Modern American Journal of Business, Economics, and Entrepreneurship
ISSN (E): 3067-7203
Volume 01, Issue 09, December, 2025
Website: usajournals.org

MEASURING THE IMPACT OF DIGITAL TRANSFORMATION ON EFFICIENCY AND TRANSPARENCY: AN ANALYTICAL REVIEW OF OFFICIAL LEGISLATION AND REPORTS IN IRAQ FOR THE PERIOD (2020–2024)

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Abstract

Over the recent years, the digital transformation has been facing growing interests attributable to its role in enhancing achievement speed, relaxation of costs, bridging of data and information gaps, and providing oversight with a dominant role that contributes to the dimension of governance and maturity and finally to efficiency and transparency. Since 2020, Iraq has been among the countries that strive to transform digitally, and during the process, it has taken a series of measures and numerous channels. The research is expected to gauge the effectiveness of the government laws and governmental reports on efficiency and transparency through an analytical review methodology on laws and instructions presented in a sequence in both the state and given to the state and non-state organisations. It used the official sources of obtaining the required data and information such as the General Secretariat of the Council of Ministers, the Central Bank of Iraq, the Iraqi Ministry of Finance, the Federal Board of Supreme Audit, and the International Bank of Reconstruction and Development. The descriptive-analytical method was also used in the study wherein a review of legislation, instructions, and reports was done during the period (20202024). Moreover, it employed a methodology that transforms qualitative indicators into quantitative indicators on the (01) scale in order to compare and analyze them. The study concluded that digital transformation in Iraq during the examined

period, despite being limited to specific areas and showing low effectiveness, was nevertheless influential in promoting efficiency and transparency. It also found that the Iraqi business environment remains unprepared to encourage both foreign and domestic investment.

Keywords: (Digital Transformation, Efficiency, Transparency, Official Reports, Governance, Maturity)

Introduction

A great interest was paid to digital transformation in recent years due to its widespread role in accelerating achievement, reducing costs, bridging data and information gaps. It gives oversight a dominant role that strengthens the dimensions of governance and maturity, ultimately serving efficiency and transparency. Beginning in 2020, Iraq joined the group of nations seeking digital transformation through a set of procedures and multiple channels.

Research Importance

The significance of the study lies in presenting results that show the extent to which digital transformation has influenced efficiency and transparency. This provides political decision-makers and government auditors with an integrated view of the effectiveness of digital legislation and its impact on financial and oversight performance.

Research Problem

The research problem is represented by the following questions:

1. Is there a tangible digital transformation in Iraq as a result of the legislation in this regard?
2. To what extent has this transformation affected efficiency and transparency in Iraq during the period (2020–2024)?

Research Hypotheses

Main Hypothesis "Digital transformation has an effective impact on achieving efficiency and transparency".

Modern American Journal of Business, Economics, and Entrepreneurship
ISSN (E): 3067-7203
Volume 01, Issue 09, December, 2025
Website: usajournals.org

Sub-Hypotheses:

1. The publication of monthly accounts adopted by the Iraqi state has achieved transparency and efficiency.
2. The Federal Board of Supreme Audit has played an important role in monitoring the performance of governmental institutions.
3. The indicators of maturity and governance have a direct role in enhancing governmental performance efficiency, the transparency of data and information, and their dissemination to create a suitable business environment.

Research Objectives

The research aims to achieve the following:

1. A theoretical conceptual review of the research variables and Iraqi legislation related to digital transformation during the period (2020–2024).
2. Measuring the impact of governmental legislation on efficiency and transparency.
3. Measuring the impact of official reports on efficiency and transparency.

Research Methodology

The study followed a temporal sequential analytical review of the legislation and instructions issued by the state and imposed on public and private organizations. It relied on official sources to obtain the required data and information, including the General Secretariat of the Council of Ministers, the Central Bank of Iraq, the Iraqi Ministry of Finance, the Federal Board of Supreme Audit, and the International Bank for Reconstruction and Development. It has also assumed the descriptive-analytical method by reviewing legislation, instructions, and reports in the period (20202024). It also used a technique that transforms the qualitative indicators into quantitative indicators in the form of a (0-1) scale, which is to compare and analyze.

Chapter One: Fundamental Concepts of the Research Variables

This study addresses three fundamental variables: digital transformation, efficiency, and transparency. The following section presents a theoretical and conceptual clarification of these concepts.

