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The impact of business intelligence tools on sustaining financial report quality in Jordanian commercial banks

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ABSTRACT

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The objective of this study was to showcase the influence of Business Intelligence (BI) tools, such as Online Analytical Processing (OLAP), Extract, Transform, Load (ETL) processes, Data Mining (DM), Relational Database Management Systems (RDBMS), and Document Management Systems (DMS), on maintaining the quality of financial reports in Jordanian commercial banks listed on the Amman Stock Exchange. Two approaches were employed to achieve the research objectives: a descriptive-analytical approach involving the development of a questionnaire to gather primary data on the independent variables associated with BI tools (OLAP, ETL, DM, RDBMS, DMS), and an applied approach to evaluate the dependent variable represented by the sustainability of financial report quality, utilizing the financial statements of commercial banks listed on the Amman Stock Exchange from (2016 to 2021). Data analysis and hypothesis testing were conducted using statistical software (SPSS) through multiple regression analysis. The results of the statistical data analysis and input from the research community indicated that the sustainability of financial report quality, as a valuable asset for banks, relies on the utilization of Business Intelligence tools. IT professionals in commercial banks perceive a statistically significant impact of BI tools on maintaining the quality of financial reports. Consequently, the management of commercial banks listed on the Amman Stock Exchange should prioritize the effective utilization of Business Intelligence tools, as their potential lies in aiding the accounting process to achieve its objectives, which ultimately contribute to the sustainability of financial reports. By employing these tools accurately and efficiently in accounting practices, all stages of the accounting process can be influenced, enabling the transformation of available data into information that benefits decision-makers both internally and externally within the banking environment.

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1. Introduction

Undoubtedly, Business Intelligence (BI) tools have profoundly influenced all aspects and operations of productive, organizational, administrative, and strategic business entities, yielded various benefits and returned in terms of increased return on investment and stakeholder engagement with the economic unit (Basile et al., 2023). These outcomes are instrumental in ensuring their longevity and reinforcing the attributes that sustain the quality of financial reports and the associated data and information. In the present landscape, the accounting system cannot fulfil its role as an asset for banks without relying on and utilizing Business Intelligence tools, which play a critical and impactful role in achieving the sustainability of accounting activities throughout the identification, measurement, operational, and reporting stages (Mariani et al., 2018).

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By embracing Business Intelligence tools, commercial banks can realize their objectives, enhance their data management processes, streamline processing, transform raw data into meaningful information, and facilitate sorting, retrieval, and disclosure (Alshehadeh et al., 2023). This, in turn, undoubtedly contributes to the sustained effectiveness of accounting activities, especially in terms of the quality of disclosure processes in financial reports (Dadkhah & Lagzian, 2018). Consequently, this study aims to exemplify the influence of Business Intelligence tools on maintaining the quality of financial reports within the realm of commercial banks listed on the Amman Stock Exchange (Sari, 2022).

2. Study Problem

The accounting profession is presently confronted with a multitude of challenges, difficulties, and inherent obstacles that can potentially lead to failure (Alshehadeh et al., 2023). These challenges pertain to the identification, measurement, and disclosure processes within the accounting unit, despite the wealth of historical knowledge encompassing conceptual frameworks, procedural applications, local and international accounting standards, rules, and policies that professionals in the field have been acquainted with since the inception of accounting (Musa et al., 2019). As highlighted in several studies, these challenges stem from the personal nature and subjective judgment involved in the accounting process (Brooks et al., 2015). Furthermore, the diverse range of stakeholders benefiting from the economics of the accounting unit often possesses conflicting interests (Caseiro & Coelho, 2018). Additionally, there is a lack of control over the inherent flaw in the accounting disclosure process, which involves an excessive accumulation of information in financial reports, while Business Intelligence tools have proven effective in assisting financial data users in analysis, research, interpretation, and data preparation for decision-makers (Patriarca et al., 2022). Undoubtedly, there is considerable interest in utilizing Business Intelligence tools within the accounting process. However, this interest and utilization have predominantly focused on the tangible material aspects, such as procuring software and technological applications, rather than developing effective methods for managing and harnessing the intelligent capabilities provided by this software in the processes of identification, measurement, and data restructuring (Alkhatib et al., 2018; Saif, 2022). Such developments can fundamentally transform the foundations of the accounting process and ensure the sustainability of financial report quality (Zheng et al., 2018). Therefore, this study aims to address the following inquiries:

1. What is the impact of Online Analytical Processing (OLAP) systems, as Business Intelligence tools, on sustaining the quality of financial reports in commercial banks listed on the Amman Stock Exchange?
2. What is the influence of Data Warehousing (DWH) solutions, as Business Intelligence tools, on maintaining the quality of financial reports in commercial banks listed on the Amman Stock Exchange?
3. How do Data Mining (DM) techniques, as Business Intelligence tools, contribute to the sustainability of financial report quality in commercial banks listed on the Amman Stock Exchange?
4. How do Relational Database Management Systems (RDBMS), as Business Intelligence tools, affect the sustainability of financial report quality in commercial banks listed on the Amman Stock Exchange?
5. What is the role of Document Management Systems (DMS), as Business Intelligence tools, in sustaining the quality of financial reports in commercial banks listed on the Amman Stock Exchange?

3. Theoretical Framework and Previous Studies

3.1 Business Intelligence Tools in Accounting

Business Intelligence tools in the accounting domain refer to the application of Business Intelligence software to mitigate biases in personal accounting measurements and promote objectivity in managing accounting data (Musa et al., 2019). This enables the generation of fair and high-quality information pertaining to organizational activities, with reliable data available in diverse formats to cater to the requirements of internal and external stakeholders. These tools also aid in analyzing, researching, interpreting, and preparing data for decision-making, harnessing acquired expertise to enhance the quality of the industry and decision-making processes (Zheng et al., 2018). In the pursuit of maintaining competitiveness, if not enhancing it, banks are currently faced with the challenge of finding innovative approaches to attract stakeholders interested in their economic activities, as this is crucial for sustainability. This demanding task necessitates prompt, accurate, and decisive decision-making in response to unforeseen and unpredictable changes (Alsous, 2022; Brooks et al., 2015). Commercial banks find themselves under tremendous pressure from competitors and the dynamics of the market. The accounting activity and the information it provides play a fundamental role in managing these pressures and mitigating associated risks.

Therefore, the significance of Business Intelligence tools becomes apparent as they assist in comprehending the prevailing work environment characterized by fierce competition and rapid transformations (Musa et al., 2019). These tools enable real-time monitoring and anticipation of future trends within the accounting realm, with the aim of achieving comprehensive quality in accounting activities (Caseiro & Coelho, 2018). They contribute to improving the positioning of business entities

within the work environment, or at the very least, sustaining their competitiveness (Guarda et al., 2012). Considering the above, it can be affirmed that the utilization of Business Intelligence tools in accounting activities can drive the development of procedural and conceptual frameworks within the accounting profession, both internally and externally. These tools hold a crucial position at various organizational levels, fostering integration and alignment between the internal and external facets of the bank's environment (Patriarca et al., 2022).

3.2 *Quality Dimensions of Financial Report Quality*

Attaining quality in financial reports relies on the quality of every component within the accounting system. The all-encompassing notion of quality encompasses the quality aspects of each element in the accounting system, comprising design quality and conformity quality (Yee et al., 2021).

1. **Design Quality:** This encompasses elements that impact inputs and operational processes concerning those inputs. These elements encompass the capacity to employ standardized and fitting accounting methods and regulations tailored to the accounting unit's activities. It also involves making significant adjustments to the framework of accounting measurement in response to events, circumstances, and operations transpiring in both the internal and external environment of the accounting unit.
2. **Conformity Quality:** This centers on the operational process of accounting events, particularly the selection of appropriate policies, procedures, and accounting rules through which accounting data and information are processed and restructured to meet the needs of end-users.
3. **Performance Quality:** This quality dimension is a culmination of both design and conformity qualities. It pertains to elements that are indispensable to the users of the accounting system's outputs. Performance quality should result in a transformation of the required information's nature from historical to future-oriented and predictive information. It also involves a shift from detailed information to summarized information linked to decision-making, varying levels of information based on the managerial level within the accounting unit's environment, and diversity in disclosure and presentation elements.

3.3 *Business Intelligence Tools*

According to Bister (2015), Business Intelligence tools encompass data integration tools such as extraction, transformation, loading, data warehouses, real-time analytical processing systems, data mining, and information display techniques, as defined by Mesaros et al. (2016). Regarding extraction, transformation, loading, data warehouses, information display techniques, and data mining, there is a consensus on the classification of Business Intelligence tools, which will be clarified based on current research directions as follows (Zheng et al., 2018).

