

DOES THE ADOPTION OF EXTENSIBLE BUSINESS REPORTING LANGUAGE IMPACT THE QUALITY OF FINANCIAL REPORTING? THE MEDIATING ROLE OF THE E-DISCLOSURE SYSTEM

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Article History:

- received 16 February 2023
- accepted 30 September 2024

Abstract. The study aimed to demonstrate the mediating role of the e-disclosure system (E-DS) in the relationship between the extensible business reporting language (XBRL) and the quality of financial reporting (FRQ), for the Jordanian companies listed at the Amman Stock Exchange (ASE). This study uses AMOS to perform structural equation modelling to analyze the data; survey data was gathered from 284 respondents working across various industries and sectors listed at the ASE; 229 usable responses were received. This study finds that XBRL is positively associated with the FRQ. Further, it is found that E-DS positively influences FRQ and plays a mediating role in the connection between XBRL and FRQ. The results of this study are expected to be of high quality regarding the preparation and presentation of financial statements by XBRL. Also, the study's findings make original contributions to developing countries other than Jordan, which are expected to benefit.

Keywords: extensible business reporting language, quality of financial reporting, e-disclosure system, Jordan.

JEL Classification: M41, E44.

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1. Introduction

Since the early 2000s, XBRL has garnered significant attention as a critical feature (Perdana et al., 2015). XBRL is a newly emerging technology that has the potential to be crucial in the creation and use of financial data (Doolin & Troshani, 2004). XBRL is an extension of eXtensible Markup Language (XML) derived from an established markup computer language. It makes exchanging data and information easier for different systems (Perdana et al., 2015). XBRL is useful for automating company information, like preparing, sharing, and analysing financial reports and audit schedules (IASB, 2023). It also makes it more accessible and faster for analysis by improving financial information interchange (Hwang et al., 2020). Thus, the XBRL data quality in the repository is crucial to the interactive data program's success (Debreceňy et al., 2010). Therefore, users may find it simpler to study financial data with the help of XBRL, one of the channels for interactive and electronic company financial reporting (Saragih & Ali, 2022). This Financial reporting provides investors and other stakeholders with pertinent information, and regulatory authorities continually work to increase the value of the information by changing the reporting standards (Henderson et al., 2015).

Therefore, the quality of the financial reporting is vital, as given by Martínez-Ferrero et al. (2013), which represents the accuracy of the information provided by the reporting process. However, according to Jonas and Blanchet (2000), the financial reporting quality process depends on each step, along with the disclosure of the company's activities and details regarding the choice and implementation of accounting policies. So, one of the internet's most cutting-edge applications is electronic disclosure (Shatnawi, 2018). The preparation and processing of financial and non-financial data that can be used in the disclosure process are done using the computer language XBRL, which aims to improve processes of preparing and analyzing information for financial statements (Amman Stock Exchange, 2023). Because of this, continual accounting disclosure of a company's financial statements are of interest to financial markets worldwide because of its crucial importance and expected role in enhancing the efficiency of the financial markets (Al-Sakini, 2019). Jameel (2022) indicates that each of the key aspects of the quality of computerized accounting information is improved by electronic disclosure utilizing XBRL. Therefore, disclosure of information, whether financial or non-financial, indicates the company's success.

The higher the disclosure of this information, the greater the positive impression about the efficiency and effectiveness of the company's performance, which will improve the quality of financial reports (Shatnawi, 2018). So, my current paper explores whether XBRL is reflected in the FRQ through E-DS as a mediating role.

Furthermore, an organization can reliably process many transactions thanks to automation (Gunn, 2007). Electronic financial reporting has evolved significantly within the past two decades. XBRL emerged as the leading platform mandated in the European Union on January 1, 2020 (Suta & Tóth, 2020). By introducing XBRL, rapid technological advancements increased the digitalization of the accounting and auditing environment (Ashoka et al., 2020). In recent years, the literature on XBRL studies has expanded quickly (Saragih & Ali, 2022). Consequently, publicly traded companies in the United States were forced to provide financial statements in XBRL format under the SEC regulation (Hwang et al., 2020). Numerous studies have looked at the links between XBRL usage and financial data, like the quality of financial reporting (Hsieh & Bedard, 2018) and financial reports' timeliness (Hwang et al., 2020). The high quality of a corporation's annual reports can contribute significantly to its success (Pivac et al., 2017). Additionally, accurate, complete and timely information disclosure is essential for a functioning stock market (Pivac et al., 2017). According to O'Riain et al. (2012), XBRL has become essential to the landscape of financial data. XBRL enables the exchange of financial data globally "through a digitalized global standard language" (Tarmidi & Roni, 2014). To meet the needs of diverse stakeholders, XBRL is an innovative way to prepare, present, and communicate business and financial information (Ashoka et al., 2020). Research on the effects of voluntarily adopting XBRL is still important (Hsieh & Bedard, 2018).

