THE NEXUS OF INTEGRATED REPORTING AND FINANCIAL PERFORMANCE IN

FIRMS LISTED ON SUSTAINABLE STOCK EXCHANGES IN NAMIBIA AND SOUTH

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This Thesis by <u>Fred Mugisha</u> has been approved by the committee members below, who

recommend it be accepted by the faculty of Unicaf University in partial fulfillment of

requirements for the degree of:

Doctor of Philosophy

Thesis Committee:

Dr Yusuf Suleiman, Supervisor

Dr Olga Novokhatskaya, Chair

Dr Benson Benedict Okech, Internal Examiner

Dr Faustin Gasheja, External Examiner

Abstract

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FIRMS LISTED ON SUSTAINABLE STOCK EXCHANGES IN NAMIBIA AND SOUTH

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Fred Mugisha

Unicaf University

This study investigates the nexus between integrated reporting (<IR>) and financial performance (FP) in firms listed on sustainable stock exchanges in Namibia and South Africa that have mandatory disclosure requirements. The study is desirable in view of the dearth of studies in this area. Even for existing studies on the subject, results are inconsistent which can send conflicting signals on value relevance of <IR>.

The study employs the positivist paradigm. Hypotheses were developed based on the agency and signaling theories. Data was collected from 225 firms listed on JSE and NSX using stratified and simple random sampling. The dependent variable was FP (measured through return on equity – ROE and return on assets – ROA) while independent variables were <IR> capitals: natural (NC), human (HC), social & relational (SRC), manufactured (MC), intellectual (IC) and Financial (FC). An overall <IR> quality (IRI) was also examined. Leverage (LEV) and Firm Size (FSize) were used as control variables.

NC and FC are the least and most reported <IR> capitals respectively. There is a significant relationship between the quality of <IR> capitals and FP. The significance level is based on the F-

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statistic with a *p*-value below 0.05. With the $R^2$ of 45%, it shows a strong influence of disclosure quality levels of <IR> capitals to ROE. ROA yields similar results. Inclusion of control variables in the equation did not deter the statistical significance.

The results confirm the value relevance of <IR>. Firms that have adopted quality <IR> practices have enjoyed higher FP and other firms that still lag behind are encouraged to adopt the practice. The level of <IR> has been highlighted including its gaps. Practitioners and policymakers need to tighten areas like NC reporting.

The study brings more understanding of the state of <IR> and areas of improvement in reporting. The study validates the relevance of agency and signaling theories in explaining <IR> practices. The gaps and levels of reporting under each <IR> capital have been highlighted thus contributing to the tools that can be used to improve <IR>. The study contributes to the literature on mandatory <IR> as well as value relevance of adopting <IR> practices.

## Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where states otherwise by reference or acknowledgment, the work presented is entirely my own.

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List of Abbreviations

| | |
|---|---|
| ACCA | Association of Chartered Certified Accountants |
| A4S | Accounting for Sustainability |
| CPA | Certified Public Accountant |
| CSR | Corporate social responsibility |
| CVI | Content validity Index |
| ESG | Economic, Social and Governance |
| FCDI | Financial Capital Disclosure Index |
| FC | Financial capital |
| FCCA | Fellow of the Chartered Association of Certified Accountants |
| F&NF | Financial and non-financial |
| FP | Financial performance |
| FSIZE | Firm size |
| GRI | Global Reporting Initiative |
| Ha | Alternative hypothesis |
| H0 | Null hypothesis |
| HC | Human Capital |
| HCDI | Human Capital Disclosure Index |
| ICDI | Intellectual Capital Disclosure Index |
| I-CVI | Item content validity index |
| IESBA | International Ethics Standards Board for Accountants |
| IFRS | International Financial Reporting Standards |

