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## Article

# The role of XBRL adoption on enhancing transparency of information disclosure: A case study of Jordanian financial companies

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*Suggested Citation:* Alkayed, Hani; Zighan, Saad; Qabajeh, Majed; Almaharmeh, Mohammad I. (2023) : The role of XBRL adoption on enhancing transparency of information disclosure: A case study of Jordanian financial companies, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 10, Iss. 3, pp. 1-17, <https://doi.org/10.1080/23311975.2023.2265082>

This Version is available at:

<https://hdl.handle.net/10419/294670>

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**To cite this article:** Hani Alkayed, Saad Zighan, Majed Qabajeh & Mohammad I. Almaharmeh (2023) The role of XBRL adoption on enhancing transparency of information disclosure: A case study of Jordanian financial companies, Cogent Business & Management, 10:3, 2265082, DOI: [10.1080/23311975.2023.2265082](https://doi.org/10.1080/23311975.2023.2265082)

**To link to this article:** <https://doi.org/10.1080/23311975.2023.2265082>



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Published online: 06 Oct 2023.



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Received: 29 August 2023  
Accepted: 19 September 2023

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# The role of XBRL adoption on enhancing transparency of information disclosure: A case study of Jordanian financial companies

Hani Alkayed<sup>1</sup>, Saad Zighan<sup>2\*</sup>, Majed Qabajeh<sup>3</sup> and Mohammad I. Almaharmeh<sup>4</sup>

**Abstract:** The current study investigates the role of eXtensible Business Reporting Language (XBRL) on the transparency and efficiency of information disclosure in Jordanian financial companies. Based on a sample of 124 respondents, including accountants, academics, and auditors with a background in XBRL. We find that there is a significant positive impact of adopting XBRL on improving information transparency and efficiency of Jordanian financial companies. XBRL reporting leads to better, more relevant, reliable, and transparent financial information, simplifying preparing group financial statements. XBRL is more critical for sustainability reporting than financial reporting because sustainability reporting is primarily optional. XBRL holds more potential for promoting corporate social and environmental sustainability performance reporting. The study heightened the importance of using the XBRL framework in preparing their financial reports to increase the level of confidence by external parties in the management system of these companies. While this research contributes to the existing knowledge base, it also underlines the need for further exploration into this field. The implications for regulators and financial companies are clear, and addressing the identified limitations can refine future research efforts. XBRL continues to be a vital tool in financial reporting, offering opportunities for growth, transparency, and efficiency in Jordan and beyond.

**Subjects:** Corporate Governance; Corporate Social Responsibility & Business Ethics

**Keywords:** financial reporting; XBRL; information transparency; information disclosure; financial sector

### 1. Introduction

Adopting XBRL (eXtensible Business Reporting Language) has emerged as a transformative force in the ever-evolving financial reporting landscape. XBRL empowers stakeholders to access granular financial data in a machine-readable format, heralding a new era in transparency, analysis, and decision-making for investors, analysts, regulators, and the public (Hwang et al., 2008a; Liu et al., 2014, 2017; Yen & Wang, 2015). Technology, a driving force behind corporate practices, has been pivotal in reshaping how businesses operate (Al-Okaily, 2022). Its profound impact extends across demographic groups, with the business sector reaping substantial benefits in communication, raw

material procurement, and financial reporting (Abhishek & Ashok, 2018). The advent of the internet in the 1990s marked a pivotal moment, enabling companies to transition from traditional paper-based reporting to electronic formats, most notably XBRL. This technological revolution gave birth to virtual information systems, harnessing the internet's capabilities to collect and disseminate data efficiently, revolutionizing accounting and management systems, and empowering diverse stakeholders to make informed financial or otherwise decisions (Mahdi Sahi et al., 2022).

Nevertheless, amid the accessibility of information facilitated by the internet, challenges persist. While financial disclosures are readily available online, the seamless integration of this information into spreadsheets and analysis tools remains a hurdle, hindering users from efficiently extracting data from financial reports (Mwiya et al., 2022).

Moreover, as highlighted by Tohang et al. (2020), the transferability of online disclosures exhibits asymmetry, potentially skewing the cost dynamics within the capital market. Another notable challenge is the absence of consistent data standards for commercial and financial information, which is critical for informed decision-making by individuals and institutions alike. Although the Internet has undoubtedly improved the efficiency of financial reporting by reducing the time required for presenting financial reports (Al-Okaily, 2021; Lutfi et al., 2022), the lack of a unified data standard makes it challenging to integrate data from various sources even when collected electronically.

In response to these limitations, XBRL has emerged as a potent solution, garnering increasing attention in the business and accounting domains. XBRL serves as an encoding and decoding information system, lauded for its role in corporate financial reporting, providing a reporting standard characterized by uniformity, accuracy, and machine-readability (Uyob et al., 2019). XBRL offers several advantages: standardization, accuracy, and machine-readability (Uyob et al., 2019). However, challenges persist despite the easy access to financial information made possible by the internet. Online data integration into analytical tools remains cumbersome, and information transferability exhibits asymmetry, impacting capital market dynamics (Tohang et al., 2020). Additionally, the absence of uniform data standards hinders efficient data aggregation and analysis.

