

Impact of the Use of AI Applications on Building an Accounting Information System for E-government Governance to Combat Corruption and Achieve Management Reform

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Abstract

The current study seeks to explore the application of a comprehensive suite of artificial intelligence (AI) technologies to enhance the functionality and effectiveness of accounting information systems (AIS). Specifically, it focuses on four key AI applications: expert systems, synthetic neural networks, advanced business reporting languages, and genetic algorithms. The integration of these technologies is expected to facilitate the construction of a robust AIS that not only streamlines data processing and financial reporting but also enhances decision-making capabilities within organizations. Expert systems will provide valuable insights by simulating human expertise in financial decision-making, while synthetic neural networks will contribute to predictive analytics, enabling organizations to anticipate trends and make informed strategic choices. Furthermore, the study delves into the role of these AI applications in optimizing the performance of e-government initiatives. By implementing advanced internal mechanisms, such as enhanced internal control processes, rigorous financial oversight, and systematic internal audits, governments can ensure greater accountability and transparency. The incorporation of AI can also assist in refining external government operations aimed at combating corruption and driving administrative reform.

Keywords: Accounting Information Systems, AI applications, E-government, Corruption Management Reform, Governance Mechanisms.

Introduction:

E-government significantly influences corruption control and control because it improves work efficiency, reduces opportunities for head-to-head corruption, expands competition circle and increases transparency (Remeikienė & Gasparenienė, 2023) Financial information systems play an important and crucial role in the implementation of budgets and contribute to financial discipline, strategic planning of resources and operational efficiency, thereby investing a lot of time, effort and resources by the World Bank and other development institutions in such systems around the world. (Kassen, 2022), this will be done through a review of the comprehensive literature that will be presented in the study, including addressing the role of e-government and e-governance in the face of financial and administrative corruption as well as highlighting the role and strategy of financial information systems in fighting corruption as well as the role of AI applications in reducing corruption (Valle-Cruz, Fernandez-Cortez, & Gil-Garcia, 2022), the study therefore seeks to use these applications to build an accounting information system that is to control the government's electronic performance and the second in curbing corruption and achieving administrative reform.

The study problem is illustrated by the review of shortcomings in previous studies and the development of research gaps. These studies did not focus on building an accounting information system using an integrated set of AI applications, namely, expertise systems, synthetic neural networks and reporting, expanded business and genetic algorithms and how to control the government's electronic performance through the development of internal and external governance mechanisms or through an integrated group of internal intelligence applications. (GFMIS) applied in government units many problems that have not yet been overcome in addition to the fact that anti-corruption and administrative reform strategies have not led to the detection of corruption cases, all of which do not include how to build an accounting information system, how to develop internal and external governance mechanisms, how to control the government's electronic performance and how to combat corruption using AI applications.

Study Objectives:

- The main objective of the study is to develop a proposed framework for the system of accounting information based on AI applications to adjust the government's electronic performance to fight corruption and achieve administrative reform.
- How to design an accounting information system using AI applications?
- Can electronic government performance be adjusted by activating internal and external governance mechanisms using an accounting information system based on AI applications?
- How to curb corruption and achieve management reform using an accounting information system based on AI applications?
- Is a control wasting the electronic government curbs corruption and achieves administrative reform?

The scientific importance is to provide a theoretical and applied framework proposed to curb corruption and achieve administrative reform and clarify the means of achieving this as well as the development of internal and external governance mechanisms, financial auditing and financial surveillance to control the performance of electronic government and activate internal and external governance mechanisms using an integrated set of artificial intelligence applications so that they can control the performance of electronic government and fight corruption.

The study aims to control the performance of the electronic government by activating internal and external governance mechanisms using an accounting information system based on an integrated set of artificial intelligence applications and trying to develop them and knowing their role in controlling both the performance of the electronic government and curbing corruption and achieving administrative reform.

Methodology & Literature Review:

Inductive curriculum: It is relied upon in its literature review. The review of literature is not limited to academic literature, but includes non-academic documents. Content analysis is used to analyze the totality of documents in terms of research variables. Web analytics are also used to obtain the necessary information about accounting information systems, financial information systems, electronic government and anti-corruption alliances.

Extraordinary approach: It is used to infer formulas and mathematical relationships between research variables that link the design of an accounting information system based on AI applications and the control of electronic government performance and thus fight corruption.

