

The Value-Relevance of Integrated Reporting: A Cross-Country Analysis of Egypt, South Africa and Europe

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ABSTRACT:

This paper aims to investigate the value relevance of accounting information under integrated reporting (IR) in a comparative mandatory and voluntary setting. It examines the relationship between the level of integrated reporting based on the extent of adoption of the International Integrated Reporting Framework (IIRF) and the value relevance in Egypt, Europe and South Africa. Moreover, the differences in the value relevance of integrated report between those countries is also investigated. We used data of 45 non – financial companies (that construct 315 firm-year observations) listed on the Egyptian stock exchange and from registered companies on the JSE or on a European stock exchange for the period 2015–2021. Two regression models assessed the value relevance of IR. The results indicate that there is a positive relationship between the level of IR adoption and value relevance based on the price and return model in Egypt and south Africa but not in Europe. Furthermore, this study found strong evidence that there is a significant difference in the value relevance of integrated reports in Egypt, South Africa and Europe where the integrated report was issued voluntarily or mandatorily. In general, the results suggest that the IR type moderates the relationship between the level of IR adoption and value relevance. The findings bring out different implications for managers, decision-makers, policymakers, professional accounting bodies and the research community as well. This study further expands the existing knowledge on integrated reporting and sets the foundation for future researchers.

Keywords: integrated reporting, value relevance, Integrated thinking, voluntary and mandatory.

1. Introduction

The purpose of this study is to investigate the value relevance of IR and compare between mandatory and voluntary implementers. Integrated report is an approach to corporate reporting that demonstrates the linkages between an organization's strategy, governance and financial performance and the social,

environmental and economic context within which it operates (IIRC, 2011). IR has gained momentum with the issuance of the International Integrated Reporting Framework (IIRF) in 2013 by the International Integrated Reporting Council (IIRC) who outlined the aim of IR in the Integrated Reporting Framework as to improve the quality of information available to providers of financial capital to enable a more efficient and productive allocation of capital

The IIRC promotes the idea of integrated thinking and suggests reporting on six different capitals such as financial, manufactured, intellectual, human, social and relationship, and natural capital and their interdependencies (IIRC, 2013).

IR has gained traction in the global corporate reporting community in the past decade and the IIRC have undertaken significant efforts to implement integrated reporting worldwide. Management through IR communicates the organization's initiatives toward business growth, ensuring economic, social, environmental, and sustainable matters to stakeholders, investors, and other creditors in particular. IR thus provides environmental, social, and governance (ESG) information in an integrated way to portray the performance of the company (Adams, 2015). It also aims to reduce the clutter and voluminous of corporate disclosure by ameliorating conciseness (Zhou et al., 2017) which enhances the quality of corporate disclosure and reduces information asymmetries (Cortesi & Vena, 2019).

The evolution of IR that gives benefits for companies in each phase led many international firms in different countries, such as Brazil, Japan, Australia, Germany, South Africa, Netherlands, Canada, the United States, the United Kingdom, and others, to adjust their regulations and policies and follow IIRC, although not all the countries take the same action (Fernando et al., 2018). Many companies in Egypt also recognized these facts and obtained advocacy in IR implementation. However, corporate annual report preparation and presentation based on IR are mandatory in some countries, while such preparation is voluntary in other countries. South Africa is a country where preparation and presentation of IR is mandatory, while it is a voluntary exercise in Egypt and in European countries (Basnayaka & Priyadarshini, 2022). Encouraging mandatory adoption of IR, Baboukardos and Rimmel (2016) state that mandatory adoption of IR along with the King III report enhanced the quality of corporate reporting in South Africa since one of the primary purposes of IR is to

enhance the value relevance of accounting information.

However, before switching to such a different reporting system, which can be a costly and resource-consuming endeavor, it is important to understand how value relevant integrated reporting is to investors and capital markets. That is what is being tested empirically in this paper. If integrated reporting is providing useful additional information to the providers of the financial capital, not provided by existing reporting practices, then the information presented under the IR approach should be more value relevant.

Empirical analysis is used to analyze whether or not the implementation of IR has an impact in the value relevance of the reported accounting information. This implies that if IR is value relevant, then it is contributing towards increasing the usefulness of reported accounting information. There is considerable disagreement between IIRC and other academics and interested bodies regarding the actual value of implementing IR (Elkington, 2009; Milne & Gray, 2013; Flower, 2015; etc.). Such differences are difficult to mitigate without proper evidence. Analysis of the value relevance of IR will demonstrate how implementation of IR has affected the usefulness of reported information and thus establish a defensible case for one side or other.

Evidence from previous studies on the relation between IR and value relevance is mixed. Thus, this relation is not yet fully understood, and its nature is still an empirical issue. In the way of understanding this relation, we argue that value relevance may be moderated by the IR type if it is mandatory and voluntary. We hypothesize that there is a differences in the value relevance of IR between them and thus the current study could contribute to extant literature, especially as evidence originates in an emerging economy such as Egypt. Most prior studies investigate the value relevance of IR in developed countries. Given that a country's institutional factors, such as legal and information infrastructure, could influence the effect of IR on value relevance the

current study examines the relation between IR and value relevance and the moderating effect of IR type on this relation in an emerging economy, namely Egypt and in developed countries. Additionally, this study addresses one implication of agency theory by indicating how the interaction between IR and value relevance can improve the information environment through reducing information asymmetry and provide effective monitoring activities. Hence, the detrimental impact of moral hazard and adverse selection problems on investment decisions is decreased.

The remainder of this paper is organized as follows: Section 1 presents theoretical background. Section 2 presents empirical literature review and hypotheses development. Section 3 describes the research design, variables measurement, and sample selection. In section 4, empirical results, Section 5 presents discussion, Limitations and future research ideas are laid down in the final section.

2. Theoretical framework

2.1 Agency Theory

Agency relationship arises when one individual (the principal) hires another individual (the agent) to perform work (Jensen & Meckling, 1976). Agency Theory is used in this study to explain the relationships between the voluntary disclosure of the information related to the IR content elements and the value relevance of corporate information. According to this theory, high disclosure of information can add value to firms. This study suggests that companies will voluntarily disclose greater amounts of information related to the IR content elements to satisfy the information needs of their shareholders. Consistent with the aim of integrated reporting to provide an inclusive report to shareholders, after the issuance period of the IR Framework, the level of disclosure of the information related to the IR content elements will be higher and subsequently enhance the value relevance of corporate information (Jaffar & Selamat, 2019).

2.2 Signaling Theory

Since the notion of signaling theory explains how signals are applied to reduce information asymmetry among the two parties, this can be viewed as one way of addressing the problems identified in the agency theory (Jeroe, 2016). The signaling theory talks about how signals are sent to the parties who are interested in specific information to reduce information asymmetry. (Basnayaka & Priyadarshini, 2019).

Signaling theory has been used in many studies, especially those related to corporate finance and human behavior¹. Ross (1977) states that through the signaling theory voluntary financial disclosure provides signals to reduce information asymmetry. Various kinds of analyses explain that IR and its credibility will give the signal that the organization is taking steps to meet the information expectations of various stakeholder groups as it provides a more useful signal that a company is providing a better quality of information for the investor community and provides information on the relationships between the various measures, both operational and organizational strategies, as a complement of financial statements.