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First: Digital Transformation

The digital transformation is essentially dependent on the use of digital technologies to reshape financial transactions to generate value and competitiveness of the digital economy. It spreads further to people in the aspect of their awareness, perception and behavior such that they fit in these changes in technology and deal with it in an easy, smooth and willing manner. It involves the reevaluation by the legislative and legal institutions, social institutions, and executive institutions of their systems of operation (Vial, 2019). Others might be confused with digitization and digital transformation but digital transformation is an advanced process compared with digitization. The latter is fundamentally the transfer of information through a physical form into a digital one, and digital transformation is a strategy change to the performance of operations in its base form using digitization (Al-Salhi and Jaddah, 2024). Digitization is, therefore, an instrument of digital transformation which has wider scopes that transcend beyond the process digitization to the nature of work, the lifestyle, thought, and behavior of people, not to mention the visions and strategies embraced by institutions. Today financial, commercial and other institutions are competing fiercely to please customers, ease operations as well as to attract investors. The presence of this competitive environment has led to expectations by the clients that their transactions are supposed to be easy and simple to carry out. It has been underpinned by the fact that a number of potent engines of digital transformation have emerged with the most significant being artificial intelligence and its impressive innovations, cloud computing and the Internet of Things (IoT).

All these drivers have helped in accelerated, convenient and relatively cheap operation execution (Pardo & Pagani, 2017). Digital transformation as a result, has become an institutional need that has to be integrated into plans, strategies, visions, and objectives. It does not apply to particular industries but to almost all of them. Although initially its attention was paid to the financial sector and its local and international transactions, as well as the safe transfer of information, nowadays, digital transformation can also include other spheres, in particular, education, particularly following the global health crisis in the form of the COVID-19 pandemic. The examples include digital banking and electronic

Modern American Journal of Business, Economics, and Entrepreneurship
ISSN (E): 3067-7203
Volume 01, Issue 09, December, 2025
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payment services, electronic health records, remote medical visits, AI-assisted analysis of laboratory tests and Doppler outcomes, application platforms, tests, academic promotion systems, e-learning, and blended learning in the education industry.

The digital transformation is therefore bringing the humankind on the road to the progress, which is undeniable truth. But some people doubt this limitless digital development, which comes with unpredictable alterations in the future, has its side effects on the life of humans, its economic, social, and human relations. The reason is that such progress is definitely present, and experts concede that no such concerns will hinder it. On the other hand, the digital transformation can face problems in the institutional settings that the change is being implemented. The commitment to digital transformation is not always immediately accepted by employees in a particular field; they are accustomed to the old work patterns, and they usually do not want to change their habits and switch to digital procedures. This opposition may spread to the middle and top management as well. These represent administrative challenges. From an economic standpoint, the dominance of digital transformation may lead to the loss of a large number of jobs, thereby increasing unemployment and rendering some specializations and skills, acquired over many years, less relevant. In the accounting field, digital transformation poses challenges related to the difficulty of determining future returns on investment in digital transformation technologies, as well as assessing risks, payback periods, and other financial evaluation metrics (Kane et al., 2015).

Second: Efficiency

The concept of efficiency does not differ much from that of productivity; both refer to the ratio of outputs to inputs, and both represent the basis of successful operations, indeed, success is measured through them. Efficiency is defined as the ability to complete tasks and achieve planned objectives with minimal waste of available resources (Wara, O. A., Justus, A., & Benjamin, M., 2021). It is important here to distinguish among three interrelated concepts that describe similar ideas but possess specific distinctions. Efficiency is not limited to the ability to create returns on production inputs but rather, it goes to the best

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utilization of the available resources; material or human in the shortest time accessible. Productivity, however, is a measure of the effectiveness of every factor of production by taking the inputs of a certain factor against its output like the productivity of a machine or employee at a given unit of time. Effectiveness is the attainment of the planned goals irrespective of other considerations incorporated in efficiency and productivity (Ibrahe & Hassan, 2019).
Going by the above clarification, efficiency cannot be measured solely on quantitative parameters as productivity is but on qualitative parameters in addition to the quantitative parameters. Typically, there are three efficiency measures that are used: time, cost, and quality (Vial, 2019). Time is measured by comparing the planned time to complete a task with the time taken to complete the task; cost is measured by the estimated budgets verses the real expenses incurred; and quality is measured by the resulting outputs of the project which is produced as per the quality control standards. Efficiency has a variety of forms. In accounting, efficiency is needed so that all its constituents perform to the maximum benefit of the accounting system to generate sound financial data. To begin with, documentation of the transactions should be done correctly to present accurate and clear data that can be used to make sound decisions. This attribute of efficiency refers to the aspects of documentation and reporting, particularly with regard to invoices, receipts and financial statements (Hussein et al., 2024). In terms of procedures and programming, accounting instructions, and other computerized applications, digitization has to be introduced to the standard practices in order to decrease errors and save time and energy. Also, the human factor, accountants, auditors, and controllers, should be perfectly aware of any relevant standards and rules, including international standards and unified accounting systems, and ensure that they are used correctly without subjective interpretation, which yields the correct and worthwhile outcomes (Westernman et al., 2014). This will be transferred to both financial and operational efficiency when the accounting system is run efficiently as to making sure that the data management is effective and the taxes are paid without any problems.
Efficiency in the financial system can be realized when there are the required skills to perform accurate financial ratio analysis, proper project management having strategic administrative aspect, and proper evaluation of the risk through

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proper risk management. Here, the financial system is strongly linked to management science, as management provides the competencies required to achieve financial efficiency. From another perspective, administrative system efficiency is realized when production processes improve, along with associated functional empowerment. Planning and organization, being the primary functions of management, play a crucial role in increasing productivity by setting priorities, making decisions, organizing tasks, and mobilizing resources. Therefore, management science pays great attention to training and professional development to acquire the expertise needed to achieve efficiency (Matt et al., 2015).