| | |
|---|---|
| IIRC | International Integrated Reporting Council |
| <IRF> | Integrated Reporting Framework |
| IRI | Integrated reporting index |
| <IR> | Integrated reporting |
| <IR> quality | Integrated reporting quality |
| IC | Intellectual Capital |
| ICDI | Intellectual Capital Disclosure Index |
| IoDSA | Institute of Directors South Africa |
| IT | Information technology |
| JSE | Johannesburg Stock Exchange |
| JSTOR | Journal Storage |
| LEV | Leverage |
| MC | Manufactured Capital |
| MCDI | Manufactured Capital Disclosure Index |
| MIS | Management information system |
| NamCode | The Corporate Governance Code for Namibia |
| NC | Natural capital |
| NCDI | Natural capital Disclosure Index |
| NFI | Non-financial information |
| NFR | Non-financial reporting |
| NSX | Namibia Stock Exchange |
| OLS | Ordinary least squares |
| ROA | Return on Assets |

| | |
|---|---|
| R&D | Research and development |
| ROE | Return on Equity |
| RQ | Research question |
| SRC | Social and relational Capital |
| S-CVI | Scale content validity index |
| S-CVI/Ave | Scale-level content validity index (average) |
| S-CVI/UA | Universal agreement scale content validity index |
| SDGs | Sustainable Development Goals |
| SPSS | Statistical Package for the Social Sciences |
| SSRN | Social Science Research Network |
| SRCDI | Social and relational Capital Disclosure Index |
| UK | United Kingdom |
| VIF | Variance inflation factor |

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**CHAPTER ONE**

**INTRODUCTION**

Integrated reporting (<IR>) is the contemporary corporate reporting paradigm (Ivan, 2018) that endeavors to respond to the call for enhanced transparency, accountability and sustainability in the business community (Sarioğlu et al., 2019). Globally, the demand for a corporate reporting framework that gives more information than conventional financial reporting is increasingly gaining pace (Adegbie et al., 2019). Corporate reporting has advanced from financial reporting that emerged in the Great Depression of the 1930s (Integrated Reporting Committee of South Africa, 2011) and was predominant until the introduction of sustainability reporting in the 1990s which focuses on social, environmental and governance (Venkatraman & Nayak, 2015; Wilson, 2015). In early 2000s, mainly after the start of the IIRC's framework, <IR> as a contemporary corporate reporting framework emerged (Dumitru & Guşe, 2017; Kundu, 2017; Vitolla & Raimo, 2018). While financial reports take into account the financial metrics, integrated reports provide interconnectivity of a firm's capitals: manufactured, human, natural, financial, social & relational, and intellectual as provided in the 2013 IIRC framework (Jian & Binghan, 2018).

<IR> is older than the IIRC's framework. Romolini et al. (2017) note that the first integrated report surfaced in 2002 produced by Novozymes, a Danish company in Europe. However, as a global corporate reporting practice, <IR> thrived after the introduction of IIRC framework in 2013, which is internationally seen as a suitable framework for <IR> (Eccles et al., 2019; Solomon & Maroun, 2012). <IR> is being endorsed worldwide (Albetairi et al., 2018). Germany, the Netherlands, and South Africa are highly rated countries in terms of integrated

reporting while France, Italy, South Korea, and the UK are medium and Brazil, Japan, as well as the United States are rated lower among the ten countries assessed (Eccles et al., 2019). According to IIRC (2019), 35% of listed companies in the UK use the <IR> capitals concept in their business model. 100 listed companies in Malaysia produced integrated reports in 2018, 372 companies operating on the Johannesburg stock exchange produced integrated reports, 48% of the 200 largest listed companies in Australia produced integrated report and last but not least is 700 companies in Brazil that equally did the same (IIRC, 2019).

