



INTERNATIONAL JOURNAL OF TRANSFORMATIONS IN BUSINESS MANAGEMENT

e-ISSN: 2231-6868, p-ISSN:2454-468X

eXtensible Business Reporting Language (XBRL) : Requirements and Challenges

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Paper Received: 10th April, 2022; **Paper Accepted:** 11th May, 2022;

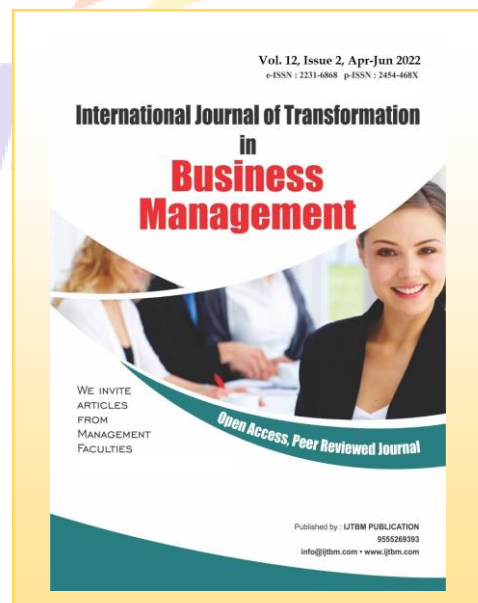
Paper Published: 17th May, 2022

DOI: <http://doi.org/10.37648/ijtbm.v12i02.011>

How to cite the article:

Dr. Manal Hussein Lafta, eXtensible
Business Reporting Language
(XBRL) : Requirements and
Challenges, IJTBM, April-June 2022,
Vol 12, Issue 2; 214-242, DOI:
<http://doi.org/10.37648/ijtbm.v12i02.0>

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ABSTRACT

This study seeks to study and discuss one of the most prominent information technologies of this era, the eXtensible Business Reporting Language (XBRL), which aims to provide financial reports electronically in a standard manner. This research presents a different view of what has featured in the studies related to this language by examining the reflections of XBRL outputs on users of these outputs under the concept of information overload (which indicates that there are limits to the amount of information that the human mind can absorb and process, and when these limits are exceeded, information overload occurs , which leads to a deterioration in the quality of the decision-making process)..... The researcher's vision in this regard centres on two axes:

- The fact that XBRL information is actually needed by users of this system.
- The ability of XBRL information users to understand the large amount of information provided to them within the XBRL environment.

XBRL needs a set of requirements that live up to the application area while at the same time facing a few challenges that raise some reservations about this language. To achieve the objectives of the research, the researcher sought to study the reality of the relationship of XBRL requirements to the phenomenon of information overload and the fact that XBRL challenges are related to the phenomenon of information overload by conducting a field study and subjecting it to a set of statistical analyses.

Keywords: *Accounting Information Systems – IT – XBRL*

INTRODUCTION

XBRL is an electronic system adopted in the financial reporting process. It is also one of the leading information technologies of the current century that adopts the delivery of financial information in accordance with IFRS international financial reporting standards and facilitates the exchange of information between economic activity parties and users of financial statements. For XBRL, a set of requirements should be provided that serve as a framework for this language. At the same time, XBRL faces a number of challenges that produce a few negative effects on the user of the

information generated by this language. Here, we should stop at a very important phenomenon: information overload, which, according to the researcher's vision, is an inherent part of the information provided by XBRL. Based on the above, the research attempts to provide an analytical vision of both the requirements and challenges of XBRL, and to determine the extent to which they are close to the phenomenon of conceptual information overload based on the nature and characteristics of the information that arise from this language.

To achieve the objectives of the research, the researcher followed the following mechanism:

- Developing a scientific methodology for research.
- Discussing the literatures related to research variables: XBRL and information overload.
- Providing an analytical vision of the relationship between XBRL requirements and challenges and the phenomenon of information overload.
- Conducting a field study in the Iraqi environment to diagnose the reality and nature of the relationship between the variables of research and prove the researcher's vision in this field through a series of statistical analyses.
- Drawing a set of conclusions and recommendations from the indicators produced by the field study.

RESEARCH METHODOLOGY

The Research problem

In order for the XBRL to achieve its objectives, a number of requirements must be available that form the XBRL framework while at the same time facing a few challenges arising from the nature of the risks and errors associated with its application. Both requirements and challenges share the circumstances for the emergence of the phenomenon of information overload through the confusion,

anxiety, uncertainty and complexity caused by XBRL information and outputs ...etc .This is reflected, as a final outcome, on the users of financial statements, under the determinants of the time needed to make decisions and the quality of information. Therefore, the research problem can be summed up in the fact that XBRL's requirements and challenges involve many areas in which they share the phenomenon of information overload in terms of the intellectual foundations of both.

The aim of the research

The research aims to:

- Presenting and discussing XBRL from a different point of view from what is contained in the relevant literature, by presenting the negative aspects or reservations that can be diagnosed on the outputs, information and implications of this language.
- Studying the convergence of vision between XBRL requirements and challenges and the phenomenon of information overload.

The importance of research

The importance of research stems from the nature of XBRL, which is a modern and contemporary method of electronic reporting of financial statements that play an important role in decision-making. This is where this research discusses the requirements for the application of this language as well as the

challenges facing its application through their relationship to the phenomenon of information overload as much as the nature of the outputs of this language and its information is concerned.