Third: Transparency

The roots of this term “transparency” in economic and political thought extend far back in history. One of the most prominent theories that highlighted the role of transparency in achieving political and economic reform is the theory of good governance, with its standards related to human development and human rights on one hand, and the requirements of economic development, natural and human resources and technology, on the other. The early ideas of this orientation emerged from institutional economics, which views the economy as dependent on all institutions in society, in contrast to classical economics that focused on limited aspects to interpret economic phenomena. Transparency, in its abstract sense, refers to making information and data related to political, social, and economic issues clearly and openly accessible to citizens, as they are directly affected by these matters which shape their lives and the lives of future generations. However, this abstract concept does not provide measurable indicators; therefore, scholars developed the concept to include several indicators, the most important of which are (Al-Silawi, and Al-Hasnawi, 2024):
1. Informational Transparency: Presenting available information held by public institutions to citizens to enable them to access it.
2. Procedural Transparency: Presenting public decision-making procedures and regulations to citizens and clarifying them to reduce multiple interpretations.
3. Financial Transparency: Summarized in the principle of disclosure, publicly announcing general budgets, actual government spending, major government

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deals such as licensing rounds and major real estate investments, and similar matters.

Transparency is considered one of the most important tools for combating corruption, as it is closely linked to integrity and accountability. These concepts lose meaning without transparency: how can an official be held accountable if citizens are unaware of the violations committed? Thus, transparency is the most crucial element in building citizens' trust in state institutions and governmental leadership (Transparency International, 2025).

Financial and accounting control institutions (SAIs) have crucial roles to play in fulfilling international priorities and objectives in the same area. They are involved in the unceasing progress of government auditing as well as developing the capacity of supreme audit institutions. That is why, United Nations developed its plan of Millennium Development Goals, which was called UN 2030 Agenda providing great attention to the significance of these oversight bodies and all their extensive benefits. This was accompanied by an added responsibility of auditing the Sustainable Development Goals (SDGs) which places on the bodies the responsibility of being continuously developed and endowed with new skills which transforms their historical role of holding transactions to the new role of holding performance. Therefore, the place and significance of transparency can arise in establishing efficiency by the highest financial and accounting oversight institutions, placing them in a unique political space as a mentor and as an equal. Therefore, these institutions have to make sure of information quality and the level of its availability. The high level of knowledge, skills, and credibility is mandatory and inevitable, especially given this high and critical position of supreme oversight institutions. This is done based on the following principles (INTOSAI 23 rd congress, 2019):

1. Having effective communication and positive relations with the entities concerning the oversight without the arbitrary and authoritarian practices.
2. Setting up standards of accountability that are plain and simple to all entities under supervision.
3. The tracking of the actions that have been taken upon making recommendations based on the auditing process.

4. Creating awareness and elucidation to clarify the role of the supreme oversight institutions.
5. Writing and handing in clear reports that are easy to comprehend by the stakeholders.
6. Turning to professionals in different spheres and keeping a good contact with them.

Section Two: The Relationship Between Digital Transformation, Efficiency, and Transparency

First: The Relationship Between Digital Transformation and Efficiency

Integrated strategic processes like digital transformation transform the accounting systems and current operations using digital technologies. It involves automating the routine tasks that comprise the entry of invoices, computing of expenses and depreciation, analysis of large sets of financial and non-financial transactions, and their transformation to the differential options that are given priority in strategy making. It also includes invoking the artificial intelligence to foresee cash flows, spot frauds, automate auditing operations, apply cloud computing to support easy data retrieval, and use the blockchain to organize financial operations in a safe and unmodifiable manner. Following this description, the digital transformation is undoubtedly positively correlated with efficiency because the above-stated tools enhance the efficiency of accounting in a variety of perspectives as follows (Arab Monetary Fund, 2019):

1. Routine Process Automation increases the efficiency of accounting by automatically recording daily accounting transactions into the journal and moving it to the ledger either by barcode or email, or any other method. This not only conserves time which is a key tenet of efficiency but also eradicates mistakes thus strengthening another essential tenet of efficiency. As time and effort are saved, the costs go down and the revenues grow with the number of transactions completed in a given time period. It also gives the accountants greater time to contemplate more about their discipline and the philosophy involved in their work by constantly examining their needs and goals.
2. Artificial intelligence delivers high-order depth of thinking analysis, which increases performance efficiency greatly. There is an example of AI examining

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spending habits and forecasts, which simplifies and increases the precision of cash flows in the future. This type of forecasting is usually applied in the feasibility studies of large capital-intensive projects with rather long payback periods and complicated calculations of the present value over a large number of years. Simultaneously, the high-order analyses of AI handle and examine thousands of transactions within a brief time. This will enable accountants to transform their job into not only organizing past data to predict but also as strategic analysts to use AI-created data to develop more profound, accurate, and quicker insights and strategies, which will provide an appropriate atmosphere of developing the appropriate administrative and financial decisions.