In a global survey of 320 institutional investors by Ernst & Young, it is noted that most of the surveyed investors say integrated reports influence their investment decisions (Ernst & Young, 2017). Dumitru and Guşe (2017) note that interest in <IR> is growing and is expected to grow further in 2020s. However, integrated reports still trail sustainability reports. Whereas in the period 1999-2015, a total of 25,134 sustainability reports were globally published, they were only 3,107 for integrated reports (Demirel & Erol, 2016). By 2020 only 16% of N100 companies (top 100 firms by revenue in 52 selected countries) developed integrated reports and of those doing so, 70% use the IIRC framework (KPMG, 2020). The authors note too that based on the most recent survey, the majority of <IR> companies are found in South Africa, Japan and Sri Lanka.

Prior empirical research has attempted to establish the value relevance of <IR> (Appiagyei et al., 2016; Romolini et al., 2017). The current competitive business environment with growing demands from companies' stakeholders including investors, the general public and government for improved corporate accountability and transparency (Abeysekera, 2013) has demonstrated to companies that rely on financial reports is insufficient to portray required information (Wen et al., 2017). The stakeholders of the companies are not only interested in the financial returns but also

the non-financial performance aspects of environmental, social and governance reported in a single corporate report; the integrated report (Abeysekera, 2013; Vitolla & Raimo, 2018).

Following the emergence of the <IR> concept in 2011, there have been efforts from both practitioners and academicians to examine its significance (Anifowose et al., 2020). However, whereas there is a growing interest in <IR> among firms worldwide (Elda et al., 2017), companies struggle in preparing quality integrated reports (De Villiers et al., 2017) mainly due to misunderstanding of the concept in the IIRC framework among practitioners (Eccles et al., 2019). Equally, <IR> concepts still present theoretical and empirical challenges due to a variety of ways researchers understand the concept (De Villiers et al., 2014). With attempts to establish the value relevance for <IR> (Zhou et al., 2017), prior studies still show that research on value relevance of IIRC framework including firms' capitals in particular is lacking (Kılıç & Kuzey, 2018). There is therefore a need to establish the value relevance of <IR> (Ivan, 2018; Solomon & Maroun, 2012). Affan (2019) argues that there is actually a great need for further research on the effect of <IR> on profitability in mandatory <IR> jurisdictions. Elda et al. (2017) lament of lack of empirical studies on the relationship between mandatory reporting and quality of <IR>. Besides, Cosmin et al. (2015) notes that <IR> framework suffers from lack of adequate measurement.

Establishing the quality of a firms' reporting provides confidence on the seriousness of firms in adopting the <IR> practices (Martinez, 2016). The present research contributes to the understanding of value of relevance of <IR> in line with the advocacy of such empirical works (Sofian & Dumitru, 2017). Equally, it seeks to contribute towards the advocacy of <IR> framework consideration by investors as also argued by Churet and Eccles (2014). Capital markets and economies at large can borrow a leaf on the importance of mandatory <IR> in view of the extent to which there is value relevance in using the practice as argued by Chersan (2018). Van der Lugt

and Mans-Kemp (2022) observed that even after a decade of IIRC's framework application, there is a critical need to examine its usefulness and merit. The key orientation of this study is to find the merit of <IR> based on establishing the relationship between the quality of <IR> and financial performance. Bochenek (2020) analyses how <IR> practices of countries do affect their wealth and finds that the higher the wealth of a nation, the higher the level of <IR>. Perhaps this can explain too why most <IR> studies are on developed countries (Iyoha et al., 2017). This therefore gives additional reason to conduct more studies outside the developed world arena. The results of this study may inform standards setters in the area of integrated reporting to get informed on the current practices in mandatory <IR> jurisdictions. The study also seeks to contribute to literature by increasing the understanding of the applications of IIRC framework with specific reference to the value relevance of the <IR> six capitals, which is a unique study in the jurisdiction covered.

