



**Implications of Digitalization on the Accounting Profession,
Auditing Practices, and Accounting Education in Iraq: Challenges
and Proposed Solutions**

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Abstract

This research aims to investigate the impact of digital transformation on the accounting profession and accounting education by analyzing its implications for accountants' performance efficiency and the ability of educational curricula to keep pace with technological advancements, as well as identifying the key challenges hindering the success of this process. The study examined the extent to which digital tools contribute to accelerating financial operations, facilitating auditing, and enhancing financial analysis capabilities, in addition to evaluating the effectiveness of curricula and academic staff in adapting to the digital environment. The findings revealed that digital transformation has created a qualitative shift in the accounting and auditing profession and contributed to improving the quality of accounting education. However, several obstacles still limit its effectiveness, most notably concerns related to information security, insufficiently qualified human resources, and limited financial resources. Accordingly, the research recommends developing accountants' skills to adapt to digital requirements, updating measurement and disclosure systems and accounting standards in line with rapid technological developments, enhancing the competencies of faculty members in colleges of economics and business administration, updating financial and regulatory legislation, and strengthening accountants' participation in workshops and specialized training programs to meet the demands of the digital economy.

Keywords: Digital Transformation, Accounting Profession, Auditing Profession, Accounting Education.



1.1 Introduction

Today, the world is witnessing a comprehensive digital transformation across industries, economies, and societies, which has directly impacted the accounting profession and accounting education. A report issued by the Institute of Chartered Accountants in England and Wales (ICAEW), titled *“Leading in a Digital World”*, emphasized that digitization of the economy not only creates new opportunities but also introduces risks and challenges, reshaping the role of accountants in the modern financial framework. Accordingly, the interaction between the accounting profession and information technology represents a crucial intersection that determines the future of both the profession and accounting education.

Digital transformation is considered the independent variable, influencing the dependent variables represented by the accounting profession and accounting education. On the one hand, this transformation provides opportunities to improve performance and enhance the efficiency of financial systems through the use of digital tools such as cloud computing and blockchain, thereby eliminating traditional practices such as manual entries and paper-based documentation. On the other hand, it imposes challenges that require redefining concepts, rules, procedures, accounting standards, and financial reporting to align with the digital business environment.

The Fourth Industrial Revolution, with its accelerating pace, obliges individuals and countries alike to adapt rapidly to its requirements; otherwise, they risk being excluded from the development framework. This highlights the relationship between digital transformation (independent variable) and the institutional and legislative response (mediating variable), as the success of transformation depends on the ability of states and institutions to provide the legislative, technological, and skill-based infrastructure necessary to keep pace with labor market changes.

At the same time, studies such as Bardan and Abu Aila (2020) indicate that this transformation faces a number of barriers (moderating/impeding variables), the most prominent of which include: difficulty in prioritizing implementation mechanisms, limited allocated budgets, risks associated with information security, shortage of



scientifically and practically qualified competencies, internal resistance to change, and legal restrictions. These barriers reduce the effectiveness of the expected positive relationship between digital transformation and the development of the accounting profession and education.

Thus, the theoretical relationship among the study variables can be summarized as follows:

- Digital transformation (independent variable) leads to the development of the accounting profession and accounting education (dependent variables) by enhancing efficiency, speed, and data protection.
- The success of this impact depends on the existence of a supportive legislative and institutional framework (mediating variable).
- Meanwhile, organizational, human, and technological barriers (moderating/impeding variables) weaken the relationship between digital transformation and the advancement of the profession and accounting education.

1.2 Research Problem

Since digital transformation affects individuals, processes, products, and organizations as a whole, institutions today require a higher level of specialization in their operations, while maintaining flexibility and responsiveness to deliver innovative services and products that meet customer needs and expectations.

Accordingly, the accounting profession must evolve to go beyond traditional roles and provide value-added tasks, while simultaneously building distinctive skills that are compatible with the digital information age. This evolution depends on both technological advancement and accounting education equipped with appropriate skills and modern tools. For example:



- Cloud computing provides flexibility in processing and storing financial data.
- Big data analytics allows accountants to generate new insights and support decision-making.
- Financial technologies (FinTech), such as cryptocurrencies, open up new horizons and opportunities for financial practices.