One of the worldwide business reporting standards is XBRL, which enables all business organizations to conveniently record and communicate their corporate activities (Abhishek et al., 2023). Also, enables business organizations to report and discuss their financial and non-financial affairs in a tailored way thanks to this technology (Abhishek et al., 2023). Corporate financial statements address multiple stakeholders' needs (Faccia et al., 2021). According to Hsieh and Bedard (2018), research provides information to regulators, investors, and scholars in nations that do not yet require XBRL. It can be necessary to redesign outdated systems and reengineer the procedures used to prepare financial reporting because improved automation gives them new dimensions (Gunn, 2007). Many large businesses today rely on paper, Excel, or Word documents for reporting (Chakraborty & Sarkar, 2021). Grant and Conlon (2006), cited in O'Riain et al. (2012), indicate that disclosure notes' use of normal language, is still problematic. So, utilizing XBRL is a remarkably imaginative approach for exchanging financial and non-financial data in a computerized structure and is one such way that business data might be made incredibly accessible (Chakraborty & Sarkar, 2021). Adopting XBRL enhances transparency and,

more broadly, produces superior financial reporting quality that will aid potential investors in making decisions (Tawiah & Borgi, 2022). Additionally, employing "XBRL-standardized information items based on official taxonomies" lowers information processing costs by doing away with the need for manual seeking (Kim et al., 2019). Additionally, through taxonomy labels, XBRL has facilitated financial data extraction. As part of an XBRL recommendation, the IAS Primary Financial Statements (PFS) Taxonomy was released in November 2002 by the XBRL International Steering Committee (ISC). Also, it issued the IAS Explanatory Disclosures and Accounting Policies (EDAP) Taxonomy (IASB, 2023). The PFS Taxonomy includes XBRL representations for all financial reports' whether balance sheets, an income statement, a statement of changes in equity, and a cash flow statement (IASB, 2023).

On the other hand, Globalization and several business crises have increased the demand for high-quality disclosure of financial and non-financial information (Archambault & Archambault, 2003; Ghofar & Saraswati, 2009) cited in Alzoubi (2016). Additionally, the economic climate in Jordan is becoming more diverse regarding international investments across multiple fields (Al Frijat et al., 2024). So, regulators have made using XBRL for companies' financial reporting listed on their stock markets mandatory in several nations, particularly emerging nations (Saragih & Ali, 2022). It might be argued that adopting XBRL will have different effects in Developed countries than in developing countries because of lower levels of institutional quality (Tawiah & Borgi, 2022). So, Companies listed in Jordan's ASE must disclose of information in their annual reports using consistent techniques (Al-Ramahi et al., 2021). Consequently, one of the most important local methods for standardizing disclosure is XBRL (Al-Ramahi et al., 2021). The author indicates that the annual financial report electronic disclosure level at companies listed as ASE is insufficient to achieve the required aims. According to Abed (2018), few people in the Jordanian context are aware of or knowledgeable about XBRL, and most respondents are unwilling to use the new technology unless they know the nature of this language. So, on December 20, 2020, the ASE and the Jordan Securities Commission (JSC) launched an e-disclosure system using the XBRL as an electronic platform for entities to submit their financial as well as non-financial disclosures, publish them in several formats and exchange them electronically (Amman Stock Exchange, 2023).

To improve the national capital market, raise levels of disclosure and transparency in the market to achieve justice, transparency, and integrity, as well as prevent fraud, the Jordan Securities Commission (JSC) has adopted the electronic Disclosure System as one of the significant strategic projects that it is working to implement. Academic researchers and Jordanian businesses have begun to emphasize the importance of XBRL in recent years as a developing country. Jordan has adopted XBRL early, demonstrating its dedication to following global best practices and adopting technology for financial transparency

(Alkayed et al., 2023). So, the study is considered one of the rare recent studies related to the reality of adopting XBRL. This study highlights a critical enabling factor for the XBRL from developing countries' perspectives. All users of financial statements in financial markets can realize the importance of its application and use it to ensure obtaining financial reporting with factual, non-misleading information to enable them to make the financial and investment decisions that they desperately need. This study presents the theoretical and practical implications for guiding companies listed on the ASE to use this language. This article contributes to the literature in multiple directions. It provides a more comprehensive guide on the XBRL that all companies listed on the ASE must be aware of to enable them to present highly credible financial reporting. This study also encourages companies to show electronic disclosures of all related financial information to display accurate financial reports that help their users make financial and investment decisions.

The structure of my paper is as follows. Section 2 is a literature review and hypotheses development related to XBRL, electronic disclosure, and the quality of automated financial reporting. Section 3 Methodology and study sample. Section 4 presents data analysis and results in addition to hypothesis testing. Section 5 discusses the results of the study. Finally, the conclusion of the study and its contribution.

2. Literature review and hypothesis development

Indeed, extensive internet usage, web technologies, and their applications have spurred a technological revolution during the last ten years (Janvrin & Mascha, 2010). XBRL is an international business reporting standard that enables all companies to disclose financial affairs in an easy-to-understand manner (Al-Okaily et al., 2024). So, companies are progressively disseminating financial data online, XBRL (next generation) is increasing in popularity globally, and stakeholders use IFR to help them make important decisions (Yassin, 2017). In the computer world, XBRL is a markup language (not a programming language) developed to revolutionize online financial reporting. XBRL is becoming increasingly popular in the area of financial accounting data (Chakraborty & Sarkar, 2021). It is an extension of XML (Gandhi, 2010). Although XBRL automation greatly enhances the output of the financial reporting process, it also offers huge benefits to each link along the corporate reporting supply chain and produces reliable financial information (Gunn, 2007). So, success stories from regulators in the USA, Australia, and the Netherlands that highlight the advantages of XBRL adoption served as the impetus for my study (Cordery et al., 2011) cited in Sassi et al. (2023). In April 2009, the Securities and Exchange Commission (SEC) mandated using XBRL for financial reporting (Securities and Exchange Commission, 2009). In addition, since 2018, the Central Bank of Jordan has as-

sured banks and other financial corporations to report financial data using XBRL (Alkayed et al., 2023).