## 1.1 STATEMENT OF THE PROBLEM

The problem at hand is to establish the relationship between the quality of <IR> and financial performance in listed firms. Zhou et al. (2017) identify that while <IR> is becoming popular worldwide, the momentum is constrained due to inadequate evidence of its business value and thus the value relevance of the concept is in question (Vitolla et al., 2019b). Lipunga (2015) while studying the concept of <IR> argues "there is dearth of empirical studies on the subject worldwide" (p. 132). Anifowose et al. (2020) argue that <IR> literature is still insufficient to understand its performance and that the extent to which <IR> has delivered its intention remains a subject of review. Besides, empirical studies on <IR> are predominantly emerging in the developed world and there is paucity of studies in other economies (Iyoha et al., 2017). Worldwide, there is a gap when it comes to integrated reports mainly due to misunderstanding of the concepts in the IIRC framework (Eccles et al., 2019).

Empirical results from <IR> studies carried out so far provide mixed results. Whereas studies like Baboukardos and Rimmel (2016), Lee and Yeo (2016), Vitolla et al. (2019a), Affan (2019) and Martinez (2016) establish a significant effect of <IR> on profitability, other studies like Nurkumalasari et al. (2019) and Matemane and Wentzel (2019) find no significant relationship between the two variables. On the other hand, studies like Dilling and Caykoylu (2019) find the relationship to be negative. Mrigakshi (2015) conclusively notes that literature does not present any consensus on direction or strength of the relationship (alternatively referred to as the nexus) of <IR> and performance of a firm. Additionally, there is a shortage of research when it comes to the nexus between capitals of a firm and its profitability; studies either considered fewer capitals or ignored relationships (Albertini, 2019; Eccles & Serafeim, 2015). By using agency and signaling theories that a firm's quality of <IR> positively relates to its profitability in line with priori studies like Dilling and Caykoylu (2019), and Suttipun and Bomlai (2019), this research contributes to the debate on value relevance of <IR> and aims at filling research gap by examining the nexus between quality of reporting on firms' <IR> capitals and profitability.

**1.2 PURPOSE OF THE STUDY, RESEARCH AIMS, AND OBJECTIVES**

The purpose of this study is to investigate the nexus between integrated reporting and financial performance in firms listed on sustainable stock exchanges in Namibia and South Africa. The study is desirable in view of the dearth of studies in this area especially in Africa. Additionally, even for existing studies on integrated reporting, their results are inconsistent, and this may send conflicting signals to researchers, practitioners and policymakers in the field of corporate sustainability and integrated reporting in particular. Besides, there is scarcity of empirical studies investigating relationships between the six <IR> capitals of a firm and its financial performance. Therefore, the study sought to fill these gaps.

Through employing a multiple regression analysis, this study examines the nexus between the six <IR> capitals (independent variables) and financial performance (return on assets – ROA and return on equity – ROE) while also controlling for leverage and firm size. A survey of 225 firms listed on the Johannesburg stock exchange (JSE) and Namibia Stock Exchange (NSX) is conducted. The two stock exchanges are noted to be the only African sustainable stock exchanges (Yow & Heaps, 2016) that have made <IR> a mandatory listing rule. The study seeks to contribute towards establishing the value relevance of <IR>.

The study has the following objectives:

    a)   To determine how the quality of disclosures of <IR> capitals of a firm affect its ROE.

    b)   To ascertain the relationship between ROA of a firm and the disclosure quality of its <IR> capitals.

    c)   To establish whether there is a statistically significant relationship between the quality of overall integrated reporting and financial performance of a firm.

    d)   To establish the controlling effect of leverage and firm size on the relationship between disclosure quality of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm is related to its ROE.

    e)   To ascertain how the quality of overall integrated reporting affects financial performance of a firm in the presence of control variables of firm size and leverage.

## 1.3 NATURE AND SIGNIFICANCE OF THE STUDY

This study employs the positivism research paradigm (Aliyu et al., 2014). The study seeks to confirm or otherwise reject the null hypotheses afore designed based on presence or absence of disclosure of the six <IR> capitals provided by the IIRC framework. Hypothesis testing fits well

in the correlation research design (Bukvova, 2009) and hence the approach selected for the study.

