



Digital Transformation in Financial Statement Consolidation Practices and Its Impact on the Quality of Consolidated Financial Reports

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Abstract:

The purpose of this study is to draw attention to how the quality of financial reports is affected by digital transformation as one of the factors influencing financial statement consolidation procedures. In order to do this, all ideas pertaining to information technology and digital transformation, accounting information systems, integrated management software (ERP), and artificial intelligence applications are covered, along with how they affect the process of combining financial statements and the caliber of financial reports. A survey of professionals in accounting consolidation procedures, such as certified accountants, auditors, accounting specialists, and accountants working for Algerian economic conglomerates, is the basis for this study. The statistical program SPSS v.23 was used to analyze the data.

The study concluded that digital transformation has influenced the practices of financial statement consolidation, thereby affecting the quality of consolidated financial reports.

Keywords: Digital Transformation; Financial Statement Consolidation Practices; Accounting Information Systems; Quality of Consolidated Financial Reports.

JEL Classification Codes: O33; M41, M48, M15.

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1-Introduction:

The world is currently witnessing a broad digital transformation impacting various aspects of business, including the accounting field. Digital technology has become an essential tool for enhancing financial performance and achieving operational efficiency. In this context, digital transformation in the accounting consolidation process emerges as a key focus for companies aiming to improve the accuracy and speed of financial reporting and enhance compliance with accounting standards, thereby providing reliable information for strategic decision-making.

To improve the consolidation of financial accounts from branches and subsidiaries, digital transformation provides tools and technology such as accounting systems, integrated management software (ERP), and artificial intelligence applications. This helps to speed up accounting consolidation procedures and lower human error. Since the performance of conglomerates in this sector is correlated with their capacity to provide transparent and trustworthy reports that accurately reflect their financial situation, it is imperative to investigate how this digital transition is affecting the quality of financial reports.

The significance of digital transformation in accounting consolidation procedures will be discussed in this article, along with how it improves accuracy, transparency, and regulatory compliance and how it affects the caliber of consolidated financial reports.

1.1 Study Problem:

Based on the above, the research problem is presented as follows:

What is the impact of digital transformation in financial statement consolidation practices on the quality of consolidated financial reports?

From the main question, the following sub-questions arise:

- Does the quality of financial reports change when digital transformation is used in the accounting consolidation process?
- Is knowledge of information technology essential for those involved in the consolidation process?
- How do the following variables—ERP systems, artificial intelligence applications, and accounting information systems—interact with each other in the accounting consolidation process, affecting the quality of financial reports?

1.2 Research Hypotheses:

1.2.1 Main Hypothesis:

Digital transformation contributes to improving the quality of consolidated financial reports.

1.2.2 Sub-Hypotheses:

To answer the above questions and comprehensively address the research problem, the following hypotheses are proposed:

- Digital transformation enhances the accuracy and transparency of consolidated financial reports.
- Digital transformation accelerates the preparation of consolidated financial reports.
- Digital transformation aids decision-making and reduces human errors.

1.3 Study Significance:

This research is significant because it aims to realize the theory of the digital economy in Algeria by highlighting the significance of digital transformation in the process of consolidating financial statements and its impact on the quality of consolidated financial reports.

1.4 Study Objectives:

- Understand digital transformation, its methods, and approaches.
- Analyze how digital transformation can use artificial intelligence applications and integrated management software (ERP) to streamline and expedite financial statement consolidation procedures.
- Explore the contribution of digital transformation in making timely decisions.
- Identify how digital transformation reduces costs related to time and human resources needed for manual consolidation, in addition to minimizing human errors.

1.5 Study Methodology:

We used a descriptive-analytical approach to cover the general concepts of digital transformation and financial statement consolidation practices and their impact on the quality of consolidated financial reports in order to address the research problem, cover the various facets of the topic, and test the validity of the hypotheses. On the practical side, we employed an analytical approach through a survey directed at specialists in financial statement consolidation practices, including certified accountants, auditors, accounting experts, and accountants in Algerian economic companies. The survey contained a set of questions on the subject, which were analyzed using the statistical software SPSS v.23.

1.6 Literature Review:

1.6.1 Foreign Studies:

- Motawaa Saeed El-Sayed Motawaa (2019): The Scientific Journal of the Faculties of Commerce Sector, Al-Azhar University, Issue 21, January 2019: The Effect of Automated Accounting Information Systems Quality in Improving the Quality of Financial Reports: A Case Study. The purpose of this study was to quantify how the quality of automated accounting information systems (AAIS) affects the caliber of financial reports that are used by Egyptian commercial banks. The research looked into and analyzed the quality of AAIS in commercial enterprises, as well as the criteria used to test and evaluate the accuracy of financial reporting. This research used a variety of statistical techniques, including measurements of central tendency, basic linear regression analysis, analysis of variance (ANOVA), and Cronbach's Alpha test. The research indicated that AAIS improves financial report quality while saving time and effort in decision-making, particularly during crises. The research advocated the adoption of particular accounting standards to control the functioning of AAIS inside commercial organizations, viewing them as the ideal technique for producing accounting information.
- SalwaDararAwad (2020): The Islamic Entrepreneurship Journal, Vol. 05, Issue 02, examined the effect of using accounting information systems on the caliber of financial reports as they relate to the telecom company STC. The purpose of this study was to determine how the use of accounting information systems affects the caliber of financial reports and how much management of the Saudi Telecommunications Company (STC) depends on these systems to support its goals and oversee operations.

The study followed a descriptive-analytical methodology, with the study population consisting of managers, heads, and employees of the telecommunications company. A total of 150 questionnaires were distributed to the sample to gather opinions on the impact of using accounting information systems on the quality of financial reports. Of the distributed questionnaires, 120 were returned, constituting an 80% response rate, and the necessary statistical analysis was conducted.

The most significant of the study's conclusions was that the organization follows through on the compilation of regular financial reports and that the size of the business and the advancement of the accounting information systems in use are positively correlated. The findings also showed that financial report preparers need to be proficient with accounting information systems. Furthermore, the results demonstrated that financial reports generated by accounting information systems support wise decision-making.

