

A Review Of The Study On The Impacts Of The Extensible Business Reporting Language (XBRL)

Roslee Uyob, Ram Al Jaffri Saad, Aidi Ahmi

Abstract— eXtensible business reporting language (XBRL) is an electronic tool with the acceptable global standard for the electronic financial data to communicate and to be compiled, analyzed and shared among the stakeholders. The implementation of XBRL brings some benefits and impacts to all of the users of financial reports. This study aims to identify the research trends on the impact of XBRL and issues related to it. Forty-six articles related to the impact of XBRL was extracted from the Scopus database and Google Scholar. The result from the study found that a study regarding the XBRL impact has shown slightly increase until 2014 but has not grown much since then. There are a few perspectives that have been discovered to investigate on how XBRL affected certain users of the financial reports. This study will give a general picture of the current research on the impact of XBRL, the trend, and future direction of the research related to the XBRL.

Index Terms— eXtensible business reporting language, XBRL, Internet reporting, systematic review, financial reporting, accounting information systems, bibliometric analysis

1 INTRODUCTION

FINANCIAL reporting is the information of financial information communicating the financial position of the company through several media to inform various users for their decision-making process. Nowadays, in rapidly changing technology and development era, most notably the internet, the language of financial reporting has become digitalized. Through the World Wide Web, financial information is progressively being provided on the internet. These enhance the efficiency and timely transmission of the financial information between the preparation of the financial reporting and the user of financial statement. It requires an expensive and tedious work to extract the data from this medium. This will make it difficult for users to analyze the data from the financial report and can give an error during the process. However, eXtensible Business Reporting Language (XBRL) can overcome this problem by encoding and decoding the information system. This tool can give consistent information, more accurate, and become a machine-readable format.

XBRL is an open XML (eXtensible Markup Language) based standard electronic language for the electronic communication especially for business and financial information [1, 2]. Adoption of XBRL as a machine-readable report can play a significant role in transferring and converting the data into a different format. The use of XBRL can increase data integrity, promote cost saving, increase the efficiency, accuracy and reliability of the data and import for decision-making process [2].

In Malaysia, the XBRL initiative is one of the projects under the Companies Commission of Malaysia (SSM). It is a 5-year plan beginning in 2010 and completed in 2014. The first financial statement taxonomy has been released in 2014,

known as SSM Taxonomy (SSMT). The platform known as "Malaysian Business Reporting System (MBRS) allows the company to submit their annual submission filing of financial statement and reports (FS) annual return (AR) and exemption application (EA) which related to the financial statement and annual return applications in XBRL format. According to Abdul Aziz [3], Director of Corporate Development and Policy Division, Companies Commission of Malaysia, companies in Malaysia it is expecting to implement XBRL financial reporting format voluntarily. There will be two phases involve. First phase will focus on listed companies, subsidiaries and non-listed companies. The second phase will involve private limited companies. Even though XBRL give positive impacts to the reliability and accuracy of the financial report, the implementation by companies to use XBRL is still low in Malaysia [4].

The objective of this paper is to identify the research trends on the impact of XBRL and other related issue related to XBRL. To achieve this objective, we examine article published in various publications gathered from the Google Scholar and Scopus database. This study contributes to the context of the presentation of research and development through bibliometric analysis and systematic review. The bibliometric analysis used in this study has some functions as outlined by previous researchers (see, for example, De Bakker et al. [5] and Baumgartner & Pieters [6]). Among the functions of literary research is to assess the influence of different journals in a particular field, can evaluate the intellectual structure of a field and suggest how the field can move forward. This study presents meaningful structures and patterns, such as the year of publication, document types, most influential countries that contributed to the field of the study, the research types and approaches that have been conducted and the perspectives that focus on the impact of XBRL.

This paper is organized as follow: The first section will explain the background of the study and the objectives of the study. The second section will provide the literature review regarding the general overview of financial reporting and the emergence of XBRL and the impacts of XBRL. After that, this paper will outline the methodology used in this study,

- Roslee Uyob is a postgraduate student at the Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia. E-mail: rosleeuyob@gmail.com
- Ram Al Jaffri Saad is currently an Associate Profession at the Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia. *Corresponding Author. E-mail: ram@uum.edu.my
- Aidi Ahmi is currently a Senior Lecturer at the Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia. E-mail: aidi@uum.edu.my

including the scope and the classification of information gathered for the analysis. The next phase will present the results of the analysis that will cover the number of publications by year and publisher, classification according to the research type, approach and analysis based on the subject area of articles. Lastly, this study will present the discussion based on the findings and conclude the paper with a summary of significant findings and recommendation for future research.

2 LITERATURE REVIEW

2.1 General Overview of the Financial Reporting and the Emergence of XBRL

Financial reporting is the financial result prepared by the accountant of the companies which contained financial information that disclose the financial status of the company. This financial reporting will be used by the user of financial statement to make a decision-making purpose. In recent years, the reporting of financial information becomes interactive since many companies publish their financial reporting into the website. According to Avallone, Ramassa and Roncagliolo [7], the using of XBRL was being promoted and supported by world leading accounting and financial reporting firms as an open standard language for the electronic communication since 1999. They also discovered that XBRL is now used in more than 30 countries around the world. Approximately 18 countries in Europe have implemented XBRL either voluntarily or mandatorily, and the numbers keep growing from years to years. Now XBRL international consortium of more than 600 companies and government agencies have been involved in the progress of XBRL standard [7].