2.1. XBRL and E-DS

To explain what determinants influence the adoption of XBRL, Many theories and models have been used in previous studies on XBRL, such as the Unified Theory of Acceptance and Use of Technology (UTAUT) model, the Theory of Reasoned Action (TRA), the Model of PC Utilization (MPCU), the Technology Acceptance Model (TAM), the Decomposed Theory of Planned Behavior (DTPB), and the Institutional (INT) theory (Rawashdeh & Rawashdeh, 2021). According to La Torre et al. (2018) examined how XBRL might be used for static reporting by utilizing the multidimensionality of IR and addressing some of its drawbacks, A shift from periodic and static reporting to more pertinent and dynamic corporate disclosure for stakeholders is made possible by the use of XBRL for investor relations. Also, it offers flexibility to those who create information and those who use it due to its levels of disaggregation and evidence-based methodology (La Torre et al., 2018). In order to raise awareness among Algerian institutions of the necessity of implementing this new technology in the accounting disclosure process and, consequently, to enhance the financial reporting quality, Benbouali and Benberi (2018) highlight the role of the XBRL in electronic accounting disclosure and how it contributes to the activation and effectiveness of the stock market. In addition, according to Alkayed et al. (2023), Adopting XBRL has a considerable positive effect on enhancing information transparency and the effectiveness of information disclosure at Jordanian companies.

Faccia et al. (2021) state that the XBRL can close a financial ESG disclosure gap by standardizing financial reporting, ensuring comparability, and encouraging further obligatory disclosures. According to Cauter (2011), XBRL reporting improves the quality of disclosures as the cost of equity financing for studied enterprises decreases significantly. Then Tawfik et al. (2017) concentrated on the idea that the release of accounting data using XBRL helps to quicken the speed of the information revolution and unify the language of the business world. The language helps XBRL achieve its goal of developing an e-disclosure system that enables users to access the proper information and a high speed in gathering data by ensuring that those who utilize it receive more information than those who do not (Tawfik et al., 2017).

2.2. XBRL and FRQ

XBRL is required in the US. The significance of standardizing the presentation of financial reporting by XBRL and the extra advantages of XBRL technology is demonstrated, according to Henderson et al. (2015). In both the financial and non-financial spheres, the quality of financial reporting is regarded as the foundation of confidence (Benbouali & Benberi, 2018). Ashoka et al. (2020) indicate that the

perceived effects of XBRL adoption on corporate financial reporting, auditing, and the calibre of financial information shared should be evaluated. As well as Slehat (2018) intends to investigate the capacity of Jordanian businesses to adopt and apply (XBRL); the findings showed that several factors, including “environmental, organizational, and technical ones” in the Jordanian-listed companies in ASE, could encourage the implementation of XBRL within businesses (Slehat, 2018). Furthermore, according to Jameel (2022), the XBRL improves the accuracy of computerized accounting information, including “relevance and faithful representation, in addition to comparability, verifiability, timeliness, and comprehension.”

Pajula (2021) highlights the significance of automation in financial reporting and indicates the theory that XBRL theory in Europe emphasizes and supports the importance of automation in financial reporting. Thus, according to Baldwin et al. (2006), XBRL enables information preparers to run many financial analyses without manually entering data, resulting in more accurate financial information. Tawiah and Borgi (2022) investigate the impact of XBRL adoption on the calibre of financial reporting at the national level (developing and developed countries). The findings indicate that XBRL is linked to improved financial reporting quality. In contrast to developed nations, the link is stronger in developing nations. The outcomes align with the hypothesis that better searchability, display quality, and comparability of XBRL-formatted financial statements lead to improved information efficiency (Tawiah & Borgi, 2022). The relationship between financial reporting quality and disclosure quality is examined by Alwardat (2019). According to the analysis, the Sarbanes Oxley Act of 2002 has dramatically raised management’s understanding of the significance of accounting disclosures. Thus, according to Steenkamp and Nel (2012), XBRL is a technology that tags financial data to increase the accessibility, speed, and efficiency of data analysis and retrieval. Another XBRL variation specifically created for business and financial reporting is called XML (Steenkamp & Nel, 2012).

So according to Faccia et al. (2021), XBRL standards enable consistency and compliance in the creation and submission of financial statements, and the 310000 and 320000 codifications of XBRL taxonomies, respectively, reflect the IFRS disclosure requirement for income statements. The primary goals of Qushtom (2021) were to determine whether utilizing XBRL in Jordanian organizations was feasible and how far the XBRL framework could take the place of traditional financial statements. The findings demonstrated the utility of the XBRL framework for providing them with pertinent, accurate, comparative, timely, and necessary information for planning and decision-making (Qushtom, 2021). Also, the project Baldwin and Trinkle (2011) aims to offer the findings of a future predicting Delphi research that examined the effects of XBRL “in the second decade of the new millennium”. According to the Delphi panel, XBRL will probably have an impact on businesses, financial reporting, and auditing users. The most likely effects of XBRL have improved investment and

business decision-making efficiency, compliance, increased accessibility of financial reports, improved availability of financial information, and convenience of continuous reporting (Baldwin & Trinkle, 2011).