The hypothesis of research

The research is based on the following hypotheses:

- There is a statistically significant relationship with XBRL requirements as a manifestation of information overload.
- There is a statistically significant relationship with XBRL challenges as a manifestation of information overload.

eXtensible Business Reporting Language XBRL : Reality and Requirements

For the purpose of diagnosing the reality of XBRL, the most important concepts underlying this language should be presented and explained based on what the relevant literature has produced. The financial reporting process plays a major role in delivering accounting information to different users in a timely manner. With the emergence of the knowledge economy and information technologies and the expansion of internet use, there have been significant developments in dealing with accounting and financial applications, especially in the field of publishing and distributing financial

statements . XBRL is an electronic system that is relied upon in the financial reporting process as a flexible software language aimed at establishing a standard accounting information system. This system converts and transmits accounting information over the Internet by reformulating financial statements in a way that all users can easily handle. XBRL is a modern method of electronic reporting of financial statements, i.e. it is a language specifically designed to facilitate the delivery of business information (Romney & Steinbart,2018). It is at the same time a widespread global standard for reporting all kinds of financial information within and across organizations with the aim of facilitating the circulation of financial and non-financial information among all types of organizations around the world (Hurt & Zhen, 2008). Extensible Business Reporting Language (XBRL) can be defined as an electronic financial reporting language aimed at improving the delivery of financial information and allowing a smooth flow of data through computers. As a result, XBRL facilitates the exchange of data between users in accordance with the extended coding language XML (Extensible Mark-up Language). This allows computer applications to recognize data for reading or processing by certain XML-based standards (Valentinetti & Rea, 2011). In other words, XBRL is a digital language developed

specifically to support disclosure and information exchange between economic activity parties and users of information and financial statements (Gigler & Hemmer, 2004).

XBRL is one of the most prominent technologies of the century, a process that relies on the ease of communicating financial information in accordance with IFRS, using information technology to provide financial reports in a standard electronic form. This is so that it can be classified and displayed in the same way to avoid human errors, and thereby ensuring the transparency and reliability of financial statements (Benbouali & Berberi, 2018). The above definitions indicate that XBRL is a simple and fragmented way of communicating information in accordance with the requirements of the decision taken by the beneficiary (IFAC,2011). It functions in a way that facilitates the analysis of this information by investors and other beneficiaries faster and less expensively. XBRL helps link and connect different reporting systems directly with software, by providing public codes of information used by available software, XBRL makes credit rating more automated. Reducing or excluding the need to produce paper documents allows for an analytical platform (system) that can significantly reduce credit analysis costs, increase access, and repeat information provided by enterprise-level

borrowers and asset register (asset ledger), as well as reduce error rates by reducing or eliminating manual tasks, reducing time spent in data consolidation and increasing time spent in financial analysis (Willis & Saegesser, 2003).

The application of XBRL requires a set of regulatory and physical requirements, with regulatory requirements based on a package of binding laws and legislation to apply this language. There is also the need for human resources with the necessary skills and knowledge capabilities to apply. The physical requirements are based on a set of rules for the XBRL language, which consist of the following:

- 1- Tag: It is called the tag or description, and refers to the address that begins and ends with each item included in the XBRL program (Farewell,2006). The identification card is a means of encrypting the definition provided to financial reports. This links the item in the financial report and the corresponding element in the XML scheme (Schema). This in turn provides all the information for this element such as how the account occurs and the criteria and rules applied to access it and how to supervise and submit it (Benbouali & Berberi,2018).
- 2- Taxonomies : It serves as a dictionary of XML names and elements that are clearly defined when preparing business

reports, so that the name of each item highlights a “financial fact” that serves the purposes specified in these reports and the classification determines the hallmarks of each data item (Farewell,2006). The first part of these classifications, the chart, includes the definitions of all elements such as the definition of assets, liabilities and other elements, while the other part, the link rule, determines the relationships between these elements (Donnelly, 2007). The classification dictionary consists of five key elements, represented by the Schema file, presentation link base, calculation link base, label link base, definition link base, and reference link base (Apostolou & Nanopoulos,2009).

3- XBRL Documents: Another vital component of the XBRL framework. The XBRL document includes the taxonomy and the instance document (the financial document). The taxonomy consists of describing and classifying business and financial terms, while the instance document consists of actual facts and figures. The classification and instance document together are XBRL documents. An XBRL financial document is mapped via a data tag and these tags map the financial document to globally agreed classifications that are standardized and usable in multiple

formats, for many beneficiaries, and for multiple purposes (Azhar & Subramanian, 2019). An XBRL document can be defined as the document or report executed in XBRL that reflects the information that need to be reported.

4- Instance Document: This document is an XML file that contains the XBRL elements that are a set of financial facts represented by the data cards. Once you click on any number in the electronic financial reports, provided in XBRL language, all the information about this number through the identification card enables the beneficiaries to access it electronically, read it and analyse it through the open files. This document can be defined as the report that describes certain accounting information such as the statement of financial position or the income statement (Benbouali & Berberi, 2018) (Farewell, 2006).

5- XBRL Tools: XBRL Tools, provided by third-party companies and XBRL international, are intended to support the creation and management of XBRL documents, and to facilitate data interoperability between different legacy systems. Moreover, these tools enable automatic collection, validation and extraction and XBRL document

processing. (Azhar & Subramanian, 2019).

The application of XBRL results in several advantages that benefit many parties producing and using organizations' business reports. According to what was mentioned in the relevant literature, the most important of these parties are regulatory authorities, institutional entities, auditors, accountants, investors, financial analysts and academics. As for the advantages of the XBRL application, it can be embodied in the following items:

- The application of XBRL enhances the transparency and efficiency of the financial market by increasing the possibility of processing and trading accounting information and comparing it with other reports and reducing the discrepancy involved in financial information resulting from conflicting models for preparing international financial statements (Ahrendt, 2009). This in turn allows investors and financial analysts to analyse data quickly and accuracy thanks to its ability to arrange and classify financial data in a way that is easy to compare (Wang, 2015). This is done by improving access to financial reporting information and as a result analysts gain more time for good analysis and increase forecasting accuracy by reducing manual tasks or

waiting time for additional data from data brokers and then obtaining less expensive information (Liu *et al.*, 2014).