XBRL is an encoding and decoding information system, a globally accepted standard that has been a ground-breaking technology for corporate financial reporting and provides a consistent, accurate, machine-readable format [2]. As a tool of communicating and exchanging business information, XBRL can provides a universal classification for accounting and financial terms that could be understood by numerous tools and applications [8]. Tagging unique structure in XBRL allowed inter-operability even though with the different format which that improve the disclosure, analysis of management or corporate data [9].

2.2 General Impact of the XBRL

Prior research has proven that XBRL has given a significant impact on the reliability and the integrity of the data, especially in the data transferring process. The research conducted by Ib et al. [2] has shown that the integrity and transparency of the financial and business information prepared by prepares are positively influenced by using XBRL. Ib et al. [2] also found that XBRL is allowing screening the information, easy access and processing the information that provides by the organization irrespective of diversity in language presentation of such reports or the application of different regulations. Besides that, XBRL as an Internet-based language in web-based reporting and disclosure technology has enabled the users of financial reporting including government, financial analyst, investors and others user of

financial information to easily extract, use and analyze firm's financial information in a minute [10]. In Japan, study conducted by Bai, Sakaue and Takeda [11], found that adoption of XBRL in Japanese improves the information environment in the Japanese market and have a potential to reduce information asymmetry.

The study conducted by Hao, Zhang and Fang [11] on 165 US firms who participated in the United States Securities and Exchange Commission (SEC) voluntarily filer program using the Price/Earnings-to-Growth ratio model also shows that the cost of equity is significantly and negatively associated with the XBRL adoption. Their study also found that firms that willingly embracing XBRL are connected with an average reduction in the cost of equity capital. Besides, the study also shows that the factors that companies decide to join the voluntary program are to gain a more profound knowledge of XBRL and acquire an image as a pioneer in technology reporting. They feel that with participation in this voluntary program, it can contribute to the increase of the image of the company [9].

2.3 Impact of XBRL to the External User Perspective

An external user can be described as entities or individuals who do not participate in running or managing the business but are interested in the financial information of the company [13]. Example of an external user is external auditor, financial analyst, investor, creditor and government agency. The study conducted by Avallone et al. [7] has shown that using XBRL, the auditor can quickly gather the financial information data and the ability to analyze large data pools for anomalies and fraud. According to research done by Hodge, Kennedy and Maines [14], there is an impact of XBRL in analyst forecast behavior. They found that the adoption of XBRL by the companies was positively associated with the number of analyst followings and analyst forecast accuracy. It shows that XBRL can give a better view of decision making, especially in making an investment decision. China is the first country that adopts XBRL in their reporting. The theories information technologies paradox has indicated that it will take time for IT innovation, such as XBRL to appreciate business value [15].

A survey conducted by Harris and Morsfield [16] finds that investors and analyst express a negative view of the usability and quality of XBRL formatted data, however, they found that the mandatory adoption of XBRL has improved the accessibility and usability of financial information and give the quality of the information that help the analyst make a forecast decision. A study conducted by Dong et al. [17] found that the adoption of XBRL significantly reduces adopter's stock return synchronicity and price delay. The empirical study also shows that the mandatory adoption of XBRL is positively associated with the number of analyst followings and analyst forecast accuracy [18].

The adoption of XBRL also affects the trading behavior of investors, especially for the foreign investor. Foreign investors trading turnover ratio significantly increase after the adoption of XBRL by the Korean public listed company. Besides that, the foreign investor's trading turnover ratio in a small firm is significantly higher than in a large firm [10]. A study conducted to the 554 US bank loan contract, was found that

borrowers who adopt the XBRL will enjoy a more favorable price, and non-price terms of bank loan contract compare with non-XBRL adoption. This indicates that the adoption of XBRL is an essential indicator of borrower's risks and values. It shows that adoption of technology advancement reporting such as XBRL reduces the cost of bank loans by decreasing the information asymmetry between lenders and borrowers [19].

2.3 Impact of XBRL to the Internal User Perspective

Internal user can be described as a person inside or an organization that helps run its operations and uses the company's financial information to make decisions [13]. They can be referred to the fellows of the company's management such as top management or any level of company's management. Financial information is very important for them in making conversant decisions for the future of the company. According to Avallone et al. [7], XBRL could potentially enable preparers to save costs in producing and distributing financial information, removing manual data re-entry and reducing errors.

They also added that XBRL could also allow easier regulatory compliance and increase the efficiency in business decision-making and the use of information systems. XBRL also can provide larger benefits mainly in terms of cost savings related to a decrease in data redundancy as well as lower costs of bookkeeping [20]. The empirical study done by Choi [10] found that adoption of XBRL by Korean public firms mitigates the information asymmetry between managers and investors.

3 METHODOLOGY

In this study, all publication regarding the impact of XBRL has been gathered. To identify the relevant articles, the query used in Google Scholar and Scopus database to find articles related to the keyword of "impact" and "XBRL" in the title of the documents. From the search findings, 18 articles were found in the Scopus database, and 68 articles were found in Google Scholar. All data gathered in both databases has been download and exported to the Mendeley, a reference manager software for further actions. All of the articles have been checked to see the completeness and accuracy of the article information.