Thus, the independent variable (digital transformation) directly influences the dependent variables (accounting profession and accounting education), by pushing them to adopt new technologies, enhance competencies, and shift from traditional methods toward digital systems.

In Iraq, the accounting profession is required to undergo development in order to keep pace with the demands of the information era. Likewise, accounting education must advance in alignment with modern technologies, which requires:

- Educators with strong digital skills, networking knowledge, and data analysis capabilities.
- Sufficient financial support from universities and professional organizations.
- A shift away from paper-based, traditional methods toward digitization and innovation.

Based on this, the research problem emerges from the inability of the accounting profession and accounting education in Iraq (dependent variables) to adequately keep up with the requirements of digital transformation (independent variable), particularly in relation to technologies such as blockchain, big data, and FinTech.

Therefore, the central research questions can be formulated as follows:

1. To what extent are the accounting profession and accounting education in Iraq able to adapt to digital transformation and modern technologies?



2. What obstacles hinder this adaptation, and what mechanisms can be employed to overcome them?

1.3 Research Significance

The importance and motivation of this study arise from several key considerations, most notably:

- The rapid expansion of digital transformation across economic and institutional activities in both public and private sectors, which necessitates continuous adaptation.
- The critical need to examine the impact of digital transformation on the accounting profession and education together, in order to identify how technological developments and modern tools can contribute to advancing professional practices and aligning accounting education with the requirements of the digital era.

1.4 Research Objectives

The main practical objectives of this study are to:

- Measure and analyze the actual impact of digital transformation on the accounting profession and accounting education in Iraq.
- Propose practical mechanisms to enhance the performance capacity of accountants by integrating modern digital tools and technologies into their work.
- Design and recommend updates to accounting curricula that incorporate digital skills, data analysis, and emerging technologies such as blockchain and FinTech.



- Identify and provide solutions to overcome the most critical obstacles that hinder the successful implementation of digital transformation in the accounting profession and education.

1.5 Research Hypotheses

In light of the research questions, objectives, and the review of previous studies, the following hypotheses are proposed:

H1: There are no statistically significant differences among the views of the study sample regarding the capacity of the accounting profession in Iraq to keep pace with digital transformation.

H2: There are no statistically significant differences among the views of the study sample regarding the capacity of accounting education in Iraq to adapt to digital transformation and modern technologies.

H3: There are no statistically significant differences among the views of the study sample regarding the obstacles and challenges hindering the implementation of digital transformation in the Iraqi business environment.

1.6 Previous Studies

The researcher reviewed several prior studies related to the variables of the current research in order to determine its position and the existing knowledge gap. The most relevant studies are presented below:

Rashwan (2020) – "Digital Transformation and Its Implications for the Practice of the Accounting and Auditing Profession"

This applied study aimed to explore the role of digital transformation in shaping the practice of accounting and auditing. The study relied on a literature review and an analysis of professional practices under digital transformation. The findings indicated that digital transformation equips accountants with advanced technological skills, increases efficiency and accuracy in accounting and auditing tasks, and enhances the



satisfaction of service beneficiaries. Based on these results, the study recommended adopting digital technologies within accounting and auditing institutions to maximize efficiency and improve service quality.

Abbas (2019) – "The Impact of Big Data on the Development of the Accounting Profession"

This analytical study sought to determine the impact of big data on the development of the accounting profession in terms of accounting information quality, standards, curricula, performance, and disclosure. The study employed an analytical framework supported by data-driven case studies. The results revealed that applying big data requires the modernization of the accounting profession, as it enhances performance, measurement and disclosure accuracy, and the quality of accounting information, while supporting the development of standards and curricula. Consequently, the study recommended integrating big data applications into accounting practices and curricula to improve professional performance and information reliability.