This study aims to bridge the gap between the theoretical advantages of XBRL adoption and its practical implications in the Jordanian financial sector. While some studies suggest positive outcomes of XBRL implementation, such as enhanced transparency and efficiency (Yoon et al., 2011), others highlight potential drawbacks like information inaccuracies (Liu et al., 2014). The theoretical framework underpinning these findings' discrepancies forms a central aspect of our research. Moreover, existing literature on XBRL adoption predominantly originates from developed economies, leaving a significant gap in understanding its implications in emerging economies like Jordan. Despite regulatory mandates, the slow adoption of XBRL in Jordan's financial sector indicates a need for a deeper understanding of the challenges and opportunities specific to this context. Consequently, this paper seeks to make several contributions to the existing literature. It provides empirical evidence on the impact of XBRL adoption in the Jordanian financial sector, shedding light on its effects on transparency and efficiency. Our research focuses on a developing economy, offering insights into the challenges and opportunities unique to Jordan's financial reporting environment.

The paper is organized as follows: The next section explores the multifaceted implications of XBRL adoption, shedding light on its transformative potential in financial reporting, particularly in the Jordanian context. This is followed by an in-depth literature review, offering a comprehensive overview of financial reporting and XBRL. Then, empirical literature is reviewed, and hypotheses are developed. Subsequent sections will detail the research design findings, discussion, and conclusions.

## 2. The study background

XBRL has gained global acceptance and is used in many countries for regulatory reporting, including financial statements, tax filings, and other regulatory disclosures. This widespread adoption contributes to the comparability of financial data on a global scale (Sassi et al., 2023). XBRL, or eXtensible Business Reporting Language, is a standardized markup language for encoding, sharing, and analyzing financial and business data. It has become a fundamental tool in modern financial reporting and data analysis. Hoitash et al. (2021) XBRL provides a standardized framework for representing financial information. It uses a structured format, similar to HTML or XML, where data elements are tagged with labels that describe their content. This structured approach ensures consistency in presenting financial information, making it easier to interpret and compare data across different companies and industries (Mosteanu & Faccia, 2020).

Hoitash et al. (2021) argue that one of XBRL's primary purposes is to enhance the transparency and efficiency of financial reporting. By using XBRL, companies can streamline preparing and disseminating financial statements and reports. This automation reduces the risk of errors and ensures that financial information is consistent and reliable. According to Sassi et al. (2023), XBRL transforms financial data into a machine-readable format. This means that computers can efficiently process, analyze, and extract valuable insights from the data without manual intervention. As a result, stakeholders, including investors, analysts, regulators, and the public, can access and analyze financial information more efficiently. Mosteanu and Faccia (2020) argue that XBRL democratizes access to financial data. It allows various stakeholders to access granular financial information in a format that suits their needs. For instance, investors can quickly analyze a company's financial health, regulators can monitor compliance, and analysts can conduct in-depth research. The general public can also access this information, promoting transparency and accountability.

Empirical research on the impact of XBRL adoption has shown conflicting results. Even with Yoon et al. (2011) find a significant negative relationship between XBRL adoption and information asymmetry in the Korean stock market, Yen and Wang (2015) find a significant positive relationship between XBRL adoption and information asymmetry in the United States, as reflected by higher abnormal bid-ask spread after XBRL mandate. Similarly, Liu et al. (2013) concluded that mandated XBRL adoption among corporations listed in the United States has resulted in higher analyst following and prediction accuracy. In contrast, another study by Liu et al. (2014) finds that XBRL uncertainty, such as information inaccuracies, has reduced analysts' prediction accuracy and raised the cost of capital among Chinese enterprises in an economy with relatively inadequate public information on listed firms.

The choice of Jordan as our research context holds immense relevance for several reasons. Firstly, the country represents a unique setting within the MENA region, characterized by its progressive regulatory stance on financial reporting practices (Zighan, 2022). Jordan's early adoption of XBRL showcases its commitment to aligning with international best practices and embracing technology for financial transparency. Secondly, the challenges faced by Jordan in adopting XBRL mirror those encountered by many emerging economies. This resonance positions Jordan as a microcosm, allowing us to draw valuable insights with broader applicability.

Organizations, users of financial statements, and decision-makers in Jordan are unaware of the advantages and significance of XBRL in aiding them in obtaining accurate, dependable, and comparable financial information (Al-Okaily et al., 2021)

Accordingly, like many developing nations, Jordan is still developing in the usage of XBRL, and the demands continue to highlight the importance of XBRL and encourage financial statement users and decision-makers to use it (Al-Okaily et al., 2022; Altarawneh, 2021). The Amman Stock Exchange, for instance, began taking steps toward using XBRL language in implementing electronic disclosure in the Jordanian capital market in 2016, firstly due to the enthusiasm of capital

market organizations in Jordan applying the most recent international practices in the field of financial markets, and secondly; the importance and benefits that the application of electronic disclosure will bring to the market (Alsharayri & Al-Arabiya, 2021).

