


DIGITAL BUSINESS REPORTING IS A KEY TO ENHANCE FINANCIAL REPORTING QUALITY – AN XBRL PERSPECTIVE

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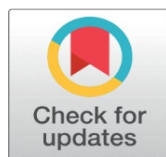
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ABSTRACT

Communication of high-quality business and financial information to decision-makers helps to get clear insights on the business outlook and assists them in making timely decisions. Financial reporting acts as a media to disseminate the information of the business to various interested parties by providing operating and financial insights through financial statements, notes to accounts and other footnotes and narratives in the Annual Business Report (ABR). Today stakeholders of the business are very keen in getting both financial and non-financial information in a single report i.e., ABR. Therefore, the companies are required to communicate enhanced information in their ABR to facilitate and assist the stakeholders in their decision-making process. The method of dissemination of both business and financial information in a single ABR is EBR Model (Enhanced Business Reporting Model). The EBR model of communication is only possible by the application of XBRL (Extensible Business Reporting Language). The purpose of present paper is to analyze the impact of XBRL on the quality of financial reporting. For this purpose, the study analyzed the financial reporting pattern of 23 select companies in India through the analysis of their annual reports from 2005 to 2020. To derive valid conclusions Tukey test, dummy variable regression analysis techniques were employed and concluded that XBRL has made a significant impact on the quality of financial reporting of select companies.

Keywords: Financial Reporting, Quality of Financial Reporting, XBRL, Enhanced Business Reporting, Annual Business Reporting

1. INTRODUCTION

The efficient and effective communication of business and financial information to end-users helps to get clear insights on the business outlook and assists them in making timely decisions. Financial reporting acts as a vehicle to disseminate the financial information of the business to various interested parties by communicating operating and financial information through financial statements, notes to financial statements and other footnotes in the annual report. The operational and financial outlook of a business can be communicated through various Media such as annual reports, news item in newspapers, press meets and so forth. But annual reports are considered as the most appropriate way to disseminate the operational and financial outlook of the business [Kavitha and Nandagopal \(2011\)](#), [Harris and Morsfield \(2012\)](#). Consistent reporting of business and financial information through annual reports enables the organisation in ensuring a high quality of financial reporting [Naser and Nuseibeh \(2003\)](#). Financial reports are said to be qualitative only when they cater to the actual information needs of various stakeholders. Nowadays stakeholders of the business are more expecting both financial and non-financial information to be communicated in a single annual report. Therefore, the corporate houses are required to communicate enhanced information in their annual reports to facilitate the stakeholders in their decision-making process. Communication of enhanced information in the annual report is only possible with the help of the EBR Model (Enhanced Business Reporting Model) which is only possible by the application of XBRL (Extensible Business Reporting Language) to the business reporting purpose.

XBRL is the global business reporting standard and is adopted in more than 140 nations across the globe. India is one of those nations, which mandated the financial reporting through XBRL by a select class of companies from 2016 onwards. XBRL promotes high-quality transparent business reporting, and which eases the corporate reporting's various purposes further it offers many benefits which can be enjoyed during analysis, interpretation, and decision-making process by the stakeholders. In this paper, an attempt has been made to assess the Impact of XBRL on the Quality of Financial Reporting in India. The rest of the paper is organized into different sections such as earlier studies and literature gap; research questions and objectives; theoretical framework and hypothesis development; research methodology; results and discussions; findings, conclusions, and suggestions; and lastly scope for future research and limitations of the study.

2. EARLIER STUDIES AND LITERATURE GAP

To understand the conceptual foundations and to find out the literature gap the study reviewed a sufficient number of literatures and the summary of the review is presented as follows:

Technological advances in financial reporting provide more opportunities for enhanced corporate reporting to external stakeholders by the companies [Uyar \(2016\)](#). The quality of financial reporting depends on the effective implementation of superior accounting and reporting standards accepted and implemented in the global scenario [Agarwal \(2013\)](#). To ensure the quality of financial reporting it is necessary to consider well accepted conceptual framework issued by standard setters [Zeff \(2013\)](#). Qualitative aspects of financial reporting are also influenced by various technical aspects such as XBRL and by inducing XBRL in reporting process timeliness of financial reporting can be enhanced [Lambert et al. \(2019\)](#). To induce advanced technologies in the financial reporting process the adopting firms can bear