Ali (2022) – "Digital Transformation in Contemporary Universities: Challenges and Opportunities"

This descriptive and analytical study aimed to explore how digital transformation could be advanced within Egyptian universities. The study used a literature review and institutional case analysis. Findings highlighted weak administrative efficiency, rigid organizational structures, and insufficient involvement of governmental, private, and civil society sectors in supporting digital transformation. The study recommended restructuring universities' organizational frameworks, diversifying funding sources, and expanding cooperation with governmental and private institutions to facilitate effective digital transformation.

Ibrahim (2022) – "The Role of Blockchain Technology in Enhancing Operational Efficiency in Egyptian Public Banks"

This empirical study aimed to measure the impact of blockchain technology on reducing operational costs and improving service quality in public banks in Egypt. Quantitative analysis was used to assess blockchain applications. The study found



that blockchain reduces operational costs, accelerates financial transactions, ensures security, minimizes manual procedures, and improves service quality, transparency, and capital efficiency. It recommended the wider adoption of blockchain in banking operations to achieve greater efficiency, cost reduction, and improved customer satisfaction.

Rchinger (2019) – "The Impact of Digital Technology Adoption on Organizational Structures: A Case Study of Stantac"

This case study analyzed the effects of adopting digital technologies on organizational structures and relationships in a Canadian engineering and architecture firm. The study employed organizational design analysis to examine changes in roles and relationships within the company. Results indicated that digitally successful firms move away from rigid hierarchies toward more flexible structures, requiring a reconsideration of organizational roles and relationships. The study recommended adopting flexible organizational structures and redefining roles to align with digital transformation.

Research Methodology

2.1 Inductive Method

The researcher examined and analyzed relevant Arab and foreign studies related to the research variables, in addition to reports and publications issued by international institutions and professional organizations concerned with enhancing the application of digital transformation strategies.

2.2 Deductive Method

The researcher sought to derive a theoretical framework that reflects the interactive relationship between digital transformation strategies, the accounting profession, and accounting education in Iraq, while also identifying the obstacles that hinder this relationship and proposing solutions to keep pace with such developments.



2.3 Research Population and Sample

In line with the hypotheses and objectives of the study, the researcher designed a questionnaire directed to the research population, which consists of:

- .Professionals practicing in the accounting field
- Individuals involved in accounting education.
- Faculty members in universities and academic institutes in Iraq.

Given the difficulty of distributing the questionnaire to all members of the population, a random sample was selected, represented by:

- .Practicing professionals in the city of Nasiriyah
- Faculty members at the College of Administration and Economics, University of Thi Qar.

Theoretical Framework of the Study

Concept and Importance of Digital Transformation

Digital transformation refers to the way technology is employed within institutions to enhance operational efficiency and improve the quality of services provided to customers. This is achieved through the optimal use of modern technologies, which positively impact workflow across departments while saving time and effort (Adnan, 2019, p. 30).

Johannes (2019, p. 23) defined digital transformation as the shift of institutions from relying solely on physical resources to emphasizing informational resources based on the internet and business networks. In this context, informational, knowledge-based, and intellectual capital has become the most effective factor in achieving institutional objectives and maximizing the utilization of available resources.



2.4 Rationale for Digital Transformation

Verhoef et al. (2019, p. 25) identified three key rationales for the necessity of digital transformation:

- **:Accelerated Technological Development**

Since the advent of the World Wide Web and subsequent innovations such as broadband internet, smartphones, Web 2.0, cloud computing, voice recognition, online payment systems, and cryptocurrencies, e-commerce has grown significantly. Global e-commerce sales reached USD 2.3 trillion in 2017 and were expected to rise to USD 4.88 trillion by 2021 (Statista, 2019, p. 13)

- **:Intensified Competition**

Digital technologies have heightened competition, particularly in the retail sector. Relatively new digital companies have successfully competed with traditional firms. Competition has become more global and intense, with major corporations such as Amazon, Apple, and Facebook in the U.S., and Alibaba and JD in China, dominating multiple industries.

- **:Changing Consumer Behavior**

As a response to the Fourth Industrial Revolution, consumers increasingly shift their purchases to online stores, with digital channels directly influencing purchasing decisions. Research tools and social media platforms have further raised consumer awareness, empowered them, and increased interactivity (Kannan & Li, 2017, p. 22.)