3. Cloud based accounting systems consolidate all the departments of an establishment, production operations, inventory, sales and purchasing activities of an establishment in one database where they are easily reachable at any time and place. It is so easily available that financial reports can be prepared at any time. Additionally, the monthly closing procedure that used to take a number of days of tedious work and constant communication can now be carried out in a few hours with minimum coordination required. Internal audit teams can also oversee accounting work by using cloud systems.

4. The blockchain technology records financial transactions and verifies transactions to everyone professionally experienced in a specific accounting field. This saves time in the reviewing and auditing process, the work that was done in traditional bank reconciliations is removed and the data that is submitted is more reliable and transparent hence making the auditing processes more efficient.

Therefore, digital transformation is of great help in making the accounting operations more efficient. Nevertheless, it would be wrong to think that the mentioned benefits do not have obstacles. Some of these challenges include the high cost of capital which is invested in up-to-date software and certified training programs to equip their employees with the knowledge and skills they need. The reliance on digital transformation systems is also associated with the need to create high levels of protection against the violations of sensitive financial data, which is why effective cybersecurity is crucial. Moreover, digital transformation requires the active further evolution of the skills of employees since technology

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and accounting systems, and in particular, the digital analysis, the systems knowledge and work with data development is continuously growing beyond the classical accounting skills.

Digital transformation also needs strategic planning that defines its vision and goals to everyone, spreading throughout the organization. This assists in developing a general orientation of the staff to embrace and normalize digital transformation, and develop appropriate human capital that is trained, qualified, and ready to work with new digital accounting devices with an open and creative approach. All this should be done gradually, with clear steps to be followed by accounting teams, sudden challenges, and the need to find solutions to an unexpected negative outcome (Al-Khalifa, 2017).

Second: The Relationship Between Digital Transformation and Transparency

The concept of transparency has since transcended the time-honored concept of disclosure, and has become a more profound concept that involves near-instant informational symmetry as a result of digital transformation. The character of transparency changes when it is filtered with the help of digital tools, including cloud computing, blockchain, and artificial intelligence, to a much more complicated variant. Generally speaking, the foundations of accounting are simple concepts which collectively govern accounting procedures such as the principles of the double-entry and of disclosure. The revelation of financial information cannot be carried out unless the final stages of accounting processes are carried out, and records are made, statements, and financial positions are determined. This causes a time lag between the time of a financial transaction and the disclosure and as such, transparency, by disclosure is fixed at specific intervals that are not elastic. Nevertheless, with the digital transformation, these periods have been eliminated mostly because of automatic creation and processing of financial information, which are stored without hesitation and in fact with no delay. Therefore, and transparency in the context of digital transformation makes the process of accounting a continuous, automated affair that demonstrates a rigid infrastructure of credibility and allows the availability of all stakeholders, in real time, to data. It will also enable them to have a trace of transactions on the entry through to inclusion in financial statements in an understandable manner that is easy to analyze and in a timely manner.

There are various tools that can increase transparency through digital transformation (Transparency International, 2025):

1. Blockchain Technology: In the traditional accounting system, the first item to be entered is in the journal and then it is to be transferred to the ledger. With blockchain technology, however, any accounting transaction is stored as a single encrypted block that is interconnected and can neither be modified nor destroyed. This implies that the transaction will be documented in the same form as it was with no manipulations available. Although it is possible to have collusion among disputing parties, this technology still does not allow falsification because every party is given the same unaltered copy of the transaction. The system produces a third archived and encrypted entry on its network in real-time thus any update is immediately distributed. This automatically builds great transparency, which averts any tampering of finances or renders it very risky.

2. Artificial Intelligence and Data Analysis: AI are used to do constant monitoring and digital information analysis. It audits every transaction in its financial institutions, not only a sample, which eliminates fraud or manipulation. Moreover, AI is able to analyze not only the quantitative data but also the qualitative information, news, and indicators associated with the reputation to identify the operational risks and refer to them to users. It is able to project the future cash flows and predict contingencies in feasibility studies, which enhance a high transparent environment.