additional costs and needs training for their employees who are involved in the process of preparation and presentation of financial statements [Krisko \(2017\)](#). Financial reporting quality is influenced by various dimensions that may be differing from one organization to another [Tarmidi and Roni \(2014\)](#). Financial reports prepared by using advanced technologies such as XBRL enhance the comparability and utility of information so communicated. Further, the cost of re-arranging information for various compliance purposes can also be eliminated as XBRL based reports can be used to file with various regulatory authorities prevailing under a particular business environment [Wenger et al. \(2013\)](#). For assessing the quality of financial reporting there is a need to have a comprehensive tool that should be constructed based on the various factors such as financial reporting standards, corporate laws, and any other regulatory requirements [Van et al. \(2009\)](#). To assess the impact of XBRL based financial reports it is prominent to evaluate the taxonomies. For analysing the taxonomies there is a necessity of having a framework [Zhu and Wu \(2014\)](#). Relevance, timeliness, reliability, clarity, and low cost of reporting can be ensured only with the help of XBRL, and which would benefit various stakeholders including regulatory authorities [Harris and Morsfield \(2012\)](#). XBRL based financial reports help business organisations in web data management, data analysis and presentation. Further, it also enhances the accessibility feature with high accuracy of information communicated [Wang and Gao \(2012\)](#). XBRL enables the business organizations to report and communicate enhanced information which will cater for the dynamic information needs of various stakeholders [Boritz and No \(2008\)](#). XBRL based financial reports are interoperable and can be easily exchanged with other regulatory authorities and help regulatory authorities quickly gather the required information from companies' filings [Rahwani et al. \(2019\)](#), [Hoffman and Rodríguez \(2013\)](#).

From the analysis of earlier studies, it is found that many of the studies have focused on fundamental aspects of financial reporting; the application of XBRL for financial reporting and only a few studies have focused on analysing the quality of financial reporting and no studies have focused on studying the impact of XBRL on quality of financial reporting. Therefore, the present study intended to analyse the *"Impact of XBRL on Quality of Financial Reporting in India"*.

3. RESEARCH QUESTIONS

- 1) By observing the summary of outcomes of earlier studies and the literature gap following research question has been developed:
- 2) What is the level of quality of financial reporting of select companies during entire period of study?

How does XBRL impact on quality of financial reporting in India?

4. OBJECTIVES

Based on the research question study framed the following objective for the present study:

- 1) To analyse the level of quality of financial reporting of select companies during the entire period of study.
- 2) To assess the impact of XBRL on the quality of financial reporting of select companies.

5. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

The present business environment is dynamic in which various stakeholders need multiple sources of information to be communicated by the companies in which they are interested. Nowadays both financial and non-financial information getting equal importance in the decision-making process by various interested parties. For making timely and sound decisions by the stakeholders, it is necessary to communicate high-quality information Hill (2001), Parish (2000), Bovee (2005). The information communicated by the business organisation is said to be highly qualitative only when it caters for the information needs of various stakeholders Beattie et al. (2004), Kavitha and Nandagopal (2011). Only the way to ensure high-quality information in the annual reports of the business organisation is that Enhanced Business Reporting (EBR). EBR is only possible through the adoption of XBRL for financial reporting. XBRL is the global business reporting language that positively influences the quality of business reporting and eases the entire financial reporting system of a business organisation. To keep this in mind the following hypotheses have been developed to achieve the objective of the present paper:

H₀: There exist the same level of quality of financial reporting among select companies during the period of study.

H₀: XBRL does not impact on quality of financial reporting of select companies in India.

6. RESEARCH METHODOLOGY

The present study is empirical. The methodological aspects of the present study are based on the analysis of secondary data. The data was collected from annual reports of select companies for analysing the impact of XBRL on financial reporting. To analyse conceptual aspects and review earlier studies information is gathered from various reputed journals, newspapers, websites, and books.

1) Data collection

For the collection of secondary data, annual reports of the top 30 NSE listed companies were considered. But out of the top 30 companies, 7 companies were eliminated because of the non-application of XBRL for financial reporting and these companies are out of the purview of XBRL regulations as they are operating in the banking, finance, and power sector.