2.5 The Impact of Digital Transformation on Accountants'

Performance

Digital transformation has fundamentally altered the role of accountants. Their responsibilities are no longer limited to recording data and preparing traditional financial reports; rather, they are now tasked with managing both financial and non-financial data, analyzing such data, and ensuring its ethical use, in addition to strengthening their role in information privacy (Lennon, 2020, p.39).



Accountants have also become the link between the financial side traditionally handled by accountants and the information technology departments led by software engineers. Consequently, accountants are required to acquire new skills in areas such as statistics, mathematics, quantitative and qualitative data analysis, as well as time-series analysis. They must also be familiar with emerging technological developments, including:

- ,Cloud computing
- ,Cybercrime
- ,Digital services
- ,Artificial intelligence
- .Blockchain technology

A joint report by the Institute of Management Accountants (IMA) and the Association of Chartered Certified Accountants (ACCA) in 2013, entitled *Digital Darwinism*, indicated that the most important technologies that would reshape the accounting profession include: big data, cloud computing, smart devices, artificial intelligence and robotics, cybersecurity, digital service provision, and social networking (AICPA, 2014, p.35).

However, accountants were not fully prepared to deal with the mechanisms of digital transformation, since existing accounting and auditing standards were established at a time when such modern technologies did not exist. As a result, the requirements of digital transformation have not been clearly reflected in the accounting model or financial disclosure practices.

According to Titera (2013, p.136), broader access to databases would lead to significant changes in accounting disclosure. Similarly, Agostino (2016, p.38) emphasized the need to develop accounting standards in line with the requirements of digital transformation, particularly through the use of text analytics, image data, audio data, emails, web pages, and social media platforms on a large scale in the disclosure process.



2.6 The Impact of Digital Transformation on the Quality of

Accounting Information

The primary challenge facing accounting in the digital era lies in rethinking the concept of financial reporting. Accountants are now able to leverage digital technologies to transition from a traditional role to a more strategic and effective one, bridging the gap between information technology and accounting data (Chan, 2017, p.123).

Digital transformation can influence the qualitative characteristics of accounting information as follows:

- **Reliability:** The availability of image, video, and audio data—such as meeting recordings and customer feedback—along with textual data like emails and web pages, enhances the reliability of accounting information.
- **Faithful Representation:** Comparability and predictive value are essential characteristics of faithful representation in financial statements. The integration of multi-format data (images, videos, texts, audio) contributes to achieving these characteristics more accurately.
- **Timeliness:** Digital transformation improves the timeliness of financial information, both in terms of data processing speed and disclosure timing, due to technological tools that enable real-time data processing.

2.7 The Impact of Digital Transformation on Accounting

Measurement and Disclosure

The accounting system is directly influenced by handling electronic data in the digital transformation era. Bram (2016) identified a set of factors affecting accounting measurement and disclosure, most notably the nature of data and the accounting standards related to software.



The impact of digital transformation on accounting measurement can be observed in the following aspects:

- Providing detailed information traditionally available in ledgers at a low cost and with high explanatory value, such as inventory data by type, location, supplier, shelf life, and discounts, thereby supporting internal use and voluntary disclosure (Brivot, 2017, p.597).
- Enabling accountants to access customer data, including addresses, payment schedules, aging of receivables, and allowable discounts.
- Utilizing data on sales, costs, sales commissions, and human resources, which can be obtained at low cost, thereby enhancing the competitiveness of firms (Titera, 2013, p.139).
- Expanding business reporting practices that clearly affect measurement and disclosure to serve various stakeholders. Vasarhelyi (2010, p.25) noted that technological advancements have profoundly impacted accounting through the adoption of advanced software in accounting and auditing, which will in turn influence the decisions of regulators and standard-setting bodies in the future.

2.8 The Impact of Digital Transformation on the Auditing

Profession

The auditing profession has been directly influenced by modern digital developments, as firms are increasingly implementing these advancements to improve operational efficiency, enhance customer satisfaction, expand into new markets, increase productivity, and develop business models. This has made the responsibilities of external auditors more complex, particularly in terms of keeping pace with digital transformation and understanding its implications for clients' business environments (Metwally, 2020, p.47).