Since accounting information systems and technologies are an essential part of organizational life's fabric and must be evaluated in a broader environmental context (Gelinas et al., 2017). Consequently, the current study focuses on the impact of adopting XBRL on the transparency and efficiency of information disclosure in Jordanian financial companies. In Jordan, the adoption of XBRL has been relatively slow compared to other countries. However, the Central Bank of Jordan has mandated the use of XBRL for reporting financial data by banks and other financial institutions since 2018. This requirement was introduced to improve the country's financial reporting accuracy and transparency. Despite the mandate, the adoption of XBRL has been slow, and many financial institutions in Jordan still use traditional methods for reporting financial data. The slow adoption may be attributed to the lack of awareness among financial companies about the benefits of XBRL and the associated costs of implementing it. Besides, the lack of skilled professionals who can work with XBRL has hindered its adoption. However, some financial institutions in Jordan have adopted XBRL for reporting their financial data. For example, the Arab Jordan Investment Bank has implemented XBRL for financial reporting, improving its reporting processes' accuracy and efficiency.

While the benefits of XBRL adoption are well-documented in the literature, the initial costs and required skillsets for successful implementation have created barriers for some financial institutions. The availability of skilled professionals who can effectively work with XBRL has been a persistent concern in Jordan's financial sector, hindering the technology's broader adoption. Nevertheless, amidst the broader backdrop of slow adoption, certain financial institutions have recognized the potential of XBRL and embarked on its implementation journey. For instance, the Arab Jordan Investment Bank pioneered the Jordanian financial sector, successfully integrating XBRL into their financial reporting processes. This case exemplifies the positive outcomes of XBRL adoption, including enhanced reporting accuracy and efficiency. Thus, in investigating the impact of XBRL adoption within Jordan's financial landscape, our study aspires to contribute insights that transcend its immediate context. We seek to provide a nuanced understanding of the challenges and opportunities that emerge in technology adoption within emerging economies. Additionally, we aim to offer practical recommendations for stakeholders in Jordan and similar settings, facilitating informed decision-making in financial reporting practices.

### 3. Theoretical literature review

Financial reporting is a critical process that supports decision-making and economic monitoring. However, it faces administrative complexity, voluminous reporting obligations, and high costs (Shehadeh et al., 2021). In addition, traditional reporting methods have difficulty finding essential disclosures and extracting data accurately (Sassi et al., 2023). The company's financial information and financial status are presented in reports prepared by the accountants of these companies. The process is called financial reporting, and these reports are used to support the process of decision-making and monitoring the country's economy and its implications for financial health. To collect such data, governments have implemented regulations demanding that enterprises and citizens submit financial data. However, reporting companies now face excessive administrative difficulties due to the volume and complexity of reporting obligations, and the reporting cost can significantly impact the economy. Attempts to understand the financial sector may become more demanding due to the growing amount of data being gathered and inconsistent data reporting. However, the widespread Internet increased the publication of such information online and decreased traditional reporting methods (Shehadeh et al., 2021). Genuine cross-platform communication and data sharing have been hindered by incompatible systems and software, reducing the reported information's use and transparency.

The Internet's widespread use has transformed how financial information is disseminated. It has led to increased online publication of financial data, reducing reliance on traditional reporting



methods. In traditional reporting, finding important disclosures and underlying notes to information items has been difficult since information search engines' accuracy has been poor. In addition, extracting the data from this medium is complex, and expensive work is needed. Likewise, electronically handling financial data can be difficult and time-consuming. Another difficulty is that users of accounting information have various information demands. Therefore, financial information must be changed for each party after compilation. Nevertheless, a change in how businesses report to investors and the financial markets is required in light of recent high-profile corporate disasters. More recent information, more thorough information, and new sorts of information are required by regulations. Businesses also want to use their reports to gain an advantage in the market, such as environmental reports and reports on corporate sustainability. XBRL has shown some initial success in addressing these challenges. XBRL encrypts and decrypts the information system, which can provide more accurate, consistent information in a machine-readable way (Nam et al., 2017).

XBRL is an international standard for digital reporting controlled by XBRL International. Essentially, XBRL offers a language for lawfully defining reporting concepts. Hwang et al. (2021) explained that XBRL drives organizations to change from "block tagging" to "detail tagging," resulting in a rise in the number of tags utilized. The source document is the company's annual report, which will be converted to XBRL. Prior research has shown that XBRL significantly impacts data reliability and integrity, particularly during the data transfer. According to the findings of Ndaks and Yusuf (2022), employing XBRL improves the integrity and openness of financial and commercial information created by professionals. In addition, XBRL has enabled users of financial reporting, such as governments, financial analysts, investors, and others, to quickly extract, utilize, and evaluate a firm's financial information in less than a minute (Choi, 2016).

Adopting the XBRL language in financial reports is considered a crucial issue today. It is one of the most important programming languages used in the current era in the accounting sector (Alsharayri & Al-Arabiati, 2021). The search-facilitating technologies, such as XBRL, significantly impact financial statement users' capacity to obtain and integrate relevant financial information. For instance, when a company's management gives comparable data tags to linked financial information items, search-facilitating technology may access these things, regardless of where they are in the company's financial report. Furthermore, similarly marked things indicate to users that competent people, such as the financial experts who created XBRL and the firm's managers, feel these items are linked, in addition to facilitating the decision-making process by allowing cross-company comparisons that are more transparent to users and highlight differences in these choices. Accordingly, XBRL is suggested to have the ability to enable users of financial statements to make better-educated decisions based on information included in financial reports, regardless of where the content is presented in the reports. Finally, improving corporate and financial information transparency and realizing efficiency gains in information gathering, analysis, and dissemination has not received enough attention from scholars.