Then, the IR Framework can be identified as an ideal means of providing quality information to outside parties. It was justified by Fernando et al., (2018), and in their study, they mentioned that IR would provide a signal that various stakeholders are getting the required information regarding the value creation process of the entity. As a result, investors may estimate the firm's value, which reflected the value relevance of accounting information. As identified above, signals may contain several descriptions, pictures, or messages. Then the IR disclosures made by companies also fall into one of those means. Hence, IR disclosures made by reporting entities can be viewed as signals. Those signals support corporate report users to estimate the firm value, which is termed as a proxy measure for the value relevance of accounting information (Klimko & Juhaszova, 2022).

2.3 Stakeholder Theory

Jensen's (2001) enlightened stakeholder theory offers a coherent theoretical lens to explore the value creation proposition provided in IIRF. Stakeholder theory is a theory that reflects a company's accountability to stakeholders¹⁵. Jensen suggests that focusing on a single objective, e.g., increasing the long-term market value, maximizes shareholder wealth while best advancing social welfare (Cooray et al., 2022). Following a similar argument to that of the enlightened stakeholder theory, IIRC states that value is not created by or within an organization alone. It is influenced by the external environment, created through the relationships with stakeholders, and depends on various resources. IR is closely related to the stakeholders, especially the concept of value creation, which plays a significant role for the sustainability of the company (Gunarathne et al., 2017).

The IR concept provides the requirement to integrate all information related to social, economic, and environmental issues, as well as the socio-political and global economic subsystems. This approach will make investors more informed and better able to assess the economic value of the company. The concept of IR has shifted the corporate responsibility that was initially measured by the economic indicators in financial reporting to social factors or social dimensions to stakeholders, both internal and external. All of these aspects can be communicated through IR adoption, regardless of the cost incurred in the reporting process. (Fernando & Hermawan, 2019).

3. Literature review and hypotheses development

3.1 Value relevance of accounting information under IR

The value relevance of disclosures has been a popular area of study among accounting researchers over a long period of time. In these studies, value relevance is defined as the ability of information disclosed by financial statements to capture and summarize firm value (Kargin, 2013) and the focus is made on the association

between the empirical relation between stock market values (or changes in values) and various accounting numbers to assess the usefulness of accounting numbers in equity valuation (Ota, 2002). In this context, the value relevance of IR is a critical consideration in most countries. The studies that have examined the effect of IR have a positive impact of IR from a capital market perspective.

This path of research is aimed to examine the quality of information and the usefulness of IR, by assessing the capital market effects of its mandatory adoption (Eccles & Serafeim, 2011; Solomon & Maroun, 2012; Cho et al., 2013; Middleton, 2015; Baboukardos & Rimmel, 2016; Bernardi & Stark, 2016; Lee & Yeo, 2016; Martinez, 2016; Barth et al., 2017; Zhou et al., 2017). Although they are related to a specific context, and to mandatory reporting practice the results of these studies are considered significant because, regardless of whether the adoption of IR is voluntary or mandatory, they allow evaluating the effects of integrated reporting on investors' choices (Loprevite et al., 2018).

In this respect, Taking the first step to address value relevance of accounting information under the IR approach, Baboukardos and Rimmel (2016) carried out a study in South Africa to understand market valuation implications of financial reporting under IR. They reported that with the issuance of an integrated report, the value relevance of earnings increased. Lee and Yeo (2016) found a positive association between the firms' value measured by Tobin's Q and Integrated Reporting disclosures. Further, Zhou et al., (2017) showed IR provides incrementally useful information to the capital market. A study conducted by Fernando and Hermawan (2018) comparing the value relevance of accounting information pre and post introduction of IR found that the adoption of IR affects the firms' value relevance which is also reflected through the Book Value per Share (BVS). Cosma et al., (2019) also found that the stock prices of companies positively react to IR award announcements. All these studies have been conducted in South Africa, where the adoption of IR is mandatory.

Then the research interest for assessing value relevance of accounting information with IR disclosures shifted to the European context with the study conducted by Loprevite et al., (2018) with a sample of European companies. Similar findings are also reported. They found that the value relevance of accounting information is higher in IR adopting companies than in non-adopters in the European Union. Cortesi and Vena (2019) showed IR enhances corporate disclosure, reduces information asymmetries, and increases the quality of reported earnings per share. Further, Landau et al., (2020), found that IR plays a role in the market valuation of a firm's equity, where these findings indicate a negative impact on market valuation unless firms publish an integrated report with the assurance of a big four audit firm and prepare their report according to the newest GRI guidelines. This finding is consistent with IIRC's aim to provide information on how an entity can create and sustain value for the use of capital providers, who are considered the primary audience of IR. Thus, the extant literature shows that the preparation of integrated reports, which combine all the material information of an entity, has contributed to improving the value relevance of corporate disclosures.

However, as time passed researches conducted in this area shifted to the Asian countries from South Africa and European context. As one of the pioneering work conducted in Asian context a study conducted by Fernando et al., (2018) concluded that accounting information's value relevance does not significantly enhance after adopting IR practices in Asian countries. In the same manner, a study conducted by Cooray et al., (2020) in Sri Lanka found that although the disclosure level of IR is increased it does not significantly impact the firm value.

The above findings then point out that the findings within the research context is contradictory and that further research work is necessary to conclude how IR disclosure level impacts the value relevance of accounting information. Hence, this study examines how the level of adoption of IIRF in IR can impact

the value relevance, which is measured based on both price and return models to give a broad perspective to firm value. This study hypothesizes the relationship between the level of adoption of IIRF in IR and the firm value, which is measured in terms of both market price and the market return as follow:

Hypothesis 1 (H1): There is a positive relationship between the level of IR adoption and value relevance.

- **H1-a:** There is a positive relationship between the level of IR adoption and value relevance for investors in Egypt.
- **H1-b:** There is a positive relationship between the level of IR adoption and value relevance for investors in South Africa.
- **H1-c:** There is a positive relationship between the level of IR adoption and value relevance for investors in Europe.

3.2 value relevance of IR in mandatory versus voluntary settings

Some researchers tried to find out the difference of IR effect in mandatory and voluntary settings. One of these studies conducted by Paelman (2019). In this study, Paelman empirically investigated whether information contained in integrated reports is valued by investors by investigating whether integrated reporting are reflected in the share price. Furthermore, he verified whether integrated reporting affects the value relevance of accounting information. Two different samples are observed from South Africa and Europe For the former, integrated reporting is a mandated practice as imposed by the King III report, for the latter, legislation is less guiding. The findings suggested that after committing to an integrated reporting approach European firms trade at a lower share price, the share price of South African firms is not significantly affected. Nevertheless, the observed difference between both samples is statistically insignificant. An indirect positive effect of IR is detected for both samples, given that it affects the value relevance of basic accounting numbers of earnings per share and book value per share. The issuance of integrated reports affects the

value relevance of basic accounting information. For both samples, earnings per share becomes more relevant in explaining the share price under an IR approach than under a non-IR approach.