- Aliya Mahdi Ali (2023): The effect of artificial intelligence on financial report quality and how it affects decision-makers, master's thesis, University of Karbala, Iraq, Faculty of Management and Economics. The goal of this study was to use artificial intelligence (AI), a key technology, to raise the caliber of financial reporting. These technologies can process, analyze, and apply financial data in a timely and precise manner while spotting odd trends and any hazards. AI also offers accurate financial operation monitoring and helps with ongoing financial data verification. Since a number of financial scandals have cast doubt on the accuracy of financial reports, the study problem focused on the existence of several factors that have contributed to a lack of confidence and credibility in these reports. In order to increase trust in financial reports, it is imperative to embrace and use digital technologies like artificial intelligence (AI), big data analysis, and the Internet of Things (IoT), which are hallmarks of the Fourth Industrial Revolution and the onset of the digital age. The study employed a descriptive-analytical methodology, and the research tool utilized to assess the study hypothesis was a questionnaire. 121 people answered the survey after it was given to many accountants, auditors, and programmers. For analysis, the statistical program Smart PLS was utilized.

According to the study, artificial intelligence (AI), which is exemplified by the Internet of Things, neural networks, machine learning, deep learning, and expert systems, improves the quality of financial reporting and decision-makers.

1.6.2 Local Studies:

- Qourin Haj Kouider and NaqazNour Al-Huda (2019): Accounting Information Systems and Information Technology and Their Impact on the Quality of Financial Information – Case Study of Nover Spa. The accounting information system is one of the applications built on technological elements, providing information regularly in the form of reports that contribute to decision-making. The use of accounting software packages by management helps accountants and others gather and analyze data, reaching financial information of a quality that meets the requirements of users. The quality of information handled by these systems in a timely manner has significantly saved time and effort for accountants, who are the primary users of this information.

The study concluded that information technology plays a significant role in achieving the characteristics of information quality.

- Ibrahim Bouaziz (2021): The Tabana Journal of Scientific Academic Studies conducted a field study on the Saidal Group titled "The Contribution of Accounting Information Systems in Improving the Quality of Financial Statements." The purpose of this study was to determine how accounting information systems can enhance the caliber of financial statements and why they are used to help a business accomplish its objectives, thereby gaining several advantages through the activation of information systems. To achieve this goal, a field study was conducted on the Saidal Group through a survey of a sample of

accountants. The statistical tests showed a strong positive correlation between the accounting information system and the financial statements of the Saidal Group. This is evidenced by the accounting information system's contribution to providing transparent, reliable, and credible information, which in turn enhances the quality of financial statements and rationalizes various decisions within the group.

- Asmaa Ben Hamada and Mohamed Ben Sayed (2022): The Impact of Integrating Artificial Intelligence Applications into Electronic Accounting Software – A Field Study, published in New Economy Journal, Volume 13, Issue 02 (2022), pp. 755-774. This study aimed to explore the impact of integrating artificial intelligence applications into electronic accounting software. To achieve the study's objectives, a descriptive-analytical method was used to define the research problem and establish the theoretical framework. A questionnaire was distributed to 50 participants active in the accounting field. The results showed a strong, positive, and statistically significant correlation between the use of artificial intelligence applications and electronic accounting software.

1.6.3 Discussion of Literature Review:

In this section, we provide a commentary on the previous studies. After summarizing them, we conducted an evaluation and prepared the following report:

Through the presentation of previous studies conducted on this subject, the researcher reviewed a number of foreign and local studies. Although these studies were conducted in different environments and systems, they share similarities with the study's context, particularly with the local Arabic studies. By analyzing the previous studies, similarities and differences were identified between the current research and the previous ones, which played a role in building the current study.

1.6.4 Similarities Between the Current Research and Literature Review:

The current research aligns in its objective with several previous studies, such as the studies by Motawaa Saeed El-Sayed Motawaa, SalwaDararAwad, Qourin Haj Kouider and NaqazNour Al-Huda, and Ibrahim Bouaziz, in addressing the impact of using accounting information systems on the quality of financial reports.

1.6.5 Differences Between the Current Research and Literature Review:

Our research focuses on the impact of digital transformation and accounting information systems on the quality of consolidated financial reports.

1.6.6 Distinctive Aspects of the Current Research Compared to Literature Review:

The current research is unique, to the best of the researcher's knowledge, as it addresses the digital transformation and accounting information systems in accounting consolidation processes and their effect on the quality of consolidated financial reports. It highlights the need for more local Arab studies on this important topic due to the scarcity of such studies.

1.6.7 Benefits Derived from Literature Review:

The researcher benefited from previous studies in several key areas, including:

- The caliber of financial reporting is improved by the caliber of accounting information systems.
- The necessity of having expertise in using accounting information systems among financial report preparers.
- The imperative use of artificial intelligence in developing accounting information system applications.

- The contribution of information technology to the development of high-quality information features.

The quality and dependability of consolidated financial statements are influenced by the caliber of accounting information systems.

2. Digital Transformation:

Digital transformation refers to the integration of digital technology into all aspects of business, resulting in a fundamental change in how businesses operate and give value to their customers. Furthermore, it is a cultural shift that requires firms to continuously challenge the status quo, try new things, and tolerate failure.

Additionally, it is described as the process through which organizations transition from traditional business models to new models based on digital technologies for product and service innovation, as well as management and marketing methods. This includes creating new revenue streams by developing a digital strategy, which can only be achieved through providing digital capabilities and studying the requirements for digital investment in the context of digital marketing activities, along with a willingness for change from management toward digitization (Khaira & khlouf, 2023).

3. Information and Communication Technology:

The concept of Information Technology (IT) emerged with the advent of computing devices, and there are several definitions of IT and Communication. According to UNESCO, it is defined as a set of scientific, technological, and engineering knowledge and administrative methods used to handle and process information and its applications. It can also be described as the automated processing of information, meaning the digitalization of data within the framework of modern technology. This information can be stored, processed, transmitted, and retrieved by other computing devices for reuse when needed. Moreover, it can be distributed to a group of people simultaneously, with remote transmission and broadcasting capabilities being one of the most distinguishing features of IT and Communication.