Hoitash et al. (2021) state that XBRL is an essential electronic business and financial data communication standard. It is designed to facilitate the exchange and analysis of financial information, including financial statements, for public and private companies. One of the critical benefits of XBRL is that it allows for data collection and analysis automation, making it easier and more efficient for companies to report financial information and for investors and other stakeholders to analyze it. By using XBRL, companies can reduce the time and resources required to prepare financial reports and improve the accuracy and consistency of the data they report. XBRL is also crucial because it promotes transparency and standardization in financial reporting. Using a standard set of tags and definitions, XBRL helps ensure that financial data is consistent and comparable across different companies and jurisdictions, making it easier for investors and other stakeholders to understand and compare financial information. The adoption of XBRL can have several consequences for firms, both positive and negative. Some positive potential consequences include Improved efficiency: One of the main benefits of XBRL adoption is data collection and

analysis automation, which can save time and reduce costs associated with manual data entry and analysis. Moreover, using a standardized format for financial reporting, XBRL can reduce errors and improve the accuracy and consistency of financial data.

Furthermore, XBRL can make it easier for investors, analysts, and other stakeholders to analyze financial data and compare it across different companies and jurisdictions, which can help firms attract and retain investors. In addition, Compliance with regulatory requirements can be easier to achieve through XBRL, reducing the risk of non-compliance and associated penalties. Hence, the availability of accurate and standardized financial data can help firms make better decisions and improve their overall financial performance.

Various studies have supported the adoption of XBRL with positive results. For instance, Bai et al. (2014) argued that XBRL adoption in Japan enhances the information environment in the Japanese market and can eliminate information asymmetry. Furthermore, Hao et al. (2014) conducted a study on 165 businesses in the United States and demonstrated that the cost of equity is strongly and adversely linked with XBRL adoption. Their research also discovered that businesses that embrace XBRL willingly experience an average decrease in the cost of equity financing. These findings emphasize the advantages of XBRL adoption, including improved information quality, transparency, and potentially reduced financing costs for businesses. These studies provide valuable empirical support for adopting XBRL to enhance financial reporting and information dissemination in Japanese and U.S. contexts.

#### **4. Empirical literature review and hypotheses development**

Research indicates that high-quality public disclosures can mitigate information asymmetry and enhance liquidity in stock markets (Cheynel & Levine, 2020). The advent of XBRL since 2000 has spurred numerous studies examining its effectiveness across various domains (Faccia et al., 2021; Qushtom, 2021; Tawiah & Borgi, 2022). Among these, Razak et al. (2019) argue that XBRL improves information search efficiency and elevates the quality of digital financial data. Likewise, Liu et al. (2014) posit that XBRL adoption can enhance transparency and accuracy in financial reporting. By introducing a standardized framework that assigns unique tags to each financial data element, XBRL eliminates comparability issues (Vasarhelyi et al., 2012).

Numerous studies have examined how XBRL affects different stakeholders in the financial reporting process. Uyob et al. (2019) explored the influence of XBRL and found a modest increase in its impact until 2014. XBRL reduces the time needed to compile and report financial statements (Du & Wu, 2018). Additionally, it enhances the effectiveness of earnings releases for companies with positive news (Abdolmohammadi et al., 2017), fosters market liquidity, and reduces information asymmetry. Amin et al. (2018) contend that XBRL adoption can lead to a shorter delay period in audit reports. Furthermore, XBRL's adoption transforms financial reporting from a static format to a dynamic one, empowering stakeholders to access specific, relevant information (La Torre et al., 2018). Chen et al. (2018) suggested that XBRL positively impacts bank loan pricing by streamlining information processing and reducing costs. In the same context, Liu et al. (2014) suggest that using XBRL can increase transparency and accuracy in financial reporting. Moreover, adopting XBRL resolves comparability issues by identifying each line item on the financial statement and marking the accounting technique used (Vasarhelyi et al., 2012).

However, information asymmetry, where one party possesses more or superior information than others, is a crucial concern in financial markets (Bergh et al., 2019). Efendi et al. (2019) argue that XBRL adoption is associated with improved data quality. Errors in financial reporting are reduced, and the accuracy of financial data is enhanced. This leads to higher data integrity, a fundamental aspect of information transparency. Qushtom (2021) found that XBRL facilitates data collection and analysis automation. Stakeholders can quickly extract, utilize, and evaluate a firm's financial information without manual intervention. This increased accessibility and search efficiency contribute to greater information transparency. Tawiah and Borgi (2022) found that one of the critical



outcomes of XBRL adoption is the reduction of information asymmetry. As financial data becomes more readily available and easily understandable, stakeholders are better equipped to make informed decisions. Reduced information asymmetry is a direct result of enhanced information transparency.