The source of data for this study is the integrated reports of the years 2018 and 2019 for the sampled firms operating on two stock exchanges – JSE and NSX. Integrated reports may have different formats and structures but what is important is the quality of information they contain (Oluwamayowa, 2019). The study relies solely on secondary data sources. Secondary data suffices in answering a research question under such a study (Martins et al., 2018) given the research questions and hypotheses. Prior studies on content analysis with regard to <IR> have used secondary data (Affan, 2019; Dilling & Caykoylu, 2019; Lipunga, 2015; Zhou et al., 2017) and therefore judged sufficient for this study. The study is founded on content analysis methodology based on an analysis of the context of textual data and quantitative content is generated by use of frequencies to aid in conducting inferences for the study (Helfaya & Whittington, 2019).

The data collection tools in this study are the 225 integrated reports from sampled firms operating on JSE and NSX. The sampling frame is a list of firms drawn from the JSE and NSX. Stratified sampling of equity investing firms on the stock exchanges is done while simple random sampling is used to identify the specific firms to include in the sample.

<IR> quality in this study has been defined as the alignment level of the integrated reports with the IIRC framework in line with prior studies (Tiron-Tudor et al., 2020). <IR> quality index (IRI) is arrived at as a ratio of the sum of the number of the six <IR> capitals' indicators present in integrated report and the expected total if the indicators were all to be present (Islam, 2021).

Barth et al. (2017) and Dube (2018) in their empirical studies on <IR> note that the quality of <IR> is related to levels of compliance with the <IR> framework such that a higher level of compliance signifies a higher quality. Moloi and Iredele (2020) identifies that <IR> quality

"conceptually refers to the degree of compliance of integrated reports with the provision of relevant framework" (p. 4). In this regard, <IR> quality is the level of alignment of integrated reports with the <IR> capitals of the IIRC framework where the disclosure scores measure and compare information in the reports with the benchmark of what is expected to be presented as per the <IR> framework (Tiron-Tudor et al., 2020).

To find out the reporting of the <IR> six capitals within the firms' integrated reports, an assessment was undertaken on the presence or absence of indicators of each <IR> capital in the reports. The presence or absence of the indicators of each <IR> capital in each firm's integrated report was denoted 0 (for absence) and 1 (for presence). The data was codified into categories and then frequencies used to come up with the quantitative measures in line with prior studies (Lac, 2016; Mion & Adaui, 2019). This study defines quality of each <IR> capital as the ratio between total scores of indicators of the respective <IR> capital to expected maximum score in accordance with prior studies on integrated reporting. Prior studies use the <IR> capitals based on the IIRC framework (Anifowose et al., 2020; Lipunga, 2015; Suttipun, 2017) and the current study uses a similar methodology in coming up with the <IR> quality index as well as the quality <IR> Capitals index based on the IIRC framework.

Firm performance is the dependent variable for this study. Return on equity and return on assets are the two widely recognized financial performance metrics (Islam, 2021) and are therefore used this study as the indicators for financial performance in line with prior studies (Affan, 2019; Mondal & Ghosh, 2012). The ratio of net income to total assets is applied as a representation of ROA (Lee & Yeo, 2016) while net income to total equity ratio is used as a proxy for ROE in line with (Cosmulese et al., 2019).

Two control variables were used to verify the strength of the association between <IR> and FP. Firm size measured as the natural logarithm of total assets as used in previous studies (Dey, 2020; Islam, 2021; Martinez, 2016; Mondal & Ghosh, 2012) was adopted. Financial leverage (referred to as leverage in this study) was measured as a ratio of total liabilities to total assets in line with prior studies (Dey, 2020; Dilling & Caykoylu, 2019).

Details on measurement of the variables of this study have been provided in the section on operationalization of the variables in the third chapter of this thesis.