1. **Online Analytical Processing (OLAP) Systems:** This tool represents one of the most advanced tools that gather information from various internal and external sources for analysis and extraction of useful insights. OLAP systems enable timely analysis of data stored in databases. They incorporate specialized algorithms and indexing tools to efficiently address data mining challenges and extract knowledge. Additionally, other analysis tools allow managers to explore data from multiple perspectives and uncover hidden insights for users (Guarda et al., 2012).
2. **Extraction, Transformation, and Loading (ETL) Processes:** ETL solutions involve three distinct stages, including sourcing and transforming data from various sources and loading the output into data warehouses. The third stage of ETL comprises (Figalst et al., 2022):
 - **Extraction Stage:** This stage involves obtaining and accessing data from diverse sources, often heterogeneous and distributed across multiple platforms. These sources can be part of the customer information system.
 - **Transformation Stage:** Here, data is converted into information. It is one of the most intricate stages in the ETL processes. Data is transformed into the desired format within the data warehouse. Typically, transformation is performed using traditional programming languages, scripting languages, or structured query language (SQL).
 - **Loading Stage:** In this stage, the transformed data, along with the collected and filtered data, is loaded into data warehouses.
3. **Data Mining (DM):** The primary goal of data mining is knowledge discovery, which requires a substantial amount of reliable data. Data mining integrates statistics, information technology, databases, artificial intelligence, and machine learning. It encompasses methods and techniques for generating information and knowledge from large volumes of data, linking it to practical approaches to derive new information or knowledge (Musa et al., 2019).

4. **Relational Database Management System (RDBMS):** Relational databases are a type of database that stores and provides access to interconnected data stores. They directly represent data in tables, where each row is a unique record referred to as a key. The table's columns contain data attributes, and each record typically has a value for each attribute, facilitating the establishment of relationships between data points. Relational databases feature user-friendly table formats, enhancing ease of use. Data access and organization are structured using a natural structure. Database queries easily determine the location of matching entries. Multiple users can simultaneously access a single database while updating or modifying data. Users can benefit from built-in locking functions and transaction management to access data, mitigating potential disruptions between multiple users and preventing access to partially updated or in-use data (Al-Shahadah et al., 2023).
5. **Document Management System (DMS):** A Document Management System establishes a valuable repository for an organization's assets and information, fostering knowledge creation, improving decision-making processes, enhancing collaboration, and increasing organizational productivity through shared practices and better relationships with customers and beneficiaries. Some features of a Document Management System include (Figalist et al., 2022):
 - **Archiving:** Archiving internal and external electronic documents and consolidating documents from multiple sources into a single location.
 - **Collaboration:** The Document Management System allows for assigning and sharing documents with employees and groups for simultaneous collaboration and work.
 - **Discussions and Tasks:** The Document Management System enables discussions among system participants and the assignment of activities and tasks related to the document.

3.4 *Business Intelligence Tools for Ensuring the Sustainable Quality of Financial Reports*

The success of any system utilizing business intelligence tools relies on the accuracy, quality, validity, and timeliness of the utilized information and data. These data and information can originate from sources external to banks, in addition to data extracted from the accounting system (Safwan et al., 2016). Business intelligence tools encompass a broad field that includes various types of software. These tools collaborate to form an intelligent system that aids banking institutions in developing their current capabilities to implement and enhance their existing strategy, ultimately achieving their goals (Alshehadeh et al., 2023a). There are numerous areas where business intelligence tools find application in the field of accounting, such as understanding the preferences and requirements of internal and external stakeholders concerning information and data, as well as the nature of financial and non-financial indicators that should be reflected in financial statements and reports. Several examples of these applications include generating reports for financial resource planning, identifying key performance indicators, determining the most profitable products, calculating product cost per unit, conducting sales analysis, sales forecasting, and segmenting sales based on specific categories. All these aspects can be known not only at the end of the accounting cycle but also throughout it (Jebril et al., 2023; Figalist et al., 2022). The power of utilizing business intelligence tools in the accounting process lies in their contribution to achieving measurement and disclosure objectives. Proper and effective utilization of these tools in accounting impacts all stages of the process, transforming available data into valuable information for decision-makers in the internal and external banking environment. This enables higher-quality and timely decision-making based on the analysis of this information, ultimately benefiting the business and improving performance (Arnott & Pervan, 2014). Over the years, business intelligence tools have significantly enhanced accounting activities. While not new to accounting, recent advancements have revolutionized all aspects of accounting functions, including financial measurement and disclosure (Calof et al., 2017; Buabbas, 2022). The importance of business intelligence tools in the data extraction process, transforming it into a suitable format, and loading it into the data warehouse is evident. The utilization of data mining and information tools empowers users to create diverse reports tailored to their needs, making them more effective and beneficial. Furthermore, the system's pre-built reports further enhance effectiveness and usefulness (Bregar, 2022). There exists a synergy between business intelligence tools and the achievement of financial reporting quality (Goel, 2021; Alshebli, 2022).