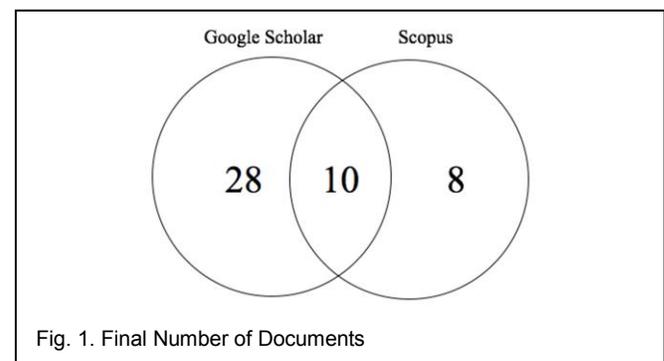
There are a few eligibility and exclusion criterion are determined for this study. Concerning the language used in

the documents, this study only focuses on articles published in English only. Concerning the timeline, this study focuses on all articles published until 2018. This study also has to limit the scope of the database to the Google Scholar and Scopus database only. Thus, the articles indexed in the Web of Science and other databases are excluded. There is no limitation on the document's types and the country that produced related papers on the impact of XBRL.

TABLE 1
THE INCLUSION AND EXCLUSION CRITERIA

Criterion	Eligibility	Exclusion
Language	English	Non-English
Timeline	<=2018	>=2019
Indexes	Scopus and Google Scholar	Web of Science
Document Type	All	None
Countries	All	None

After filter for the duplicate articles and numerous modifications and recheck, as well as removing the articles within the exclusion criteria, 46 articles have been selected to investigate further and analyses (see Table 1). Fig. 1 summarizes the total number of documents gathered from the Google Scholar and Scopus database.



Based on selected articles, all related information then be extracted and classified by year of publication, type of the documents, type of research, the approach of the research, the country in which the research has been performed and the perspective on the impact of XBRL that the research has been focused on. The list of documents that has been gathered and analysed is as per Table 2.

TABLE 2
LIST OF DOCUMENTS GATHERED

No	Author (Year)	Title	Publication Title
1	Pinsker & Gara (2003) [21]	The socio-economic impact of XBRL usage	American Accounting Association 2004 Mid-Atlantic Region Meeting Paper
2	Öhling & Heitmann (2005) [22]	Audit of the future - An analysis of the impact of XBRL on audit and assurance	N/A
3	Capozzoli (2007) [23]	The impact of XBRL on the oil and gas industry	Oil IT Journal
4	Buys (2008) [24]	The impact of XBRL on the financial reporting supply chain: A South African case study	Meditari Accountancy Research
5	Ly (2009) [25]	eXtensible Business Reporting Language for financial reporting (XBRL FR): A foundation, impact framework, and research opportunities	Minutes of Business Studies
6	Vlad, Colbu & Cioban (2011) [26]	Assessing the impact of XBRL in raportations issued by credit institutions	The Annals of the "Ștefan cel Mare" University of Suceava. Fascicle of The Faculty of Economics and

No	Author (Year)	Title	Publication Title
			Public Administration
7	Ya-ping (2011) [27]	Analysis of the impact of XBRL on audit and selection model of the audit	Journal of Tongling University
8	Baldwin & Trinkle (2011) [28]	The impact of XBRL: A Delphi investigation	International Journal of Digital Accounting Research
9	Monterio (2011) [29]	XBRL and its impact on corporate tax departments	Strategic Finance
10	Olsen & Jenson (2011) [30]	XBRL and its potential impact on events reporting	The Review of Business Information Systems
11	Florin (2012) [31]	Impact of XBRL on Financial Reporting in Romania	"Ovidius" University Annals, Economic Sciences Series
12	Arnold, Bedard, Phillips, Sutton & Sutton (2012) [32]	The impact of tagging qualitative financial information on investor decision making: Implications for XBRL	International Journal of Accounting Information Systems
13	Blankespoor (2012) [33]	The Impact of Investor Information Processing Costs on Firm Disclosure Choice: Evidence from the XBRL Mandate	N/A
14	Chen & Li (2013) [34]	Analysis the impact of XBRL in China's capital market using methods of empirical research	Research Journal of Applied Sciences, Engineering and Technology
15	Florin, Daniel & Florina (2013) [35]	Financial Reporting under XBRL and the Impact on the Financial Audit	Ovidius University Annals, Series Economic Sciences
16	Perdana (2013) [36]	The impact of data information quality of XBRL-based financial statements on nonprofessional investors' decision making	PACIS 2013 Proceedings
17	Liu & O'Farrell (2013) [37]	The impact of XBRL on forecast accuracy across nations	International Journal of Services and Standards
18	Shi & Xue (2013) [38]	The impact of XBRL on the financial reporting	Value Engineering
19	Hao & Kohlbeck (2013) [39]	The market impact of mandatory interactive data: Evidence from bank regulatory XBRL filings	Journal of Emerging Technologies in Accounting
20	Müller-Wickop, Schultz & Nüttgens (2013) [1]	XBRL: Impacts, issues and future research directions	N/A
21	Liu, Yao, Sia & Wei (2014) [15]	The impact of early XBRL adoption on analysts' forecast accuracy - empirical evidence from China	Electronic Markets
22	Liu, Luo, Sia, O'Farrell & Teo (2014) [40]	The impact of XBRL adoption in PR China	Decision Support Systems
23	Maleki & Rahimi (2014) [41]	XBRL and its impact on internationalization of Iran capital market	European Online Journal of Natural and Social Sciences
24	Bai, Sakaue & Takeda (2014) [11]	The impact of XBRL adoption on the information environment: Evidence from Japan	The Japanese Accounting Review
25	Faboyede, Mukoro, Lyoha & Odafen (2014) [42]	The impact of extensible business reporting language education and adoption of stock exchange development: A focus on Nigeria	Business and Applied Sciences Academy of North America
26	Liu, Wang, & Yao (2014) [18]	XBRL's impact on analyst forecast behavior: An empirical study	Journal of Accounting and Public Policy
27	Weissmueller & Johnson (2014) [43]	Impact of using XBRL in 10K and 10Q filings with the SEC: evidence of increased timeliness in reporting	International Journal of Business Research and Information Technology.
28	Blankespoor, Miller & White (2014) [44]	Initial evidence on the market impact of the XBRL mandate	Review of Accounting Studies
29	Boritz, Efendi & Lim (2014) [45]	The impact of executive team competencies on XBRL adoption	ICIS 2014 Proceedings
30	Cong, Hao & Zou (2014) [46]	The impact of XBRL reporting on market efficiency	Journal of Information Systems
31	Song-Sheng & Xiao-Xiao (2015) [47]	The impact of XBRL adoption on post-earnings announcement drift: Based on the perspective of ownership structure	Finance Research
32	Hu & Hu (2015) [48]	The impact of XBRL classification criteria on accounting conservatism – an example of the wholesale and retail trade	International Conference on Network Security and Communication Engineering, NSCE 2014
33	Wang (2015) [49]	Financial reporting with XBRL and its impact on the accounting profession	N/A
34	Ib, Jide & Zik-Rullahi (2015) [2]	The impact of XBRL on financial reporting: A conceptual analysis	Research Academy of Social Sciences
35	Kim & Lim (2015) [50]	The impact of XBRL-tagged financial notes on information environment	The 2015 Annual Summer/ International Conference-Korean Accounting Association
36	Choi (2016) [10]	The impact of XBRL adoption on corporate dividend policy: Evidence from Korean firms	Indian Journal of Science and Technology
37	Yang, Liu & Zhu, (2016) [51]	Impact of XBRL on financial statement structural comparability	2016 International Conference on Information Systems, ICIS 2016
38	Lim & Wang (2016) [52]	The impact of service provider switches on XBRL Quality.	PACIS 2016 Proceedings
39	Chen, Guo & Tong (2017) [53]	XBRL implementation and post-earnings-announcement drift: The impact of state ownership in	Journal of Information Systems