- XBRL reduces financial reporting information inconsistencies because it standardizes terminology and symbols. As a result, it improves the transparency and reuse of financial reporting information by reducing data re-entry, if not completely removing it, eliminating redundant data and increasing processing speed. This reduces the risk of human errors during Importing and exporting data, and at the same time, the speed of data collection, analysis and preparation of reports contributes to enhancing the competitive advantage (Ramin & Reiman, 2013).
- The XBRL application assists in business reporting and information exchange for all regulatory agencies, including tax and financial authorities, central banks and governments (Martic *et al.*, 2017). At the same time, giving economic entities a better representation of their financial position in the market and better handling of company data in the field as well as better enable the Certified Public Accountant (CPA) to carry out its primary mission of protecting the public interest by improving investors' access to the capital markets (Benbouali & Berberi, 2018).

- Implementing XBRL results in lower financial reporting costs and more timely reporting (Durkovic *et al.*, 2017). It also results in utilizing open data for analytical purposes, providing better information for enterprise risk management, and enabling integrated reporting. (Benbouali & Berberi,2018).
- The application of XBRL increases the quantity and quality of information that can be published and communicated to users (AICPA, 2009).

XBRL Application Challenges

The nature of XBRL's requirements and features creates some kind of challenges to this technology, which should be considered as ways to reduce the negative impacts it has on the XBRL information user. These challenges are in the next items (Al-Sakka , 2007) (Burnett *et al.*, 2006) (Zhang *et al.*, 2019) (Zhou,2019) (Ahrendt,2009) (Durkovic *et al.*, 2017):

1. The nature of the information provided by XBRL reflects on the credibility of the financial statements resulting from this language, as well as on the confidence of users of what they contain and the accompanying disclosure. Accordingly, the user of these financial statements does not guarantee that these electronically published statements are

the same as those adopted by the external auditor.

2. Challenges stemming from the nature of XBRL components and the advantages they achieve, the application of this language is not without some problems that are a real challenge to it. This includes the failure to ensure the correct application of the Taxonomy classification used in the creation of XBRL reports as well as the problems associated with distinguishing between classification items that must correspond to the terms of the financial statements as well as the misuse of the tag label of incorrect designation of the subject of accounting on the corresponding mark.
3. The weak motivation that encourages companies in general to apply XBRL, which in itself is a major challenge to this language, due to their fear of changes, especially when current reporting processes are being conducted correctly.
4. The techniques used in the XBRL application can be a challenge in itself. XBRL does not prevent and restrict anyone from editing and using electronic financial information, since this language consists of the program code. The challenge here is the possibility of modifying the program and attacking and maliciously tampering with the third party of its data. This

affects the reliability of the XBRL document and thereby reducing the efficiency of the audit. XBRL allows economic entities to use custom addition elements. Unrestricted use of ad hoc extensions can make it difficult to compare financial statements with economic entities.

5. There are still doubts about the reliability of the data provided by XBRL reports, with Ernst & Young (2004) recommend that investors continue to rely on classic reports even though documents associated with XBRL reflect the same information as classic reports. This results in investors and analysts not being able to rely on the validity of the XBRL reports submitted. Therefore, their reluctance to use this technology for analysis purposes.
6. Another challenge is lack of ensuring the quality of the information reported according to XBRL, as XBRL programs involve some exemptions that indicate that the relevant institutions are exempt from accounting responsibility for their financial reports according to XBRL, and that relevant accounting firms and certified chartered accountants are exempt from audit responsibility. This in itself causes XBRL providers not to pay attention to the accuracy and completeness of financial information. This leads to the provision of weak

financial information that significantly reduces the impact of auditing and causes deviations in the results of the examination of information, thereby affecting the quality of the reported information.

7. One of the outcomes of using XBRL is providing new information beyond what has been reported in traditional financial reports. In other words, it increases the quantity and quality of the data disclosed, which in itself constitutes another type of challenge that investors are not interested in financial reports prepared by the XBRL application and may be a source of confusion and anxiety for them. Also, the techniques applied in data processing through XBRL language may take some time for investors to recognize, and may lead to their reluctance to use XBRL significantly.
8. Challenges of errors that XBRL does not make, such as failure to manually validate the XBRL document or with the program, as well as errors in data labelling and extension errors involving the inability to establish mathematical relationships between elements, representation of elements in the wrong place in reports, errors in creating unnecessary new elements and selecting insufficient classification elements

within the framework of assigning errors.

9. Another challenge is that XBRL is not easy to understand by all parties, as it is not without controversy. XBRL specifications have been criticized for being complex, documenting these specifications more than 151 pages, which in turn has a negative impact on the usability of XBRL, which is closely related to the success of this technique.

INFORMATION OVERLOAD

The phenomenon of information overload (IO) is produced when our brains receives large amounts of information, or sheds information faster than its ability to process this information, based on the fact that the brain has limited capacity to process information (Hurt & Zhen,2008). Information overload can be expressed as “the difficulty an individual faces when making a decision with information overload”. It may indicate a situation in which users of information fail to process any other information because of its large size as a result of the oversupply of information to the limits of human ability to process information (Hoq, 2014).

The performance of any user (represented by making the appropriate decision) is positively related to the amount of information provided to him – up to a certain point ,if he/she receives more information

after this point, then the performance of the individual will decrease rapidly, leading to the emergence of information overload that confuses the individual and negatively affects his or her ability to set priorities and remember previous information or difficulty remembering it, as well as feelings of tension, confusion, pressure and anxiety (Eppler & Mengis, 2003). The characteristics of information (quality of information) can contribute to the emergence of information overload, such as the level of uncertainty associated with information, ambiguous, complexity, modernity, etc. Information overload occurs when information processing requirements exceed the ability to process information. Information processing requirements are meant to be the information necessary to complete a particular task, and information processing can be characterized by other aspects such as presentation format, access, completion, number of options, time pressure and others. However, the ability to process information is the amount of information that an individual can integrate into the decision-making process, and this is related to individual aspects such as desire, acceptance, motivation, knowledge, convenience and others (Rachfall, *et al.* 2015).