2) Research Period

To analyse the impact of XBRL on the quality of financial reporting the study is considered 2011 as the base year because XBRL was implemented in India for financial reporting by select companies. Based on the availability of annual reports of all the 23 select companies from 2005 to 2010 is considered as pre-XBRL implementation period and from 2011 to 2020 is considered as XBRL period.

3) Research Instrument

The self-constructed research instrument (Appendix-1) was used and is based on the financial reporting quality assessment model (developed by Jonas & Blanchet, 2000). The research instrument contains 11 dimensions and 44 variables, and which is the base for assessing the quality of financial reporting both during the pre-XBRL period and during the XBRL period. The list of dimensions considered for assessing the quality of financial reporting is shown in the following table. [Table 1](#)

Table 1

Table 1 Quality of Financial Reporting Dimensions		
S. No.	Quality of Financial Reporting Dimensions	No. of. Variables
1	Relevance	4
2	Predictive Value	6
3	Feedback Value	4
4	Timeliness	4
5	Verifiability	6
6	Completeness	3
7	Representational Faithfulness	5
8	Neutrality	2
9	Comparability	2
10	Consistency	4
11	Clarity (Understandability)	4
	Total number of items	44

Source [Jonas and Blanchet \(2000\)](#)

4) Content Analysis

Information from annual reports of selected companies is gathered with the help of content analysis techniques based on a checklist developed with the help of Jonas & Blanchet's model of financial reporting quality assessment. Content Analysis is the scientific and systematic approach that involves classifying and codifying qualitative and quantitative information contained in the annual reports of companies into pre-defined categories for drawing valid conclusions by applying more appropriate statistical tools [Holsti \(1969\)](#), [Krippendorff \(1980\)](#), [Guthrie and Abeysekera \(2006\)](#). To mark the score about the information contained in the annual report binary code or ordinal scale method can be used. The binary code method of scoring is used for quantitative analysis which involves recording either the presence or absence of information which is indicated in '1' or '0' respectively [Guthrie and Abeysekera \(2006\)](#), [Marston and Shrives \(1991\)](#). Under the ordinal scale method both quantitative and qualitative analysis can be done [Guthrie and Abeysekera \(2006\)](#), [Beattie et al. \(2004\)](#), [Kavitha and Nandagopal \(2011\)](#). The score is ranging from 5 to 1, where 5 indicates the high quality of information and 1 indicated the low quality of information.

5) Quality of Financial Reporting Index

The quality of the Financial Reporting Index (QFRI) was calculated from the data gathered from content analysis for further statistical analysis. The main aspect of the present study is to assess the quality of financial reporting of select companies both in the context of XBRL and Non-XBRL reporting. Several methods can be employed for assessing the quality of financial reporting. Among the several methods, the disclosure index method is the most popular in accounting research for assessing the quality of financial reporting. Further, the disclosure index methodology helps in assessing both the quantity and quality of financial reporting [Cerf \(1961\)](#), [Hooks et al. \(2002\)](#). Therefore, the study is used the following index to assess the quality of financial reporting, and which is adopted from [Beattie \(2002\)](#), [Urquiza et al. \(2009\)](#).

$$QFR_i = (A_s - Min_s) / (Max_s - Min_s)$$

Were,

QFR_i= Quality of Financial Reporting Index.

A_s= Actual score obtained by the company on a specific QFR dimension.

Min_s= Minimum score a company can obtain on a specific QFR dimension.

Max_s= Maximum score a company can obtain on a specific QFR dimension

6) Reliability and Validity

Reliability analysis was made to check the internal consistency of the research instrument. Validity shows the accuracy of data to test and re-test to derive valid conclusions. The following table reveals the results of the reliability analysis. [Table 2](#)

Table 2

Table 2 Results of Reliability Analysis			
Scale	No. of Items	Cronbach Alpha	Remarks
Relevance	4	0.814	
Predictive Value	6	0.866	
Feedback Value	4	0.854	
Timeliness	4	0.864	
Verifiability	6	0.875	
Completeness	3	0.739	
Representational Faithfulness	5	0.885	<i>The reliability level of data is Excellent</i>
Neutrality	2	0.612	
Comparability	2	0.716	
Consistency	4	0.878	
Clarity	4	0.801	
Overall	44	0.926	

Source Annual Reports of Companies

The Cronbach's Alpha concerning all the financial reporting quality dimensions is more than 0.6. Hence, it can be concluded that the internal consistency and validity of data gathered from annual reports of select companies is excellent.