The affected accounting numbers and economic impact of these effects differ among both samples. The economic impact appears larger for the South African firms. Potential explanations are that actors on European stock markets are not familiar with the IR Framework and that the mandated IR regime already leads to uniform reports. The results align with those of Baboukardis and Rimmel's (2016) and Cortesi and Vena's (2019) research.

The effect of IR on the relevance of earnings per share is significantly larger for South African integrated reporters than for their European counterparts. Furthermore, it is reaffirmed that the effects of IR on the relevance of book value per share is significantly stronger for firms emanating from the South African sample. Hence, conform Fernando et al., (2018), this study corroborates that – even over a longer time frame and using the same measures for both adoption contexts – the effect of voluntary IR on the relevance of accounting information is not as pronounced as the effects witnessed in South Africa.

Another Comparative Cross Country Study on Value Relevance of Integrated Reporting of Mandatory and Voluntary Implementers by Mohaimen (2021), which provides evidence that value relevance of accounting information increases after implementation of IR in the mandatory setting. In the voluntary setting the effect of IR varies and is moderated by market effects and reporting environment. He examined the value relevance of accounting information under integrated reporting in a comparative mandatory and voluntary setting. For the mandatory settings, the JSE in South Africa is used as the sample and for the voluntary, the TSE in Japan and Europe is used as sample. The findings show that value relevance of summary accounting information increases after the implementation of IR in the mandatory setting.

In the voluntary setting, mixed results are observed. Market effect and the existing reporting environment affect the value relevance of accounting information under IR. If the market is large and existing reporting requirements are robust voluntary adoption of IR has minimal to no effect. However, in smaller markets with less rigorous reporting environment, adoption of IR does result in increased value relevance of accounting information. The consensus of most studies affirms the assertion that the adoption of an integrated approach would improve the decision usefulness of corporate reporting for investors. But there is debate on whether IR impacts in the same manner the value relevance of the information disclosed by companies in mandatory and voluntary settings.

Based on the above literature, the researcher developed a second research hypothesis as follows:

Hypothesis 2 (H2): There is a difference in the value relevance of integrated reports where it was issued voluntarily or mandatorily.

4. Methodology

4.1. Sample selection and data sources

The study's population comprises all Egyptian companies listed on Egyptian stock exchange, JSE and European stock exchange. Banks and financial services firms are excluded due to their unique financial reporting practices. A sample of 45 nonfinancial, listed Egyptian companies with 315 firm-year observations from the period 2015–2021 is selected to examine the relationship between the level of integrated reporting based on the extent of adoption of the International IIRF and the value relevance in Egypt, Europe and South Africa as well as investigate the differences in the value relevance of integrated report between those countries is also investigated. This period is selected to avoid time periods witnessing unusual events, including political uprising in Egypt preceding the year 2014 that has had an unknown effect on economic stability. The data for Egypt are collected from the Egyptian Stock Exchange official website, companies' websites, and the

Mubasher website that are publicly available online. The data are also obtained from Egypt for Information Dissemination (EGID) in exchange for a charge. For Europe primarily data is collected from the IIRC database (IIRC, 2021).

4.2. Level of Adoption of IIRF in IR

The extent of adoption of IIRF in IR was assessed through the content analysis of the selected 45 integrated reports using a comprehensive disclosure checklist based on IIRF.

4.3. Model specification

The following regression models are estimated in order to examine the relationship between the extent of adoption of IIRF in IR and value relevance of IR.

Model 1: Price Model

$$\begin{aligned} MVS_{it} = & \beta_1 + \beta_2 BVS_{it} + \beta_3 EPS_{it} + \beta_4 IRI_{it} \\ & + \beta_5 (BVS_{it} \times IRI_{it}) \\ & + \beta_6 (EPS_{it} \times IRI_{it}) \\ & + \beta_7 LOSS_{it} \\ & + \beta_8 (LOSS_{it} \times EPS_{it}) \\ & + \beta_9 LEV_{it} + \beta_{10} ROA_{it} \\ & + \beta_{11} SIZE_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

where *MVPS* is market value per share (stock prices); *BVPS* represents book value of equity per share; *EPS* represents earnings per share; *IRI* is an *IR* index; *LOSS* is the corporate loss; *LEV* is leverage; *ROA* is return on assets; *SIZE* is firm size; ε_{it} is error term.

Model 2: Return Model

$$\begin{aligned} R_{it} = & \beta_0 + \beta_1 (EPS_{it}/P_{it-1}) \\ & + \beta_2 (\Delta EPS_{it}/P_{it-1}) \\ & + \beta_3 IRS_{it} \\ & + \beta_4 (EPS_{it}/P_{it-1}) \times IRI_{it} \\ & + \beta_5 (\Delta EPS_{it}/P_{it-1}) \times IRS_{it} \\ & + \beta_6 SIZE_{it} + \beta_7 LOSS_{it} \\ & + \varepsilon_{it} \end{aligned} \quad (2)$$

Where R_{it} is the market returns; EPS_{it} represents earnings per share; EPS_{it}/P_{it-1} is the earnings per share deflated by the share price; $\Delta EPS_{it}/P_{it-1}$ is the change in earnings

per share from time $t - 1$ to time t deflated by the share price of firm i at time $t - 1$; *IRI* is the *IR* index; *LOSS* is the corporate loss; *SIZE* is firm size; ε is error term.

The following regression model is estimated in order to examine the moderating effect of *IR* type if it was issued mandatorily or voluntarily on value relevance.

$$\begin{aligned} MVS_{it} = & \beta_1 + \beta_2 BVS_{it} + \beta_3 EPS_{it} + \beta_4 IRI_{it} \\ & + \beta_5 (BVS_{it} \times IRI_{it}) \\ & + \beta_6 (EPS_{it} \times IRI_{it}) \\ & + \beta_7 LEV_{it} + \beta_8 ROA_{it} \\ & + \beta_9 SIZE_{it} \\ & + \beta_{10} (V_{it} \times BVS_{it}) \\ & + \beta_{11} (V_{it} \times BPS_{it}) \\ & + \beta_{12} (V_{it} \times IRI_{it}) \\ & + \beta_{13} (V_{it} \times BVS_{it} \times IRI_{it}) \\ & + \beta_{14} (V_{it} \times EPS_{it} \times IRI_{it}) \\ & + \varepsilon_{it} \end{aligned} \quad (3)$$

Where V is a dummy variable.

4.3.1. Measurement of dependent variable

The dependent variable of this study is the value relevance of accounting information. In line with prior researchers' practices, the value relevance of accounting information was measured using the proxy measure of "Firm Value" (Fernando et al., 2018; Fernando & Hermawan, 2019; Cooray et al., 2020). In those studies, the firm value was measured using share price and market return. The share price was used in this study to measure the firm value as a proxy measure for accounting information's value relevance. Stock price per share for a particular firm was taken six months after the financial year-end since market participants take some time to react to published data through Integrated Reports (Fernando & Hermawan, 2019). Cooray et al., (2020) also justified that six months after the financial year-end is a reasonable time to capture Integrated Reports' value.