2.3. The mediating role of E-DS and FRQ

Corporate reporting is related to the presentation and disclosure of information to show a company’s real financial position as determined by accounting practices. It includes the following areas of disclosure: “financial detailing, corporate administration, corporate responsibility, and narrative reporting” (Chakraborty & Sarkar, 2021). Abhishek et al. (2018) indicate to every corporate entity’s primary responsibility is to make its business concerns disclosed to diverse stakeholders, which cannot except carried out using the reporting system’s digital format XBRL. XBRL is one of the technologies available to report corporate data. XBRL financial reporting has been disclosed to be more effective than traditional reporting and to benefit all stakeholder classes equally (Abhishek et al., 2018). There are many ways that corporations might disclose information, the annual report to stockholders is primarily a fundamental type of periodic disclosure (Cauter, 2011). In market-based economies, financial reporting serves two essential purposes; first, it fosters the transparency required for a successful capital market operation by reducing information asymmetry and enabling capital providers to appraise enterprises (Sahi et al., 2022). Corporate governance fundamentally depends on public disclosure in financial statements and financial reporting (Holland, 1999). Higher social disclosure quality and financial reporting quality have a positive link, according to Martínez-Ferrero et al. (2013), who studied the connection between the two. According to Kothari et al. (2009), a rich disclosure environment has many advantageous effects, including “effective resource allocation, the development of capital markets, market liquidity, a lower cost of capital, lower return volatility, and high analyst forecast accuracy” (Pivac et al., 2017). According to Al-Sakini (2019), disclosing the direct effects of an accounting disclosure may aid in evaluating the accuracy of the published accounting information as well as the ability of investors to understand and assess such information. Additionally, Study Jameel (2022) found that adopting electronic disclosure enhances all critical components of the accuracy of computerized accounting information.

Alzoubi (2016) examines how disclosure quality affects how much earnings management occurs at companies listed on the ASE. As a result, there is a high level of disclosure and a reduction in the scale of earnings management, which improves the quality of financial reporting (Alzoubi, 2016). According to Shatnawi (2018), research on electronic accounting disclosure and its function in enhancing financial reporting quality and minimizing information asymmetry in the Jordanian corporate environment are discussed to assist users of reports in making the best decisions. The outcomes demonstrated that electronic accounting disclosure contributes to raising the standard of financial

reporting (Shatnawi, 2018). Also, Pivac et al. (2017) indicate that analyzing and comparing the degree of annual report disclosure quality for listed European firms may interest future investors, management, and other users of company disclosure, particularly regulators working to raise the calibre of financial reporting (Pivac et al., 2017). Tawfik et al. (2017) show the importance of XBRL in the development of electronic publishing information in Jordanian industrial enterprises. The key findings indicate that the use of XBRL is supported by organizational factors, working persons, and technological considerations (Tawfik et al., 2017). According to Hsieh and Bedard (2018), businesses with stronger corporate governance have a higher chance of realizing the benefits of XBRL. Such businesses could, for instance, deploy XBRL in ways that significantly boost information collection and reporting, or they could use XBRL more effectively to increase its advantages regardless of the implementation technique. Yassin et al. (2012) investigated the potential advantages and challenges of XBRL adoption in the Jordanian context from an academic standpoint. The results show that improving financial report communication, analysis, comparison, quality, transparency, and a company's technological reputation are all possible (Yassin et al., 2012). Additionally, Al-Okaily et al. (2024) discuss how Jordanian financial companies' use of XBRL has affected the transparency of their financial information disclosure. The results demonstrate that Jordanian financial enterprises using XBRL are able to disclose financial information more "transparently in the digital disclosure environment", resulting in the publication of financial statements that are more relevant, trustworthy, and transparent (Al-Okaily et al., 2024).

Based on the above, the author proposed the following research hypotheses, which allow the exploration of the relationship between XBRL and FRQ in mediating the role of the electronic disclosure system is formulated as:

H1. A positive relationship exists between the extensible business reporting language and the e-disclosure system.

H2. A positive relationship exists between the extensible business reporting language and the quality of financial reporting.

H3. A positive relationship exists between the e-disclosure system and the quality of financial reporting.

H4. The mediating role of the e-disclosure system in the relationship between extensible business reporting language and the quality of financial reporting.

In Jordan and, in comparison to other countries, the adoption of XBRL is rather slow (Alkayed et al., 2023). So, the study results are expected to be of high quality regarding XBRL and FRQ, mediating the role of the E-DS at companies listed as ASE to help them prepare and present financial statements by XBRL. Thus, other developing countries other than Jordan are expected to benefit from the results of this study. Especially umbra in light of the awareness of XBRL adoption in developing countries

(Hentati et al., 2021). Based on the hypotheses above, the author proposed the study model, which allows for exploring the relationship between XBRL and FRQ while mediating the role of the E-DS. See Figure 1.

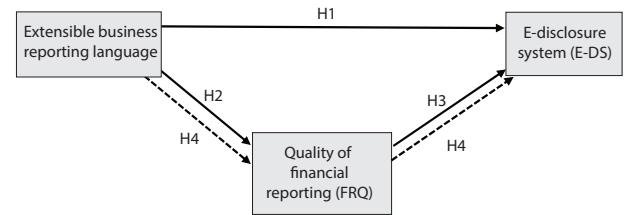


Figure 1. The study's model

3. Methodology

3.1. Study sample

The study searched for perceived emphasis on the E-DS mediating the relationship between XBRL and the FRQ. Based on an extensive assessment of the pertinent literature, a survey tool was created to examine the connections between XBRL, E-DS, and financial reporting automation. The study was conducted using internal auditors, financial managers, and financial analysts. The reason for choosing this sample is that it is strongly related to preparing, analyzing and auditing the financial reports within the companies listed on the ASE, so they have sufficient knowledge to answer the questionnaire items for this study. Eight experts participated to create a well-structured, accurate, and insightful survey questionnaire.