Study (Zou, Mao, Yan, Liu, & Duan, 2023), the study aimed to illustrate the financial and administrative corruption suffered by States, in particular developing States, Taking wide dimensions overlapping factors such as the effectiveness of regulatory devices Therefore, the importance of the research is to clarify the supervisory role played by the Financial Supervisory Office to eradicate financial and administrative corruption within government institutions under its control and the extent to which these bodies comply with regulations and laws to preserve public money, There is a clear role of the Financial Supervisory Office in diagnosing cases of financial corruption, but it does not report them to anti-corruption agencies in a timely manner. However, absenteeism will cause further manipulation of public funds. offences, violations of financial laws, increased embezzlement and waste of public funds and exploitation of influence and government positions.

A study (Odilla, 2023), which discussed corruption and how to combat it, found a set of recommendations, including the need to work hard by all official and popular sectors to lift all coverage of corruption, primarily technical, legal and administrative coverage to enable the Federal Financial Supervision Office to combat it more effectively. Develop proposals for bills to criminalize practices and actions behind the emergence and spread of corruption, obtain legislative approval for

their enactment and strive to pursue their implementation and establishing sound objective criteria for the selection of leadership cadres of all State institutions who enjoy a good reputation and professional competence rather than according to the criteria of proximity and distance from the enforcing bodies.

A study (Duan, Vasarhelyi, Codesso, & Alzamil, 2023) provides an attempt to study and analyse the impact of AI mechanisms to add value to judicial auditors to carry out judicial review work efficiently and effectively, reflecting on the reduction of corporate financial and administrative corrupt practices and subsequent fraud and fraud offences, and to achieve these objectives: The researcher relied on a survey that saw a sample of accounting and auditing workers in the professional and academic fields; To know their views on the extent to which there is awareness of the importance of judicial review among those working in this field, and its role in reducing the practices of financial and administrative corruption of companies, in the light of the use of the artificial intelligence mechanism and the availability of skills of auditors; To become judicial auditors capable of using AI applications in judicial review work, the study found that: There is an intrinsic influence of accounting and auditing workers' perception of the importance of auditing.

Terminology:

Corruption from the perspective of international organizations: Corruption knows that there is no clear and explicit agreement on the concept of corruption, as its international transparency organization and international corruption have defined them as abusing the authority on which a person is entrusted to pursue personal interests, the same definition as its United Nations body that corruption is an abuse of public power to gain personal gain while harming public interest.

The United Nations defines corruption, including acts that constitute improper performance of duty or abuse of a particular position or authority, including omissions, in anticipation of promising benefits or directly or indirectly exposing or requesting a person or another person.

Financial and administrative corruption from the perspective of legislators in different States: The position of the French legislature is that the positive corruption is the active pursuit by the public official of the award of the contract and the negative. It is the acceptance of the employee's gift or rewards after the award of the contract or the introduction of the service. The Egyptian legislator's position is that he did not establish a definition of corruption and did not criminalize it despite its multiple prices and shapes, but he defined bribery. (Sadik-Zada, Gatto, & Niftiyev, 2022), which today falls under the name of corruption and is flawed and taken away.

Finally, the Algerian legislature's position did not use the term corruption before 2006 and was not criminalized by the Penal Code, but following Algeria's ratification of the United Nations Convention against Corruption in 2004 under the Presidential Decree, domestic legislation was adapted in accordance with the Convention and the Prevention and Combating of Corruption Act was promulgated, criminalizing corruption in its various manifestations (Zhang & Kimathi, 2022).

The definition of financial and administrative corruption from an academic perspective indicates that corruption is an incurable disease for all countries and societies, whether rich, poor, educated or ignorant, and therefore linked to the appearance and desire of man to obtain material or moral gains (Malodia, Dhir, Mishra, & Bhatti, 2021).

Some see corruption as an abuse of a person's power for illegitimate gains while realizing that corruption in private societies reprofiles existing structures of unequal distribution of power (Ibrahimi, Norta, & Normak, 2023).

Extent to which GFMIS and strategies contribute to controlling the government's electronic performance, fighting corruption and achieving administrative reform.

- The impact (GFMIS) of the system is internal control, matters, IT governance, anti-corruption and administrative reform.
- GFMIS's impact on internal control over IT and knowledge of sources of financial and other extravagance. It contributes to the increase of claims for accounting disclosure of all financial information to government units with the aim of protecting all sources of extravagance and tracking the movement of funds allocated to support the accounting balance with the inclusion of accounts. (FEVIS) 2023
- GFMIS's impact on accountability and accountability: This system contributes to the control of the process of matters on the size of expenditure on investment projects and the general balance of the state. It sees it as an integrated system that helps protect the security of information and information crime and also enhances efficiency, effectiveness, accounting, accountability and increased disclosure through database management and tree accounts.
- GFMIS has influenced IT governance: your contribution to increasing the range of accounting disclosures in government institutions as well as registered business organizations on the financial paper market such as banks and telecommunications companies. It has also helped to establish a system for procurement management, cash receipts and the use of payments, as well as the public sector balance system and the economic planning and coordination system (Adam & Fazekas, 2021).