Based on the study of IT and Communication concepts by various experts, IT can be defined as a system composed of a set of physical resources: computing devices, software, data, and communication networks that utilize computer-based information systems. It is characterized by the ability to gather, analyze, organize, store, and retrieve vast amounts of information quickly, to maximize the utility of information and aid in making the right decisions at the right time with the required accuracy.

3.1 The components can be clarified as follows:

- Hardware: The actual hardware that a computer system uses for input, output, and storage.
- Software: Three primary purposes are served by the comprehensive instructions (commands) that govern the information system's operations: managing the organization's computer resources, granting users access to these resources, and serving as a liaison between the organization and its stored data. There are two primary categories of software:
 - System Software: Primarily concerned with managing and supporting computer and network operations.
 - Application Software: Designed to accomplish tasks and process data for end-users.
- Networks and Communication: Whether wired or wireless, they are responsible for transmitting information in any form from one place to another using electronic or optical

media. Networks and their components are essential for establishing and completing remote communications. Networks facilitate the sharing of technological resources, data sharing, data distribution, customer service systems, and ultimately improving communications, thus providing organizations with a competitive advantage.

4. Integrated Management Software (ERP):

ERP (Enterprise Resource Planning) refers to a configurable, modular, and integrated computer application aimed at integrating and optimizing company management processes by providing a unique data repository and relying on standardized management rules. In other words, an ERP system consists of a logically unified database that can be linked to independently provided modules by the publisher, covering various needs such as production management, quality management, human resources management, etc. Once the modules are specified, the ERP system can cover a variable range from a single site to all locations within a company.

ERP is not the entire information system nor all applications used in the organization where it is installed. However, it often serves as the structural backbone for the organization's processes and tends to encompass more functions over time (Froufe, 2015).

5. Accounting Information Systems:

Accounting information systems are part of the overall information system and are classified as open systems that interact with the surrounding environment, both influencing and being influenced by it. This system plays a crucial and effective role in providing information necessary for various levels of decision-making. This information is provided through reports and statements that are prepared based on actual daily data and supported by additional elements such as indicators, standards, and estimated budgets, which play an active role in interpreting and evaluating actual results.

In accordance with certain guidelines and protocols, accounting information systems are made up of a network of physical and human components that work together to collect, handle, and track financial data pertaining to both internal and external economic events. These systems offer historical and present financial and non-financial data (pertaining to control and operational activities), as well as future-oriented information for problem-solving and planning. This information is essential for all parties interested in the economic unit, serving to achieve its objectives and assist in planning, monitoring, and decision-making processes (Delahma, 2016).

6. Artificial Intelligence:

There are many different ways to define artificial intelligence (AI), which is now seen as a wave of technology that is making the world smaller by allowing robots to carry out cognitive tasks including sensing, reasoning, learning, and interaction. Three technology advancements that have sufficiently matured and converged to solve commercial problems have allowed AI to quickly permeate our lives:

- Advancements in algorithms.
- Big data.
- Increased computing and storage capabilities at a low cost (Ergen, 2019).

Artificial intelligence is essentially software capable of executing activities that were previously expected to be performed solely by the human brain. These activities include knowledge acquisition and application, as well as the ability to make judgments, understand relationships, and generate original ideas. From another perspective, AI represents the capability of a computer system

to monitor its experiences, learn from them, and simulate human intelligence in decision-making. (BENHAMADA & MOHAMED, 2022)

7. Consolidation of Financial Statements:

The final financial accounts are reflected in consolidated financial statements, which accurately depict the financial status and performance of the group of enterprises under consolidation. As stated in the content of Law 99-05, Article 1, consolidated accounts are the accounts of the holding company combined with those of the controlled companies, which are referred to as the consolidated accounts of the group.

Consolidated financial statements, as defined by the International Accounting Standard (IAS 27) on separate financial statements, are financial statements of a group that show the parent company's and its subsidiaries' assets, liabilities, equity, income, expenses, and cash flows as though they were a single economic entity (Youssef, 2022).

7.1 Quality of Consolidated Financial Reports:

The group's financial situation during a given accounting period is accurately depicted in consolidated financial reports. The group discloses all information related to its activities and the results achieved during the period to facilitate sound and appropriate decision-making regarding the group's circumstances. In this research, we will present the concept of consolidated financial reports and the objectives of these reports.

7.2 Concept of Consolidated Financial Reports:

Consolidated financial statements prepared by the group aim to provide accurate information about its financial position over a specific time period. This is in response to the needs of shareholders, investors, government entities, and regulatory bodies regarding performance, profitability, risk management, and the ability to meet obligations.

7.3 Objectives of Consolidated Financial Reports:

Defining the objectives of financial reports represents the starting point for the conceptual framework of accounting. By identifying these objectives, the type of required accounting information is determined. It is important to note that the objectives of financial reports are not static; they change with evolving circumstances and the necessity for information needed for decision-making or changes in the surrounding economic and political environment. The objectives of financial reports are characterized by their general nature, aiming to meet the needs and interests of potential users without focusing on specific individuals.

The objectives of financial reports should primarily address the needs of external users of accounting information who do not have the authority to access it (Madahi, 2012).

7.4 Characteristics of Quality Financial Reports:

Quality characteristics are attributes that render the information disclosed in financial reports useful to users of financial accounting information, whether current or potential investors, creditors, lenders, and others. High-quality financial information is free from misrepresentation or deception and complies with a set of legal, regulatory, professional, and technical standards.

The financial accounting system, through its conceptual framework, relies on four fundamental criteria to frame the quality of financial information, which can be addressed as follows:

7.4.1 Clarity:

This means that financial information should be easy to understand for its users, avoiding complexity. Conversely, users should possess a reasonable level of knowledge that enables them to comprehend the information presented in financial reports.

7.4.2 Relevance:

This feature signifies that the financial information presented is related to the decisions that users will make. The relevance of the information aligns with the intended objective, whether for evaluating the past, assessing the present, or forecasting the future. Thus, information is deemed relevant as long as it has the potential to influence decisions.