This new reality requires auditors to:



- Understand the effects of digital transformation on business models and clients' future expectations.
- Develop auditing procedures to ensure quality and reduce costs.
- Utilize big data analytics (BDA) and blockchain technology to enhance the effectiveness of control and audit procedures.

These developments raise significant questions about how auditors should deal with big data and the increasing complexity of accounting processes. Thus, auditors and regulatory bodies must establish updated mechanisms and guidelines related to big data analysis and the application of artificial intelligence tools in auditing.

Digital auditing also presents new challenges, as employees now spend more time online engaging with clients and the public through social media to promote products and support financial performance. This raises a critical question: *How should auditors respond to these changes?*

The answer lies in auditors' continuous professional development and the adoption of advanced technological tools such as cloud computing and blockchain technology to maintain audit quality and address pressures related to costs and client demands. By doing so, auditors can improve the efficiency of their work and enhance the value they deliver through the effective integration of digital technologies.

2.9 The Impact of Digital Transformation on Accounting

Education

Accounting is a dynamic and evolving profession that is influenced by economic, social, and technological variables, while also exerting influence on them in return. Although digital transformation does not in itself impose a direct change on accounting, the current business environment necessitates the development of



curricula, accounting standards, and teaching and learning methods in line with the requirements of the digital economy.

The digital transformation environment requires fundamental changes in the design and development of curricula, accounting standards, and teaching approaches to keep pace with modern developments. Among the key opportunities offered by digital transformation in accounting education are:

- **Enhancing the educational process** through digital tools and applications that help personalize each student's learning path and adapt content to their needs.
- **Developing students' skills** such as critical thinking, collaboration, and problem-solving through interactive learning environments supported by modern technologies.
- **Assessing academic performance** using digital tools that enable faculty members to monitor both individual and group performance and leverage data to improve curricula.
- **Promoting social interaction** within the educational environment by employing systems that measure and analyze student interactions.

Some global universities have already adopted these approaches. For instance, *Jiaotong University* in Beijing was among the first to introduce academic programs specialized in big data, while in the United States, digital learning technologies tailored to individual students have been widely applied. At the University of Arizona, for example, advanced programs are used to collect and compare student data to provide tailored educational content that meets each student's needs (Coyne, 2016, p.161).

On the professional level, International Education Standard (IES) No. 7, titled *Information Technology Skills and Knowledge for Accounting Graduates* (AICPA, 2014, p.37), emphasized the need for accounting programs to include technical



knowledge and skills in areas such as data collection, management, analysis, reporting, and security.

Accordingly, working in a digital transformation environment requires:

- **Curriculum development** in accounting to include contemporary courses such as: information and communication technology, quantitative analysis, governance and risk management, business efficiency, digital transformation, internal control in a technological environment, e-commerce, digital marketing, artificial intelligence, virtual reality, as well as courses on data risks and security.
- **Preparing and qualifying new accountants** with the necessary digital knowledge and skills, and training them in modern tools and applications that support accounting practice in the digital business environment.

2.10 The Field Study

The field study serves as an extension of the theoretical components of the research and aims to determine the nature and extent of digital transformation within business organizations, as well as its impact on the accounting profession and accounting dissemination. Previous theoretical studies have indicated that digital transformation in organizations is expected to significantly enhance accountants' performance and the quality of accounting information, in addition to contributing to the development of accounting dissemination, thereby improving accountants' efficiency.

Based on this, the researcher conducts a field study to verify the conclusions drawn from the theoretical part of the research and to identify the impact of digital transformation on accountants' performance, the quality of accounting information, and accounting dissemination, as well as to test the acceptance or rejection of the research hypotheses.

Objectives of the Field Study



The field study aims to explore the opinions and attitudes of stakeholders regarding the implementation of digital transformation in business organizations. Its objectives include:

- Exploring the views and attitudes of the sample regarding the extent to which digital transformation contributes to the development of the accounting and auditing profession in Iraq.
- Exploring the views and attitudes of the sample regarding the extent to which digital transformation contributes to improving accounting dissemination in Iraq.
- Exploring the views and attitudes of the sample regarding the obstacles and challenges facing the application of digital transformation.