The concept of information overload can be summarized as follows: there are limits to the volume of information that the human mind can absorb and process. When these

limits are exceeded, there is information overload that leads to a deterioration in the quality of the decision-making process and higher costs of processing this information (Romney & Steinbart, 2018).

The phenomenon of information overload is behind a few reasons (identified by Eppler & Mengis), the most important of which is (Hurt & Zhen, 2008) (Kashada *et al.*, 2020):

1. Personal factors: these refer to the individual determinants of each person in the processing of information.
2. Information characteristics: The characteristics of information play an important role in the release of information overload. The information may be uncertain, vague, complex and intense. All these characteristics can create a greater chance that decision makers will become overloaded with information.
3. Task & Process: this refers to the idea of making a decision under considerable time pressure, as well as other reasons within tasks and processes consisting of non-routine tasks and the complexity and overlap of tasks and others.
4. Organizational design: this refers to groups of individuals, who work according to a particular organizational design, differ in ideas and in problem-solving and decision-making approaches, and that merging all points of view can cause information overload.

5. Information Technology: Information Technology can contribute to the emergence of information overload, through its methods and approaches of introducing information such as e-mail, instant messaging, mobile phones, the Internet and the growth of television channels.

Other studies have confirmed that accounting information overload is linked to the following sources:

Inappropriate information, too much information, frequency of information, low quality of information, lack of time to understand information effectively (Al-Abdullah & Asaad, 2008).

The phenomenon of information overload has some negative effects, namely, wasting time in search of information, which causes delayed decision-making as a result of the large amount of information, as well as the dispersal of users of this information from their main tasks (Allen & Wilson, 2003).

Information overload in financial reports (or excessive disclosure of financial reports) is a major and growing problem. This is because a large amount of disclosures can affect the usefulness of financial reports and add unnecessary complexity to them (Drake *et al.*, 2019). Excessive disclosure of financial reports has a few negative effects, the most important of which is confusion among users of annual financial statements, sometimes withholding appropriate information, time

and effort, and additional costs in preparing such disclosures that exceed the management's needs to carry out their tasks (Sampers, 2013).

XBRL AND ITS REFLECTIONS ON INFORMATION OVERLOAD

This section is interested in presenting and discussing the convergence between the intellectual structure of XBRL and the phenomenon of information overload through XBRL requirements and challenges. To this end, the researcher lists the following questions, the answers of which help provide some indications of reflections and convergence in vision between XBRL and the phenomenon of information overload....

- XBRL is used by organizations to increase the amount and quality of data disclosed, but does the XBRL output user need so much data to understand financial information? In other words, does the information user realize this volume of output from XBRL?
- Who is sure the XBRL information user actually wants XBRL?
- Who guarantees that the user (e.g. investor) will understand the financial information provided to them by XBRL in the way that the producer expects this information?
- Should the user have the right knowledge and experience to understand the

financial information provided to him by XBRL?

- Do XBRL requirements meet the concept of information overload?
- Do XBRL challenges translate into information overload ?

The researcher considers that the answers to these questions can be identified and discussed in two axes: need and perception. As far as the need is concerned, attention should be drawn to the fact that users actually need XBRL information, which is marketed according to the environment and requirements of this language. As for the issue of perception, it should be thought here of the ability of users to understand the large amount of information provided to them in accordance with the XBRL environment and within time-frames. This poses a real challenge to this language that brings it very close to the phenomenon of information overload.

Based on the above, the researcher believes that the entire intellectual structure of XBRL creates the appropriate ground in which the phenomenon of information overload works. The researcher will work to present this vision and prove it in the field study of this research.

FIELD STUDY

The field study was conducted to research through the design of a questionnaire form, which included two axes (XBRL

requirements and information overload) and (XBRL challenges and information overload), with (7) items per axis. These are distributed to a random sample of the research community consisted of a number of academics, professionals and investors in the Iraqi Stock Exchange. A total of 120 questionnaires have been adopted for statistical analysis.

Factor analysis of research variables

The main purpose of the exploratory factor analysis method is to summarize and reduce the variables to the lowest number possible. The factor analysis aims to interpret positive correlation coefficients that have statistical significance. In the current study, the factor analysis will be adopted to test the scale of the first axis of questionnaire (XBRL requirements and information overload) and the second axis scale of (XBRL challenges and information overload) in order to explicitly explore the dimensions under these measures.

• **Sample adequacy and correlations between variables**

In order to verify the adequacy of the study sample, which is one of the most important necessary conditions for the use of factor analysis, the Kaiser-Meyer-Olkin Measure has been used. Table (1) below shows that KMO is greater than (0.5) at (0.531) for the first axis of the questionnaire and (0.461) for the second axis. This indicates an increased reliability of the factors we obtain from the factor analysis as well as the adequacy of the sample size. As for the existence of correlations between variables, Bartlett test was used in terms of whether the link matrix was a single one. The test indicates statistical significance of the link, where the test value was (0.004) for the first axis and (0.000) for the second axis, which is lower than the significance level (0.05).

Table (1): KMO and Bartlett’s test results for items of axis(XBRL requirements and information overload)

THE TEST		The first axis	second axis
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.531	0.461
Bartlett's Test of Sphericity	Approx. Chi-Square	42.198	68.950
	Sig	0.004	0.000

Using principal components method, the summary of the results of factor analysis can be displayed on the(XBRL requirements and

information overload) factors, which had only three higher subjective values than the one true before and after rotation. Table (2) below shows that three factors have been reached because their eigen values (latent

root) are greater than the one true. The ratios of interpretation of variations from the total variation of each factor were also reached.