7.4.3 Credibility (Reliability):

This means that the information must be accurate, truthfully representing what it is intended to convey, free from bias, and unaffected by the personal judgments of its preparers. Reliability encompasses the following attributes:

- True representation
- Primacy of economic substance over legal form
- Neutrality
- Caution and prudence
- Completeness of information

7.4.4 Comparability:

This means that the information presented in financial reports can be compared across specific financial periods or with previous financial periods of the same entity, or compared with the financial reports of other entities. This enables those who utilize financial reports to make choices about funding, investments, or comprehending the entity's financial status and performance.

7.5 Practical Aspect:

7.5.1 Study Methodology:

In this study, we adopted the descriptive method, which is defined as: "A method aimed at gathering facts and data about a specific phenomenon or situation while attempting to sufficiently interpret these facts. The objectives of descriptive research are not limited to merely collecting facts; it must also aim to classify and thoroughly analyze data and facts, leading to generalizations regarding the situation or phenomenon under study" (Al-Dulaimi, Saleh, & Ali, 2014, p. 149).

7.5.2 Study Sample:

The study sample was deliberately selected and included 31 employees involved in the practice of financial statement consolidation. (Sarhan, 2017) points out that deliberately chosen individuals in a research sample possess more accurate and superior information about the subject under investigation.

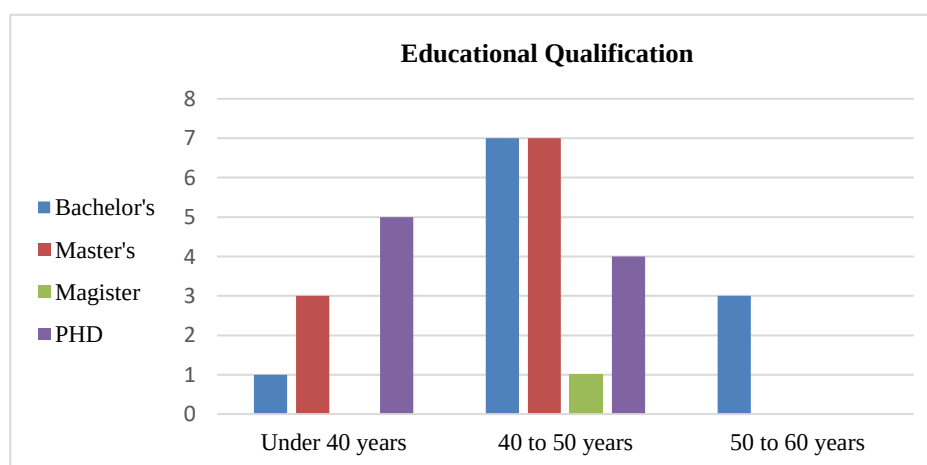
7.5.3 Characteristics of the Study Sample:

The sample was described according to certain personal data, as shown in the table below.

Table 1. Characteristics of the Study Sample by Age and Educational Qualification

Age Range	Educational Qualification				Total
	Bachelor's	Master's	Magister	PhD	
Under 40 years	1	3	0	5	9
	0.091	0.3	0	0.556	0.29
40 to 50 years	7	7	1	4	19
	0.636	0.7	1	0.444	0.613
50 to 60 years	3	0	0	0	3
	0.273	0	0	0	0.097
Total	11	10	1	9	31

Figure 2. illustrates the characteristics of the study sample based on age and educational qualification



Source: SPSS Program Outputs.

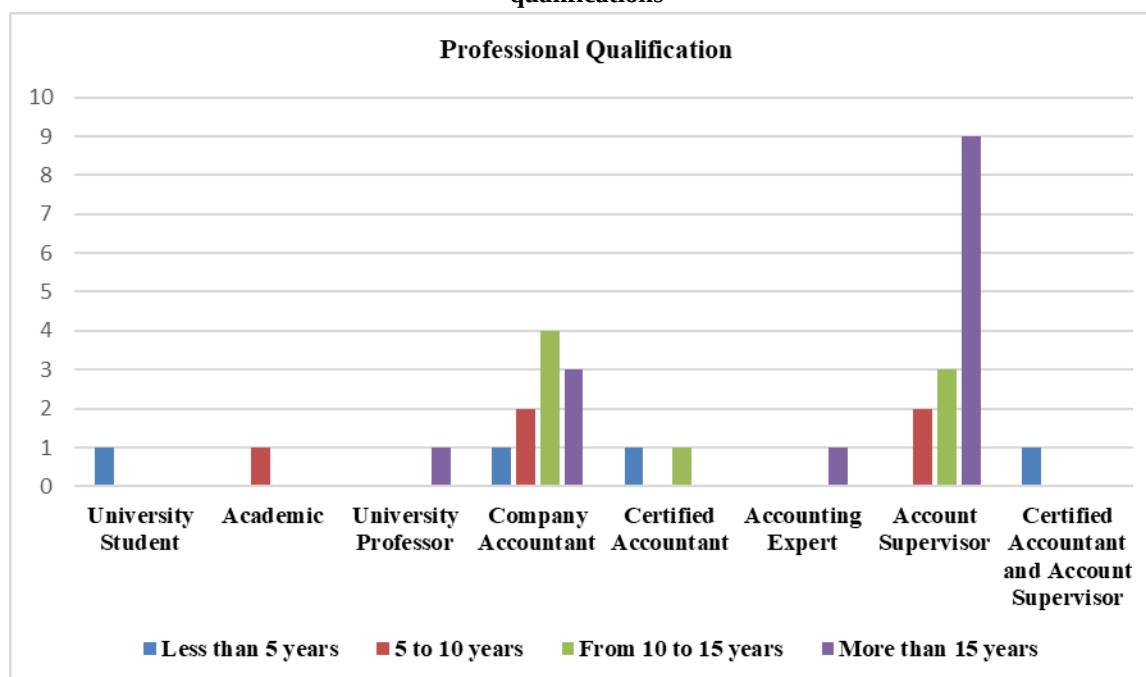
Both Table 01 and Figure 02 provide a description of the study sample, which consists of 31 employees, categorized by age and educational qualification. The majority of financial statement consolidators are between 40 and 50 years of age, totaling 19 individuals, which constitutes 61.3% of the sample. Regarding educational qualifications, 11 individuals hold a Bachelor's degree, followed by 10 with a Master's degree, 9 pursuing a PhD, and, lastly, 1 individual holding a Magister degree.