3.4.1 *In terms of input*

Business Intelligence tools have introduced a variety of novel tools and methods for processing data. These tools encompass identification, input methods, collection, sorting, tabulation, and linking of accounting process elements, facilitated by pre-existing software that can be utilized across all stages of the accounting process. Data mining systems, integrated within Business Intelligence tools, enable the processing of vast amounts of accounting data (Gendron, 2014). The implementation of Business Intelligence tools at the input level of the accounting system has resulted in (Alaskar & Efthimios, 2015; Al-Shahadah et al., 2023):

1. The ability to employ new accounting methods and rules, particularly for measuring accounting events, both internal and external (such as the social impact of accounting activities) and acquiring objective data regarding the external environment.
2. Impacting the quality of accounting performance by directly or indirectly reducing errors and discrepancies in data input processes, both on a collective and individual basis.
3. Influencing the quality of inputs, especially random inputs into the system directly affects the system's efficiency and its capacity to provide data and information that fulfil the needs of internal and external users.
4. Decreasing the cost of obtaining information and data, which serve as inputs to the system, through direct data input tools and mechanisms.
5. Minimizing errors through precise accuracy in accounting and computational processes, alongside automated data collection and storage capabilities, as well as maintaining comprehensive records of accounting operations.
6. Enhancing flexibility through the accounting system's adaptability in capturing all events and processes transpiring in the organization's environment, transitioning from solely quantitative cash measurements to encompassing quantitative and descriptive measurements of operations and events.
7. Mitigating biases in accounting measurements, whether stemming from standardized processes or the selection of measurement tools.

3.4.2 In terms of operational processes

Utilizing Business Intelligence tools for accounting operations has become cost-effective and efficient. This has had a positive impact on performance and increased returns on activities by enabling the accounting system to collect and process data systematically, generating valuable information for both internal and external users. Additionally, Business Intelligence tools have transformed the role of accounting and accountants, elevating them from mere record-keepers and processors of business strategies to vital contributors to the success of banks (Bregar, 2022). They now provide data that effectively supports the management of financial institutions (Gendron, 2014). Accountants, empowered by Business Intelligence tools, have become more efficient and effective decision-makers, utilizing their experience and competence to conduct logical analysis and manage financial information (Goel, 2021). They play an active and influential role in shaping the decision-making strategy within the banking institution (Yee et al., 2021; Aldegheishem & Alzamil, 2022).

3.4.3 In terms of the output

Using Business Intelligence tools has brought about diversification in information levels based on the managerial hierarchy within the accounting unit's environment. It has also resulted in a transformation of the quality and structure of the generated information, shifting from historical data to predictive information and from detailed information to summarized data linked to decision-making (Alaskar & Efthimios, 2015). Moreover, there is diversity in the methods of presenting and delivering information across different periods (Arnott & Pervan, 2014). The availability of accurate information in a timely manner, facilitated by Business Intelligence software, saves valuable time for decision-makers. This utilization of Business Intelligence tools has led to the production of higher-quality, accurate, well-formatted, timely, and relevant reports (Goel, 2021). These reports assist internal and external stakeholders in making informed decisions at the right time, ensuring their proper application (Al-Shahadah et al., 2023).