3. Cloud Computing: Financial information of a particular party is saved in conventional accounting. Cloud computing is a form of digital transformation that renders all the data available to all the interested parties. The interactive reporting platforms are characterized by the fact that users can tailor dashboards and filter data based on their requirements. APIs facilitate accountants to uniformly utilize accounting systems and international standards with external actors like banks, auditors, and suppliers, and all these subjects have direct and hassle-free access to real-time data.

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4. XBRL Code: It is a language that is used to standardize financial statements so that they can be comparable around the world. It enables easy extraction and analysis of data by the auditors and reviewers, thus minimizing the chances of hiding activities that some companies may engage in to hide some financial information. Similar to the instruments of digital transformation that have certain steps to achieve efficiency, they also have some transparency demands. These involve warning of the so-called illusory transparency due to the lack of digital skills, because the work of digital competencies needs advanced competencies. Sometimes, access to huge amounts of data can not bring clarity but confusion to decision-makers, as compared to traditional accounting that reduces information to the necessary knowledge. Other issues are risks of information being stolen, influencing the algorithms to create false data and the ethical issues, as some information might be personal and its unethical release should be considered unethical.

Section Three: Analytical Review of Legislation and Official Reports in Iraq (2020–2024)

First: Official Legislation

The adoption of institutional theory is reflected in the official digital transformation legislation in Iraq. According to this theory, the accounting must react to external forces in order to guarantee organizational survival and continuity. In line with this, the business establishments frequently embrace the institutionally anticipated practices despite their ineffectiveness. Institutional theory is built on the basis of a three-facet combination of mechanisms (Saadi, 2024):

1. Coercive Pressure: It is based on the reliance of a particular organization on a stronger one, say the government institutions or the regulatory bodies. Governments usually come up with binding laws, rules and orders like the imposition of a standard accounting system in Iraq.

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2. Mimetic Pressure: It is the result of the uncertainty, and a company decides to follow the footsteps of another successful company to minimize risk. This pressure can be seen in the adoption of the practices by the developed nations in accounting issues.

3. Normative Pressure: This arises due to the spread of the practice that has been approved by a group of respected accounting professionals and thus, these practices have become a normal way of general acceptance.

The Iraqi government responded to these three pressures by enacting a series of laws, regulations, and instructions (General Secretariat of the Council of Ministers of Iraq, 2024):

1. Council of Ministers Decision No. 23044 (2024): This decision obliges all government institutions, as well as private sector establishments, to use a point-of-sale (POS) system for recording sales and processing electronic receipts. Reports must be generated accurately using scanners and card readers, with payments stored in drawers before printing receipts. The decision aims to reduce cash transactions in favor of card payments.

2. Decision on Commissions for Electronic Payment Transactions: In its 5th regular session on January 30, 2024, the Council of Ministers determined that electronic payment commissions are charged to the recipient rather than the payer. Commissions are calculated as a percentage of the amount withdrawn through the Central Bank of Iraq, with a maximum cap above which no fees are applied. This decision follows Decision No. 23044 of 2024 and Decision No. 2023 of 2023, which regulated relations between state institutions and electronic payment companies.

3. Updated Instructions for the Electronic Payment System: One of the strongest orders is the ban on cash payments in the institutions of the government.

These decisions and instructions are to be achieved by the Iraqi government through three goals: the need to develop the culture of digital transformation, increase transparency and fight corruption, as well as expand financial inclusion. Along with these government objectives, monetary ones are also covered with the help of the electronic payment system. It influences money supply by making

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the exchange of money easy through cash transfer and at the same time making transactions quicker hence raising the velocity of money. It also leads to increased household expenditure by increasing the speed at which payments are made, e-commerce, and improved security in the banking industry.

Second: Accounts Publication on a monthly basis.

Narrowing the accounting information and data disparity is believed to be crucial in offering the required efficiency and effectiveness in monitoring. In the agency theory, the manager is considered to have first hand information and data, which he is known as the agent in the agency theory. This will provide the manager with a clear edge, since they know the performance of the company on a daily basis and are aware of their challenges and growth opportunities. Access to such information is only availed to other shareholders, also known as principals, and the access is under what is formally reported as the manager has been delegated the management authority (Al-Tamimi, 2008).

The agency theory emphasizes the fact that as owners of the company, principals are mostly interested in maximizing profits, as well as expanding the capital of the company in the long run. On the contrary, the main aim of the manager is personal interest in terms of salary, incentives, rewards, and building relations with government officials and other people. This can make managers come up with unrealistic reports, hide administrative or operational shortcomings, or broaden company operations despite their risks, which even are high. Thus, agency theory focuses on the reduction of the information gap to have an effective and efficient monitoring system. This control therefore becomes active and ongoing instead of a post facto examination of reports. There is an initial understanding of the company performance by the auditors and controllers hence, it is hard to manipulate the reports by the managers since any irregularities can be easily spotted. The oversight is able to step in when there is a deviation of strategic plans, visions, or objectives (Al-Khalfaji, et al., 2017).