In Jordan, various studies were presented to explore the perspective of Jordanian financial experts toward adopting XBRL. Abed (2018), for instance, concludes that understanding the framework of the language is necessary for Jordanian people to accept the adoption of the XBRL. Furthermore, Slehat (2018) examines the impact of technological, organizational, and environmental variables on adopting and implementing the XBRL framework in Jordanian businesses. The author finds that Jordanian-listed firms have the essential facilities to adopt and deploy XBRL. Besides, researchers have investigated the perspectives of financial experts regarding XBRL adoption. For instance, Abed (2018) highlights the importance of understanding the XBRL framework for its acceptance among Jordanian stakeholders. Slehat (2018) assesses the influence of technological, organizational, and environmental factors on adopting XBRL in Jordanian businesses, finding that listed firms in Jordan have the necessary infrastructure for XBRL implementation. Nevertheless, the literature review reveals evidence supporting the positive impact of XBRL on financial reporting, including improvements in data quality, transparency, and reduced information asymmetry (Amin et al., 2018; Liu et al., 2014). Besides, studies specific to Jordan suggest a conducive environment for XBRL adoption (Abed, 2018; Slehat, 2018).

Academics acknowledge the possibility of using information and communication technologies to enhance transparency as crucial in preventing financial crises. However, insufficient research has been done on the XBRL implementations that could improve the efficiency and transparency of business and financial information for the financial industry. In addition, the few studies published on XBRL implementation are restricted to a single nation. This study aims to fill this knowledge gap. The main contribution is to advance the theory and practice of XBRL implementation by focusing on its implementation of XBRL rather than discussing its benefits. It covers two main types of XBRL implementation: a) the implication of adopting XBRL on transparency and b) the implication of adopting XBRL on the efficiency of information disclosure in Jordanian financial companies.

**H1:** Adopting XBRL positively impacts information transparency of Jordanian financial companies.

## **5. Research design**

### **5.1. Data collection**

A descriptive correlation study was conducted to investigate the impact of adopting XBRL on Jordanian financial companies' information transparency and efficiency. This study is based on primary data gathered through a survey for which email was used to distribute questionnaires while considering the study's goal when creating the questionnaire. A two-part questionnaire based on the Likert scale was used according to previous studies related to the same topic (Shahwan et al., 2022; Singh & Singh, 2021). The questionnaire's first part uses the XBRL variable (9) questions, while the second deals with information transparency and efficiency (16) questions. Finally, the SPSS software was used for data analysis, and the research hypothesis was tested using the OLS regression.

### **5.2. Sample of study**

The survey's target audience included banks, insurance companies, businesses that provide various financial services, real estate firms, and university lecturers. Accordingly, a pilot survey was conducted with a draft questionnaire to check the feasibility of the study. Academic lecturers (PhD holders only) and bank managers with good XBRL backgrounds have been selected for the pilot survey. We have used the academics and managers for the pilot survey to improve the

**Table 1. Reliability Statistics**

	<b>Cronbach's Alpha</b>	<b>N of Items</b>
XBRL	0.743	9
Information Transparency and Efficiency	0.832	16

questionnaire items. The questionnaire was finalized based on the pilot study. According to Kumar et al. (2019), it is relatively typical in financial sector research to include all population units or use a purposive sampling approach to sample selection. However, selection procedures have been devised to acquire a representative population sample because our study is based on a questionnaire.

Initially, 200 questionnaires. Of these, 145 were received, and 21 incomplete responses were not included in the analysis. Our final sample was 124 respondents. The results were used to calculate two metrics, effectiveness and transparency, to gauge the overall effect of adopting XBRL on enhancing the efficiency and transparency of information disclosure in Jordanian financial companies.

### **5.3. Validity and reliability of the questionnaire**

Reliability is the degree to which the results of a specific experiment provide the same results over time (Thanasegaran, 2009). Since the observations of human beings are not always being read the same way, reliability is paramount. The most used internal consistency measure for reliability is Cronbach's alpha ( $\alpha$ ). The measure is determined by the average inter-correlations of items and the scale's total number of elements. According to Tavakol and Dennick (2011), the measurement values are usually between one, which implies absolute internal consistency, and zero, which means the opposite. Hence, acceptable alpha value estimates in the social sciences vary from 0.7 to 0.8 (Mohajan, 2017).

In this study, the SPSS software was used to find the Value of Cronbach's alpha and measure the consistency of all measuring items in the questionnaire. As mentioned above, the questionnaire contains two parts; the first is to collect related data to the XBRL variables, and the second is to collect related data to the information transparency and efficiency. As illustrated in Table 1, the values of Cronbach's Alpha for the items are higher than 70%, which are acceptable values for measurement.

## **6. Empirical results and discussion**

### **6.1. Demographic information**

Several groups are represented in this study's sample, including accountants, managers, academics, auditors, decision-makers, and potential respondents with a background in XBRL in Jordanian financial companies. The questionnaire was completed and returned by 124 respondents, and the demographic information about age, gender, education, and experience is expressed in the following table.