Population and Sample of the Field Study

The research population consists of practicing accountants, professionals involved in accounting dissemination, and faculty members at universities and higher institutes in Iraq. Given the difficulty of distributing questionnaires across the entire research population, the researcher relied on a representative convenience sample, which includes:

- Practicing accountants in the city of Nasiriyah.
- Faculty members at the Colleges of Economics, University of Thi-Qar.

Distributed, Completed, and Valid Questionnaires

Table (1) illustrates the distributed, completed, and valid questionnaires according to the categories of the research sample:

Questionnaires	Research Sample Category	Distributed	Completed & Valid	Percentage (%)
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Questionnaires	Accountants and Auditors in Companies	19	18	32%
Questionnaires	Faculty Members	51	43	72%
Total	—	72	66	100%

Section One: Characteristics of the Research Sample

Distribution of the Research Sample According to Academic Qualification

Table (2) shows the distribution of the research sample according to academic qualification:

Academic Qualification	Accountant	Auditor	Faculty Member	Total	Percentage (%)
Bachelor's Degree	11	7	—	18	32%
Master's Degree	—	—	34	34	56%
Doctorate (PhD)	—	—	9	9	14%
Total	11	7	43	66	100%

Distribution of the Research Sample According to Years of Experience

Table (3) shows the distribution of the research sample according to years of experience:

Years of Experience	Accountant	Auditor	Faculty Member	Total	Percentage (%)
Less than 5 years	3	4	9	16	20%
More than 5 years and less than 12 years	7	0	19	26	34%
More than 12 years	0	2	15	17	22%



and less than 20 years					
20 years or more	3	2	2	7	9%
Total	13	8	45	66	100%

The research sample includes a diverse mix of years of experience:

- 20% have less than 5 years of experience,
- 34% have between 5 and less than 12 years,
- 22% have between 12 and less than 20 years, and
- 9% have 20 years or more.

This diversity ensures adequate representation of different levels of expertise and strengthens the suitability of the sample for achieving the research objectives and testing its hypotheses.

4.1 Data Collection Methods

The researcher relied on questionnaires to collect primary data from the research sample, distributed both electronically via the Internet and in hard copy directly. This method was employed to gather the opinions and attitudes of the research sample regarding the impact of digital transformation on the accounting profession and accounting dissemination in Iraq.

4.2 Questionnaire Design

The questionnaire items were grouped in a way that each group reflects one of the research hypotheses. The researcher ensured that the questions were clear, simple, and easy to understand. A **five-point Likert scale** was adopted to measure the respondents' attitudes, with the degree of agreement ranging from (1) to (5) as follows:

Degree of Agreement	Interpretation
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1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

4.3 Reliability of the Questionnaire Data

It is essential to test the reliability of the questionnaire items using Cronbach's Alpha coefficient. Table (5) shows that its value reached 0.7392, which is higher than the commonly accepted threshold (0.6). This indicates the reliability and internal consistency of the questionnaire items.

Number of Questionnaire Items	Cronbach's Alpha
7	0.739

Discussion of Results

5.1 Results of Testing the First Hypothesis

Hypothesis 1: There are no statistically significant differences between digital transformation and the development of the accounting and auditing profession in Iraq.

The Mann–Whitney U test was used to examine the mean ranks, and the results are presented in Table 3:

Table 3. Mean ranks of academics and professionals and Mann–Whitney U test for the effects of digital transformation on accounting and auditing practices