No	Author (Year)	Title	Publication Title
		China	
40	Liu, Luo & Wang (2017) [54]	An empirical investigation on the impact of XBRL adoption on information asymmetry: Evidence from Europe	Decision Support Systems
41	Tohang & Lan (2017) [55]	The impact of adoption of XBRL on information risk in representative countries of Scandinavian Region	Jurnal Keuangan dan Perbankan
42	Chong, Shi, Fu, Ji & Yan (2017) [19]	The impact of XBRL on information asymmetry: evidence from loan contracting	Journal of Management Analytics
43	Hwang, No & Kim (2017) [56]	The impact of internal control weaknesses on the timeliness of XBRL disclosure	Korea Accounting Institute Proceedings
44	Nanjundaswamy & Ashok (2018) [57]	Impact of XBRL reporting on the quality of financial reporting system in India	Review of Research
45	Li & Nwaeze (2018) [58]	Impact of extensions in XBRL disclosure on analysts' forecast behavior	Accounting Horizons
46	Hsieh & Bedard (2018) [59]	Impact of XBRL on voluntary adopters' financial reporting quality and cost of equity capital	Journal of Emerging Technologies in Accounting

4 RESULTS AND FINDINGS

4.1 Number of Publications by Year

There were 46 articles in total published related to the impact of XBRL starting from the year 2003 until 2018. The most article published on the impact of XBRL is in 2014. The result also shows that there is no article being published in the year 2004, 2006 and 2007. Details of the number of articles published according to year are shown in Table 3.

TABLE 3
TOTAL PUBLICATIONS BY YEAR

Year	Frequency	Percent	Cumulative Percent
2003	1	2.2	2.2
2004	0	-	2.2
2005	1	2.1	4.3
2006	0	-	4.3
2007	1	2.1	6.4
2008	1	2.1	8.6
2009	1	2.1	10.7
2007	0	-	10.7
2011	5	10.6	21.3
2012	3	6.4	27.7
2013	7	14.9	42.6
2014	10	21.3	63.9
2015	5	10.6	74.5
2016	3	6.4	80.9
2017	5	10.6	91.5
2018	3	6.4	97.9
Total	46	100	

The most significant number of articles was published in 2014, with a total of 10 documents representing 21.3% of the total documents. There seems not much growth of articles published on the impact of XBRL.

4.2 Type of Document Published

Table 4 presents the number of documents based on the document type. The most document in XBRL published in the Google Scholar and Scopus database is the journal article (32) representing 69.6% of the total article compared to conference paper (9, 19.6%), thesis (3, 6.5%), book (1, 2.2%) and magazine article (1, 2.2%).

TABLE 4
DOCUMENT TYPE

Document Type	Frequency	Percent
Journal Article	32	69.6
Conference Paper	9	19.6
Thesis	3	6.5
Book	1	2.2
Magazine Article	1	2.2
Total	46	100

4.3 Country/Region

This paper also has examined the country/region that the studies have been focuses on. From the analysis, the United States of America is the most country that the study on the impact of XBRL has been conducted representing nearly 43.5% of the total publication i.e. almost half of the study on the impact of XBRL. This study also found that China also is a quite popular country that the study of XBRL has been conducted compared to the other country. The rest of the countries involved with the study is presented in Table 5. As per Table 5, there are a few studies focus on more than one country. There are also five papers (10.6%) that not specify the country. Instead, these papers focus on the impact of XBRL as general.