4.3.2. Measurement of independent variable

The independent variable of this study, "IR Disclosure Level" will be measured using a detailed *IR* Index which contained 50 disclosure

checklist items. Further, this index was initially introduced by Stent and Dowler (2015) and further developed by Gunarathne N. and Herath (2016). Moreover, this index was developed further by Cooray et al (2020) based on the suggestions given by Kılıç and Kuzey (2018) in their study.

4.3.3. Measurement of moderator variable

In this study the researcher introduced a dummy variable V that takes the value 1 if a company is part of the European sample (voluntary setting) and 0 if otherwise, which interacts with variable IR and the interaction variables.

4.3.4. Measurement of control variables

First, regarding firm size, larger firms are expected to have higher disclosure levels. Larger firms account for a greater proportion of the economy's goods and services and have a large number of employees. They have a large asset base and are more established than smaller firms. All these factors suggest that large firms are associated with higher disclosure levels. Therefore, Firm size (SIZE) is measured by natural logarithm of total assets (Cooray et al., 2020). Second, Profitability (ROA) is measured by the return on assets. Third, Leverage can imply the level of control over insiders by creditors, but it can also be associated with higher costs of bankruptcy (Campbell & Minguez-Vera, 2008). Therefore, it is expected that leverage affects the attractiveness of a firm for potential shareholders, which will influence the market value. Furthermore, prior research has found different outcomes when looking into the effect of leverage on environmental disclosure (Cormier & Magnan, 2011) and this relation is thus unclear.

It is suggested that highly leveraged firms incur higher monitoring costs (Jensen & Meckling, 1976). Creditors act as external monitors that play a beneficial governance role in reducing managerial agency problems, hence a positive

correlation between leverage and voluntary disclosure is expected (Ahmed & Nicholls, 1994). To control for these effects leverage, measured as the ratio of total debt to total equity, is added (Baboukardos & Rimmel, 2016). We control for leverage (LEV), which is measured as the ratio of total debt scaled by total assets. Fourth, The company's loss will be considered as a dummy variable. It was 1 if the company achieved negative earnings or loss and 0 if the company gets positive earnings or profits (Cooray et al., 2022).

5. Empirical results

5.1. Descriptive statistics and correlation

Table 1 presents descriptive statistics of the variables that are used in the study. In order to eliminate the outliers effect, all continuous variables included in the study are Winsor zed at the top 5% and the bottom 95% percentiles of their distribution.

The mean of market value (MVPS) in Egyptian companies is 23.394, in South African companies the mean is 4.26 and in European companies is 52.80. This implies that MVPS in Egypt is more than in South Africa but less than Europe. The average percentage of Return on equity (R) for Egyptian companies is 3.19 with a range between .14 and 11.45, which is close to that found in the South African companies, which is 3.66 with a range between .34 and 13.86, and that of the European companies which is 2.76 with a range between 48 and 90.33. The mean of book value per share (BV) in Egypt is 13.89 which is far more than the 1.48 found in the African sample and less than the 22.89 reported in Europe. The mean of earnings per share (EPS) for Egyptian companies is .86 more than that for South African companies, which is .29 and lower than the 4.67 found in Europe.

Table 1. Descriptive statistics

Variable	Egypt				South Africa				Europe			
Panel A: Continuous variables												
	Mean	Min.	Max.	Std. Dev.	Mean	Min.	Max.	Std. Dev.	Mean	Min.	Max.	Std. Dev.
MVPS	23.39	0.790	87.08	22.11	4.262	0.009	37.85	8.098	5.280	0.250	30.47	162.7
R	3.189	0.138	11.45	3.207	3.655	0.336	13.86	4.415	2.759	0.475	90.3	12.26
BV	13.89	0.005	52.05	11.39	1.480	0.0131	18.42	2.408	2.289	0.093	22.67	38.37
EPS	0.856	-3.730	17.33	2.050	0.288	-0.714	5.713	0.904	4.671	-3.535	74.06	10.51
ΔEPS	0.505	-1.953	6.750	1.282	-0.622	-38.21	18.28	4.717	-0.409	-61.50	46.3	7.781
IRI	0.597	0.30	0.760	0.115	0.852	0.680	1	0.571	0.648	0.420	1	0.517
LEV	0.579	0.04	1.063	0.214	0.535	0.142	0.897	0.209	0.664	0.126	1.515	0.264
ROA	0.049	-0.605	0.231	0.090	0.219	-0.329	0.577	0.248	0.078	-0.090	0.385	0.082

SIZE	22.51	17.54	25.46	1.762	1	14.69	21.51	1.708	1	16.36	23	2.470
					7.				9.		.1	
					8				8		74	
					9				7			
Panel B: Discrete variables												
LOSS	(1)		(0)		(1)		(0)		(1)		(0)	
	Fre.	Per.	Fre.	Per.	F	Per.	Fre.	Per.	F	Per.	Fr	Per.
					re				re		e.	
					.				.			
	90	85.71	15	14.29	8	80.95	20	19.05	9	89.52	11	10.48
					5				4			

Notes: This table shows the sample's descriptive statistics. The study sample consists of 315 firm-year observations and spans the years 2015 to 2021.

For the Egyptian companies, the level of integrated reporting disclosure, which was measured using index for IR (IRI), ranges between .3 and .76, and the mean of it is .59, this ratio is close to that found in some studies in Egyptian business environment. Where it reached by Diab and Abd-Elazim (2019) 62 and Mostafa (2023) 53.85. These results indicate that the disclosure level according to the IR concept in the Egyptian business environment still at an average level. For the South African companies, IRI the mean is .85 which is higher than that found in Egypt, and that is a logical result as IR in South African companies is mandatory unlike in Egyptian companies. For the European companies, IRI ranges between .42 and 1 with a mean .65 which is higher than that of Egypt and lower than that of South Africa. The leverage ratio (LEV) ranges from .04% to 1.06%, and the mean is 58%, which indicates that approximately 58% of the total assets of sample firms are financed by debt, suggesting that sample firms are highly leveraged. And that's higher for European companies 66% than for South African companies 54%. The mean of profitability (ROA) for Egyptian companies is equal to 5% which is almost the same as that in European companies .8%, and less than that in South Africa 22%. The mean of firm size (SIZE) in Egypt, South Africa and Europe, as measured by the natural logarithm of total assets, is 22.514, 17.893 and 19.87 respectively.

The Spearman's correlation coefficients for all variables in the study are shown in Tables 2, 3 and 4 for the Egyptian, South African and European samples respectively.