The other section was destined to gather the respondents' views about questionnaire items and included the independent variable (XBRL), mediating variable (E-DS), and the dependent variable (FRQ). The researcher used the descriptive analytical approach based on structural equation modelling (SEM) and AMOS to analyze the data. The sample study surveyed to gather data comprised 284; 229 usable responses were received, with 80% Response rates. Questionnaires were distributed by e-mail and WhatsApp. The responses were evaluated on a five-point Likert scale, as follows: "1–1.8 = very low; 1.81–2.60 = low; 2.61–3.40 = moderate; 3.41–4.20 = high; 4.21–5.00 = very high" (Owusu Kwateng & Darko, 2017; Mbachu et al., 2017; Albawwat et al., 2021). Several arbitrators tested the questionnaire to review its content and form. All questionnaire items were mostly derived from the website (Amman Stock Exchange, 2023) and also previous studies, whether they were related to developed or developing countries (Baldwin & Trinkle, 2011; Jameel, 2022; La Torre et al., 2018; Faccia et al., 2021; Henderson et al., 2015; Ashoka et al., 2020; Slehat, 2018; Qushtom, 2021; Martínez-Ferrero et al., 2013; Pivac et al., 2017; Tawfik et al., 2017; Shatnawi, 2018; Chakraborty & Sarkar, 2021; Murphy, 2022). See Appendix (Table A1).

Results analysis indicates the respondents' personality to the questionnaire. The selected the sample from a wide variety of companies from all sectors (insurance, banks, services, and industries). The majority of the respondents

(69.6%) have been industry sector and working in small- and medium-sized firms, whereas the remainder work in large firms. Most respondents were male, at a rate of 91%, and 72% were undergraduates with degrees (Bachelor and Diploma) specialising in accounting. Also, 39% of the respondents were between 30 to 40 years, 41% were between 40–50, and 66% had more than ten years of working experience. The previous personal information of the study sample indicated that the respondents had sufficient ability to respond to the questionnaire questions.

4. Data analysis and results

This study uses AMOS to perform structural equation modelling to analyze the data and demonstrate the relationship between the (XBRL) and (FRQ) by the mediating role of the (E-DS). Amos is a multi-variable statistical program frequently utilized in the business sciences as an efficient and successful instrument. Typically, Amos builds theoretical models from collected data (Tang & Jia, 2011). Furthermore, according to Kline (2005) and Bagozzi and Yi (2012), further benefits include the capacity to consider measure reliability, the “use of multiple-item constructs”, simpler mediation testing and evaluating construct validity.

4.1. Structural mode and descriptive statistics

The measurement model was assessed using some indicators (Hair et al., 2010). Confirmatory factor analysis (CFA) is run to evaluate all the study variables items used to measure each variable before running any relational tests, where the internal consistency is in the Cronbach alpha (CA). Composite Reliability for the model (CR) and Average Variance Extracted (AVE) for the model measure have convergent validity. The results show CA and CR above 0.7, and AVE is more than 0.5. So, for all variables, sufficient variance is necessary for the good of the measurement model (Hair et al., 2010; Kang, 2009; Fornell & Larcker, 1981). Also, it focuses on the results related to the statistical tests used in the study (descriptive statistics). See Table 1.

Table 1. Reliability and validity and descriptive statistics

Construct	NO	Mean	SD	Item	Load-ing	AVE	CR	CA
XBRL	189	3.836	.549	XBRL1	.76	.57	.77	.74
				XBRL2	.81			
				XBRL3	.79			
				XBRL4	.80			
				XBRL5	.91			
				XBRL6	.84			
				XBRL7	.78			
				XBRL8	.72			
				XBRL9	.82			
				XBRL10	.75			

End of Table 1

Construct	NO	Mean	SD	Item	Load-ing	AVE	CR	CA
E-DS	189	3.921	.489	EDS1	.70	.66	.81	.79
				EDS2	.72			
				EDS3	.81			
				EDS4	.77			
				EDS5	.79			
				EDS6	.80			
				EDS7	.83			
				EDS8	.74			
FRQ	189	3.359	.421	FRQ1	.84	.61	.72	.70
				FRQ2	.87			
				FRQ3	.88			
				FRQ4	.83			
				FRQ5	.91			
				FRQ6	.86			
				FRQ7	.88			
				FRQ8	.85			
				FRQ9	.83			

Note: abbreviations: XBRL – extensible business reporting language, E-DS – Electronic Disclosure System, FRQ – Quality of Financial Reporting.

4.2. Discriminate validity

The degree to which the measures that should not be highly linked with one another are genuinely distinct is known called discriminant or convergent validity (Hair et al., 2010). The results support the measures’ convergent and discriminant validity and construct reliability (Fornell & Larcker, 1981). See Table 2.

Table 2. The measurement model

Construct	XBRL	E-DS	FRQ
XBRL	0.83		
E-DS	0.72	0.81	
FRQ	0.69	0.61	0.79

Note: abbreviations: XBRL – extensible business reporting language, E-DS – Electronic Disclosure System, FRQ – quality of Financial Reporting.

4.3. Fit indices of the measurement model

At this point, the measurement model’s fit indices must satisfy the minimum criteria, where the value (RMSEA) should be between 0.05 and 0.08 to be deemed acceptable (MacCallum et al., 1996). Additionally, the parsimonious fit index relative chi-square value (CMIN) should be less than 5.0 (Hu & Bentler, 1998), and scores for the normed chi-square (CMIN/df) should be equal or less than 3.0 (Kline, 1998). The incremental fit index (CFI and TLI) should be greater than or equal to 0.9 (Marsh & Hocevar, 1985). The goodness of the Fit Index should be ≤ 1 (GFI). The test of the root Mean Square Residual (RMR) and Expected Cross Validation Index (ECVI), where the smaller the RMR value, the better (Hu & Bentler, 1998; Schermelleh-Engel

et al., 2003). Furthermore, the Tucker-Lewis index (TLI). Finally, the measurement model's fit results showed that all the fit-index scores were acceptable and reasonable and discriminant validity (Fornell & Larcker, 1981). See Table 3.