TABLE 5
COUNTRY OF THE FOCUS STUDY

Country/Region	Frequency	Percent
United States of America	20	43.5
China	7	15.2
General	5	10.9
Romania	2	4.4
Iran	1	2.2
Belgium, Italy, Japan, Singapore, Spain, and South Korea	1	2.2
Europe	1	2.2
Europe & USA	1	2.2
India	1	2.2
Japan	1	2.2
Korea	1	2.2
Nigeria	1	2.2
Scandinavian Region	1	2.2
South Africa	1	2.2
Sweden	1	2.2

United Kingdom	1	2.2
Total	46	100

4.4 Research Types

The research on the impact of XBRL also has been categorized based on the type of research that has been conducted (see Table 6) either it is conceptual or empirical. According to Kothari [60], conceptual research usually used to develop new concepts or to reinterpret the existing concepts based on a particular idea or theory. While, for empirical research, which is also called as an experimental type of research is used when certain confirmation is sought either through some observations or experiments. Empirical research is also usually being used to prove or disprove some hypothesis [60]. From this study, it can be found that most of the research conducted on the impact of XBRL is the empirical type of research, representing 63% of the total publications.

TABLE 6
RESEARCH TYPES

Research Type	Frequency	Percentage (%)
Conceptual	17	37.0
Empirical	29	63.0
Total	46	100.0

4.5 Research Approaches

This study also will examine the research approach of the gathered article either it is qualitative, quantitative, or mixed methods. According to Creswell and Creswell [62], qualitative approach used for exploring and understanding social or human problem. The process of qualitative research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data. Creswell and Creswell [62] also defined quantitative research as an approach for testing objective theories by examining the relationship among variables which, can be measured and analyzed using statistical procedures. While mixed methods, according to Sekaran and Bougie [61], aims to answer research questions that cannot be answered by qualitative or quantitative approaches individually. Mixed methods research focuses on mixing both quantitative and qualitative data in a single study or series of studies [61]. Table 7 shows the methods of research used for every article published in this study. Most of the articles in the XBRL impact studies used quantitative approach (27), followed by a qualitative (16) and mixed method (3).

TABLE 7
RESEARCH APPROACHES OF EACH PUBLICATION

Year	Research Approach			Total
	Quantitative	Qualitative	Mixed	
2003		1		1
2004				0
2005		1		1
2006				0
2007		1		1
2008		1		1

2009		1		1
2010				0
2011		5		5
2012	2	1		3
2013	2	3	2	7
2014	9	1		10
2015	3	1	1	5
2016	3			3
2017	5			5
2018	3			3
Total	27	16	3	46

4.6 Research Perspective on the Impact of XBRL

Based on the content of the analyzed documents, this study has categories the focus on the impact of XBRL into several perspectives (see Table 7). This study found that the research on XBRL have focused more on the investor perspective (14) and accounting perspective (13) as well as from the finance perspective (8) due to the fact that XBRL does affect among these groups of users and business areas. Besides that, there are 4 studies conducted in the perspectives of auditing, whereas 3 studies concentrate on the general perspective. Others perspective are government perspective (3 study), industry and management perspective with only 1 study, respectively. From the perspective of investors, i.e. the external users of the financial reports, majority of the study focus on the capital market (3 study), analyst forecast behavior (2 study), forecast accuracy (2 study), information asymmetry (2 study) and investor decision making (2 study). In the accounting perspective, most of the studies done are on financial reporting (6 study) and financial reporting quality (2 study). In the perspective of finance, most of the study given focus on the information environment and market impact with 2 study conducted, respectively.

TABLE 8
RESEARCH APPROACHES OF EACH PUBLICATION

Research Perspectives	Focus of the Study	No. of Study	T otal
Investor Perspective	Capital Market	3	
	Analyst Forecast Behaviour	2	
	Forecast Accuracy	2	
	Information Asymmetry	2	1
	Investor Decision Making	2	4
	Corporate Dividend Policy	1	
	Investor Information Processing Cost	1	
	Service Provider Switches	1	
Accounting Perspective	Financial Reporting	6	
	Financial Reporting Quality	2	
	Accounting Conservation	1	
	Accounting Profession	1	1
	Corporate Tax Department	1	3
	Financial Reporting Supply Chain	1	
Finance Perspectives	Comparability	1	
	Information Environment	2	
	Market Impact	2	
	Information Risk	1	8
	Market Efficiency	1	
	Post Earning Announcement Drift	1	
Audit Perspective	Stock Exchange Development	1	
	Audit and Assurance	1	
	Audit and Selection Model of Audit	1	4
	Financial Audit	1	
General Perspective	Internal Control Weaknesses	1	
	Adoption	1	
	General	1	3
Government Perspective	Impact Framework	1	
	10k and 10Q Filing	1	2
Industry Perspective	State Ownership	1	
	Oil & Gas Industry	1	1
Management Perspective	Executive Team Competencies	1	1

5 DISCUSSION AND CONCLUSION

This study merely reviews on the list of literature that focuses on the impact of the XBRL based on the title of the article. Based on the results of this study, it is expected that it can identify the possible research gaps on the relevant topic related to XBRL. Many researchers found that the impact adoption of XBRL either voluntary or mandatory adoption on their digital financial improved the efficiency and reliability of the information. Many conducted kinds of research on the impact of adoption XBRL are more towards voluntary adoption if compared to the mandatory adoption. Only a few researchers being conducted to the mandatory adoption. Voluntary adoption of XBRL can be self-biasness compare to the mandatory adoption. Researchers also found that the adoption of XBRL can improve market efficiency by reducing information asymmetries. Most of the studies included in this review are quantitative compared to qualitative study or a