Table 3. shows the characteristics of the study sample based on professional experience and professional qualification.

Professional Qualification	Professional Experience				Total
	Less than 5 years	5 to 10 years	From 10 to 15 years	More than 15 years	
University Student	1	0	0	0	1
	25.00%	0.00%	0.00%	0.00%	3.20%
Academic	0	1	0	0	1
	0.00%	20.00%	0.00%	0.00%	3.20%
University Professor	0	0	0	1	1
	0.00%	0.00%	0.00%	7.10%	3.20%
Company Accountant	1	2	4	3	10
	25.00%	40.00%	50.00%	21.40%	32.30%
Certified Accountant	1	0	1	0	2
	25.00%	0.00%	12.50%	0.00%	6.50%
Accounting	0	0	0	1	1

Expert	0.00%	0.00%	0.00%	7.10%	3.20%
Account Supervisor	0	2	3	9	14
	0.00%	40.00%	37.50%	64.30%	45.20%
Certified Accountant and Account Supervisor	1	0	0	0	1
	25.00%	0.00%	0.00%	0.00%	3.20%
Total	4	5	8	14	31

Figure 4. illustrates the characteristics of the study sample based on professional experience and professional qualifications



Source: SPSS Program Outputs.

Both Table 03 and Figure 04 describe the study sample of 31 employees based on the variables of professional experience and professional qualifications. The number of financial statement consolidators with over 15 years of experience was the highest at 14 individuals, followed by those with 10 to 15 years of experience at eight individuals, then those with 5 to 10 years of experience at five individuals, and finally, those with less than 5 years of experience at four individuals.

Regarding professional qualifications, Account Supervisors made up the largest percentage at 45.2%, representing 14 individuals from the total sample. They were followed by Company Accountants with 10 individuals, constituting 32.3%. Certified Accountants came next. The remaining categories (University Student, Academic, University Professor, Accounting Expert, and Certified Accountant and Account Supervisor) each consisted of only one individual.

Table 5. shows the quantitative assessment of the sample

Variables	Quantitative Assessment	Assessment Indicator
Educational Qualification	1	Bachelor's Degree
	2	Master's Degree
	3	Magister
	4	PhD
Professional Qualification	1	University Student
	3	Academic

	4	University Professor
	5	Company Accountant
	6	Certified Accountant
	7	Accounting Expert
	8	Account Supervisor
	9	Account Supervisor and Certified Accountant
Age	1	Under 40 years old
	2	40 to 50 years old
	3	50 to 60 years old
Professional Experience	4	Less than 5 years
	1	5 to 10 years
	2	10 to 15 years
	3	More than 15 years

Table 05 illustrates the quantitative assessments that were assigned during the coding process in SPSS. Each variable was given a specific quantitative value, as shown in the table.

- Study Tools: After reviewing several studies related to the research topic, we developed a questionnaire based on the study variables.

7.5.4 Questionnaire Scoring Method:

The participants in the sample answer the statements in the questionnaire by marking an (x) next to one of the options provided for each statement.

Table 6. represents the scores for the statements in the scale measuring addiction to social media use

Questionnaire Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Scores	1	2	3	4	5

Source: SPSS Outputs.

Table 06 represents the scores for the questionnaire statements, wherein a five-point Likert scale, with 1 being the lowest number, is used to score the assertions. We made sure the questionnaire was reliable and valid by:

7.5.5 Internal Consistency Validity:

To determine this type of validity, the questionnaire was administered to the study sample. Based on the results obtained from the participants' responses, the correlation coefficient between the axes and the overall questionnaire score was calculated.

Below is a detailed presentation of the correlation coefficients using Pearson's formula:

Table 7. shows the correlation coefficients between the questionnaire axes and the overall score

Dimensions	First Axis	Second Axis	Third Axis
Parameters			
Correlation Coefficient	0.64	0.88	0.8
Significance Value	0.00**	0.00**	0.00**
Sample Size	31	31	31

Significance Level: 0.01

Source: SPSS Data.

Table 07 indicates the internal consistency validity of the axes. This type of validity focuses on the internal analysis of the test itself, gathering information about the test content, the processes used to respond to its items, and the correlations between these items (Allam, 2006, p. 459). We calculated Pearson's correlation coefficients for each axis, and the analysis provided strong and reliable correlation coefficients ranging between (0.64) and (0.88), all of which are statistically

significant at the 0.01 level. As emphasized by (Tigza, 2009), the average correlation coefficient of an axis should not be less than (0.30) (p. 682).

7.5.5 Questionnaire Reliability:

The reliability of an instrument refers to the consistency of the results obtained. This means that if the instrument is reapplied to the same sample under the same conditions and within a suitable timeframe, the same results should be obtained, indicating the instrument's reliability (Bishta & Bouamoucha, 2020). In this study, we calculated the reliability of the questionnaire using the split-half method.

Table 8. presents the calculation of the questionnaire's reliability using the split-half method

Cronbach's Alpha Coefficient	The first section of the survey	Value	0.52
		Number of Items	13 ^a
	For the second half of the questionnaire	Value	0.86
		Number of Items	12 ^b
	Total Number of Items		
CorrelationCoefficient between the Two Halves	0.56		
Spearman-Brown Correction Coefficient	When the quantity of objects is identical		0.71
	When there are an uneven amount of objects		0.71
Guttman Correction Coefficient	0.71		

Source: Based on SPSS data.

Table 08 presents the reliability values of Cronbach's Alpha coefficient for the questionnaire, where the reliability was calculated using the split-half method. This method relies on dividing the required test after it is administered to a single group. There are various ways to split the test: some use the first half versus the second half, while others use odd-numbered items versus even-numbered items. The calculation was done using statistical software, and the reliability coefficients obtained are shown in the following table.