Table 2 indicated that the sample had a higher proportion of males (81%) than females (19%), with the age group 40–50 years having a higher proportion (50%). Regarding the qualification of the respondents, it was evident from Table 2 that the respondents have a comparatively high level of formal education, with 57% having a bachelor's degree, 30% having a master's degree, and 13% having a Ph.D. Table 2 also indicates that many of the respondents had a good level of experience. More specifically, 93% of respondents had more than five years of experience.

**Table 2. Demographic information**

		Frequency	Percent
Please indicate your gender:	Female	23	19%
	Male	101	81%
	Total	124	100%
Please indicate your age:	20 to 29 Years	12	10%
	30 to 39 Years	46	37%
	40 to 50 Years	62	50%
	Over 50 Years	4	3%
	Total	124	100%
Please indicate your highest education level achieved:	Bachelor Degree	71	57%
	Masters Degree	37	30%
	PhD	16	13%
	Total	124	100%
Please indicate your experience in your organization:	Under 5 Years	9	7%
	5 to 9 Years	53	43%
	10 to 14 Years	56	45%
	15 Years and Over	6	5%
	Total	124	100%
Please indicate if you hold any professional qualifications in accounting and finance:	CMA	17	14%
	CPA	1	1%
	Any other	1	1%
	None	105	85%
	Total	124	100%

## 6.2. Descriptive analysis

This part of the study relates to a descriptive analysis of the study variables, the mean and standard deviation of the responses to the questionnaire, which was measured based on (the 25) paragraphs shown in this section.

According to the results in Table 3, the third paragraph states, “The company makes an effort to upgrade the used software regularly,” achieving the best mean Value (4.516), which reflects a high level of importance from the viewpoint of the respondents while the standard deviation is 0.5177. However, the sixth paragraph, stating, “The company has qualified staff who can utilize XBRL for financial reporting,” gets the lowest mean Value (2.427) and is ranked last by importance from the respondents’ perspective.

Table 4 illustrates the mean and standard deviation results of the second part of the questionnaire related to information transparency and efficiency. As shown in the table, the mean values ranged between 4.306–4.605, where the paragraph “Better, more relevant, more reliable, and more transparent financial information about businesses is made possible through XBRL reporting.” obtained the least levels of approval, while the paragraph “It is more transparent to present financial statements in XBRL than to see them in PDF. “Obtained the highest levels, with a high degree of approval. The least mean Value still has a high level of implementation, indicating that the level of information transparency and efficiency of the financial reports in the Jordanian financial sector is within the high level.

**Table 3. Descriptive analysis for XBRL**

<b>One-Sample Statistics - Test Value = 3N=124</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>Sig.</b>
Financial reports are generated by the company using information technology.	4.169	.3766	.0338	.000
Employees at the company get information technology updating training.	4.476	.5014	.0450	.000
The company makes an effort to upgrade the used software regularly.	4.516	.5177	.0465	.000
The company stays up to date on accounting system technology advancements.	3.298	.4594	.0413	.000
The company is aware of the benefits of using XBRL for financial reporting.	4.298	.5407	.0486	.000
The company has qualified staff who can utilize XBRL for financial reporting.	2.427	.5436	.0488	.000
The future of online accounting disclosure is represented by (XBRL).	4.306	.4968	.0446	.000
In order to use and share data in real-time in companies, the (XBRL) open format is used.	4.339	.5083	.0456	.000
XBRL implementation enhances data analysis in companies.	4.492	.5179	.0465	.000
XBRL	4.0358	.21312	.01914	.000

### **6.3. Regression analysis**

As mentioned above, the current study contributes to the XBRL literature by providing new empirical evidence on how adopting XBRL may affect the information transparency and efficiency of Jordanian financial companies, and hence, the suggested hypothesis is as follows:

**H1:** There is a significant impact of adopting XBRL on improving information transparency and efficiency of Jordanian financial companies. This hypothesis was tested using simple linear regression; its results are shown in Table 5.

**Table 4. Descriptive analysis for information transparency and efficiency**

<b>One-Sample Statistics - Test Value = 3 N=124</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>Sig.</b>
Better, more relevant, more reliable, and more transparent financial information about businesses is made possible through XBRL reporting.	4.306	.4629	.0416	.000
The use of XBRL will make preparing group financial statements simple.	4.395	.4909	.0441	.000
Financial statement analysis will be straightforward, with XBRL reporting for various decision-making objectives.	4.419	.5425	.0487	.000
Accuracy and dependability will be improved with a “true and fair perspective” of the financial statements.	4.548	.4997	.0449	.000
Companies can satisfy the disclosure requirements of numerous regulatory agencies by using XBRL reporting.	4.476	.5174	.0465	.000
XBRL reporting enables companies to disclose all financial and non-financial information in annual reports.	4.460	.5004	.0449	.000
By fairly representing accounting data, (XBRL) improves accuracy.	4.484	.5018	.0451	.000
The (XBRL) impacts how financial statements are prepared and presented.	4.476	.5014	.0450	.000
The precision of the data supplied (XBRL) improves companies’ financial reporting quality.	4.379	.5348	.0480	.000

(Continued)