From the table 2, it appears that Book value (BV), the integrated reporting index (IRI) and (ROA) are positively correlated with market value per share (MVPS). which tentatively imply that firms with higher IRI, higher profitability, exhibit more value relevance in terms of MVPS. While there is a negative relation between (MVPS) and (EPS), (LEV) and (SIZE). Also from the table it appears that IRI have positive relation with R, EPS, BV, ROA, while it have a negative relation with firm size which means that firm size doesn't affect the level of IR disclosure. In table 3 for South African firms we found the same results except for the (SIZE) which are positively correlated with (MVPS) and (IRI) which means that firm size in South Africa affect the level of IR disclosure. From table 4 which relate to European companies it appears that (BV), (LEV) and (SIZE) are positively correlated with (MVPS). While there is a negative relation between (MVPS) and (IRI), (EPS). Also it appears that IRI have positive relation with (R) and firm size which means that firm size in Europe affects the level of IR disclosure. while it have a negative relation with BV, EPS, LEV, ROA. multicollinearity is not a concern

Table 2. Spearman correlation matrix for Egyptian sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) MVPS	1.000									
(2) R	0.919 (0.000)	1.000								
(3) BV	0.613 (0.000)	0.570 (0.000)	1.000							
(4) EPS	-0.230 (0.018)	0.184 (0.060)	0.424 (0.000)	1.000						
(5) Δ EPS	-0.236 (0.015)	-0.170 (0.084)	0.065 (0.513)	0.031 (0.757)	1.000					
(6) IRI	0.696 (0.000)	0.712 (0.000)	0.435 (0.000)	0.121 (0.218)	-0.155 (0.114)	1.000				
(7) LEV	-0.218 (0.025)	-0.215 (0.028)	-0.265 (0.006)	0.085 (0.389)	-0.187 (0.055)	-0.202 (0.038)	1.000			
(8) ROA	0.227 (0.020)	0.131 (0.181)	0.007 (0.940)	0.304 (0.002)	0.018 (0.858)	0.041 (0.674)	-0.136 (0.166)	1.000		
(9) LOSS	0.371 (0.000)	0.286 (0.003)	0.096 (0.331)	0.433 (0.000)	-0.055 (0.574)	0.228 (0.020)	0.052 (0.600)	0.583 (0.000)	1.000	
(10) SIZE	-0.232 (0.017)	-0.189 (0.053)	-0.066 (0.507)	0.118 (0.229)	-0.215 (0.028)	-0.175 (0.074)	0.441 (0.000)	-0.161 (0.100)	-0.054 (0.581)	1.000

Notes: This table shows Spearman correlation coefficients of market value per share, market return, integrated report index, and other control variables.

Table 3. Spearman correlation matrix for South African sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) MVPS	1.000									
(2) R	0.350 (0.000)	1.000								
(3) BV	0.451 (0.000)	-0.294 (0.002)	1.000							
(4) EPS	-0.004 (0.006)	0.226 (0.021)	0.427 (0.000)	1.000						

(5) Δ EPS	-0.005 (0.958)	-0.249 (0.010)	0.192 (0.049)	0.211 (0.031)	1.000					
(6) IRI	0.485 (0.000)	0.538 (0.000)	-0.059 (0.549)	-0.166 (0.091)	-0.169 (0.085)	1.000				
(7) LEV	-0.117 (0.235)	0.129 (0.190)	-0.331 (0.001)	-0.215 (0.027)	-0.112 (0.256)	0.112 (0.257)	1.000			
(8) ROA	0.088 (0.370)	0.186 (0.058)	0.023 (0.814)	0.035 (0.721)	0.014 (0.889)	0.127 (0.195)	-0.034 (0.727)	1.000		
(9) LOSS	0.055 (0.578)	-0.331 (0.001)	0.232 (0.017)	0.338 (0.000)	0.262 (0.007)	-0.067 (0.499)	-0.064 (0.513)	0.048 (0.630)	1.000	
(10) SIZE	0.320 (0.001)	0.077 (0.433)	0.330 (0.001)	0.231 (0.018)	-0.057 (0.561)	0.140 (0.154)	0.029 (0.766)	0.078 (0.426)	-0.148 (0.132)	1.000

Notes: This table shows Spearman correlation coefficients of market value per share, market return, integrated report index, and other control variables.

Table 4. Spearman correlation matrix for European sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) MVPS	1.000									
(2) R	-0.093 (0.343)	1.000								
(3) BV	0.891 (0.000)	-0.084 (0.396)	1.000							
(4) EPS	0.119 (0.228)	-0.019 (0.004)	0.053 (0.589)	1.000						
(5) Δ EPS	0.073 (0.457)	0.013 (0.899)	0.008 (0.937)	0.086 (0.385)	1.000					
(6) IRI	-0.185 (0.009)	0.028 (0.781)	-0.143 (0.145)	-0.114 (0.246)	-0.126 (0.199)	1.000				
(7) LEV	0.169 (0.085)	0.069 (0.487)	0.177 (0.070)	0.046 (0.644)	0.096 (0.329)	-0.474 (0.000)	1.000			
(8) ROA	0.152 (0.122)	-0.004 (0.971)	0.245 (0.012)	0.042 (0.668)	0.155 (0.115)	-0.338 (0.000)	0.515 (0.000)	1.000		
(9) LOSS	0.131	0.052	0.123	0.270	0.312	-0.046	0.099	0.392	1.000	

	(0.182)	(0.598)	(0.212)	(0.005)	(0.001)	(0.644)	(0.317)	(0.000)		
(10)	0.280	-0.009	0.278	-0.004	0.013	0.157	-0.374	0.099	0.195	1.000
SIZE										
	(0.004)	(0.924)	(0.004)	(0.964)	(0.898)	(0.109)	(0.000)	(0.316)	(0.046)	

Notes: This table shows Spearman correlation coefficients of market value per share, market return, integrated report index, and other control variables.

5.2. Regression results

5.2.1 Testing H1: The relationship between the level of IR adoption and value relevance based on the price model.

The Pooled Ordinary Least Squares (Pooled OLS) estimation method is used to estimate the regression model. To overcome the potential heteroscedasticity and autocorrelation problems, robust standard errors are applied (Greene, 2003). Also, the variance inflation factor (VIF) is calculated to ensure the absence of multicollinearity.

As shown in Tables 5 and 6, the VIF for all explanatory variables in the study model is less than 10. Hence, there is no significant multicollinearity problem. Tables 7 and 8 shows the regression results regarding the relationship between the level of IR adoption and value relevance as well as the effect of IR type as a moderator variable. The probability of $\chi^2 = 0.0000$ is less than the level of significance of 5%. Hence, the regression model is statistically significant.

Table 5. Variance inflation factor (price model)

Variable	Egypt	Variable	South Africa	Variable	Europe
LOSS	1.879	BV	1.511	LEV	2.102
BV	1.712	EPS	1.433	ROA	1.834
ROA	1.685	SIZE	1.33	SIZE	1.544
EPS	1.68	LOSS	1.259	IRI	1.338
LEV	1.442	LEV	1.18	LOSS	1.338
IRI	1.379	IRI	1.088	BV	1.213
SIZE	1.303	ROA	1.028	EPS	1.109
	1.583		1.261		1.497

Table 6. Variance inflation factor (return model)

Variable	Egypt	Variable	South Africa	Variable	Europe
LOSS	1.859	EPS	1.368	LEV	2.017
ROA	1.662	LOSS	1.255	ROA	1.830
LEV	1.358	SIZE	1.179	LOSS	1.451
SIZE	1.351	Δ EPS	1.121	SIZE	1.367

EPS	1.299	IRI	1.106	IRI	1.348
IRI	1.216	LEV	1.067	Δ EPS	1.125
Δ EPS	1.13	ROA	1.028	EPS	1.108
1.411		1.161		1.464	

Table 7. The relationship between the level of IR adoption and value relevance (Price model).