Statistical Tools

For drawing valid conclusions from the data gathered for the study statistical and econometric tools were used which include ANOVA dummy variable regression models for assessing the level of Quality of Financial Reporting and the Impact of XBRL on the Quality of Financial Reporting and to test the hypothesis Tukey's Post Hoc Multiple comparison tests are used.

7. RESULTS AND DISCUSSIONS

This section of the paper deals with the analysis and interpretation of data collected for the study through various statistical techniques.

The following table depicts the summary of the QFR Index Analysis, and the descriptions of the values shown in the table are given in the notes. [Table 3](#)

Table 3

Table 3 Results of Tukey Test on Level of Quality of Financial Reporting Among Select Companies											
Companies	D₁	D₂	D₃	D₄	D₅	D₆	D₇	D₈	D₉	D₁₀	D₁₁
APS	1	4	2	4	2	2	4	2	2	2	2
AP	1	4	2	4	2	2	4	1	3	2	2
BAL	1	4	2	4	1	1	4	3	2	2	2
BATL	1	4	2	4	2	2	4	1	2	2	2
CIPLA	2	4	2	4	1	2	4	2	2	2	2
COI	1	4	2	4	2	2	4	1	1	2	2
DRL	1	4	2	4	2	3	4	2	2	2	2
HEMO	2	4	1	4	2	2	4	3	2	1	2
HIUNI	3	4	2	4	2	2	4	1	3	2	2
INFY	3	4	2	4	2	2	4	1	1	2	2
ITC	3	4	2	4	3	3	4	3	1	3	3
L&T	2	4	2	4	1	2	4	1	3	2	2
M&M	2	4	2	4	3	2	4	2	3	2	2
MSI	2	4	2	4	2	2	4	2	1	2	2
NTPC	2	4	2	4	2	2	4	1	3	1	2
ONGC	1	4	2	4	2	2	4	3	1	2	2
RIL	3	4	2	4	3	2	4	1	2	2	2
SPI	1	4	1	4	2	1	4	2	2	2	2
TCS	2	4	2	4	2	3	4	2	1	2	2
BPCL	1	4	2	4	2	2	4	1	1	3	2
TMOTO	2	4	2	4	2	2	4	1	2	1	3
TSL	2	4	2	4	3	2	4	3	2	1	2
WIPRO	3	4	3	4	3	3	4	1	3	2	1
F-Value	3.582	0.939	1.870	1.157	3.742	2.982	1.493	5.733	4.956	2.789	2.677
Sig	0.000	0.543	0.011	0.284	0.000	0.000	0.073	0.000	0.000	0.000	0.000

Note:(1= low, 2=medium, 3=high, 4=No difference (Similar))

(D₁): Relevance, **D₂:** Predictive Value, **D₃:** Feedback Value, **D₄:** Timeliness,

D₅: Verifiability, **D₆:** Completeness, **D₇:** Representational Faithfulness,

D₈: Neutrality, **D₉:** Comparability, **D₁₀:** Consistency, **D₁₁:** Clarity (understandability)

Based on the financial reporting quality index Tukey Post Hoc Multiple comparison tests have been conducted and it has been found that a significant difference exists among the companies in the financial reporting quality dimensions of Relevance, feedback value, verifiability, completeness, neutrality, comparability, consistency, clarity, and differences doesn't exist in dimensions of predictive value, timeliness, and representational faithfulness. Accordingly, the Null hypothesis (H₀) is rejected, and the alternative hypothesis (H₁) is accepted. Therefore, **there are**

significant differences in the level of quality of financial reporting in most of the dimensions in the select companies.

8. ANALYSIS OF COMPANY WISE IMPACT OF XBRL ON QUALITY OF FINANCIAL REPORTING

The major focus of the present paper is to analyse the impact of XBRL on the QFR of select companies in India by considering all 11 dimensions together. The company-wise results of dummy variable regression models are presented in the following section:

The following model has been used for the estimation of the impact of XBRL on company-wise QFR:

$$Y_t = \beta_0 + \beta_1 D_1 + U_t$$

Where,

Y_t = Value of index for company-wise QFR.

β_0 = Benchmark and represents the pre-XBRL period.

β_1 = Difference between benchmark and dummy variable.

D_1 = Dummy variable for XBRL.

U_t = random error term.