Table 3. Fit indices of the measurement model

Indices	XBRL	E-DS	FRQ
χ^2	117.23	123.54	88
Df	67	84	49
χ^2/df	1.75	1.47	1.80
RMSEA	0.031	0.039	0.033
CFI	0.966	0.947	0.957
GFI	0.981	0.924	0.936
NFI	0.911	0.932	0.947
TLI	0.922	0.946	0.984
AGFI	0.969	0.971	0.962

Note: abbreviations: XBRL – extensible business reporting language, E-DS – Electronic Disclosure System, FRQ – Quality of Financial Reporting.

4.4. Hypotheses testing

Then, the differences in the path coefficients are examined through beta estimate (β) values along the direct and indirect paths (Hair et al., 2010). The results attained through Amos matrices (standardized regression weights, p-value, regression weights, and the direct and indirect effect) are represented in the table below. See Tables 4 and 5.

The results of Table 4 indicate the direct effect of the independent variable XBRL on the dependent variable FRQ with the mediating variable E-DS. Also, the immediate effect of the mediating variable on the dependent variable. The results indicated the direct impacts of XBRL revealed on the E-DS (H1) have a significant positive effect (Estimate = 0.248, S.E = 0.023, CR = 10.782, P = 0.05). It also showed the results supported the positive effects of XBRL on FRQ (H2) (Estimate = 0.316, S.E = 0.054, CR = 5.851, P = 0.05). The results of the third hypothesis test also supported the positive effects of the e-disclosure system on financial reporting (Estimate = 0.642, S.E = 0.067, CR = 9.582, P = 0.05).

Table 4. Results of hypotheses testing

Hypothesis	Direction	Estimate	S. E	CR	P	Result
H1	XBRL → E-DS	0.248	0.023	10.782	0.05	Supported
H2	XBRL → FRQ	0.316	0.054	5.851	0.05	Supported
H3	E-DS → FRQ	0.642	0.067	9.582	0.05	Supported

Note: abbreviations: XBRL – extensible business reporting language, E-DS – Electronic Disclosure System, FRQ – Quality of Financial Reporting.

The results presented in Table 5 illustrate the indirect impact of the independent variable on the dependent variable. The mediating variable E-DS partially mediates the

association between XBRL and FRQ. The outcomes show that XBRL has a considerable favourable impact, both directly and indirectly, on the quality of financial reporting using the e-disclosure system (direct = 0.48, P-value = 0.01, indirect = 0.51, P-value = 0.01).

Table 5. Testing the indirect impact

Relationship	Direct	p-value	Result	Indirect	p-value	Result
XBRL → FRQ	0.48	0.01	Significant	0.51	0.01	Significant

5. Discussion

The study sought to show how the XBRL and the FRQ are related by mediating the E-DS for the Jordanian companies listed on the ASE. As shown in the test of H1 (Estimate = 0.248, S.E = 0.023, CR = 10.782, P = 0.05), the results revealed a significant positive relationship between XBRL and E-DS. That means whenever corporations adopt an XBRL, it will positively support the e-disclosure process, whether it is through immediate delivery of reports and financial information to all its users or increasing the volume of data and information that e-discloses electronically, such as prospectuses in which the issuer offers securities for subscription in financial markets and purchase and ownership transactions, long-term credit ratings, and buying treasury shares. Also, Electronic disclosure of corporate governance reports, the company's general Authority meetings, applications for listing shares in the financial markets and general corporate circulars, such as re-trading the company's shares after reducing capital and issuing loan bonds while keeping confidentiality and quality of data and information that e-disclose electronically. Furthermore, it enables the e-link between the data elements of the financial report to prepare financial reports efficiently and effectively, as well as e-publishing financial reports and vertical and horizontal financial comparisons. The findings of the test (H1) confirm the results of prior studies that asserted that XBRL positively supports the e-disclosure system (Jameel, 2022; Benbouali & Benberi, 2018; La Torre et al., 2018; Tawfik et al., 2017; Faccia et al., 2021; Causer, 2011).

In addition, to test the H2, the results (Estimate = 0.316, S.E = 0.054, CR = 5.851, P = 0.05) revealed a significant positive relationship between XBRL and FRQ. That means the XBRL contributes to presenting financial reports in various formats, such as Word, Excel, and PDF. Also, it contributes to the timely presentation of financial reports. Presentation of financial reports in several languages reduces the possibility of errors in the financial reports. Also, classify and correct accounting information and convenient presentation of financial reports. All of the above contribute to presenting financial reports transparently, objectively, accurately and impartially. Borgi and Tawiah (2022) indicate that the potential advantages of XBRL in promoting financial reporting comparability and investor protection

through enhanced accounting transparency and disclosure have propelled its adoption globally. Janvrin and Mascha (2010) show the importance of XBRL increasing the effectiveness of the data supply chain by offering information that can be transformed into data that can be used to compare facts inside a firm or to improve the comparability of several companies. Also, Baldwin et al. (2006) state that to ensure the production of relevant information for decision-making, the nation has resorted to adopting the XBRL language. This is because it helps improve the quality of financial reports and financial information transparency by providing complete and useful information disclosed on time. The findings of previous studies also supported the results of the second hypothesis test (Faccia et al., 2021; Ashoka et al., 2020; Slehat, 2018; Tawiah & Borgi, 2022; Qushtom, 2021). According to the Jordan Securities Commission, XBRL provides computer-readable reading material based on standardized financial relationship coding. XBRL allows investors and financial analysts to analyze data on time instead of waiting longer (Liu et al., 2014); it helps them make decisions (Baldwin & Trinkle, 2011). Its application also facilitates collecting and processing data, exchanging and comparing information, and financial reports (Liu et al., 2014). In addition, it improves the quality of disclosure (Baldwin & Trinkle, 2011). XBRL imparts freedom and dynamism to the financial markets through its contribution to unifying the information that all investors need (Zamzam & Qaffas, 2018); it also enhances competitive advantage (Reiman & Ramin, 2013). It also reduces the risks of human errors during data entry operations (Apostolou & Nanopoulos, 2009).