MVPS	Egypt		South Africa		Europe	
	Coef.	p-value	Coef.	p-value	Coef.	p-value
BV	0.4217	0.000***	0.5462	0.000***	1.0501	0.000***
EPS	3.1196	0.085*	-3.4711	0.009***	1.0815	0.000***
IRI	120.06	0.000***	151.73	0.000***	58.295	0.012**
LEV	7.5363	0.187	2.4464	0.858	0.3258	0.972
ROA	54.632	0.011**	322.15	0.000***	-177.65	0.000***
LOSS	-9.5160	0.038**	4.9296	0.641	-77.039	0.075*
SIZE	-1.2647	0.030**	7.6607	0.002***	1.0516	0.036**
Constant	-38.961	0.030**	-214.22	0.000***	-59.764	0.032**
Number of obs.	105		105		105	
R-squared	.8294		.5824		.9186	
F	122.08		38.38		291.48	
	(Sig. = 0.000)		(Sig. = 0.000)		(Sig. = 0.000)	

Notes: *, **, *** significant relationship at the 10%, 5%, and 1% thresholds.

Table 8. The relationship between the level of IR adoption and value relevance (return model).

R	Egypt		South Africa		Europe	
	Coef.	p-value	Coef.	p-value	Coef.	p-value
EPS/P-1	-6.8523	0.008***	-6.2828	0.002***	-0.0464	0.314
Δ EPS/P-1	-6.8764	0.000***	-16.926	0.055*	0.0917	0.765
IRI	17.130	0.000***	10.112	0.027**	0.2077	0.291
SIZE	-0.1139	0.341	0.0739	0.775	0.0114	0.091*
LOSS	0.8440	0.004***	-0.0554	0.352	0.0027	0.017**
Constant	-4.9255	0.108*	-5.8525	0.350	0.6731	0.002***
Number of obs.	105		105		105	
R-squared	.6542		.4050		.1447	
F	33.49		12.52		2.60	
	(Significance .000)		(Significance .000)		(Significance .0167)	

Notes: *, **, *** significant relationship at the 10%, 5%, and 1% thresholds.

As shown in Table 7, the coefficient of (IRI) is 120.056, 151.732 and, 58.295. it is significant at the 1% level, which implies that the level of integrated report adoption is positively related to value relevance. Consequently, H(1-a), (1-b) and (1-c) which posits that there is a positive relation between the level of integrated report adoption and value relevance in Egypt, South Africa and Europe (i.e. $\beta_1 < 0$) is accepted. Regarding the control variables, SIZE have a significant and negative relation with (MVPS) in Egypt while it is a positive in South Africa and Europe. Returns on assets are positively related to market value in Egypt and South Africa while negatively related in Europe. In addition, there is insignificant effect for leverage (LEV) on (MVPS).

In Table 8, where we used the return model, the coefficient of (IRI) is 17.130, 10.1118 and, .20770. it is significant for Egypt and South Africa whereas insignificant in Europe, which

implies that the level of integrated report adoption is positively related to value relevance in Egypt and South Africa. Consequently, H(1-a) (1-b) is accepted whereas hypothesis (1-c) that predicts that there is a positive relation between the level of integrated report adoption and value relevance in Europe is rejected.

Testing H2: The differences in the value relevance of IR between Egypt, South Africa and Europe where the IR was issued voluntarily or mandatorily.

There was a problem of multicollinearity and to overcome this problem we take the standard values for EPS and BV in the regression model. After we take the standard values the VIF decreased but not less than 10 so we will use ridge regression to reduce the VIF and overcome the multicollinearity problem as in table (7). Ridge regression test results as presented in table (8).

Table 9. The difference in the value relevance of integrated reports where it was issued voluntarily or mandatorily.

MVPSw5	Coefficient	std. err.	t	P> t	Adjusted VIF
BVw5	0.3017	21.602	6.6087	0.000***	0.7152
EPSw5	-0.2415	27.270	-1.5789	0.115	1.1399
IRIw5	70.119	25.737	8.4871	0.000***	1.0153
IRBVSw5	0.4380	22.796	7.2030	0.005	0.7965
IRIEPSw5	-0.5621	26.635	-2.5352	0.012**	1.0874
VBVSw5	0.4088	23.579	5.9113	0.000***	0.8521
VEPSw5	0.6142	27.607	2.7167	0.007***	1.1682
VIRIw5	-50.285	29.316	-11.419	0.000***	1.3173
VBVSIRIw5	0.4724	24.590	4.0741	0.000***	0.9268
VEPSIRIw5	0.5840	27.552	1.8600	0.006***	1.1636
ROAw5	48.442	25.052	1.9733	0.049**	0.9619
SIZEw5	0.4028	25.955	0.7697	0.442	1.0326
LEVw5	3.6830	24.506	0.5396	0.589	0.9205
_cons	-21.522	17.744	-10.032	0.000***	-

Number of obs.	315
R-squared	0.5595
F(13, 301)	44.2817

Notes: *, **, *** significant relationship at the 10%, 5%, and 1% thresholds.

As shown in Table 9, the coefficient of the moderator variable (VIRI) (i.e. β_{12}) is -50.2850, and it is significant at the 1% level, which implies that the interaction of integrated report index with integrated report type is negatively associated with value relevance. This means that the level of integrated report adoption, when coupled with the type of integrated report (voluntarily) report decrease value relevance. In the regression equation, the area of interest shifts towards the, (Vit×BVSit×IRLit) and (Vit×EPSit×IRLit) and their parameters' estimates. Besides, examining estimates for them allows us to determine whether the effect on the relevance accounting numbers differs depending on whether that report was issued voluntarily or mandatorily. According to this the researcher can observe that there is a significant positive effect of the voluntary IR report on the value relevance where (VIRI) increases the effect of (IRIBV, IRIEPS) on the MVPS by (0.4724 and 0.5840) respectively. Hence, H2, which predicts that there is no difference in the value relevance of integrated reports where it was issued voluntarily or mandatorily is rejected.

6. Discussion

The study evaluates two competing hypotheses about the relation between integrated reports and value relevance. The above analysis leads to several important points for discussion. Concerning the extent of adoption of IIRF in IR, the study found that according to the price model there is a significant effect for integrated report adoption on the value relevance. This effect is positive in Egypt, South Africa and in Europe; implying that there is a response or a reaction for the Egyptian stock market toward the adoption of IR. The Egyptian-listed companies show a significant improvement over time, which is in line with other countries or regions such as Netherlands, South Africa, and the UK. This result is consistent with other

studies such as (Loprevite et al., 2018; Fernando & Hermawan, 2018; Cortesi & Vena, 2019; Pavlopoulos et al., 2019; Tlili et al., 2019; Sun et al., 2022). These studies concluded that IR disclosures enhanced investors' firm valuation abilities through enhancing accounting information's value relevance.