Besides, understanding that data and information can be monitored makes managers feel responsible and thus behave by self monitoring before the external surveillance knocks. This sustains the significance of monthly publication of accounts which Iraq has incorporated in augmenting transparency and efficiency

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in the selected digital transformation environment. The publication of the accounts occurred on the basis of binding instructions issued by the Iraqi financial institutions including the Central Bank and the Iraqi Securities Commission, which embraced the international standards of governance and transparency, particularly after 2009. Towards 2015, every commercial bank, including foreign bank affiliates, had implemented monthly account publication because of direct transactions with the Central Bank. The data published consisted of the assets, liabilities, shareholders equity, total revenues and expenses, and major indicators of solvency and liquidity ratios, and they were all available publicly (Jabr and Shaker, 2019).

The Iraqi Ministry of Finance, also issued monthly reports on the state institutions, though it was not fully covered until 2024. Table 1 represents the percentage of publications monthly during the research period. With four months being published in 2020, 2021 has progressive increases in the number of months published: six months, eight months, eleven months and, finally, publication in full years. The table also indicates the upward movement of the 33% publication coverage.

Table 1: Percentage of Monthly Account Reports Published in Iraq (2020–2024)

Year	No. of Months	Percentage
2020	4	%33
2021	6	%50
2022	8	%66
2023	11	%91
2024	12	%100

Source: Iraqi Ministry of Finance, multiple years, https://www.mof.gov.iq

The fact that 100 percent publication transparency was achieved in the span of only five years is a significant change in this aspect and shows that the digital transformation environment facilitated transparency in Iraq. Nevertheless, even with this improvement, the officials should observe that 100% publication is only quantitative; qualitative features continue to observe and have issues that

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need to be taken into notice. The main findings made about published reports are:

1. There is no divulgence of the quality of the credit portfolio.
2. No explanation on non-performing loans.
3. Accounting experts know that published data can be untimely audited, as they are usually published at a cost of errors.
4. Other institutions use artificial reporting techniques like borrowing short-term loans by the end of a month so that they appear to have high liquidity ratios, and repay them early in the following month.
5. The fact that there is weak public awareness makes it difficult to read and analyze these reports effectively by the stakeholders.

Third: Federal Board of Supreme Audit, activities.

The Federal Board of Supreme audit (FBSA) has a distinguished position in promoting general principles, through implementing the system and standards, which is considered to be the pinnace of the supervisory body in Iraq. The Board performs a number of functions (Federal Board of Supreme Audit Law, 2011), which are:

1. Providing audit of all government institutions to make sure there is a legal compliance in expenses in accordance with the public budget.
2. Ensuring that intended goals of resource management, be it material or human are realized.
3. Carrying out thorough audit of large contracts between the state and other institutions in order to make sure that they benefit the national interests.

Using the deployment of its functions, the FBSA has reported several reports that have identified serious breaches. In 2020, its report found violations of importing medical supplies of the COVID-19 pandemic, including the purchase of masks and medical devices, and it was found to be the responsibility of the Ministries of Health and Defense. The purchase price of masks was reported ten times higher than the real one. The report also reported on manipulation in the payments made by the government on those affected by restrictions of movements, poor implementation of these payments and that the people receiving the aids had their priorities on publicity rather than effectiveness. Also, medical supplies were of low quality. In 2021, the Board found out significant

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aberrations in the Ministry of Construction and Housing, such as waste and inefficiency in the project expenditure, and some of the projects were financed, but not implemented. It was also criticized that the Ministry of electricity continued to squander the peoples funds in maintenance and operational contracts such as making purchases of assets at unrealistic prices within the global market as well as poor collection of the public revenues by other ministries.

To assist in the digitalization of an environment of digital transformation by 2022, the FBSA has started to move to digitalization, with an electronic supervision system being activated and connected to multiple ministries to constantly monitor financial activities. The government e-procurement site was also placed under digital oversight, where the Board was able to identify efforts to alter the contract terms and collude to award a contract to a small number of contractors. Qualitative advances involved the exertion of control over strategic investment projects by the government like roads and bridges pointing to financial and time-related inefficiencies.

In 2023, the FBSA published data on the use of digital and traditional tools that show that the Baghdad Secretariat had squandered at least 2 trillion Iraqi dinars and that there were breaches in the contracts of sanitation, transportation, and building, some of which were not actually carried out. Although this later proved to be pronounced in the report of the Board, which caused people to be outraged and members of parliament questioned the concerned authorities, judicial follow-up and enforcement was still poor and under the needed standard. The FBSA also had a decisive supervisory role in overseeing Central Bank transfer to support the Iraqi dinar exchange rate in its devaluation to ensure that such transfers were not stolen to fund illegal financial activities or market speculations. Moreover, the Board also indicated that there were cases of corruption in the Ministry of Education in printing the curriculum and acquisition of other supplies as well as in the Ministry of Defense in the acquisition of non-standard weapons and other equipments. It was also observed that border checkpoints had a poor revenue collection through corruption and there are recommendations to use the current digital-based systems in collecting tax and revenue.