- Represents items from statement 01 to statement 13
- Represents items from statement 14 to statement 25

Table 08 shows the results of the questionnaire's reliability calculated using the split-half method, where the software divided the questionnaire into two sections. The first section included the initial items of the questionnaire consisting of 12 statements, while the second section contained the remaining items. The Cronbach's Alpha reliability coefficient for the first section was (0.52), while for the second section it was (0.86). The software also calculated the correlation coefficient between them—using Pearson's *r*—which amounted to (0.56). This was then subjected to the Spearman-Brown correction coefficient, which resulted in a value of (0.71). Since the Cronbach's Alpha values for the two halves were consistent, we relied on the Spearman-Brown correction, which was confirmed by the Guttman correction coefficient of (0.71). From this, we conclude that the obtained value is good, indicating that the questionnaire has acceptable reliability.

7.5.6 Hypothesis Testing:

A. Testing the First Hypothesis:

The hypothesis suggests that digital transformation contributes to enhancing the accuracy and transparency of financial reports. To test this hypothesis, we applied the Relative Importance Index (RII) to measure the response related to evaluating each variable. This method has been used in most studies to generally determine the importance of variables and has been applied in various types of surveys. It is also known as a common method for generating variable scores (Akadiri,

2011). It calculates each item's relative value using the Likert scale. In addition to using a five-point Likert scale with 1 being strongly disagree, 2 being disagree, 3 being neutral, 4 being agree, and 5 being strongly agree, the digital transformation variable was measured using the Relative Importance Index (RII).

Equation 1 provides the formula used to determine the relative index (Waris, Liew, Khamidi, & Idrus, 2014).

$$RII = \frac{\sum W}{A * N} = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{5 * N}$$

Where:

- W: is the weight that participants give each item, with 1 denoting the least relevance (strongly disagree) and 5 denoting the most significance (strongly agree).
- A: is the highest weight (5 on the five-point Likert scale).
- N: is the total number of people who responded.

According to (Akadiri, 2011), the level of significance is as follows:

Table 9. Represents the (RII) estimates

(RII) Values	Level of Importance	Code
$0.80 \leq RII \leq 1$	High	High
$0.60 \leq RII \leq 0.80$	Between Average and High	Between Average and High
$0.40 \leq RII \leq 0.60$	Average	Average
$0.20 \leq RII \leq 0.40$	Between Low and Average	Between Low and Average
$0 \leq RII \leq 0.20$	Low	Low

According to (Allam, 2006) and (Akadiri, 2011), Table 05 presents the levels of the Relative Importance Index (RII). Five significant levels are derived from RII values, which are as follows:

- High ($0.80 \leq RII \leq 1$)
- Medium High ($0.6 \leq RII \leq 0.8$)
- Medium ($0.4 \leq RII \leq 0.6$)
- Medium Low (M - L) ($0.2 \leq RII \leq 0.4$)
- Low ($0 \leq RII \leq 0.2$)

Table 10. Relative Importance Index for the Statements of the First Axis

Statements	RII	Rank by Axis	Overall Rank	Level of Importance
The parent company selects the appropriate consolidation method.	0.89	2	6	High
Unification of accounting policies among subsidiaries is a fundamental requirement in the consolidation process.	0.89	3	7	High
Identifying the subsidiaries within the consolidation scope is a fundamental requirement in the consolidation process.	0.84	6	18	High
Unification of accounting methods stipulated in the financial accounting system is a fundamental requirement in the consolidation process.	0.9	1	3	High
A crucial step in creating consolidated financial statements is standardizing asset appraisal and depreciation procedures.	0.87	5	12	High
Unification of inventory valuation methods is mandatory in the preparation of consolidated financial statements.	0.82	7	22	High

The parent company discloses all contracts concluded within the framework of simple partnerships.	0.82	8	23	High
The internal account reconciliation aims to eliminate accounts related to receivables, sales, and internal services from consolidation accounts.	0.77	9	24	Between Average and High
Exclusion of inter-company transactions at the balance sheet level and at the level of the income statement accounts does not affect the consolidated result.	0.64	10	25	Between Average and High
All relevant information that enables a precise evaluation of the scope, assets, financial status, and performance of the group made up of the included firms is disclosed by the parent company in the consolidated financial statements' annexes.	0.89	4	8	High

Table 10 illustrates the Relative Importance Index (RII) of the questionnaire statements, along with their ranking and level of importance. From the "Overall Rank" column, it is evident that eight criteria were identified as having "High" levels of importance, which are considered crucial in the contribution of digital transformation to enhancing the accuracy and transparency of financial reports. These "highly important" indicators have an RII ranging from 0.64 to 0.90, with the fourth statement—regarding the unification of accounting methods stipulated in the financial accounting system as a fundamental requirement in the consolidation process—ranking first. This was followed by the statement that asserts the parent company's selection of the appropriate consolidation method, with an importance index of 0.89.

In third place was the second statement, which notes that the unification of accounting policies among subsidiaries is a fundamental requirement in the consolidation process. The tenth statement occupied fourth place, emphasizing that the parent company adheres to disclosure in the annexes of consolidated financial statements regarding all significant information that enables an accurate assessment of the consolidation scope, assets, financial position, and results of the group composed of the included entities, with an importance index of 0.89. The remaining statements were also found to have a high level of importance, except for the eighth and ninth statements, which indicated a moderate-to-high level of importance.

From the above, we can conclude that most indicators suggest that digital transformation significantly contributes to enhancing the accuracy and transparency of financial reports. To confirm this, we calculated the mean response of the participants using the five-point Likert scale (1, 2, 3, 4, 5). The data was coded and entered into SPSS, and the length of the five-point Likert scale intervals (upper and lower limits) was calculated. The range ($4 = 1-5$) was divided by the number of intervals to determine the correct interval length, which is ($0.80 = 4/5$). This value was then added to the lowest value in the questionnaire to determine the upper limit of each interval. Consequently, the interval lengths are shown in the table below.

Table 11. Represents the standard adopted in the study

Interval Length	Interval Length × Number of Statements	Standard Deviation	Mean	Level
From 01 ---- 1.79	10----17.9	0.39	41.6	Very Low
From 1.80 ---- 2.59	18----25.9			Low
From 2.60 ---- 3.39	26----33.9			Average
From 3.40 ---- 4.19	34----41.9			High
From 4.20 ---- 05.00	42----50			Very High

Source: Adapted from (Pimentel, 2010, p. 111).