To test the H3, the results (Estimate = 0.642, S.E = 0.067, CR = 9.582, P = 0.05) revealed a significant positive relationship between the E-DS and FRQ. The results indicate that e-disclosure of corporate governance reports, the company's general Authority meetings, applications for listing shares in the financial markets and general corporate circulars, such as re-trading the company's shares after reducing capital and issuing loan bonds while keeping confidentiality and quality of data, all contribute to enhancing and improving the quality of financial reports. Furthermore, e-publishing financial reports and vertical and horizontal financial comparisons enable the e-link between the data elements of the financial report to prepare financial reports efficiently and effectively. Finally, electronic disclosure helps strengthen transparency in financial reports, which limits information asymmetry. In addition, disclosing accounting and financial information electronically increases the veracity of its representation of financial transactions and events, and it helps reduce errors. Electronic disclosure also reflects the possibility of verifiability of information, where errors are detected and identified, increasing the veracity of its representation of financial operations and events. The findings of all prior studies concur with those of the third hypothesis test (Holland, 1999; Martínez-Ferrero et al., 2013; Al-Sakini, 2019; Jameel, 2022; Alzoubi, 2016; Shatnawi, 2018; Pivac et al., 2017).

Furthermore, to test the E-DS mediates the relationship between XBRL and the FRQ (H4). The results, as shown in the test, revealed a significant positive relationship between XBRL and financial report quality by the role of mediating the e-disclosure. The findings suggest in Table 5 that XBRL positively affects FRQ, with the mediating variable E-DS a leading role. (H4). Abhishek et al. (2023) showed that numerous facets of financial reporting are significantly influenced by XBRL and its capabilities. Additionally, the different facets of financial reporting favourably impact the quality of financial reporting (Abhishek et al., 2023). The results indicate that the XBRL and E-DS supported the FRQ by archiving financial reporting information. It also reduces the possibility of errors and accuracy, higher efficiency, and transparency and objectivity in the presentation of financial reporting. Additionally, with fraud prevention, more reliability, and timeliness in financial reporting presentation, users can quickly and accurately understand the firm's financial condition of the firm. Al-Okaily et al. (2024) indicated that XBRL is able to disclose financial information more "transparently in the digital disclosure environment", resulting in the publication of financial statements that are more relevant, trustworthy, and transparent. As well as Electronic disclosure is one of the most important developed uses of the Internet, as it has led to a fundamental change in the environment of financial reporting and accounting information for corporations (Shatnawi, 2018). Disclosure of financial and non-financial information is also considered an indicator of a company's success level. The greater the disclosure, the more positive the impression about the efficiency and effectiveness of the company's performance will be (Shatnawi, 2018).

6. Conclusions

The study sought to show how the XBRL and the FRQ are related by mediating the E-DS for the Jordanian companies listed on the ASE. The results, as shown in the test, revealed a significant positive relationship between XBRL, E-DS and FRQ. That means whenever corporations adopt an XBRL, it will positively support the e-disclosure process, whether it is through immediate delivery of reports and financial information to all its users or increasing the volume of data and information that e-discloses electronically, such as prospectuses in which the issuer offers securities for subscription in financial markets and purchase and ownership transactions, long-term credit ratings, and buying treasury shares. Also, Electronic disclosure of corporate governance reports, the company's general Authority meetings, applications for listing shares in the financial markets and general corporate circulars, such as re-trading the company's shares after reducing capital and issuing loan bonds while keeping confidentiality and quality of data and information that e-disclose electronically. Furthermore, it enables the e-link between the data elements of the financial report to prepare financial reports efficiently and effectively, as well as e-publishing financial

reports and vertical and horizontal financial comparisons. Additionally, the test results revealed a significant positive relationship between XBRL and FRQ. That means the XBRL contributes to presenting financial reports in various formats, such as Word, Excel, and PDF. Also, it contributes to the timely presentation of financial reports. Also, it supports presenting financial reports in several languages and reduces the possibility of errors in the financial reports. Moreover, classify and correct accounting information and convenient presentation of financial reports. Therefore, the SEC took the first step toward facilitating standardized financial information when it required each publicly traded company to submit and publish available financial reporting in XBRL format on their corporate websites (Henderson et al., 2015). Hsieh and Bedard's (2018) confirm the expected interactive effect of voluntary XBRL adoption and corporate governance strength on both financial reporting quality and cost of capital. In Jordan, the e-disclosure system led to the development of obtaining information and disclosures in Arabic and English, thus raising the level of disclosure and transparency in the market (ASE, 2023). Results also confirm that XBRL reporting leads to better, more relevant, reliable, and transparent financial information, simplifying preparing group financial statements. Also, XBRL is more critical for sustainability reporting than financial reporting because sustainability reporting is primarily optional (Alkayed et al., 2023). The results of the test confirm the results of prior studies that asserted that XBRL positively supports the e-disclosure system (Jameel, 2022; Benbouali & Benberi, 2018; La Torre et al., 2018; Tawfik et al., 2017; Faccia et al., 2021; Cauter, 2011).