mixed method approach. It has also been observed that most of the research conducted are the empirical type of research compared to conceptual research. Although there quite several empirical pieces of research have been conducted, future research on XBRL probably can have a look into a different type of research or approaches. There are some gaps that might be useful to be explored from the findings of this study. Case studies and experimental studies also can be conducted in the methodologies to improve future research related to XBRL. Many researchers conducted to the XBRL impact is only focusing on the advanced country; there still lack conducted research on the adoption of XBRL into the developing country. The impact of the adoption of XBRL for advanced country maybe differs from the developing country. Besides that, many researchers conducted, focusing on the high-level companies, which not many researchers are conducted to the impact of XBRL on the small-medium companies. The impact of the adoption of XBRL towards

small-medium companies maybe differs if compare to the high-level companies. Besides that, even though the XBRL was introduced ten years ago, and the impact of XBRL has been proved to form the research conducted. The awareness and adoption regarding the XBRL are still low. Public agencies, local jurisdiction, professional association and academic community can play a role in educating the benefit of the XBRL adoption directed to both practitioners and future accounting professionals. Further research can be conducted to identify what are the factors regarding low adoption. From the analysis, it shows that a study regarding the impact of XBRL has not much improvement since 2014. The impact from the perspective of investors, accounting and finance, are among the most focusing area in XBRL. Overall the area of research in XBRL is seemed promising. Many kinds of research tend to improve the study related to XBRL. There are some areas of study that have many rooms to be investigated. It is understandable that due to many issues such as lack of data availability as well as the low level of awareness of XBRL are some of the examples of a challenge to the researcher, but a collective effort from the government, academicians and practitioners could overcome it in future. While there are some contributions to this study, there are also some limitations that should be addressed to improve future research. First, the results from the search query only cater for the keywords selected based on the title of the study. The future research probably can expand the search query into the abstract and the keywords and investigate more in-depth search for the gathered documents. This study is also only focused on the Google Scholar and Scopus database. It is suggested for future research to include Web of Science, Scimago, Ebscohost, Science Citation Index, Emerald [63] or any other relevant database. Despite these limitations, we hope by conducting this study; it will give some direction of the future research, gap identification and current trend regarding the XBRL.

REFERENCES

- [1] N. Müller-Wickop, M. Schultz, and M. Nüttgens, "XBRL: Impacts, issues and future research directions," 6th International Workshop on Enterprise Applications and Services in the Finance Industry, FinanceCom 2012, vol. 135 LNBIP. Springer Verlag, University of Hamburg, Max-Brauer-Allee 60, Hamburg 22765, Germany, pp. 112-130, 2013, doi:10.1007/978-3-642-36219-4_7
- [2] C. E. Ib, I. Jide, and A. A. Zik-Rullahi, "The Impact of XBRL on Financial Reporting: A Conceptual Analysis," Res. Acad. Soc. Sci., vol. 4, no. 2, pp. 78-85, 2015, available at <http://www.rassweb.com>
- [3] N. A. Abdul Azizi, "The Companies Commission of Malaysia's XBRL Taxonomy for Financial Reporting," in 26th XBRL Conference, 2013.
- [4] A. Ilias, M. Z. A. Razak, and S. F. F. A. Razak, "The Awareness of the Extensible Business Reporting Language (XBRL) In Malaysia," J. Internet Bank. Commer., vol. 19, no. 3, pp. 1-27, 2014.
- [5] F. G. A. De Bakker, P. Groenewegen, and F. Den Hond, "A bibliometric analysis of 30 years of research and theory on corporate social responsibility and corporate social performance," Bus. Soc., vol. 44, no. 3, pp. 283-317, 2005.
- [6] H. Baumgartner and R. Pieters, "The Structural Influence of Marketing Journals: A Citation Analysis of the Discipline and its Subareas over Time," J. Mark., vol. 67, no. 2, pp. 123-139, 2003.
- [7] F. Avallone, P. Ramassa, and E. Roncagliolo, "The pros and cons of XBRL adoption in Italy: A field study," in Lecture Notes in Information Systems and Organisation, vol. 14, 2016, pp. 157-170, 2016, doi:10.1007/978-3-319-26488-2
- [8] A. Ilias, E. K. Ghani, and Z. Azhar, "XBRL Adoption in Malaysia : Perception of the Accountants and Auditors," in Proceedings of the International Conference on Accounting Studies (ICAS) 2017, 2017, pp. 86-95.
- [9] E. Bonson, V. Cortijo, and T. Escobar, "A Delphi Investigation to Explain the Voluntary Adoption of XBRL," Int. J. Digit. Account. Res., 2009, doi:10.4192/1577-8517-v9
- [10] Y.-M. Choi, "The impact of XBRL adoption on corporate dividend policy: Evidence from Korean firms," Indian J. Sci. Technol., vol. 9, no. 20, 2016, doi:10.17485/ijst/2016/v9i20/94662
- [11] Z. Bai, M. Sakaue, and F. Takeda, "The Impact of XBRL Adoption on the Information Environment: Evidence from Japan," Japanese Account. Rev., vol. 4, no. 2014, pp. 49-74, 2014, doi:10.11640/tjar.4.2014.03
- [12] L. Hao, J. H. Zhang, and J. B. Fang, "Does voluntary adoption of XBRL reduce cost of equity capital?," Int. J. Account. Inf. Manag., vol. 22, no. 2, pp. 86-102, 2014.
- [13] Accounting Verse, "External Users", 2018, available at <https://www.accountingverse.com/dictionary/e/external-users.html>
- [14] F. D. Hodge, J. J. Kennedy, and L. A. Maines, "Does search-facilitating technology improve the transparency of financial reporting?," Account. Rev., vol. 79, no. 3, pp. 687-703, 2004.
- [15] C. Liu, L. J. Yao, C. L. Sia, and K. K. Wei, "The impact of early XBRL adoption on analysts' forecast accuracy - empirical evidence from China," Electron. Mark., vol. 24, no. 1, pp. 47-55, 2014, doi:10.1007/s12525-013-0132-8
- [16] T. Harris, "An Evaluation of the Current State and Future of XBRL and Interactive Data for Investors and Analysts," 2012.
- [17] Y. Dong, O. Z. Li, Y. Lin, and C. Ni, "Does Information-Processing Cost Affect Firm-Specific Information Acquisition? Evidence from XBRL Adoption," J. Financ. Quant. Anal., vol. 51, no. 2, pp. 435-462, 2016, doi:10.1017/S0022109016000235
- [18] C. Liu, T. Wang, and L. J. Yao, "XBRL's impact on analyst forecast behavior: An empirical study," J. Account. Public Policy, vol. 33, no. 1, pp. 69-82, 2014, doi:10.1016/j.jaccpubpol.2013.10.004
- [19] D. Chong, H. Shi, L. Fu, H. Ji, and G. Yan, "The impact of XBRL on information asymmetry: evidence from loan contracting," J. Manag. Anal., vol. 4, no. 2, pp. 145-158, 2017, doi:10.1080/23270012.2017.1299047
- [20] R. Pinsker and S. Li, "Costs and benefits of XBRL adoption: Early evidence," Commun. ACM, vol. 51, no. 3, p. 47, 2008.