Table 4

Table 4 Impact of XBRL on Financial Reporting of Select Companies						
Company	β_0	t-value	Sig.	β_1	t-value	Sig.
COI	0.360	21.476	0.000	0.258	12.173	0.000
AP	0.395	19.620	0.000	0.214	8.416	0.000
L&T	0.414	21.382	0.000	0.215	8.772	0.000
SPI.	0.429	20.259	0.000	0.188	7.013	0.000
BAL	0.407	20.097	0.000	0.230	8.973	0.000
BATL	0.413	23.374	0.000	0.231	10.347	0.000
APS	0.392	21.578	0.000	0.272	11.819	0.000
HEMO	0.427	18.897	0.000	0.213	7.463	0.000
CIPLA	0.458	24.636	0.000	0.176	7.462	0.000
TMOTO	0.470	26.640	0.000	0.140	6.250	0.000
DRL	0.433	24.293	0.000	0.218	9.682	0.000
INFY	0.444	24.440	0.000	0.188	8.192	0.000
MSI	0.432	25.316	0.000	0.220	10.179	0.000
NTPC	0.435	22.603	0.000	0.234	9.629	0.000
HIUNI	0.462	29.633	0.000	0.178	8.980	0.000
TCS	0.458	25.633	0.000	0.196	8.654	0.000
ONGC	0.483	27.121	0.000	0.157	6.961	0.000
TSL	0.482	24.199	0.000	0.177	7.023	0.000
M&M	0.474	23.595	0.000	0.188	7.385	0.000
BPCL	0.483	30.521	0.000	0.158	7.904	0.000

RIL	0.476	29.756	0.000	0.182	8.973	0.000
ITC	0.518	25.522	0.000	0.138	5.368	0.000
WIPRO	0.498	34.869	0.000	0.206	11.402	0.000

Source Annual Reports of Companies, Compiled by Researcher

The **Table 3** depicts results of dummy variable regression models and explains the company wise impact of XBRL on financial reporting quality. During the pre-XBRL period, the quality of financial reporting of COI was 0.360 and it increased by 0.258 times during the XBRL period which shows a significant impact of XBRL on enhancing the quality of financial reporting. In the above table, we can observe the value of β_1 for all the select companies are having a significant t-value which signifies the positive impact of XBRL on the quality of financial reporting during the XBRL period.

9. OVERALL IMPACT OF XBRL ON QUALITY OF FINANCIAL REPORTING

In the following section, an attempt has also been made to analyse the impact of XBRL on the overall QFR of the companies by considering all 11 dimensions of 23 selected companies for both pre-XBRL and XBRL periods i.e., (2005-2010 and 2011-2016) together.

The following model has been used for the estimation of the impact of XBRL on the QFR of all the selected companies:

$$Y_t = \beta_0 + \beta_1 D_1 + U_t$$

Where,

Y_t = Value of index for Overall QFR of 23 companies, 11 dimensions and 16 years period.

β_0 = Benchmark and represents the pre-XBRL period.

β_1 = Difference between benchmark and dummy variable.

D_1 = Dummy variable for XBRL.

U_t = random error term.

The above ANOVA dummy variable regression model estimated the overall impact of XBRL on QFR by considering all the selected companies, and 11 QFR dimensions for the entire study period. The results are as follows:

$$Y_t = 0.427 + 0.208$$

$$t\text{-Value} = (31.353) (12.070)$$

$$P\text{-value} = (0.000) (0.000)$$

The constant of the model for QFR concerning all the selected companies, 11 QFR dimensions for the entire study period is significant at one per cent level. Therefore, during the pre-XBRL period, the average QFR was 0.427. The co-efficient of the dummy is also significant at the one per cent level. Therefore, the average QFR has increased by 0.208 times. Therefore, XBRL has made a significant impact on the overall QFR of all the selected companies. Hence, the null hypothesis "XBRL does not impact on quality of financial reporting of select companies in India" is rejected and the alternative hypothesis "XBRL has made a significant impact on quality of financial reporting of select companies in India" is accepted.