Table (2): Summary of results of factor analysis (XBRL requirements and information overload)

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.607	22.952	22.952	1.607	22.952	22.952	1.471	21.012	21.012
2	1.298	18.542	41.494	1.298	18.542	41.494	1.275	18.212	39.224
3	1.026	14.653	56.148	1.026	14.653	56.148	1.185	16.924	56.148
4	.979	13.993	70.140						
5	.790	11.283	81.424						
6	.704	10.061	91.485						
7	.596	8.515	100.000						

Based on the results in Table (2) above, the items of the first axis (XBRL requirements and information overload) can be summarized in three factors, including (7) variables. Together, these factors contributed to the interpretation of (56.148) percent of the total variation, with the first main factor having the largest latent root and equal to (1.471) and explaining (21.012%) while the

second factor explained (18.212%) of the total variation of the first axis after rotation and the third factor explained (16.924%) of the total variation of the first axis. Table (3) shows the matrix of components (matrix of factors) before and after rotation, which shows the correlation coefficient between the factor and the variable that has been extracted.

Table (3): Matrix of factors before and after rotation of the axis (XBRL requirements and information overload)

	Component Matrix ^a				Rotated Component Matrix ^a		
	Component				Component		
	1	2	3		1	2	3
1	.423	-.221	.705	1		.815	.241
2	.588	.242	-.160	2	.635	.105	-.128
3	.557	.421		3	.687		
4	.493	.503	-.215	4	.727	-.113	
5	-.147	.572	.638	5			.863
6	-.579	.399	.118	6	-.238	-.443	.505
7	.415	-.523	.188	7		.615	-.319

The first main factor: it is one of the most important factors derived, as it alone explains (21.012%) of the total variation of the first axis. This percentage corresponds to the following: -

1. The incorrect application of Taxonomies used in the creation of XBRL reports delivers low-quality information. It is highly linked to the verification of the phenomenon of information overload.
2. The incorrect application of Taxonomies used to create XBRL reports, results in the provision of information that requires users more time to understand it effectively, thereby reflecting the phenomenon of information overload.
3. The misuse of the Tag, which involves the incorrect designation of the subject of accounting on the corresponding mark, increases the chances of providing unconfirmed financial information with many errors, uncertainties and ambiguities, thereby realizing the phenomenon of information overload.

The second main factor: is one of the important factors derived, as it alone explains (18.212%) of the total variation of the first axis. This corresponds to the following variables:

1. The incorrect application of Taxonomies used in the creation of XBRL reports leads to the provision of vague and unconfirmed information. It can contribute to creating a greater chance of

achieving the phenomenon of information overload.

2. XBRL allows economic entities to use custom addition elements, which are one of the requirements of this language. This unrestricted use of custom extensions makes it difficult to compare financial statements with economic entities and in a way that contributes to the low quality of XBRL information, which is a manifestation of information overload.

The third main factor: is one of the important factors derived, as it alone explains (16.924%) of the total variation of the first axis. This corresponds to the following variables:

1. The nature of XBRL technology, consisting of the program code, allows the program to be modified by anyone and then edited, used and tampered with financial information maliciously, affecting the reliability of the XBRL instance document and the efficiency of the audit. This results in a low quality of information resulting from XBRL, which as a result reflects the phenomenon of information overload.
2. The techniques used in data processing, which are an essential part of XBRL requirements, require a lot of time for investors to understand these technologies, given the lack of time to understand information effectively. This causes delays in decision-making, which

is a manifestation of information overload.

Table (4) shows the summary of the results of the factor analysis for the second axis (XBRL challenges and information overload) on the axis's common coefficients, which had only three ,had eign values greater than

the correct one before and after rotation. According to this table,three factors were reached due to the fact that their specific values(the latent root) are greater than one true,as well as reaching the proportions of interpretation of the variations from the total variance for each factor .

Table (4): Summary of factor analysis results (XBRL challenges and information overload).

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.685	24.076	24.076	1.685	24.076	24.076	1.648	23.550	23.550
2	1.248	17.827	41.903	1.248	17.827	41.903	1.242	17.739	41.288
3	1.077	15.383	57.287	1.077	15.383	57.287	1.120	15.998	57.287
4	.932	13.312	70.598						
5	.879	12.554	83.152						
6	.814	11.630	94.782						
7	.365	5.218	100.000						

According to Table (4) above, the items of the axis (XBRL challenges and information overload) was summarized in three factors, including (7) variables, Together, these factors contributed to the interpretation of (57.287%) of the total variation. The first main factor has the largest latent root equal to (1.648) and explains (23.55%) while the

second factor explains (17.739%) of the total variation of the second axis after rotation. The third factor explained (15.998%) of the total variation of the second axis.

Table (5) shows the matrix of components (matrix of factors) before and after rotation, which shows the correlation coefficient between the factor and the variable that has been extracted.

Table (5): Matrix of factors before and after rotation of the axis (XBRL challenges and information overload)

	Component Matrix ^a				Rotated Component Matrix ^a		
	Component				Component		
	1	2	3		1	2	3
1	.221	-.602	.327	1	.606		
2	.832		.245	2	.840		
3	.852	.162		3	.842		
4		.131	.818	4		-.279	.784
5		.723	.356	5		.455	.660
6	.345	.443	-.290	6	.195	.697	
7	.301	.349	-.164	7	.193	.650	

The first main factor: is one of the most important factors derived, as it alone explains (23.550%) of the total variation of the second axis. This corresponds to the following variables:

1. The challenge for XBRL is that users of financial statements, produced by this language, do not guarantee that these statements are the same as those adopted by the external auditor. This casts a shadow over the credibility of the financial statement information generated by XBRL (and the confidence of users in it). This indicates the provision of unconfirmed information as a manifestation of information overload.
2. XBRL faces a challenge of weak motivations that encourage companies, in general, to apply this language, which is reflected in their fear of making changes when financial reporting processes are going on properly. This in turn confuses the user of financial reports and negatively affects his/her ability to set priorities, indicating the state of information overload.
3. Investors' doubts about the reliability of XBRL reporting data and their continued reliance on classic reports. This in turn leads investors and analysts to be unable to rely on the validity of XBRL reports, which poses another challenge to this language, due to the low quality of

XBRL information and the confusion of financial statement users in general, reflecting the phenomenon of information overload.