**Table 4. (Continued)**

<b>One-Sample Statistics - Test Value = 3 N=124</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>Sig.</b>
Unbiased, XBRL-based preparation of financial reports can improve the accuracy of financial information.	4.476	.5014	.0450	.000
Accurately preparing financial reports using XBRL and avoiding systemic mistakes would improve financial information.	4.452	.4997	.0449	.000
Using (XBRL) accelerates the acquisition of financial information for use as needed.	4.484	.5018	.0451	.000
Using (XBRL) guarantees the transparency and clarity of the information in financial statements.	4.468	.5010	.0450	.000
Integrity and transparency are improved by the real-time presentation of financial information using (XBRL).	4.444	.4988	.0448	.000
Continuous reporting and monitoring are made easier using XBRL.	4.387	.4891	.0439	.000
Presenting financial statements in XBRL is more transparent than seeing them in PDF.	4.605	.5072	.0455	.000
Information Transparency and Efficiency	4.4539	.19715	.01770	.000

The dependent variable for the model of the study is information transparency and efficiency, and the independent variable is XBRL. As shown in Table 5, the Value of R2 is 0.188, which indicates that the dimensions of the XBRL can explain 18.8% of the variance in the information transparency and efficiency of Jordanian financial companies. This is also supported by the results of the f-test, which is significant at a 5% level. The results indicate a statistically significant impact of adopting



**Table 5. Regression analysis**

R	R2	Adjusted R2	F	Sig.
.433a	.188	.181	28.213	.000b
	B	Std. Error	t	Sig.
(Constant)	2.836	.305	9.297	.000***
XBRL	.401	.075	5.312	.000***

a Dependent Variable: Information Transparency and Efficiency, b. Predictors: (Constant), XBRL

XBRL on Jordanian financial companies' information transparency and efficiency. Consequently, the central hypothesis that states there is a significant impact of adopting XBRL on improving information transparency and efficiency of Jordanian financial companies should be accepted at a 5% significant level, as it has been proven based on the findings that there is a significant positive impact of adopting XBRL on improving information transparency and efficiency of Jordanian financial companies. Therefore, adopting XBRL in Jordan will enhance the transparency and efficiency of Jordanian financial companies. XBRL, as a recent technology, is expected to enhance business information transparency by facilitating a streamlined reporting process, improving the quality of information, enhancing search and analysis capabilities for business information users, and simplifying the business-to-government reporting process. Moreover, XBRL enables the efficient and accurate exchange of financial data across different systems, which helps reduce errors and the time it takes to prepare financial statements.

XBRL is a markup language used for tagging financial data to facilitate more accurate and efficient analysis, comparison, and exchange of financial information. Our results indicate that adopting XBRL in Jordan will enhance the transparency and efficiency of Jordanian financial companies. The theoretical background behind the positive impact of adopting XBRL in Jordan can be explained in several ways. First, XBRL enables the tagging of financial data with standardized codes, which makes it easier for investors, analysts, and regulators to analyze and compare financial statements from different companies. Using XBRL can also reduce the risk of errors or omissions in financial reporting, improving financial information quality and transparency.

Second, XBRL can reduce the time and cost of preparing and analyzing financial statements. By automating the process of data collection, processing, and reporting, financial companies can streamline their reporting processes and reduce the risk of errors. This can increase efficiency and productivity, benefiting the financial companies and their stakeholders. Third, XBRL can improve financial analysis and decision-making accuracy and reliability by providing standardized and consistent financial data. Investors and analysts can use XBRL-tagged data to perform more accurate financial analysis and make better-informed investment decisions.

In addition, our findings are consistent with some previous studies. For example, Gatea (2021) argued that XBRL enhances financial activity by providing an integrated services model for management, ensuring full supervision of operations, and improving the quality of financial reports. Adopting XBRL is also expected to provide stakeholders and financial statement recipients with credible financial information about companies. Furthermore, XBRL enables swift and cost-effective data comparisons and simplifies reporting for both internal and external users. In essence, XBRL meets the expectations of data beneficiaries regardless of their preferred data type.

On the other hand, Tohang et al. (2020) found no evidence to support the notion that XBRL adoption reduces information asymmetry in Indonesia. However, this lack of evidence could be attributed to the fact that Indonesia is still in the early stages of XBRL reporting and is considered an early adopter. It is possible that stakeholders may not fully benefit from XBRL filings in corporate financial reporting until several years after its implementation. Liu et al. (2017) demonstrated that adopting XBRL among European non-financial firms led to

a significant increase in market liquidity and a subsequent reduction in information asymmetry. Hwang et al. (2008b) found that using XBRL in financial reporting and managing data positively affects information transparency. Tawiah and Borgi (2022) found that XBRL is linked to improved financial reporting quality. Notably, the association is stronger in developing countries than in developed ones. These findings support the assumption that XBRL-formatted financial statements enhance information efficiency through increased searching efficiency, improved display quality, and better comparability. These studies suggest that adopting XBRL can positively impact transparency and efficiency in financial reporting, leading to more accurate, reliable, and accessible financial information.

In summary, adopting XBRL has been theorized to enhance information transparency through improved data quality (Efendi et al., 2019). Our findings corroborate this theory, with respondents reporting that XBRL adoption improved data quality, reduced errors in financial reporting, and increased data integrity. This empirical evidence supports the assertions of Efendi et al. (2019). In the context of Jordanian financial companies, the positive impact of XBRL on information transparency is particularly noteworthy given the regional context of limited research on XBRL adoption. Our findings reinforce the importance of XBRL adoption for improving data quality and transparency, contributing to the academic understanding of XBRL's impact.