No.	Statement	Mean Rank (Academics)	Mean Rank (Professionals)	U Value	Significance
1	Digital transformation helps ease the accountant's workload	4.980	4.850	222.6	0.159
2	Contributes to reducing reliance on paper documents	4.480	4.730	105.7	0.655
3	Helps speed up financial processes	4.089	4.685	5.500	0.798
4	Contributes to obtaining information quickly and accurately	4.500	4.500	7.000	0.647
5	Helps financial forecasting and decision-making	4.130	3.200	105.6	1.000
6	Links departments and branches with management	4.890	4.263	6.500	0.895
7	Facilitates preparation of financial reports quickly and easily	4.880	4.130	6.500	0.882
8	Makes accountants more skilled in using modern technologies	4.789	4.880	8.000	0.879
9	Helps achieve timely financial information	4.000	5.000	6.000	0.561
10	Contributes to cost and sales management	4.250	4.750	7.000	1.000
11	Enhances the speed and quality of auditors' work	4.500	4.500	8.000	0.752
12	Develops auditors'	5.000	3.980	7.500	0.687



	creative skills				
13	Enhances competition among auditing offices	4.068	4.058	6.500	0.456

Overall Result: The Mann–Whitney U test indicates that the differences between academics’ and professionals’ opinions are not statistically significant. Therefore, Hypothesis 1 is accepted.

Conclusion: There are no statistically significant differences at the 5% significance level between the opinions of the two groups regarding the impact of digital transformation on the development of the accounting and auditing profession in Iraq. The general significance level (Sig) is greater than 0.05, supporting the acceptance of the null hypothesis.

5.2 Results of Testing the Second Hypothesis

Hypothesis 2: There are no statistically significant differences between digital transformation and accounting dissemination in Iraq.

The Mann–Whitney U test was used for mean ranks. The results are presented in Table 4:

Table 4. Mean ranks of academics and professionals and Mann–Whitney U test for the effects of digital transformation on accounting education and student skill development

No.	Statement	Mean Rank (Academics)	Mean Rank (Professionals)	U Value	Significance
1	Digital transformation develops current accounting	4.850	4.850	6.500	0.652

	curricula to align with digital changes				
2	Increases skills related to information technology	4.350	5.000	6.500	0.890
3	Provides a tool for measuring students' performance in accounting dissemination	4.500	4.600	8.000	0.635
4	Enhances graduates' readiness to meet the demands of the digital labor market	4.680	4.250	6.000	0.753
5	Drives accounting dissemination to adapt to modern business environments	4.980	4.890	8.000	0.875
6	Enables students and disseminators to apply modern technologies in accounting	4.687	4.150	7.500	1.000
7	Strengthens the value of skills that support students' future careers	4.385	4.980	6.500	0.478



Overall Result: The null hypothesis is accepted. Mean ranks are homogeneous between the two groups.

Conclusion: There are no statistically significant differences at the 5% significance level between academics' and professionals' opinions regarding the effect of digital transformation on accounting dissemination in Iraq. The overall significance level (Sig = 0.645) is greater than 0.05, confirming the acceptance of the null hypothesis.

5.3 Results of Testing the Third Hypothesis

Hypothesis 3: There are no statistically significant differences in the difficulties of digital transformation in the business environment in Iraq.

Table 5. Mean ranks of academics and professionals and Mann–Whitney U test for challenges in implementing digital transformation in accounting and auditing

No.	Statement	Mean Rank (Academics)	Mean Rank (Professionals)	U Value	Significance
1	Difficulty prioritizing digital transformation mechanisms	4.653	4.790	6.500	0.742
2	Lack of allocated budgets for digital transformation programs	5.000	4.865	7.500	0.876
3	Concerns about information security risks	4.125	4.253	6.000	0.653
4	Lack of qualified competencies and management	4.123	4.000	7.000	0.637



5	Challenges related to electronic accounting standards and regulations	4.098	4.086	7.500	0.655
6	Absence of guidance for qualifying accountants to keep up with technological development	4.758	4.986	6.500	0.479
7	Weak role of the government and official entities in supporting digital transformation	4.759	4.680	7.000	0.789

Conclusion: No statistically significant differences exist between academics' and professionals' opinions regarding the difficulties of digital transformation in the business environment in Iraq. The overall Sig = 0.875 > 0.05.

5.4 Results of Testing the Fourth Hypothesis

Hypothesis 4: There are no statistically significant differences regarding obstacles to accounting dissemination in keeping pace with digital transformation in Iraq.