10. FINDINGS AND CONCLUSIONS

Based on the objectives and analysis of gathered information with the help of the Tukey Post Hoc, Multiple comparisons test the study found that there were a lot of fluctuations in the level of quality of financial reporting during the pre-XBRL period and in the XBRL period the level of financial reporting is improving and becoming consistent, and which shows the positive impact of XBRL. Further, there is an inconsistency in the quality of financial reporting among select companies in respect of all the financial reporting quality dimensions. Concerning the second objective with the help dummy variable regression model it is found that the quality of financial reporting of select companies during the pre-XBRL period is comparatively low and it is increased among all the select companies after the initiation of XBRL for financial reporting. This can be observed from the overall analysis of dummy variable regression analysis that the overall financial reporting quality during the pre-XBRL period was 0.427 and it was increased by 0.208 times after the introduction of XBRL. This study concludes that enhanced business reporting is the only tool that enhances the quality of financial reporting and certainly meets the varied information needs of different stakeholders [Hill \(2001\)](#), [Parish \(2000\)](#), [Bovee et al. \(2005\)](#). Further, the application of technologies like XBRL improves the transparency of financial reporting and enhances the timeliness, comparability, and uniformity of financial reports for various corporate filings. This builds confidence among various stakeholders' group and contributes to the long-lasting survival of the business at large.

11. LIMITATIONS

The study is confined only to secondary data and assessment of the impact of XBRL on the quality of financial reporting and it is not focused on the primary opinions of regulators, reporters, and users of annual reports.

12. FUTURE RESEARCH

Based on the limitations of the study the future research can address the following issues:

- 1) The study can be undertaken to analyse the XBRL based reporting for value relevance of the firms.
- 2) The primary opinion-based analysis from the different stakeholder's points of view can be conducted.

CONFLICT OF INTERESTS

None.

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REFERENCES

[Agarwal, H. \(2013\). Corporate Financial Reporting Practices in Emerging Capital Markets : An Empirical Study With Special Reference to Asia-Pacific Region.](#)

- Dayalbagh Educational Institute, Agra, India.
<https://sg.inflibnet.ac.in/handle/10603/34133>.
- Beattie, V., McInnes, B., and Fearnley, S. (2002). Narrative Reporting by Listed UK Companies : A Comparative within-Sector Topic Analysis. Research paper the University of Stirling.
- Beattie, V., McInnes, B., and Fearnley, S. (2004). A Methodology for Analysing and Evaluating Narratives in Annual Reports : A Comprehensive Descriptive Profile and Metrics for Disclosure Quality Attributes. In *Accounting Forum*, 28(3), 205-236. <https://doi.org/10.1016/j.accfor.2004.07.001>
- Boritz, J. E., and No, W. G. (2008). The SEC's XBRL Voluntary Filing Program on Edgar : A Case for Quality Assurance. *Current Issues in Auditing*, 2(2), A36- A50. <https://doi.org/10.2308/ciia.2008.2.2.A36>.
- Bovee, M., Kogan, A., Nelson, K., Srivastava, R. P., and Vasarhelyi, M. A. (2005). Financial Reporting and Auditing Agent with Net Knowledge (FRAANK) and Extensible Business Reporting Language (XBRL). *Journal of Information Systems*, 19(1), 19-41. <https://doi.org/10.2308/jis.2005.19.1.19>.
- Cerf, A. R. (1961). Corporate Reporting and Investment Decisions. Public Accounting Research Program, Institute of Business and Economic Research, University of California.
- Guthrie, J., and Abeysekera, I. (2006). Content Analysis of Social, Environmental Reporting : what is new ? *Journal of Human Resource Costing & Accounting*, 10(2), 114-126. <https://doi.org/10.1108/14013380610703120>.
- Harris, T. S., and Morsfield, S. G. (2012). An Evaluation of the Current State and Future of XBRL and Interactive Data for Investors and Analysts. <https://doi.org/10.7916/D8CJ8NV2>.
- Hill, G. (2001). Slouching Tiger, Hidden Dragon. *E-Company* (May), 52-62.
- Hoffman, C., and Rodríguez, M. M. (2013). Digitizing Financial Reports-Issues and Insights : A Viewpoint. *The International Journal of Digital Accounting Research*, 13(1), 73-98. https://doi.org/10.4192/1577-817/1577-8517-v13_3.
- Holsti, O. R. (1969). *Content Analysis for the Social Sciences and Humanities*, Reading, MA : Addison-Wesley.
- Hooks, J., Coy, D., and Davey, H. (2002). The Information Gap in Annual Reports. *Accounting, Auditing & Accountability*, 15(4), 01-22. <https://doi.org/10.1108/09513570210440577>.
- Jonas, G. J., and Blanchet, J. (2000). Assessing the Quality of Financial Reporting. *Accounting Horizons*, 14(3), 353. <https://doi.org/10.2308/acch.2000.14.3.353>.
- Kavitha, D., and Nandagopal, R. (2011). Disclosure Studies -A Commentary on the Methods and Measures. *Indian Journal of Corporate Governance*, 4(1), 29-46. <https://doi.org/10.1177/0974686220110103>.
- Krippendorff, K. (1980). *Content Analysis : An Introduction to its Methodology*. Beverly Hills, CA : Sage Publications.
- Krisko, A. (2017). The Role of Resistance in Incorporating XBRL into Financial Reporting Practices. *International Journal of Accounting and Economics Studies*, 5(2), 100-111. <https://doi.org/10.14419/ijaes.v5i2.7981>.
- Marston, C. L., and Shrikes, P. J. (1991). The Use of Disclosure Indices in Accounting Research : A Review Article. *The British Accounting Review*, 23(3), 195-210. [https://doi.org/10.1016/0890-8389\(91\)90080-L](https://doi.org/10.1016/0890-8389(91)90080-L).
- Naser, K., and Nuseibeh, R. (2003). Quality of Financial Reporting: Evidence from the Listed Saudi Nonfinancial Companies. *The International Journal of*

