelligence and the quality of financial disclosure.

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