Table 6. Mean ranks of academics and professionals and Mann–Whitney U test for obstacles in implementing digital accounting dissemination in education

No.	Statement	Mean Rank (Academics)	Mean Rank (Professionals)	U Value	Significance
1	Lack of development of accounting	4.600	4.086	6.500	0.536

	programs and adoption of digital dissemination				
2	Weak dissemination staff competence in handling digital technologies	4.253	4.600	8.000	0.485
3	Ministries and universities not adopting e-dissemination	4.000	4.250	7.500	0.593
4	Lack of data loading and e-commerce departments in economics colleges	4.150	4.890	6.000	0.655
5	Lack of budget allocated to practical and digital dissemination courses	4.890	4.250	8.000	0.456
6	Reliance on traditional IT skills dissemination without modernization	4.600	4.125	7.500	0.553
7	Weak infrastructure of internet networks and computer labs	4.236	4.980	5.500	0.542

Overall Result: The null hypothesis is accepted. Mean ranks are homogeneous between academics and professionals.



Conclusion: There are no statistically significant differences at the 5% significance level between academics' and professionals' opinions regarding obstacles to accounting dissemination in keeping up with digital transformation in Iraq. The overall Sig = 0.675 > 0.05. Key obstacles identified by the sample include reliance on traditional IT skills dissemination, weak dissemination staff competence, inadequate internet infrastructure and lab facilities, and insufficient funding for digital transformation programs.

Conclusion and Recommendations

6.1 Conclusion

The study reached a set of key findings as follows:

1. The Impact of Digital Transformation on the Accounting and Auditing Profession:

- Digital transformation facilitates the speedy completion of financial processes.
- It contributes to financial data processing and forecasting, which eases decision-making.
- Digital transformation enables timely provision of financial information.
- It enhances the speed and quality of auditors' work.

2. The Impact of Digital Transformation on Accounting Dissemination in Iraq:

- Digital transformation enables students and auditors to apply and disseminate modern technological techniques in accounting.
- It elevates the competency level of accounting graduates to meet the demands of the digital labor market.



- Digital transformation increases the practical value of accountants and auditors to keep pace with future developments.
- It drives accounting dissemination towards innovation and adaptation in modern business environments.

3. Difficulties and Challenges Facing Digital Transformation in the Business Environment:

- Concerns regarding information security risks in digital transformation.
- Challenges related to electronic and legal accounting standards.
- Difficulty in prioritizing digital transformation strategies.
- Lack of clear guidance for qualifying accountants to keep up with technological developments.
- Weak role of the government and regulatory authorities in supporting digital transformation.

4. Obstacles to Accounting Dissemination in Keeping Pace with Digital Transformation in Iraq:

- Lack of development in accounting programs and reliance on digital accounting dissemination.
- Dependence on traditional IT skills dissemination without modernization.
- Weak infrastructure of internet networks and inadequately equipped computer labs and digital technologies.
- Low adoption of e-dissemination by ministries and universities, and insufficiently trained dissemination staff to handle digital technologies.
- Insufficient budgets allocated for practical and digital dissemination programs.



6.2 Research Recommendations

Based on the results, the researcher recommends the following:

- Accountants should enhance their performance to align with the digital transformation environment, transitioning from traditional accounting roles to financial and digital data analysis.
- Develop an accounting disclosure system using digital transformation tools and capabilities.
- Update current accounting standards and introduce new standards that align with the digital business environment.
- Revise curricula in economics and accounting faculties to include modern skills and technologies, such as e-commerce and information technology.
- Update teaching and dissemination methods by adopting e-dissemination and modern educational tools.
- Improve the efficiency of faculty members in using modern technologies and electronic systems.
- Allocate necessary budgets to support digital transformation, including upgrading labs, internet networks, and modern systems.
- Amend financial and tax legislation to align with digital transformation, such as adopting electronic tax returns, e-commerce practices, and updating Law No. 115 regulating the accounting and auditing profession in Iraq.
- Strengthen the role of the Iraqi Association of Accountants through conferences, workshops, and training programs to support digital transformation and adapt to the digital economy.



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