Contradicts the results of many previous studies (e.g. Fernando et al., 2017; Soumilion, 2018; Jaffar et al., 2019; Cooray et al., 2020) which found no significant effect for integrated report adoption on the value relevance. The same results are reached according to the return model in Egypt and south Africa but in Europe the results indicates that there is no significant relationship between IR and value relevance. The results provide support and show that in large well-regulated markets with rigorous reporting environment as is the case of Europe including UK, voluntary implementation of IR has minimal to no effect in the value relevance of accounting information. So the voluntary implementation of IR does not result in significant increase in value relevance of accounting information. This is expected as in such reporting environment the market is efficient, and IR does not add any significant additional information to make a difference in value relevance of accounting information. However, in the smaller markets, as evidenced by Egypt, implementation of IR results in increased value relevance of accounting information. This result is consistent with the theory that in highly regulated and well managed reporting environments, voluntary implementation of IR does not result in any additional improvement in the value relevance of accounting information. This can be explained by the concept of information saturation where most of the necessary information needed is already present and any additional information does not add any

significant incremental value. This result could be attributed to the Egyptian market requiring and encouraging companies to apply integrated reporting framework.

The study extends this analysis by showing the differences in the value relevance of IR between Egypt, South Africa and Europe where the IR was issued voluntarily or mandatory. The results presented that there is a significant difference in the value relevance of IR (MVPS) in the case of voluntarily report (VIRI) which means the voluntarily report (V) decreased the effect of IR adoption on the value relevance by 82.02 than in the mandatory report. We also noticed that there are significant difference between the value relevance of IR where the IR was issued voluntarily or mandatory. This finding can be associated with the notion that in a large well-developed market such as Europe, voluntary implementation of IR does not improve the quality of the existing information paradigm in the market. Argument can be made that in such a setting, market is information saturated and additional information added by voluntary implementation of IR does not add any additional value to the capital providers. Thus there is no significant change in value relevance of accounting information after the implementation of IR in Europe. These results provide support for the idea that value relevance of accounting information increases under an IR approach under mandatory setting. This provides evidence that in the mandatory setting of South Africa, implementation of IR results in increased value relevance of accounting information. The results can be associated with the notion that implementation of IR increases the value of the information to the capital providers and thus increases the value relevance of presented accounting information.

7. Summary and conclusion

The study investigates the relation between the level of IR adoption and value relevance as well as the moderating effect of IR type on this relation. Using data of 315 firm-years observations of Egyptian, South African and European companies from 2015 to 2021, the

study concludes that the level of IR adoption has a positive effect on value relevance in Egypt, South Africa. This is due to the fact that the level of disclosure in integrated business reports achieves many advantages, including: a good means of strategic communication with users of financial reports, directing the management's view of risk management in a comprehensive, integrated and balanced manner, directing the company towards greater sustainability in the long term, showing the extent of the company's ability to create value Maintaining it, achieving more confidence in the information provided by the company in a way that enhances its reputation in front of different stakeholders, increasing competition between companies in the markets and improving and increasing employee loyalty. Additionally, the study found strong evidence that there is significant difference in the value relevance of integrated reports where the integrated report was issued voluntarily or mandatorily. The findings of our study have several valuable implications for regulators, investors, and researchers. For investors, this study helpful in assessing accounting information quality, they should become familiar with making investment decisions based on the information provided through Integrated Reports, and therefore, rationalize their investment decisions. For regulators, study provides evidence about the IR role in Egyptian context which may enhance regulators' awareness about the effect of IR on value relevance. Finally, for researchers, providing evidence from developing countries can attract the attention of other researchers in other emerging markets with comparable contextual and institutional frameworks.

▪ Limitations and future research

There are a number of limitations related to the current study. Firstly banks and non-bank financial services are excluded. Therefore, future studies can be conducted to compare differences between financial and non-financial firms concerning the impact of IR on value relevance. Secondly, the study sample size compared to the sample size in previous studies is relatively small. Thirdly, study period is also one of the study's

limitations; our study period is seven years, starting from 2015 to 2021. This period is selected due to a political uprising prior to 2014 that has had an unknown effect on economic stability. Fourthly the study only considered listed entities that published integrated annual reports for seven consecutive years.

Future research can investigate the impact of the IR on the corporate reputation. If the result is positive, this may motivate companies to be more supportive in providing an integrated report, and at the other end the investor would be more appreciative with the comprehensive report prepared for them. Alternative proxies of value relevance and IR are potential extensions to the current study. Furthermore, comparing the Egyptian market with other markets to find

distinct characteristics and factors affecting the role of IR is still another possible area for future research.

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References

- Adams, C. A. (2015). The international integrated reporting council: A call to action. *Critical Perspectives on Accounting*, 27(4), 1019-1038.
- Baboukardos, D., and Rimmel, G. (2016). Value relevance of accounting information under an integrated reporting approach: A research note. *Journal of Accounting and Public Policy*, 35(4), 1019-1038.
- Barth, M. E., Cahan, S. F., Chen, L., and Venter, E. R. (2017). The Economic Consequences Associated with Integrated Report Quality: Capital Market and Real Effects. *Working Papers* (Faculty) - Stanford Graduate School of Business. Retrieved from <https://www.gsb.stanford.edu/gsb-cmis/gsb-cmis-download-auth/435571>.
- Basnayaka, B., and Priyadarshini, W. (2022). Impact of integrated reporting disclosure level on value relevance of accounting information: Evidence from listed companies in Sri Lanka. *International Journal of Accountancy*, 2(1), 1019-1038.
- Bernardi, C., and Stark, A. W. (2016). Environmental, social and governance disclosure, integrated reporting, and the accuracy of analyst forecasts. *The British Accounting Review*, 50(1), 16–31. Retrieved from <https://dx.doi.org/10.1016/j.bar.2016.10.001>
- Campbell, J. L., and Minguez-Vera, R. (2008). A review of derivatives research in accounting and suggestions for future work. *Journal of Accounting Literature*. 42, 1019-1038.
- Cho, S. Y., Lee, C., and Pfeiffer, R. J. (2013). Corporate social responsibility performance and information asymmetry. *Journal of Accounting and Public Policy*, 32(1) 1019-1038.
- Cooray, T., Senaratne, S., Gunarathne, A., Herath, R., and Samudrage, D. (2020). Does integrated reporting enhance the value relevance of information? Evidence from Sri Lanka. *Sustainability*, 12(9), 1019-1038.
- Cooray, T., Senaratne, N. S., Gunarathne, R. Herath and Samudrage, D. (2022). Adoption of integrated reporting in Sri Lanka: Coverage and trend. *Journal of Financial Reporting and Accounting*, 20(4), 1019-1038.
- Cormier, D., and Magnan, M. (2011). Investors' assessment of implicit environmental liabilities: An empirical investigation. *Journal of accounting and public policy*, 16(2), 1019-1038.
- Cortesi, A., Vena, L. (2019). Disclosure quality under integrated reporting: A value relevance approach. *Journal of Cleaner Production*, 220(4), 1019-1038.
- Cosma, S., Soana, M., and Venturelli, A. (2019). Does the market reward integrated report quality?. *African Journal of Business Management*, 12 (4), 1019-1038.