Theoretical underpinnings suggest that XBRL adoption streamlines data collection and analysis processes, reducing manual intervention and time delays (Chen et al., 2018). Our empirical results support this theory, as respondents affirmed that XBRL adoption led to increased efficiency in data collection and reporting processes. These findings resonate with the insights provided by Chen et al. (2018). The efficiency gains observed in Jordanian financial companies due to XBRL adoption hold relevance in a region where technology adoption is gradually reshaping business practices.

Our study bridges the gap between theory and empirical evidence, demonstrating that adopting XBRL aligns with the expected outcomes in the literature. The empirical findings support the theoretical assertions made in the literature regarding the impact of XBRL adoption on information transparency and efficiency. The empirical results, rooted in the Jordanian financial context, offer valuable insights into the regional implications of XBRL adoption and contribute to the broader discussion on technology adoption in emerging economies. These findings have economic, policy, and academic implications, underscoring the importance of XBRL adoption for local financial companies and the wider academic and regulatory communities.

## 7. Summary and conclusion

In this study, we conducted an in-depth analysis of the impact of adopting XBRL on the efficiency and transparency of information disclosure in Jordanian financial companies. The research journey has led to several significant findings, provided valuable contributions to the field, and unveiled several implications and limitations that open doors for future research.

We used a sample of 124, including accountants, academe, auditors, managers, decision-makers, and potential respondents with a background in XBRL. We found a significant positive impact of adopting XBRL on improving information transparency and efficiency of Jordanian financial companies. We also find that adopting XBRL reporting will lead to better, more relevant, reliable, and transparent financial information and will make preparing group financial statements simple. This is because financial statement analysis will be made simple with XBRL reporting for various decision-making objectives.

Many studies have shown that adopting XBRL in financial reporting improves transparency and efficiency. Countries like the United States, Australia, and Europe have witnessed positive impacts. Studies have highlighted reduced reporting errors, enhanced data accuracy, and improved financial statement comparability due to XBRL adoption. For instance, the U.S. Securities and Exchange

Commission (SEC) mandated XBRL reporting for public companies. Studies, such as Liu et al. (2014), found that mandated XBRL adoption resulted in higher analyst following and prediction accuracy. Yen and Wang (2015) found a significant positive relationship between XBRL adoption and information asymmetry in the U.S., as reflected by bid-ask spreads. Adopting XBRL in European countries has increased market liquidity and reduced information asymmetry, as suggested by Liu et al. (2017). Hwang et al. (2008a) found that XBRL use in financial reporting and managing data positively affects information transparency in the European context.

Compared to these global trends and findings, our study in the Jordanian context aligns with the broader literature, indicating that XBRL adoption tends to improve information transparency and efficiency in financial reporting. Our findings demonstrate the significance of XBRL adoption in enhancing these aspects within Jordanian financial companies, supporting similar findings from other parts of the world. One main implication the current study heightened is the importance of using the XBRL framework by Jordanian companies in preparing their financial reports. Using such a framework will increase the level of confidence of external parties in the management system of that company. Another implication of the current study is the tendency of professionals who prepare financial statements to use the XBRL framework since it can facilitate their work and decrease the possibilities of negative consequences that might result from manual reporting. Finally, implementing the XBRL framework will support the decision-making process, enhancing the performance and attracting investors to these companies.

This research contributes to the academic literature by providing empirical evidence of the effects of XBRL adoption in Jordan, a region with limited previous research in this area. The findings enrich our understanding of how XBRL can influence information transparency and efficiency.

The study also offers practical insights for Jordanian financial companies and regulators, helping them understand the benefits of adopting XBRL for enhancing information disclosure processes.

Regulatory bodies in Jordan should consider promoting and standardizing the use of XBRL in financial reporting to enhance transparency and efficiency in the financial sector. Jordanian financial companies can leverage XBRL adoption to improve their information disclosure processes, attract investors, and enhance their reputations.

However, this study has several limitations, such as any other study. The first is the total number of participants in the study. Only 124 people responded, which may not be enough to produce a more reliable result. A greater sample size could increase the reliability of the findings. Secondly, the respondents' knowledge of XBRL may be somewhat imprecise, which could restrict their comprehension of XBRL. Finally, this study's results emphasize the need for regulators to increase understanding and knowledge before XBRL is fully adopted. The results could vary if XBRL gains traction and XBRL adopters gain more expertise using it. Furthermore, the study strongly recommends that decision-makers in the Jordanian government maintain their support for (XBRL) adoption due to its advantages in enhancing the content and structure of financial and accounting reporting to attract successful investments.

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#### Disclosure statement

No potential conflict of interest was reported by the author(s).

#### Citation information

Cite this article as: The role of XBRL adoption on enhancing transparency of information disclosure: A case study of Jordanian financial companies, Hani Alkayed, Saad Zighan, Majed Qabajeh & Mohammad I. Almaharmeh, *Cogent Business & Management* (2023), 10: 2265082.

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