Seven regression models were developed for this study where <IR> capitals quality of disclosure of a firm was regressed against its financial performance (measured by ROE and another by ROA) without control variables and then another test with inclusion of control of firm size and leverage. Basing on both the objectives and hypotheses of the study, the following models were specified for this study:

- Model 1: $ROE_1 = \beta_i + \beta_{11}NCDI + \beta_{21}HCDI + \beta_{31}SRCDI + \beta_{41}ICDI + \beta_{51}MCDI + \beta_{61}FCDI + \varepsilon_1$

- Model 2: $ROA_2 = \beta_{ii} + \beta_{12}NCDI + \beta_{22}HCDI + \beta_{32}SRCDI + \beta_{42}ICDI + \beta_{52}MCDI + \beta_{62}FCDI + \varepsilon_2$

- Model 3: $ROE_3 = \beta_{iii} + \beta_{13}IRI + \varepsilon_3$

- Model 4: $ROA_3 = \beta_{iii} + \beta_{13}IRI + \varepsilon_{34}$

- Model 5: $ROE_5 = \beta_v + \beta_{15}NCDI + \beta_{25}HCDI + \beta_{35}SRCDI + \beta_{45}ICDI + \beta_{55}MCDI + \beta_{65}FCDI + \beta_{75}LEV + \beta_{85}FSize + \varepsilon_5$

- Model 6: $ROE_6 = \beta_{vi} + \beta_{16}IRI + \beta_{26}LEV + \beta_{36}FSize + \varepsilon_6$

- Model 7: $ROA_7 = \beta_{vii} + \beta_{17}IRI + \beta_{27}LEV + \beta_{37}FSize + \varepsilon_7$

  Where:

- HCDI is Human Capital Disclosure Index

- NCDI is Natural Capital Disclosure Index

- SRCDI is Social and relational Capital Disclosure Index

- ICDI is Intellectual Capital Disclosure Index

- MCDI is Manufactured Capital Disclosure Index

- FCDI is Financial Capital Disclosure Index

- IRI is <IR> Index (a measure of <IR> quality)

- LEV is Leverage

- FSIZE is Firm size

- ROA is Return on Assets

- ROE is Return on Equity

- ε is the error term.

In order for firms, stakeholders as well as economies at large to make decisions basing on the health of the firms, it to a large extent depends on the firms' provision of high quality and valuable information (Zhou et al., 2017). Elda et al. (2017) assert that investors and business stakeholders rely on integrated reports to get information on non-financial aspects and financial health of a firm. For decades, the aspect of the relationship between non-financial performance and firm financial performance has generated never ending debates due to its complexity as well as differing definitions and thus yet to be resolved (Hull & Rothenberg, 2008). Solomon and Maroun (2012) also note that <IR> is crucial for business to enhance transparency and accountability to its stakeholders. Therefore, the study sought to contribute to understanding the value relevance of <IR> and to further enrich the debate on usefulness of <IR>. The study sought to study the integrated reporting practices among firms operating in mandatory sustainable stock

exchange jurisdictions in South Africa and Namibia that have made <IR> a rule and uses all the six <IR> capitals and their influence on financial performance taking into account the theoretical basis of the agency and signaling theories to guide the study in a bid to find about what might be explanations are behind the results.

Regulators and standard setters driving the implementation of <IR> like the IIRC (Zhou et al., 2017), may benefit from the results of this study to inform them on levels of adoption of mandatory <IR>. <IR> is of interest to Stock Exchanges and results of the study could contribute to increased endorsement IIRC's framework as noted by Martinez (2016). Investors and other users of reports of companies are keen to financial performance. "Financial performance becomes a separate tool for companies to obtain an assessment from the public, including potential investors who want to invest their capital in companies whose financial performance is considered healthy by investors" (Choiriyah et al., 2021, p. 103). Therefore, the study seeks to establish the extent to which financial performance is influenced by integrated reporting and this has implications on how investors can value the health of the firms under study.