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The reports by the FBSA have been found to be very influential making it the most acceptable one-outsourced supervisory authority. By means of the digital transformation and electronic control, the Board changed the concept of the traditional financial auditing to the performance auditing, which allows evaluating the direct effect of the projects and finding out their real returns. As a result, it currently plays the role of a performance auditor besides the financial operations review. It is this position of authority that has seen the reports of the Board being regarded as a fundamental reference to the financial system; any matters highlighted by the Board have been viewed as loopholes or areas of weakness that need to be rectified making the reports a sort of roadmap to financial and administrative change.

Table 2 summarizes the evolution of the FBSA's performance during the research period (2020–2024).

Year	Description of Supervisory Tasks	Ratio of Qualitative Development	No. of Publications	Ratio of Quantative Development	Ratio of Overall Development	Ratio of Digital Development
2020	Totally traditional	0.2	10	0.3	%25	0.1
2021	Traditional but partly modern	0.3	15	0.5	%40	0.2
2022	Partly modern	0.6	20	0.7	%65	0.4
2023	Partly digital	0.8	25	0.9	%85	0.7
2024	Totally digital	1.0	28	1	%100	0.9

Source: Federal Board of Supreme Audit. (2020–2024). Annual Reports. https://storage.fbsa.gov.iq

The researcher calculated the qualitative development ratio with a five-step measurement principle, which is built on three criteria: the number of published reports, the sectoral area of control, and the degree of digitalization. A score out of 0 to 1 was put on each criterion and the arithmetic mean of the scores was then computed. Qualitative development ratio was also derived in a relative method, which was a ratio of publications divided by the largest number of publications split at the conclusion of the period. The total development ratio was determined as the summation of the above two ratios. Digital development ratio was determined by using DT Index, which is computed in terms of three

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criteria based on digital legislation, digital infrastructure and e-transparency, and the computation was done by taking the arithmetic mean of these criteria.

Fourth: Maturity Index

Maturity Index puts emphasis on how well governments manage their physical and technological resources in the way the government gives services to its citizens and foster transparency. It has four major dimensions (ESCWA, 2014):

1. Simple Infrastructure: These are electronic equipment and technical capacities to provide digital services. It is significant because it ensures the creation of entire trustworthy digital information and data controlled by the state, financial operations and audits become effective. This dimension is slow growing because of the heavy investment involved and a long-term planning is needed and highly skilled technical human resources as indicated in Table 3.

2. Citizen Digital Participation: This includes providing avenues through which the citizens can be allowed to engage in strategic decision making and the development of policies to govern the people through online platforms and also allowing the citizens to report against any violation that will create grassroots control over official controls. Table 3 depicts a very low citizen trust of government institutions, which was the cause of low growth in this dimension.

3. Public Digital Services: These services lower the administrative expenses and boost revenues and transparency. This dimension is very measurable and observable by citizens since it is a direct way of looking at the success of government in the eyes of the citizenry since when it goes to the ratios it will record higher ratios than other dimensions as indicated in Table 3.

4. Supportive Technologies: This will consist of big data, artificial intelligence, and cybersecurity. It is the dimension which defines the greatest level of maturity in accounting among the government and permits the usage of the responsibility accounting and results-based budgeting. Table 3 is an indicator that Iraq is yet to begin developing this dimension.

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Table 3: Dimensions of Maturity Index Development in Iraq (2020–2024)

Year	Digital Infrastructure	Public Digital Services	Citizen Digital Participation	Policy-supportive Technologies	Index Average
2020	0.25	0.3	0.2	0.15	0.225
2021	0.28	0.35	0.22	0.16	0.252
2022	0.32	0.4	0.25	0.18	0.288
2023	0.36	0.45	0.28	0.2	0.323
2024	0.40	0.5	0.32	0.23	0.362

Source: World Bank Group. (2020–2024).
https://www.albankaldawli.org/ext/ar/home
Percentages in the dimension columns were calculated by using the five-step measurement principle between 0 and 1, based on the sub-indicators published by the World Bank. The index average was computed using the arithmetic mean.

Fifth: Governance Index

The financial and accounting aspects of governance are incorporated in various activities that influence the lives of citizens and the national resources in many ways. Weak anti-corruption controls or a weak rule of law results in audit risks as it causes distortion in financial statements. Similarly, low quality of government effectiveness is a negative effect on budget expenditures and distortion of the budget preparation leading to the wasting of the publics and denying the country public investments. In the same manner, low quality of regulations would deter domestic investments by the private investors leading to outflows of capital and decrease in the tax revenues. When there is low accountability, then oversight activities become invalid. As mentioned earlier, in spite of strong supervisory activity of the Federal Board of Supreme Audit, there was no equal accountability on the same level.
Iraq has the following six dimensions of governance and its progression:

1. Accountability and Participation: This dimension quantifies the avenues of depicting political liberties and options among citizens. The major indicators are the fairness and integrity of parliamentary elections, no political interference in the judiciary, press freedom and parliamentary checks and balances. This aspect was formed gradually during the research period because of constant elections and relatively free media, although the processes of militarization and factionalism are hard to overcome.