The second main factor: it is an important factor derived, as it alone explains (17.739%) of the total variation of the second axis. This corresponds to the following variables:

1. Another challenge is the lack of guarantee of the quality of the information reported according to XBRL, as the programs of this language involve exempting the relevant institutions from accounting responsibility for their resulting financial reports. This causes XBRL providers not to pay attention to the accuracy and completeness of financial information, referring to their low quality, which is a manifestation of information overload.
2. XBRL faces another challenge of not warranting the quality of the information reported in this language. This is due to XBRL programs that exempt relevant accounting companies and certified chartered accountants from the responsibility of auditing and contribute to the provision of unreliable financial information that significantly reduces the impact of auditing and causes low quality information, which is the embodiment of the phenomenon of information overload.

The third main factor: is one of the important factors derived, as it alone explains (15.998%) of the total variation of the second axis. This corresponds to the following variables:

1. XBRL faces a challenge represented by the controversy and complexity of its specifications that cause difficulty in understanding this language by all parties. This negatively affects its usability, which in turn leads to the provision of information, according to this language, characterized by ambiguity and complexity and cause confusion and anxiety to the user, reflecting the state of information overload.
2. XBRL provides new information that goes beyond what has been reported in traditional financial reports. In other words, it increases the quantity and quality of the data disclosed, which in itself is a challenge faced by XBRL. This is because it poses a concern and confusion for the information user due to the large amount of information and the lack of time to understand it, creating the appropriate ground for information overload.

Results of the descriptive statistics

This part of the research seeks to present the results of the field study conducted by the researcher and analyse them. To this end, it presents the tools of descriptive statistics of the responses of the sample members for the mean to estimate relative dispersion. This is in order to draw a picture or general framework for the preference of respondents and their general orientations in relation to research variables through Likert scale. The questionnaire consisted of two axes, the first (XBRL requirements and information overload) which included (7) items, while the second axis (XBRL challenges and information overload) included (7) items as well. A total of (120) questionnaires were adopted for statistical analysis purposes.

1. Presentation and interpretation the results of the arithmetic mean and standard deviation of the first dimension (XBRL requirements and information overload). Table (6) shows arithmetic means, standard deviations and variation coefficient .

Table (6): ratios, repetitions, arithmetic means, standard deviations (XBRL requirements and information overload)

Items	The answer										Arith metic mean	stand ard devia tion	Varia tion coeffi cient %
	Totally disagree		disagree		Neutral		Agree		Totally agree				
	%	T	%	T	%	T	%	T	%	T			
1-The incorrect application of Taxonomies used to create XBRL reports leads to vague and unconfirmed information. It can contribute to creating a greater chance of achieving the phenomenon of information overload.	0.8	1	0.8	1	9.2	11	45.8	55	43.3	52	4.30	0.74	17.21
2-The incorrect application of Taxonomies used in the creation of XBRL reports delivers low-quality information. It is highly related to the verification of the phenomenon of information overload.	0	0	5	6	4.2	5	55	66	35.8	43	4.22	0.75	17.71
3-The incorrect application of Taxonomies used to create XBRL reports requires from users more time to understand them effectively. Reflecting the phenomenon of information overload.	0	0	1.7	2	11.7	14	56.7	68	30	36	4.15	0.68	16.43
4-The misuse of the Tag , which involves the incorrect designation of the subject of accounting on the corresponding mark, increases the chances of providing unconfirmed financial information with many errors, uncertainties and ambiguities, thereby realizing the phenomenon of information overload.	0	0	4.2	5	20.8	25	38.3	46	36.7	44	4.08	0.86	21.14

5-The nature of XBRL technology, consisting of the program code, allows the program to be modified by anyone and then edited, used and tampered with financial information maliciously, thereby affecting the reliability of the XBRL document and the efficiency of the audit, resulting in a low quality of information resulting from XBRL, which as a result is the embodiment of the phenomenon of information overload	0	0	1.7	2	19.2	23	45	54	34.2	41	4.12	0.77	18.68
6-The techniques used in data processing, which are an essential part of XBRL requirements, require a lot of time for investors to understand these technologies, given the lack of time to understand information effectively, causing delays in decision-making, which is a manifestation of information overload.	0	0	3.3	4	8.3	10	38.3	46	50	60	4.35	0.77	17.79
7-XBRL allows economic units to use custom addition elements, which are one of the requirements of this language, and this unrestricted use of custom extensions makes it difficult to compare financial statements with economic units and in a way that contributes to the low quality of XBRL information, which is a manifestation of information overload	0	0	1.7	2	11.7	14	44.2	53	42.5	51	4.28	0.73	17.14
	0.12	1	2.62	22	12.14	102	46.19	388	38.93	327	4.21	0.31	7.30

The results presented in Table (6) show that most of the sample members had a positive and largely positive answer to all items of this dimension on (XBRL requirements and information overload) with an arithmetic mean of (4.21), and a standard deviation (0.31) and by variation coefficient (7.30%). The results were distributed among the highest level of answer and were

achieved by the sixth item which states (the techniques used in data processing, which are an essential part of XBRL requirements, need a lot of time for investors to understand these techniques, given the lack of time to understand the information effectively, which causes delays in decision-making, which is a manifestation of information overload). This had an arithmetic mean (4.35) a standard deviation between the answers (0.77) and a variation coefficient (17.79%). This reflects the very small dispersion in the responses of the sample members and the high concentration of the degree of agreement on the content of the item. While the lowest value of the arithmetic mean of item (4) contained (the misuse of the tag, which involves the incorrect designation of the subject of accounting on the corresponding mark doubles the chances of providing unconfirmed financial information interspersed with many errors, uncertainty and ambiguity, thus achieving the phenomenon of information overload) where the value of the arithmetic mean was (4.08) and a standard deviation of (0.86) and a variation coefficient (21.14%). This reflects the degree to which sample members differ in the fact that the misuse of the Tag increases the chances of providing unconfirmed financial information with many errors, uncertainties and ambiguities, thereby achieving the phenomenon of information overload.