- [21] R. E. Pinsker and S. C. Gara, "The Socio-Economic Impact of XBRL Usage," in American Accounting Association 2004 Mid-Atlantic Region Meeting Paper, 2003.
- [22] A. Öhling and S. Heitmann, "Audit of the Future-An Analysis of the Impact of XBRL on Audit and Assurance," Göteborg University. School of Business, Economics and Law, 2005.
- [23] E. A. Capozzoli, "The Impact of XBRL on the Oil and Gas Industry," *Oil IT J.*, pp. 1-12, 2007, available at <http://oilit.com/papers/xbrl.pdf>
- [24] P. W. Buys, "The impact of XBRL on the financial reporting supply chain: a South African case study," *Meditari Account. Res.*, vol. 16, no. 1, pp. 43-58, Apr. 2008, doi:10.1108/10222529200800003
- [25] K. Ly, "eXtensible Business Reporting Language for Financial Reporting (XBRL FR): A Foundation, Impact Framework, and Research Opportunities," *Minutes Bus. Stud.*, vol. 69, pp. 145-167, 2009.
- [26] M. Vlad, I. Colbu, and A. N. Cioban, "Assessing the impact of XBRL in raportations issued by credit institutions," *Ann. "Ștefan cel Mare" Univ. Suceava. Fascicle Fac. Econ. Public Adm.*, vol. 11, no. 2(14), pp. 188-193, 2011.
- [27] M. Ya-ping, "Analysis of the impact of XBRL on audit and selection model of the audit," *J. Tongling Univ.*, vol. 6, 2011.
- [28] A. A. Baldwin and B. S. Trinkle, "The impact of XBRL: A Delphi investigation," *Int. J. Digit. Account. Res.*, vol. 11, pp. 1-24, 2011, doi:10.4192/1577-8517-v11_1
- [29] B. J. Monterio, "XBRL and its impact on corporate tax departments," *Strategic Finance*, 2011.
- [30] D. H. Olsen and R. L. Jenson, "XBRL and its potential impact on events reporting," *Rev. Bus. Inf. Syst.*, vol. 7, no. 2, pp. 33-38, 2011.
- [31] R. Florin, "Impact of XBRL on Financial Reporting in Romania," "Ovidius" Univ. Ann. Econ. Sci. Ser., vol. XII, no. 2, pp. 1337-1346, 2012.
- [32] V. Arnold, J. C. Bedard, J. R. Phillips, S. G. Sutton, and S. G. Sutton, "The impact of tagging qualitative financial information on investor decision making: Implications for XBRL," *Int. J. Account. Inf. Syst.*, vol. 13, no. 1, pp. 2-20, 2012, doi:10.1016/j.accinf.2011.12.002
- [33] E. A. Blankespoor, "The Impact of Investor Information Processing Costs on Firm Disclosure Choice: Evidence from the XBRL Mandate," The University of Michigan, 2012.
- [34] H. Chen and F. Li, "Analysis the impact of XBRL in China's capital market using methods of empirical research," *Res. J. Appl. Sci. Eng. Technol.*, vol. 5, no. 5, pp. 1521-1527, 2013.
- [35] D. Florin, V. Daniel, and P. A. Florina, "Financial Reporting under XBRL and the Impact on the Financial Audit," *Ovidius Univ. Ann. Ser. Econ. Sci.*, vol. 13, no. 1, pp. 1199-1213, 2013.
- [36] A. Perdana, "The impact of data information quality of XBRL-based financial statements on nonprofessional investors' decision making," in PACIS 2013 Proceedings, 2013, p. 272.
- [37] C. Liu and G. O'Farrell, "The impact of XBRL on forecast accuracy across nations," *Int. J. Serv. Stand.*, vol. 8, no. 3, p. 247, 2013, 247, doi:10.1504/IJSS.2013.057238
- [38] M. Shi and Q. Xue, "The Impact of XBRL on the Financial Reporting," *Value Eng.*, 2013.
- [39] L. Hao and M. J. Kohlbeck, "The Market Impact of Mandatory Interactive Data: Evidence from Bank Regulatory XBRL Filings," *J. Emerg. Technol. Account.*, vol. 10, no. 1, pp. 41-62, 2013, doi:10.2308/jeta-50634
- [40] C. Liu, X. (Robert) Luo, C. L. Sia, G. O'Farrell, and H. H. Teo, "The impact of XBRL adoption in PR China," *Decis. Support Syst.*, vol. 59, no. 1, pp. 242-249, 2014, doi:10.1016/j.dss.2013.12.003
- [41] A. Maleki and F. Rahimi, "XBRL and its impact on internationalization of Iran capital market," *Eur. Online J. Nat. Soc. Sci.*, vol. 2, no. 3(s), pp. 2256-2261, 2014.
- [42] O. S. Faboyede, D. O. Mukoro, F. O. Lyoha, and A. H. Odafen, "The impact of extensible business reporting language education and adoption of stock exchange development: A focus on Nigeria," in *Busiess and Applied Scieces Academy of North America*, 2014, pp. 1-16.
- [43] R. J. Weissmueller and G. G. Johnson, "Impact of using XBRL in 10K and 10Q filings with the SEC: evidence of increased timeliness in reporting," *Int. J. Bus. Res. Inf. Technol.*, vol. 1, no. 1, p. 45, 2014.
- [44] E. A. Blankespoor, B. P. Miller, and H. D. White, "Initial evidence on the market impact of the XBRL mandate," *Rev. Account. Stud.*, vol. 19, no. 4, pp. 1468-1503, 2014, doi:10.1007/s11142-013-9273-4
- [45] J. E. Boritz, J. Efendi, and J.-H. Lim, "The impact of executive team competencies on XBRL adoption," in *ICIS 2014 Proceedings*, 2014, pp. 111-126.
- [46] Y. Cong, J. Hao, and L. Zou, "The Impact of XBRL Reporting on Market Efficiency," *J. Inf. Syst.*, vol. 28, no. 2, pp. 181-207, 2014, doi:10.2308/isys-50794
- [47] C. Song-Sheng and T. Xiao-Xiao, "The Impact of XBRL Adoption on Post-Earnings Announcement Drift: Based on the Perspective of Ownership Structure," *Financ. Res.*, vol. 4, 2015.
- [48] R. Y. Hu and F. Y. Hu, "The impact of XBRL classification criteria on accounting conservatism—an example of the wholesale and retail trade," in *International Conference on Network Security and Communication Engineering, NSCE 2014*, 2015, pp. 479-483.
- [49] Z. Wang, "Financial reporting with XBRL and its impact on the accounting profession," *Edinburgh Napier University*, 2015.
- [50] J. W. Kim and J.-H. Lim, "The Impact of XBRL-tagged Financial Notes on Information Environment," in *The 2015 Annual Summer/ International Conference-Korean Accounting Association*, 2015, pp. 1-25, available at http://www.kaa-edu.or.kr/online3/2015_1/201501_journal/1. Joung W. Kim.pdf
- [51] S. Yang, F.-C. Liu, and X. Zhu, "Impact of XBRL on financial statement structural comparability," in *2016 International Conference on Information Systems, ICIS 2016*, 2016.