2. Political Stability and Lack of Violence: This is an indicator of political stability and major indicators of the same include breach of constitution, ethnic and religious strife, and the threat of terrorism. This dimension also evolved gradually during the period of the research, as it was an indication of less terrorist attacks and bombings. The challenges that it faces are incessant protests and dissatisfaction of the people.

3. Government Effectiveness: This is used to determine the quality of civil services given to citizens where the efficiency of bureaucratic processes, quality of public services (education and health) and budget management ability are the important indicators. In Iraq, this dimension was very low and this is a summary of poor service delivery and high level of bureaucracy in the state institutions.

4. Quality of Regulations: This is a measure of the suitability of government laws and regulations in safeguarding and building the private sector. This dimension was also weak in Iraq, portraying an environment that is not business friendly.

5. Law and Order: This is an indicator of the levels of trust and obedience of laws by the citizens particularly on matters of property rights, enforcement of contracts and how security and judicial agencies operate. This dimension was poor within the period of research and it signified lack of judicial power to administer law and fight crime.

6. Control of Corruption: This evaluates the rate of corruption, key indicators of which are incidence of bribery, accountability of the officials to corruption, the effectiveness of the anti-corruption agencies like the Integrity Commission, and the transparency in the procurement within the state. This dimension was

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low with slight positive change, but means that there is still wide-spread corruption and mismanagement of public funds in state institutions.

The dimensions mentioned above, although essentially political in nature, have a profound and direct impact on financial and accounting operations. These operations are affected by distortions in financial data and information, which increases audit risks and raises agency costs, particularly when the dimensions of anti-corruption and rule of law are weak. Weak government effectiveness leads to inefficient budgeting and public revenue wastage. Similarly, poor regulatory quality negatively impacts the private sector, reducing employment opportunities and increasing pressure on the public sector to provide jobs for the working-age population, while also decreasing tax revenues expected from private-sector activity. In foreign trade, weak private-sector productivity results in higher imports than exports, causing trade deficits and reductions in foreign reserves. The accountability dimension directly affects the performance of the Federal Board of Supreme Audit. Weak accountability diminishes the influence of its reports, rendering public accounting largely meaningless at both the governmental and citizen levels.

Table 4 presents the governance scores in Iraq according to the dimensions described above for the period 2020–2024.

Year	Political stability	Government efficiency	Regulatory Quality	Law and Order	Control of corruption	Accountability and participation
2020	0.2	0.15	0.18	0.15	0.12	0.25
2021	0.22	0.16	0.19	0.16	0.13	0.27
2022	0.25	0.18	0.21	0.18	0.15	0.3
2023	0.28	0.2	0.23	0.2	0.17	0.32
2024	0.3	0.22	0.25	0.22	0.19	0.34

Source: World Bank Group. (2020–2024). https://www.albankaldawli.org/ext/ar/home.

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2024 values are predictive using the general trend method. Values published by the World Bank for reconstruction and development were converted from the scale (-2.5 to +2.5) to (0 to 1) proportionally to unify the tables in the study.

Conclusions

1. Transparency in the Ministry of Finance improved significantly, and the digitally transformed environment brought it to 100 percent of publication in five years, which is an important advancement in the country and a sign that the environment of the digital transformation supported transparency in Iraq. Yet, this is a quantitative success, and qualitative elements of the issued information still need to be focused on and refined.
2. Federal Board of Supreme audit reports were crucial and made it the most plausible independent oversight office in action.
3. The maturity index dimensions in Iraq were very slow developing except the public digital services dimension that the government focuses on because it is the most visible dimension that demonstrates digital transformation.
4. Government indicators registered a gradual development in all the dimensions with diverse development levels, which means that the business environment in Iraq is still not that well organized to embrace dynamic investment.
5. Even though it had a restricted level of application and the implementation was not sufficiently effective, the digital transformation in Iraq at the time was effective in terms of fostering efficiency and transparency.

Recommendations

1. The Ministry of Finance cannot afford to concentrate on the number of published reports only but should be keen on the quality of information presented.
2. The courts are supposed to be initiated into taking action concerning the breaches as reported by the Federal Board of Supreme Audit, as it is the duty of the board to point out violations and leave execution to the courts.
3. The digital transformation must be anchored on a strategic framework that is well defined and publicly stated where the citizens and the government are actively involved. The government ought to appoint a given body that is to

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oversee the digital transformation process and market the culture using different avenues.

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