The study could inform policymakers in Africa that may access an article to be published from this study and could interest them to use the study's findings on the relevance of the subject of <IR>. The study provides further evidence of the application of the content analysis methodology in <IR> studies by validating the use of coding by researchers like (Lipunga, 2015) where 1 denotes presence while 0 denotes non-disclosure of items of interest. The study sought to add a voice on the relevance of <IR> and to be beneficial to researchers in the field of corporate reporting, firms practicing the <IR> disclosure approaches, policymakers and standard setters in the field who may access the work and get interested in reading it. The study explores quality of

<IR> among listed firms on sustainable stock exchanges in Africa, specifically Namibia and South Africa based on the extent of <IR> capitals disclosure to reflect integrated thinking, finds the extent to which the quality of reporting affects financial performance of those firms and identifies the gaps in <IR> among the firms. Therefore, this gives uniqueness to this study and a significant contribution to the field of <IR>. The study provides an important input to the debate on value relevance of <IR>, with a peculiar perspective that, to the best of the researcher's knowledge (following a systematic and elaborate literature search), has not been studied before.

The scarcity on the <IR> studies has been highlighted in prior studies like Lipunga (2015) who argues "there is dearth of empirical studies on the subject worldwide" (p. 132). The inconclusiveness of research findings on the relationship between <IR> and financial performance has been highlighted by researchers like Adegbie et al. (2019) and Mrigakshi (2015). There is therefore a dearth of studies on the effect of quality <IR> capitals on financial performance and many of the studies on <IR> considered only a few of the <IR> capitals or did not venture in its relationship between <IR> and financial performance (Albertini, 2019; Eccles & Serafeim, 2015). This study brings in unique aspects in that it assesses all the six <IR> capitals, their quality in the integrated reports, and how they are related to financial performance. It complements existing studies which had not elaborated enough on the relationship since a number only used a few capitals.

This study is unique in comparison to other prior studies as it makes significant contributions to literature on <IR> through sustainable stock exchanges that non-financial reporting a role and have also adopted <IR> for reporting purposes. It measures quality of <IR> of the firms using most recent data. The study uses of all six <IR> capitals influence on financial

performance and consideration of both perspectives of investors and managers to verify the application of signaling and agency theories based on data collected. The study enriches the debate on the utility of <IR> in the context of mandatory reporting and this can be extended to voluntary reporting jurisdictions. The study also contributes to the understanding of possible reasons for increasing adoption of <IR> practices among firms today given the identified value relevance in literature. This study is among the pioneers in providing evidence of the impact of the six <IR> capitals on financial performance of firms listed on sustainable stock exchanges that have made <IR> a rule and in articulating the gaps in <IR> among sustainable firms. While <IR> is mandatory in some jurisdictions, the <IR> framework does not prescribe levels of coverage of indicators to disclosure and therefore firms can differ in the quality of reporting (Moloi & Iredele, 2020).

Findings of the study make a contribution in filling gaps in literature on <IR> quality and <IR> capitals and the value relevance of <IR> in mandatory jurisdictions as whole. The study is among the first to provide insights on value relevance of quality reporting of six <IR> capitals in the context of jurisdictions that use non-financial reporting as a rule among sustainable stock exchanges in Africa. The current research contributes to the understanding of the significance of a company's <IR> in improving company value among investors in line with to prior studies like Utomo et al. (2021) on <IR>. Almăşan et al. (2019) note that the IIRC does not majorly use ESG in the reporting framework but rather use the concept of <IR> capitals. Actually, while analyzing 169 integrated reports that were published by Forbes Global 2000 companies in 2013 and 2014, Grassmann et al. (2019) finds a high diversity reporting on the <IR> capitals of firms and hence this is a sign of the importance that firms attach on the <IR> capitals. Articulating the value relevance of <IR> through establishing the relationship between <IR> capitals and FP can therefore provide further evidence on the importance of integrated reporting.