- [52] J.-H. Lim and T. Wang, "The Impact of Service Provider switches on XBRL Quality," in PACIS 2016 Proceedings, 2016, p. 28.
- [53] S. Chen, J. Guo, and X. Tong, "XBRL Implementation and Post-Earnings-Announcement Drift: The Impact of State Ownership in China," *J. Inf. Syst.*, vol. 31, no. 1, pp. 1-19, 2017, doi:10.2308/isys-51374
- [54] C. Liu, X. (Robert) Luo, and F. L. Wang, "An empirical investigation on the impact of XBRL adoption on information asymmetry: Evidence from Europe," *Decis. Support Syst.*, vol. 93, pp. 42-50, 2017, doi:10.1016/j.dss.2016.09.004
- [55] V. Tohang and M. Lan, "The impact of adoption of XBRL on information risk in representative countries of Scandinavian Region," *J. Keuang. dan Perbank.*, vol. 21, no. 4, pp. 515-526, 2017.
- [56] S. Hwang, W. G. No, and J. Kim, "The Impact of Internal Control Weaknesses on the Timeliness of XBRL Disclosure," in Korea Accounting Institute Proceedings, 2017, available at http://www.papersearch.net/google_link/fulltext.asp?file_name=2w503833.pdf
- [57] A. Nanjundaswamy and M. Ashok, "Impact of XBRL reporting on the quality of financial reporting system in India," *Rev. Res.*, vol. 8, no. 1, pp. 1-9, 2018.
- [58] S. Li and E. T. Nwaeze, "Impact of Extensions in XBRL Disclosure on Analysts' Forecast Behavior," *Account. Horizons*, vol. 32, no. 2, pp. 57-79, 2018, doi:10.2308/acch-52034
- [59] T. Hsieh and J. C. Bedard, "Impact of XBRL on voluntary adopters' financial reporting quality and cost of equity capital," *J. Emerg. Technol. Account.*, vol. 15, no. 2, pp. 45-65, 2018, doi:10.2308/jeta-52235
- [60] C. R. Kothari, "Research methodology: Methods and techniques," New Age International, 2004
- [61] U. Sekaran and R. Bougie, "Research methods for business: A skill building approach," John Wiley & Sons, 2016.
- [62] J. W. Creswell and J. D. Creswell, "Research design: Qualitative, quantitative, and mixed methods approaches," Fifth Edition. Sage publications, 2018.
- [63] A. Ahmi and R. Mohamad, "Bibliometric Analysis of Global Scientific Literature on Web Accessibility," *Int. J. Recent Technol. Eng.*, vol. 7, no. 6, pp. 250-258, 2019.