-
- Diab A. A., and Abd-Elazim, S. i. (2019). Assurance of integrated reports: An exploratory study from Egypt. *Journal of Financial and Commercial Studies*, 2, 1019-1038.
- Eccles, R. G., and Saltzman, D. (2011). Achieving sustainability through integrated reporting. *Stanford Social Innovation Review*, 9(3), 56–61.
- Fernando, K. and Hermawan, A.A. (2019). Relative and incremental value relevance of accounting information under the integrated reporting approach: evidence from South Africa. Gitaharie, B.Y., Handayani, D., Setyaningrum, D. and Muzayanah, I.F.U.(Eds.), 89, 1019-1038.
- Fernando, K., Sriani, E., Shauki. R., and Diyanty, V. (2018). Does integrated reporting approach enhance the value relevance of accounting information?: Evidence from Asian firms. *Advances in Economics, Business and Management Research*, 55(3), 1019-1038.
- Flower, J. (2015). The international integrated reporting council: a story of failure. *Critical Perspectives on Accounting* 27, 1–17.
- Greene, W. H. (2003). *Econometric analysis*. Prentice Hall.
- Guthrie, J., Manes-Rossi, F., and Orelli, R. L. (2017) Integrated reporting and integrated thinking in Italian public sector organizations. *Meditari Accountancy Research*, 28(7) 1019-1038.
- Gunarathne, A.D.N., and Herath, R. (2016). Assessing the gap between integrated reporting and current integrated corporate reporting practice: A proposed checklist. Proceedings of the Eleventh Faculty of Management Studies and Commerce (FMSC) Research Symposium; University of Sri Jayewardenepura, Gangodawila, Nugegoda, Sri Lanka, (pp. 40–52).
- Gunarathne, N., and Senaratne, S. (2018). Country readiness in adopting integrated reporting: A Diamond theory approach from an Asian Pacific economy. In Sustainability Accounting in the Asia Pacific Region; Lee, K.,Schaltegger, S; Springer: Cham, Switzerland, (Eds.) (pp. 39–66).
- International Integrated Reporting Council. (2011). *Towards integrated reporting: Communicating value in the 21st century*; Sep, London.
- The International (IR) Framework. (2013) Available online: <http://integratedreporting.org/wp-content/uploads/2013/12/1019-1038-08-THE-INTERNATIONAL-IR-FRAMEWORK-1019-1038.pdf>.
- International Integrated Reporting Council (IIRC). (2013a) *Consultation draft of the international IR framework*. Integrated Reporting. April.
- International Integrated Reporting Council (IIRC). (2013b). *International integrated reporting framework*. Integrated Reporting. Dec.
- International Integrated Reporting Council (IIRC). (2021). *International integrated reporting framework*. Integrated Reporting. Jan.
- Jaffar, N., Nor, A., and Selamat, Z. (2019). Integrated report content elements effecting value relevance of publicly listed companies in Malaysia. *International Journal of Innovation, Creativity and Change*, 8(6), 1019-1038.
- Jensen, M. C., and Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3, 1019-1038.
- Jensen, M.C. (2001). Value maximization, stakeholder theory, and the corporate objective function. *J. Appl. Corp. Finance* 14, 8–21.
- Kargin, S. (2013). The impact of IFRS on the value relevance of accounting information: Evidence from Turkish firms. *International Journal of Economics and Finance*, 5(4), 1019-1038.
- Kilic, M., and Kuzey, C. (2018). Assessing current company reports according to the IIRC integrated reporting framework. *Meditari Accountancy Research*, 26(2), 1019-1038.
- Klimko, R., and Juhaszova, Z. (2022). Integrated reporting assessment from the user's perspective using the integrated report quality index. *The International Journal of Digital Accounting Research*, 22(1), 1019-1038.
- Landau, A., Rochell, J.C. Klein, and Zwergel, B. (2020). Integrated reporting of environmental, social, and governance and financial data: Does the market value integrated reports?. *Business Strategy and the Environment*, 29(4), 1019-1038.
-

- Lee, K., and Yeo, G. (2016). The association between integrated reporting and firm valuation. *Review Quantitative Finance and Accounting*, 47(8), 1019-1038.
- Loprevite, S., Rupo, D., and Ricca, B. (2018). Integrated reporting practices in Europe and value relevance of accounting information under the framework of IIRC. *International Journal of Business and Management*, 13 (5), 1019-1038.
- Martinez, C. (2016). Effects of Integrated reporting on the firm's value: Evidence from voluntary adopters of the IIRC's framework. *Business Strategy and the Environment*, 28(7), 1019-1038.
- Middleton, A. (2015). Value relevance of firms' integral environmental performance: evidence from Russia. *Journal of Accounting and Public Policy*, 34(2), 1019-1038. available at <https://doi.org/10.1016/j.jaccpubpol.2014.12.001>
- M. J. Milne, and Gray, R. (2013). Whither ecology? The triple bottom line, the global reporting initiative, and corporate sustainability reporting. *Journal of Business Ethics*, 118, 13–29.
- Mohaimen, F. G. (2021). *Value relevance of integrated reporting using a novel approach: Comparative cross country evidence of mandatory and voluntary implementers*. Doctoral dissertation. Victoria University, Melbourne, Australia.
- Mostafa, S. (2023). Integrated reporting disclosure and value Relevance of accounting information: Applied study in Egyptian stock exchange. *Scientific Journal of Commercial Studies and Research*, 37(1), 1019-1038.
- Ota, K. (2002). The impact of valuation models on value-relevance studies in accounting: A review of theory and evidence. *Work. Pap.*
- Paelman, V. (2019). Value relevance of integrated reporting: Empirical evidence from South African and European firms. Master dissertation. Ghent University.
- Pavlopoulos, A., Magins, C., and Iatridis, G. (2019). Integrated reporting: An accounting disclosure tool for high quality financial reporting. *Research in International Business and Finance*, 49(1), 1019-1038.
- Ross, S. A. (1977). Ross Signaling. 8(1), 23–40.
- Solomon, J., and Maroun, W. (2012). *Integrated Reporting: The influence of King III on social, ethical and environmental reporting*. London: The Association of Chartered Certified Accountants.
- Soumilion, V. (2018). The value relevance of integrated reporting in South Africa, Master dissertation. Ghent University, Belgium.
- Stent, W., and Dowler, T. (2015). Early assessments of the gap between integrated reporting and current corporate reporting. *Meditary Accountancy Research*, 23(1), 1019-1038.
- Sun, Y., Qiao, X., Fang, Y., An, Q., and Wu, N. (2022). Does multiple capitals disclosure affect the capital markets? An empirical analysis in an integrated reporting perspective. *Frontiers in Psychology*, 13(1), 1019-1038.
- Tlili, M., Othman, H., and Hussainey, K. (2019). Does integrated reporting enhance the value relevance of organizational capital? Evidence from the South African context. *Journal of Intellectual Capital*, 20(5), 1019-1038.
- Zhou, S., Simnett, R., and Green, W. (2017). Does integrated reporting matter to the capital market?. *A Journal of Accounting, Finance and Business Studies*, 53(1), 1019-1038.