The role of the GFMIS system in combating corruption and achieving administrative reform.

Effective control over financial allocations in ministries, governments and agencies as well as transparency and disclosure of financial data (Al-Kofahi, Almajali, Alfawareh, Al-Okaily, Al-Kofahi, & Al-Sartawi, 2024). It is an alternative to the traditional system of financial units and budget sectors in the stages of allocation of budgets. It also contributes to the achievement of accounting issues on

financial corruption for payment orders exported to government financial allocations and continuous follow-up.

Strategies for artificial intelligence to combat corruption

The role of the National AI Strategy in controlling the Government's electronic performance: Strategic reference to key areas that AI can support in government processes: making better decisions, identifying new opportunities and completing manual tasks in saving time, capturing or applying scarce knowledge, identifying new suppliers or new markets, and optimizing relations with suppliers (Faúndez-Ugalde, Mellado-Silva, & Aldunate-Lizana, 2020), as well as preparing reports for industry.

The role of the National AI Strategy in combating corruption: The National AI Strategy omits the design and development of an accounting information system characterized by the advantages of artificial intelligence in activating and developing internal governance mechanisms for internal surveillance, financial surveillance and internal audits, as well as the activation and development of external governance mechanisms and external audits and the development and facilitation of financial aspects in government units, as well as well as the achievement of governance principles such as transparency, questions, accountability and accounting.

The National Strategy for Administrative Reform aims to modernize the legislative framework governing the functioning of the administrative organ of the State, raise the efficiency and effectiveness of the administrative organ of the State, develop the capabilities of the human component, develop the public services provided to citizens, promote transparency and integrity, and communicate the study to the following points.

- The Ministry of Communications and Information Technology overlooked the construction of a database of government institutions and their personnel, the development of the capabilities of the human component of government agencies and the development of public services provided to citizens.
- The role of AI and its applications has been overlooked in designing systems in various fields within the administrative apparatus of the countries. Its role in activating internal and external governance mechanisms has been overlooked.
- The real machinery for achieving the issue and transparency has been overlooked through the omission of internal surveillance systems, the establishment of an internal audit section and the development of internal and external auditor skills and capabilities so that he can perform his role under the applicable systems.
- Overlook the accounting role of different types in various fields and audits both internal and external in general in achieving administrative reform.

The importance of artificial intelligence applications in curbing corruption and achieving administrative reform

- Speed and accuracy of sample selection and facilitate financial analysis and control of the most important financial operations.
- The numerical reports vary according to mission type and the Controller's skills using the high potential of the database and reducing the opportunities for errors and fraud in the financial statements.
- Positive changes in the form and nature of the documentary group resulting from the use of the computer as well as accuracy in performance, rapid processing of data and the preparation and presentation of information.
- Avoiding errors in general at different stages of operation by the provisions of internal and autonomous control of implementation.
- Facilitate external auditors' work in detecting manipulation of financial reports and verifying compliance with governance rules.
- Verify the existence of information and transparency reports and protect assets from errors, irregularities and theft.

Conclusion

- The development of internal and external governance mechanisms does not depend on AI applications and has many problems in electronic payment in addition to the risks of electronic transactions.
- The system does not include how to deal with assets and inventory, how to calculate salaries, wages and employees, and how to deal with credits and debtors.
- The study led to the activation of internal and external governance mechanisms through AI applications.
- The study found the fight against financial and administrative corruption using the main and subsidiary factors of accounting information systems based on AI applications.
- The study aimed at combating corruption and achieving administrative reform using electronic government control mechanisms by eliminating discretionary authority, protecting documents and documents, electronic data exchange and adopting electronic signature and government.

Recommendations

- An accounting information system based on AI applications that address traditional system deficiencies must be provided so that it can be used to connect all government units as well as perform accounting processes with government units.

- National strategies to combat financial and administrative corruption and how to control the government's electronic performance and how to combat corruption and achieve administrative reform should include using an accounting information system based on modern AI technologies.
- The need to develop internal governance mechanisms such as internal watchdog, financial and internal and external auditing so that they are in line with the applications of the modern AI system.

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