- Accounting, 38(1), 41-69. [https://doi.org/10.1016/S0020-7063\(03\)00002-5](https://doi.org/10.1016/S0020-7063(03)00002-5).
- Parish, A. (2000). Breaking the Ice. *Investor Relations* (October), 26-28. [https://doi.org/10.1016/S0363-8111\(00\)80018-1](https://doi.org/10.1016/S0363-8111(00)80018-1).
- Rahwani, N. R., Sadewa, M. M., Qalbiah, N., Mukhlisah, N., and Nikmah, N. (2019). XBRL Based Corporate Tax Filing in Indonesia. *Procedia Computer Science*, 161, 133-141. <https://doi.org/10.1016/j.procs.2019.11.108>.
- Tarmidi, M., and Roni, R. A. (2014). An International Comparison of the Determinants and Financial Information Quality in The XBRL Reporting Environment. *Procedia- Social and Behavioral Sciences*, 164, 135-140. <https://doi.org/10.1016/j.sbspro.2014.11.061>.
- Urquiza, F. B., Navarro, M. C. A., and Trombetta, M. (2009). Disclosure Indices Design : Does it Make a Difference ? *Revista de Contabilidad*, 12(2), 253-277. [https://doi.org/10.1016/S1138-4891\(09\)70008-1](https://doi.org/10.1016/S1138-4891(09)70008-1).
- Uyar, A. (2016). Evolution of Corporate Reporting and Emerging Trends. *Journal of Corporate Accounting & Finance*, 27(4), 27-30. <https://doi.org/10.1002/jcaf.22157>.
- Van Beest, F., Braam, G., and Boelens, S. (2009). Quality of Financial Reporting : Measuring Qualitative Characteristics. Nijmegen Center for Economics (NiCE). Working Paper, 09-108.
- Wang, Z., and Gao, S. S. (2012). Are XBRL-based Financial Reports Better than non-XBRL Reports ? A Quality Assessment. *International Journal of Economics and Management Sciences*, 6(1), 513-518. <https://doi.org/10.5281/zenodo.1328326>.
- Wenger, M. R., Thomas, M. A., and Babb, J. S. (2013). Financial Reporting Comparability : Toward XBRL Ontology of the FASB-IFRS Conceptual Framework. *International Journal of Electronic Finance*, 7(1), 15-32. <https://doi.org/10.1504/IJEF.2013.051754>.
- Zeff, S. A. (2013). The Objectives of Financial Reporting : A Historical Survey and Analysis. *Accounting and Business Research*, 43(4), 262-327. <https://doi.org/10.1080/00014788.2013.782237>.
- Zhu, H., and Wu, H. (2014). Assessing the Quality of Large-Scale Data Standards : A Case of XBRL GAAP Taxonomy. *Decision Support Systems*, 59(1), 351-360. <https://doi.org/10.1016/j.dss.2014.01.006>.