4. Methodology

To ensure the accuracy and reliability of the findings, a sample of all 15 commercial banks listed on the Amman Stock Exchange was selected as the study population. The independent variable of the study consisted of Business Intelligence tools, including OLAP, ETL, DM, RDBMS, and DMS. The dependent variable focused on the sustainability of financial reports for the listed commercial banks. The research employed a descriptive-analytical approach, utilizing a questionnaire to collect primary data related to the measurement of the independent variable. The questionnaire consisted of two parts: the first gathered general information about the respondents, and the second consisted of 25 items related to the elements of Business Intelligence tools (OLAP, ETL, DM, RDBMS, DMS). For measuring the dependent variable, financial statements of the commercial banks listed on the Amman Stock Exchange from 2016 to 2021 were utilized. Income smoothing, a commonly used indicator of financial report quality, was measured based on the model developed by Francis et al. (2004). This model employs the ratio of cash flow variability to earnings variability to assess income smoothing (SI). The equation used is as follows:

$$SI_{j,t} = \sigma_j (NI_{j,t} / Total Assets_{j,t}) / \sigma_j (CFO_{j,t} / Total Assets_{j,t}) \quad (1)$$

In Eq. (1), $SI_{j,t}$ represents the degree of income smoothing for company (j) in period (t), σ_j represents the standard deviation, $NI_{j,t}$ represents the net income of company (j) before extraordinary items in period (t), $CFO_{j,t}$ represents the operating cash flow of company (j) in period (t), and $Total\ Assets_{j,t}$ represents the total assets of the previous year for company (j) in period (t). Higher values of the income smoothing indicator (SI) indicate a lower level of income smoothing, reflecting management's non-manipulation of accounting income values and the presence of qualitative characteristics (relevance, reliability, comparability) indicating the quality of financial reports.

To achieve the study objectives, the following steps were taken after obtaining the reports and financial statements of the selected banks:

Step 1: Classification of banks into income smoothing and non-income smoothing categories based on the model by Francis et al. (2004). Six banks from the sample population were identified as engaging in income-smoothing practices.

Step 2: Assigning a binary code to each bank, with income-smoothing banks assigned a code of 1 and non-income-smoothing banks assigned a code of 0.

Data analysis and hypothesis testing were conducted using the statistical program SPSS through multiple regression analysis. The multiple regression model for testing is represented by the following equation:

$$SI_{it} = \beta_0 + \beta_1 OLAP_{it} + \beta_2 ETL_{it} + \beta_3 DM_{it} + \beta_4 RDBMS_{it} + \beta_5 DMS_{it} + \varepsilon_{it} \quad (2)$$

where:

ε_{it} represents the random error.

β represents the regression coefficients.

β_0 represents the constant part of the regression equation.

5. Hypothesis Testing:

H₀: There is no statistically significant effect (at a level of $\alpha \leq 0.05$) of Business Intelligence tools on the sustainability of financial report quality in the commercial banks listed on the Amman Stock Exchange.

The results of the multiple regression analysis, testing the impact of Business Intelligence tools on the sustainability of financial report quality in the commercial banks listed on the Amman Stock Exchange, are presented in Table 1.

Table 1
The results of the regression analysis

Model Summary			ANOVA			Coefficients				
The dependent variable	R	R ²	DF	F Value	Sig	Regression coefficient for the study variables	T-Value	Sig		
SI	0.411	0.379	Regression	3	6.927	0.013	OLAP	0.462	2.452	0.312
			residuals	12			ETL	0.284	1.068	0.23
			Total	15			DM	0.167	1.243	0.112
							RDBMS	0.114	4.265	0.143
							DMS	0.476	3.564	0.216

The statistical analysis unveiled the impact of Business Intelligence tools on the sustainability of financial report quality in commercial banks listed on the Amman Stock Exchange. The correlation coefficient (R) between the independent variables and the dependent variable is 41.1%, and the coefficient of determination (R²) is 0.379, indicating that 37.9% of the variations in income smoothing processes can be attributed to factors related to Business Intelligence tools in these banks. The regression coefficients for the variables are as follows: 0.462 for Online Analytical Processing (OLAP), 0.284 for Extraction, Transformation, and Loading (ETL), 0.167 for Data Mining (DM), 0.114 for Relational Database Management Systems (RDBMS), and 0.476 for Document Management Systems (DMS). These findings indicate that all independent variables have a significant and positive effect, with significant levels above (0.05). This suggests that a greater emphasis on Business Intelligence tools by the studied banks will lead to higher income smoothing processes, ultimately improving the quality of financial reports. The calculated F-value mentioned in Table 1 further supports this conclusion, confirming the acceptance of the alternative hypothesis: there is a statistically significant effect (at a level $\alpha \leq 0.05$) of Business Intelligence tools on the sustainability of financial report quality in commercial banks listed on the Amman Stock Exchange.