2. Displaying and Interpreting the results of the arithmetic mean and standard deviation of the second dimension (XBRL challenges and information overload), where table (7) shows arithmetic means, standard deviations and variation coefficient.

The logo for the International Journal of Transformations in Business Management (IJTBM) is displayed in a stylized, blue, italicized font. The letters are bold and have a slight shadow effect, giving it a three-dimensional appearance. The logo is positioned in the lower right quadrant of the page, partially overlapping a large, abstract, yellow and orange graphic that resembles a stylized flower or a flame.

Table (7): Ratios, repetitions, arithmetic means and standard deviations (XBRL challenges and information overload).

Items	The answer										Arith metic mean	stand ard devia tion	Varia tion coeffi cient %
	Totally disagree		Disagree		Neutral		Agree		Totally agree				
	%	T	%	T	%	T	%	T	%	T			
1-The challenge for XBRL is that users of financial statements, produced by this language, do not guarantee that these statements are the same as those adopted by the external auditor, and this casts a shadow over the credibility of the financial statement information resulting from XBRL (and the confidence of users in it), indicating the provision of unconfirmed information as a manifestation of information overload.	0	0	0.8	1	5.8	7	35.8	43	57.5	69	4.50	0.65	14.40
2-XBRL faces a challenge of weak motivations to encourage companies, in general, to apply this language, which is embodied in the fear of these companies making changes when financial reporting processes are going on properly, which in turn confuses the user of financial reports and negatively affects his ability to set priorities, indicating the state of information overload.	0	0	0	0	13.3	16	32.5	39	54.2	65	4.41	0.72	16.24
3-The inability of investors and analysts to rely on the validity of XBRL reports is another challenge to this language, due to investors' doubts about the reliability of XBRL reporting data and their continued reliance on classic reports, which in turn leads to a low quality of XBRL information and confusion for financial statement users in general, reflecting the phenomenon of information overload.	0	0	0	0	21.7	26	52.5	63	25.8	31	4.04	0.69	17.09
4-XBRL faces a challenge represented by the dialectic and complexity of its specifications which cause difficulty in understanding this language by all parties, which negatively affects its usability, which in turn leads to the provision of information, according to this language, characterized by ambiguity and complexity and cause confusion and anxiety to the user, reflecting the state of information overload.	0	0	0.8	1	8.3	10	58.3	70	32.5	39	4.23	0.63	14.86

5-XBRL provides new information beyond what has been reported in traditional financial reports, in other words, increasing the amount and quality of the data disclosed, which in itself is a challenge faced by XBRL as it is a concern and confusion for the information user due to the large amount of information and the lack of time to understand it, creating the appropriate ground for information overload	0	0	0	0	12.5	15	32.5	39	55	66	4.43	0.71	15.96
6-The other challenge is the lack of ensuring the quality of the information reported according to XBRL, as the programs of this language involve exempting the relevant institutions from accounting responsibility for their resulting financial reports, causing XBRL providers not to pay attention to the accuracy and completeness of financial information, referring to their low quality, which is one of the manifestations of information overload.	0	0	2.5	3	11.7	14	33.3	40	52.5	63	4.36	0.79	18.04
7-XBRL faces another challenge of not ensuring the quality of the information reported in this language due to XBRL programs that exempt relevant accounting companies and certified chartered accountants from the responsibility of auditing and contribute to the provision of unreliable financial information that significantly reduces the impact of auditing and causes low quality information, which is the embodiment of the phenomenon of information overload	1.7	2	9.2	11	20	24	39.2	47	30	36	3.87	1.00	25.96
	0.24	2	1.90	16	13.3 3	112	40.6 0	341	43.9 3	369	4.26	0.27	6.27

The results presented in Table (7) show that most of the sample members had a positive and largely positive answer to all items of this dimension on (XBRL challenges and information overload). This had an arithmetic mean of (4.26), a standard deviation (0.27) and a variation coefficient (6.27%). The results were divided among the highest level of answer achieved by the first item included (the challenge facing XBRL is that users of financial statements, produced by this language, do not guarantee that these statements are the same as those adopted by the external auditor. This casts a shadow over the credibility of XBRL financial statement information {and users' confidence in what is contained in it} this indicates the provision of unconfirmed

information as a manifestation of information overload). The value of the arithmetic mean was (4.50) and the standard deviation between the answers was (0.65) and the variation coefficient was (14.40%) reflecting the very small dispersion in the sample members' answers and the important role of the challenge facing XBRL and the users of the financial statements resulting from this language does not warrant that these users are the same statements adopted by the external auditor. This is reflected on the credibility and confidence of XBRL information, indicating the provision of unconfirmed information as a manifestation of information overload.

The lowest value of the arithmetic mean was for item (7) (XBRL faces another challenge of not warranting the quality of the information reported in this language due to XBRL programs that exempt relevant accounting companies and certified chartered accountants from the responsibility of auditing and contribute to the provision of unreliable financial information that significantly reduces the impact of auditing and causes the quality of information to be reduced, which is a reflection of the phenomenon of information overload). It had an arithmetic mean of (3.87) with a standard deviation (1.00) and a variation coefficient (25.96%). This reflects the degree to which sample members differ in not warranting the quality of the information reported in this language. This is due to XBRL programs that exempt relevant accounting companies and certified chartered accountants from the responsibility of auditing and contribute to the provision of unreliable financial information that significantly reduces the impact of auditing and causes low quality information. This is the embodiment of the phenomenon of information overload.