Moreover, the results revealed a significant positive relationship between the E-DS and FRQ. The results indicate that e-disclosure of corporate governance reports, the company's general Authority meetings, applications for listing shares in the financial markets and general corporate circulars, such as re-trading the company's shares after reducing capital and issuing loan bonds while keeping confidentiality and quality of data, all contribute to enhancing and improving the quality of financial reports. Furthermore, e-publishing financial reports and vertical and horizontal financial comparisons enable the e-link between the data elements of the financial report to prepare financial reports efficiently and effectively. Finally, electronic disclosure helps strengthen transparency in financial reports, which limits information asymmetry. In addition, disclosing accounting and financial information electronically increases the veracity of its representation of financial transactions and events, and it helps reduce errors. Electronic disclosure also reflects the possibility of verifiability of information, where errors are detected and identified, increasing the veracity of its representation of financial operations and events. Furthermore, to test the E-DS mediates the relationship between XBRL and the FRQ. The results indicate that the XBRL and E-DS supported the FRQ by archiving financial reporting information. It also reduces the possibility of errors and accuracy, higher efficiency, and transparency and objectivity in the presentation of

financial reporting. Additionally, with fraud prevention, more reliability, and timeliness in financial reporting presentation, users can quickly and accurately understand the firm's financial condition of the firm. As well as Electronic disclosure is one of the most important developed uses of the Internet, as it has led to a fundamental change in the environment of financial reporting and accounting information for corporations (Shatnawi, 2018). Disclosure of financial and non-financial information is also considered an indicator of a company's success level. The greater the disclosure, the more positive the impression about the efficiency and effectiveness of the company's performance will be (Shatnawi, 2018). The findings of all prior studies concur with those of the third hypothesis test (Holland, 1999; Martínez-Ferrero et al., 2013; Al-Sakini, 2019; Jameel, 2022; Alzoubi, 2016; Pivac et al., 2017; Shatnawi, 2018). Furthermore, the possibility of delivering and distributing information electronically of information to an unlimited number of users in the same form, content and time, and integrating and linking financial reports with several departments will increase the volume of information that is disclosed electronically, contribute to the presentation of financial reporting in a high-quality form. It also opens the door for dialogue and exchange of information between companies and users. The study is considered one of the current ones that address the realities of adopting XBRL because Jordan recently adopted an e-disclosure system based on XBRL. This study emphasizes a crucial enabling element for XBRL from the viewpoint of developing nations. For all consumers of financial statements in the financial markets to understand the significance of its application and make use of it, financial statements must contain accurate, non-misleading information so that consumers may make critical financial and investment decisions. The theoretical and practical ramifications for advising businesses listed on the ASE to utilize this language are presented in this paper. This article makes several contributions to the body of literature. It offers a more thorough explanation of XBRL, which all businesses listed on the ASE must be aware of to submit highly credible financial statements. This study also urges businesses to present electronic disclosures of all pertinent financial data so that users can view accurate financial reports and make informed financial and investment decisions.

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APPENDIX

Table A1. Questionnaire items

Construct	Item	
Extensible business reporting language	XBRL1	The XBRL language provides a specific framework for financial disclosure based on IFRS.
	XBRL2	The XBRL provides sufficient flexibility to customize multiple models to suit the needs of all companies.
	XBRL3	The XBRL increases the reliability of the information's validity among its users.
	XBRL4	The XBRL system enables users to process and prepare documents and reports in a short time and with minimal costs.
	XBRL5	The XBRL improves and accelerates the process of analyzing financial information and reduces the rate of errors in the data to the minimum.
	XBRL6	The XBRL contributes to collecting information electronically instead of manually, providing advanced mechanisms to ensure its integrity and correctness.
	XBRL7	The XBRL contributes to providing reports on an ongoing basis, and the system provides the ability to create reports and maintain them in an electronic form that can be used when needed.
	XBRL8	The XBRL contributes to the speed of receiving and sending disclosure data and reports between various parties.
	XBRL9	The XBRL contributes to raising the level of disclosure by adding new requirements, such as risk management and applying governance in the company.
	XBRL10	The XBRL language is working on the possibility of allowing information in Arabic and English to be published in other languages.
Electronic Disclosure System	E-DS1	Electronic disclosure of annual and interim financial reports.
	E-DS2	Electronic disclosure of prospectuses in which the issuer offers securities for subscription in financial markets.
	E-DS3	Electronic and full disclosure of the information enables the investor to make an investment decision.
	E-DS4	Electronic disclosure of material and corporate information, such as purchase and ownership transactions, long-term credit ratings, buying treasury shares and others.
	E-DS5	Electronic disclosure of corporate governance reports.
	E-DS6	Electronic disclosure of minutes of the company's general Authority meetings.
	E-DS7	Electronic disclosure of applications for listing shares in the financial markets and membership of companies.
	E-DS8	Electronic disclosure of general corporate circulars, such as re-trading the company's shares after reducing capital, halting trading, effects on the company's closing price, issuance of loan bonds, etc.

End of Table A1

Construct	Item	
Financial Reporting Quality	FRQ1	Relevance
	FRQ2	Credibility
	FRQ3	Reliability
	FRQ4	Verifiability
	FRQ5	Comparability
	FRQ6	Neutrality
	FRQ7	Error-free
	FRQ8	Timeliness
	FRQ9	Transparency and understandability.

Note: abbreviations: XBRL – extensible business reporting language, E-DS – Electronic Disclosure System, FRQ – Financial Reporting Quality.