Table 11 illustrates the standard used to determine the degree of variables. If participants score between 10 and 17.9 in their responses, we consider this level as "very low," indicating that digital transformation does not significantly contribute to enhancing the accuracy and transparency of financial reports. When the score ranges between 18 and 25.9, it reflects a "low" level, followed by a "medium" level ranging from 26 to 33.9, a "high" level between 34 and 41.9, and finally a "very high" level when the score exceeds 42.

Upon calculating the average response of the participants on all statements within this axis, we obtained a mean score of 41.6 with a standard deviation of 0.39. This value falls within the "high" level, leading us to conclude that digital transformation significantly contributes to enhancing the accuracy and transparency of financial reports.

B. Testing the Second Hypothesis:

The hypothesis suggests that digital transformation contributes to speeding up the preparation of consolidated financial reports. To test this hypothesis, we applied the Relative Importance Index (RII) to measure the response related to evaluating each variable. The following table presents these results.

Table 12. Relative Importance Index for the Statements of the Second Axis

Statements	RII	Rank by Axis	Overall Rank	Level of Importance
Acquiring a high level of knowledge among financial statement consolidators regarding digital transformation.	0.8	7	19	High
Using digital transformation tools and integrated management software aids in the consolidation of financial statements.	0.9	4	5	High
Artificial intelligence has helped in developing integrated management software used in the consolidation of financial statements.	0.8	8	20	High
The impact of digital transformation on the accuracy and speed of consolidation operations for financial statements.	0.9	2	2	High
One of the concerns of digital transformation in financial statement consolidation practices is exposure to cyber-attacks.	0.8	9	21	High
Financial statement consolidators face significant challenges when using digital transformation tools.	0.9	6	16	High
Digital transformation in financial statement consolidation practices contributes to saving time and reducing costs.	0.9	3	4	High
Cloud-based software facilitates communication between financial statement consolidation teams and allows remote work with high efficiency.	0.9	5	11	High
Financial statement preparers need continuous training to enhance their skills in using digital transformation tools.	0.9	1	1	High

Table 12 presents the Relative Importance Index (RII) of the questionnaire statements, along with their ranking and level of importance. The "Overall Rank" column shows that all criteria were confirmed to have "High" levels of importance, indicating that digital transformation plays a crucial role in accelerating the preparation of the group's financial reports. These "highly important" indicators have an RII ranging from 0.83 to 0.92.

The ninth statement, which states that financial statement preparers need continuous training to enhance their skills in using digital transformation tools, ranked first. This was followed by the statement asserting that digital transformation affects the accuracy and speed of financial statement

consolidation operations, with an importance index of 0.91. The third position was held by the statement indicating that digital transformation contributes to saving time and reducing costs in financial statement consolidation practices, with an importance index of 0.90. The remaining statements were also found to have a high level of importance.

Therefore, we conclude that most indicators suggest that digital transformation significantly contributes to accelerating the preparation of the group's financial reports. To confirm this, we calculated the mean response of the participants, as shown in the table below.

Table 13. Represents the standard adopted in the study

Interval Length	Interval Length × Number of Statements	Standard Deviation	Mean	Level
From 01 ---- 1.79	09----16.11	0.4	39.24	Very Low
From 1.80 ---- 2.59	16.2----23.31			Low
From 2.60 ---- 3.39	23.4----30.51			Average
From 3.40 ---- 4.19	30.6----37.71			High
From 4.20 ---- 05.00	37.8----45			Very High

Source: Adapted from (Pimentel, 2010, p. 111).

Table 13 illustrates the standard we adopted in determining the degree of variables. If participants scored between 09 and 16.11 in their responses, we consider this level as "very low," indicating that digital transformation does not significantly contribute to accelerating the preparation of consolidated financial reports. When the score ranges from 16.2 to 23.31, it reflects a "low" level, followed by a "medium" level ranging from 23.4 to 30.51, a "high" level between 30.6 to 37.71, and finally a "very high" level when the score exceeds 37.8.

Upon calculating the average response of participants to all statements within this axis, we obtained a mean score of 39.24 with a standard deviation of 0.40. This value falls within the "high" level, indicating that digital transformation significantly contributes to accelerating the preparation of consolidated financial reports.

C. Testing the Third Hypothesis:

The hypothesis suggests that digital transformation contributes to decision-making and reduces human errors. To test this hypothesis, we applied the Relative Importance Index (RII) to measure the response related to evaluating each variable. The following table presents these results.

Table 14. Relative Importance Index for the Statements of the Third Axis

Statements	RII	Rank by Axis	Overall Rank	Level of Importance
Digital tools reduce human errors in data entry and processing, increasing the accuracy of consolidated financial reports	0.86	3	13	High
Technology enables the preparation of high-quality and credible consolidated financial reports, allowing sound decisions to be made at the right time	0.86	4	14	High
Consolidated financial reports allow for economic forecasting of the group's future	0.88	1	9	High
Digital tools help provide consolidated financial reports with a high level of reliability	0.86	5	15	High
Digital systems ensure the possibility of real analysis of economic events through consolidated financial reports	0.85	6	17	High
Decision-makers in the group's subsidiaries are influenced by the caliber of consolidated financial reports.	0.88	2	10	High

Table 14 presents the Relative Importance Index (RII) of the questionnaire statements, along with their ranking and level of importance. From the "Overall Rank" column, it is evident that all criteria were confirmed to have "High" levels of importance, indicating that digital transformation plays a crucial role in accelerating the preparation of consolidated financial reports. These "highly important" indicators have an RII ranging from 0.85 to 0.88.

The statement indicating that consolidated financial reports allow for forecasting the future of the economic group ranked first, followed by the statement asserting that the quality of consolidated financial reports influences decision-makers in the group's subsidiaries, with an importance index of 0.88. The third position was held by the statement that digital tools reduce human errors in data entry and processing, thereby increasing the accuracy of consolidated financial reports, which has an importance index of 0.86. The remaining statements also demonstrated a high level of importance.