Sub-Hypotheses test

H01: There is no statistically significant effect (at a level $\alpha \leq 0.05$) of Online Analytical Processing (OLAP) on the quality of financial reports in commercial banks listed on the Amman Stock Exchange.

H02: There is no statistically significant effect (at a level $\alpha \leq 0.05$) of Extraction, Transformation, and Loading (ETL) on the quality of financial reports in commercial banks listed on the Amman Stock Exchange.

H03: There is no statistically significant effect (at a level $\alpha \leq 0.05$) of Data Mining (DM) on the quality of financial reports in commercial banks listed on the Amman Stock Exchange.

H04: There is no statistically significant effect (at a level $\alpha \leq 0.05$) of Relational Database Management Systems (RDBMS) on the quality of financial reports in commercial banks listed on the Amman Stock Exchange.

H05: There is no statistically significant effect (at a level $\alpha \leq 0.05$) of Document Management Systems (DMS) on the quality of financial reports in commercial banks listed on the Amman Stock Exchange.

To test these five sub-hypotheses, the correlation coefficients between the components of Business Intelligence tools and the quality of financial reports for commercial banks listed on the Amman Stock Exchange were calculated, as presented in Table 2

Table 2

The summary of linear regression analysis of the independent variables on the independent dependent variable for each variable arranged in descending order from the highest impact to the lowest impact

The dependent variable	The independent variables	Correlation coefficient R	Squared correlation coefficient (explained variance) R^2	Adjusted squared correlation coefficient	F-value	Statistical significance
SI	ETL	0.398	0.295	0.089	17.368	0.000
	OLAP	0.249	0.193	0.047	9.206	0.003
	RDBMS	0.192	0.169	0.043	8.752	0.004
	DMS	0.184	0.174	0.031	9.246	0.002
	DM	0.167	0.147	0.024	6.452	0.000

The findings presented in Table 2 reveal that ETL processes had the most substantial impact on financial report quality, with a correlation coefficient of 0.398. OLAP also demonstrated a notable influence, with a correlation coefficient of 0.249. RDBMS ranked third, with a correlation coefficient of 0.192, followed by DMS and DM with correlation coefficients of 0.184 and 0.167, respectively. All dimensions of Business Intelligence tools showed statistical significance at $\alpha \leq 0.05$, indicating a positive relationship between these tools and financial report quality. Hence, it can be inferred that increased utilization of Business Intelligence tools leads to an enhancement in financial report quality within the examined banks.

Furthermore, the squared correlation coefficients for ETL ($R^2 = 0.295$), OLAP ($R^2 = 0.193$), RDBMS ($R^2 = 0.169$), DMS ($R^2 = 0.174$), and DM ($R^2 = 0.147$) indicate that these dimensions explain 29.5%, 24.9%, 19.2%, 18.4%, and 16.7% of the variance in financial report quality, respectively. The corresponding F-values are 17.368, 9.206, 8.572, 9.246, and 6.452. These findings provide support for accepting the five alternative sub-hypotheses, which propose that Business Intelligence tools (OLAP, ETL, DM, RDBMS, DMS) have a statistically significant effect (at a level of $\alpha \geq 0.05$) on sustaining financial report quality in the commercial banks listed on the Amman Stock Exchange.

6. Conclusion

This study has aimed to examine the impact of Business Intelligence tools on the sustainability of financial report quality within commercial banks listed on the Amman Stock Exchange. The results highlight the vital role of Business Intelligence tools in the success of banking institutions, enabling faster and more accurate data and information exchange, which is crucial for efficient banking and accounting processes. The findings of this study are consistent with previous research conducted by Bister (2015) and Safwan et al. (2016). Specifically, the analysis reveals that Extraction, Transformation, and Loading (ETL) processes have the most significant influence on achieving sustainable financial report quality in Jordanian commercial banks, while Data Mining (DM) has the least impact. To ensure the ongoing success of Jordanian commercial banks, effective utilization of Business Intelligence tools, including their techniques and software, is essential. This will lead to enhanced banking services more efficiently and cost-effectively. Moreover, leveraging these tools will enable the identification of performance improvement opportunities and the production of high-quality financial reports that support

the comprehensive nature of accounting activities. By doing so, commercial banks can ensure the continuity of their operations and the achievement of their objectives.

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