- ***Testing and analysing the significant dimensions of research variables***

The first step in determining the relationship between variables is to identify the basic research variables and then the nature of the relationship between them, and each of the first dimension is “XBRL requirements and information overload” and the second dimension “XBRL challenges and information overload. Therefore, we are going to use the T-Test to measure the significance of the arithmetic mean, and then compare it with the hypothetical mean. Hence, if the arithmetic mean is greater than the hypothetical one, that means applying “XBRL requirements as a manifestation of information overload”, we will test the following hypotheses:

1-The first hypothesis of the research is that “there is a statistically significant relationship to XBRL requirements as a manifestation of information overload.” Table (8) shows the results of test factor values for the research variables assumed.

Table (8): (T-Test) First Hypothesis.

Arithmetic mean	Standard deviation	Calculated t-value	Degree of freedom	Tabular t-value	Significance level	Indication
4.21	0.31	43.183	119	1.984	0.000	Statistically significant

Based on Spss outputs

The calculated t value (43.183) was greater than its tabular value at the level of indication (0.05) and a degree of freedom (119) of (1.984). This means that there are significant differences, with an value of the arithmetic mean of (4.21), which was greater than the hypothetical mean of (8). The significance in favour of the arithmetic mean indicates that XBRL requirements are highly linked and contribute to the provision of vague and uncertain information. It can contribute to creating a greater opportunity to achieve the phenomenon of information overload, reflecting the evidence of the first hypothesis, i.e. that “there is a statistically significant relationship to XBRL requirements as a manifestation of information overload.”

2-The second hypothesis of the research is that “there is a statistically significant relationship to XBRL challenges as a manifestation of information overload.” Table (9) shows the results of test factor values for the research variables assumed.

Table (9): (T-Test) Second Hypothesis

Arithmetic mean	Standard deviation	Calculated t-value	Degree of freedom	Tabular t-value	Significance level	Indication
4.26	0.27	51.516	119	1.984	0.000	Statistically significant

Based on SPSS outputs

The calculated t value (51.516) was greater than its tabular value at the level of indication (0.05) and the degree of freedom (119) of (1.984). This means that there are significant differences with an arithmetic mean of (4.26), which was greater than the hypothetical mean of (3). This represents the challenge facing XBRL in that users of financial statements, produced by this language, does not guarantee that these statements are the same as those adopted by the external auditor. This casts a shadow over the credibility of the financial statement information generated by XBRL. In other words, that significance level in favour of the arithmetic mean indicates the acceptance of the second hypothesis, i.e., that “there is a statistically significant relationship to XBRL challenges as a manifestation of information overload ”.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- A factor analysis showed that the items of the axis (XBRL requirements and information overload) was summarized in three key factors that collectively contributed to the interpretation of (56.148) percent of the total variation of the axis. This indicates that XBRL requirements could be linked to the phenomenon of information overload. One of the most important of these requirements was the taxonomies used in the creation of XBRL reports, where the incorrect application of these taxonomies leads to the provision of low-quality and uncertain information interspersed with many errors, uncertainty and ambiguity and requires considerable time to understand them effectively, reflecting the phenomenon of information overload.
- A factor analysis found that the items of the axis (XBRL challenges and information overload) was summarized in three key factors that collectively contributed to the interpretation of (57.287) percent of the total variation of the axis. This indicates that XBRL challenges could be associated with the phenomenon of information overload. One of the most important challenges facing XBRL was the controversy and complexity of its characteristics and increased the quantity and quality of the information resulting from it and the failure to ensure its quality and credibility. This negatively affects its usability, which in turn leads to the provision of information, according to this language, characterized by ambiguity and complexity and cause confusion and anxiety to the user. All give clear indications to the phenomenon of information overload.
- The results of the field study and statistical analysis of the responses of the members of the sample researched for the first axis (XBRL requirements and information overload) showed their high agreement on the content of the items contained in this axis. The most important of that was: the use of techniques in data processing, as an essential part of XBRL requirements, needs considerable time for investors to understand these techniques, while allowing the provision of unconfirmed and vague information, which is one of the manifestations of information overload.
- The results of the field study and statistical analysis of the responses of the members of sample for the second axis (XBRL challenges and information overload) showed their agreement and with a high degree, on the content of the items included in this axis. The most important of these were: The challenge facing XBRL is that the users of the financial statements resulting from this language do not guarantee that these statements are the same

as those adopted by the external auditor. This is reflected on their credibility as well as increasing the quantity and quality of data disclosed according to this language, all of which can contribute to creating a greater opportunity to reach the phenomenon of information overload.

- The value of the T-Test (43.183) for the first axis (XBRL requirements and information overload) and (51.516) for the second axis (XBRL challenges and information overload) to measure significance is greater than the value (1.984) (Tabular t). This indicates the significance of the relationship between the requirements and challenges research variables of XBRL and the phenomenon of information overload.

Recommendations

Based on the results of the field study, statistical analysis and factor analysis, which proved that XBRL requirements and challenges are one of the areas of information overload, and for the purpose of reducing areas where XBRL requirements and challenges are approaching information overload, the researcher recommends:

- The fact that XBRL is actually needed by financial reporting users in general should be thought of and not adopt the view of a particular category of users when marketing XBRL.
- Attention should be paid to the issue of perception by users of financial reports of XBRL information ,so that priority is given before the marketing of this technology can begin and is put into practice.
- The application of the recommendations in (1) and (2) above requires a review of XBRL's conceptual and structural framework through the composition of its requirements and the nature of the challenges it faces in order to ensure that it meets the actual need of users of financial reports free from information overload.

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