From this, we conclude that most indicators suggest that digital transformation significantly contributes to decision-making and reducing human errors. To confirm this, we calculated the mean response of the participants, as shown in the table below.

Table 15. Represents the standard adopted in the study

Interval Length	Interval Length × Number of Statements	Standard Deviation	Mean	Level
From 01 ---- 1.79	06----10.74	0.49	26.04	Very Low
From 1.80 ---- 2.59	10.8----15.54			Low
From 2.60 ---- 3.39	15.6----20.34			Average
From 3.40 ---- 4.19	20.4-----25.14			High
From 4.20 ---- 05.00	25.2----30			Very High

Source: Adapted from (Pimentel, 2010, p. 111).

Table 15 illustrates the standard we adopted in determining the degree of variables. If participants scored between 06 and 10.74 in their responses, we consider this level as "very low," indicating that digital transformation does not significantly contribute to decision-making and reducing human errors. When the score ranges from 10.8 to 15.54, it reflects a "low" level, followed by a "medium" level ranging from 15.6 to 20.34, and then a "high" level between 20.4 and 25.14. Finally, a "very high" level is indicated when the score exceeds 25.2.

Upon calculating the average response of participants to all statements within this axis, we obtained a mean score of 26.04 with a standard deviation of 0.49. This value falls within the "high" level, leading us to conclude that digital transformation significantly contributes to enhancing decision-making.

Through the results of the sub-hypotheses, we affirm the main hypothesis that digital transformation significantly contributes to improving the quality of the group's financial reports.

8. Discussion of Results:

The first hypothesis was verified, stating that digital transformation contributes to enhancing the accuracy and transparency of the group's financial reports. The second hypothesis, which posits that digital transformation accelerates the preparation of financial reports for the group, and the third hypothesis, asserting that digital transformation aids in decision-making and reduces human errors, were also confirmed.

These results align with previous studies in terms of findings but differ in the study's focus on the quality of reports within the group.

From the above, it can be concluded that digital transformation contributes to improving the quality of the group's financial reports by enhancing accuracy and transparency, accelerating the preparation of financial reports, aiding in decision-making, and reducing human errors.

9-Conclusion:

Digital transformation in the practices of consolidating financial statements represents a significant development in the field of accounting and finance, as it contributes to improving the efficiency and quality of financial reports for groups. This study has shown that digital transformation not only accelerates the preparation of financial statements and reduces human errors but also enhances data transparency and analyzability. This supports decision-makers in achieving more accurate and effective insights. However, challenges related to cybersecurity and the costs associated with adopting digital technologies remain obstacles for some institutions, necessitating the development of effective strategies to overcome them.

9.1 Future Research Directions:

In light of the continuous advancement of technology, there is a need for future studies to explore several dimensions, such as:

- The effect of machine learning and artificial intelligence methods on financial prediction accuracy and error reduction.
- Big data's contribution to enhancing financial reports' quality and offering more thorough information.
- Analyzing the impact of digital transformation on the performance of external auditors and their ability to adapt to new technologies in auditing financial statements.
- Investigating the cultural and organizational factors that influence the adoption of digital transformation in various business environments.
- Assessing the environmental impact of digital transformation in terms of energy consumption and sustainability within accounting systems.

Ultimately, digital transformation is a fundamental pillar for improving the quality of financial reports and requires integration between technology and regulatory policies to ensure the realization of the desired benefits.

Bibliography List:

- Al-Dulaimi, A., Saleh, H., & Ali, A. R. (2014). *Scientific Research: Its Foundations and Methodologies*. Amman: Dar Al-Ridwan for Publishing and Distribution.
- Allam, R. A. (2006). *Research Methods in Psychological and Educational Sciences* (5th ed.). Cairo: Dar Al-Nashr for Universities.
- Bishta, H., & Bouamoucha, N. (2020). Truth and Stability in Social Research. *Journal of Studies in Human and Social Sciences*, 03(02), 03-02.
- consolidated financial statements in accordance with international accounting standards and the financial accounting system a filed study at the tahrawi complex BISKRA2022*economic visions magazine* 13(02)186-205
- Delahma, s. m. (2016). the impact of accounting information systems in reducing the cost of service in five star hotels in jordan a filed study. *jounal for administrative and economic research and studies*,02(05), 179.

- 2011 *Development of a Multi-Criteria Approach for the Selection of Sustainable Materials for Building Projects* University of Wolverhampton
- Ergen, m. (2019). what is artificial intelligence? technical consideration and future perception. *anatol j. cardiol* 22(2), 5-7.
- Froufe, s. (2015). contrubution to the management of logistical risks of the evolution of integrated information systems such as ERP. *management doctoral school NIMEC LE HAVRE*, 14-15.
- Khaira, c., & khlouf, z. (2023). digital transformtion in algeria. *journal of accounting, auditing and finance* 05(01), 3-17.
- Madahi, o. (2012). objectives of financial statments. *al iqtisad magazine al jadeed* (07), 52.
- Pimentel, L. J. (2010). A Note on the Usage of Likert Scaling for Research Data Analysis. 18(2), pp. 109-112. Retrieved from <https://www.researchgate.net/publication/331950617>
- Sarhan, B. (2017). *Quantitative Social Research Methods* (1st ed.). Qatar: Arab Center for Research and Policy Studies.
- the impact of introducing artificial intelligence applications on electronic accounting software study filed 2022 *new economy journal* 13(02)760
- Tigza, M. (2009). The Logical Structure of Cronbach's Alpha Coefficient and Its Accuracy in Estimating Reliability in Light of Measurement Model Assumptions. *Journal of King Saud University for Educational Sciences and Islamic Studies*(21), 637-688. Retrieved from <https://jes.ksu.edu.sa/sites/jes.ksu.edu.sa/files/0021-03-01.pdf>
- Waris, M., Liew, M. S., Khamidi, M. F., & Idrus, A. (2014). Criteria for the Selection of Sustainable Onsite Construction Equipment. *International Journal of Sustainable Built Environment*, 3(1), 96-110. doi:<http://dx.doi.org/10.1016/j.ijbsbe.2014.06.002>