**1.4 RESEARCH QUESTIONS AND RESEARCH HYPOTHESES**

Based on the overarching issue of this study, the study endeavors to answer the following research questions:

**RQ1.**

Is there a statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE?

**RQ2.**

How is ROA of a firm related to disclosure quality of its <IR> capitals?

**RQ3.**

Is there a statistically significant relationship between the quality of overall integrated reporting and financial performance?

**RQ4.**

How does leverage and firm size affect the relationship between the disclosure quality of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm related to its ROE?

**RQ5.**

How is the overall integrated reporting quality of a firm related to its financial performance in the presence of control variables of firm size and leverage?

**Hypotheses**

The study is guided by the following null hypotheses:

H10. There is no statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE.

H20. There is no statistically significant relationship between ROA of a firm and the disclosure quality of its <IR> capitals.

H30. There is no statistically significant relationship between the quality of overall integrated reporting and financial performance.

H40. there is no statistically significant controlling effect of leverage and firm size on the relationship between the quality of reporting on human, social & relational, financial, manufactured, intellectual and natural capitals of a firm and its ROE.

H50. There is no statistically significant relationship between the quality of overall integrated reporting and financial performance in the presence of control variables of firm size and leverage.

The first, second and third null hypotheses constitute the primary hypotheses of the study given that <IR> quality and financial performance are the variables of interest in the study. The fourth and fifth hypotheses constitute secondary hypotheses since both firm size and leverage are considered control variables of the study to verify on stability of the models of the study.

The following alternative hypotheses were used in this study:

H1a. There is a statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE.

H2a. There is a statistically significant relationship between ROA of a firm and the disclosure quality of its <IR> capitals.

H3a. There is a statistically significant relationship between the quality of overall integrated reporting and financial performance.

H4a. there is a statistically significant controlling effect of leverage and firm size on the relationship between the quality of reporting on human, social & relational, financial, manufactured, intellectual and natural capitals of a firm and its ROE.

H5a. There is a statistically significant relationship between the quality of overall integrated reporting and financial performance in the presence of control variables of firm size and leverage.

This chapter sought to provide the introduction of the thesis. The chapter stipulates the study's background where the rationale for <IR> is provided and the universal appeal of the concept is articulated. The statement of the problem is given to state what the research is set out to solve. The purpose of the study, its aims, and objectives follow. The chapter also discusses the nature and significance of the study and also provides measurements of the variables and the significance of the study.

**CHAPTER TWO**

**LITERATURE**

The literature review serves to identify and discuss scholarly works on the concept of integrated reporting and its relationship with financial performance. It serves to discuss the theoretical as well as the conceptual framework used by the current study including the major theories that guide the quest to know what drives <IR>. The scope of search of literature was mainly in the years 2018 to 2022 but a few important articles to the subject, which are pre-2018, were also reviewed.

The chapter focuses on corporate reporting and then deep dives into the concept of <IR>. The concept of financial performance and specifically the role of <IR> capitals, firm size and leverage are discussed in detail as they are the central piece of the study. The theoretical and conceptual framework is discussed to identify the theoretical underpinnings of the study. The association concerning <IR> capitals and FP, and the empirical evidence of the relationship between <IR> and profitability are discussed with demonstration of literature on prior studies on the subject. Last but not least are the research gaps in literature which the study the sets out to fill.

The search terms used were <IR>, firm size, financial leverage, sustainability, triple bottom line, capitals of a firm, IIRC, financial performance, quality of <IR> as well as profitability. At least 85% of the consulted sources are in the years 2018 to 2022. They are mostly peer-reviewed journals. The main constructs reviewed were <IR>, capitals of a firm, financial performance, firm size and financial leverage.

The literature review is composed of seven sub-chapters. The first sub – chapter is the introduction, which identifies the purpose of literature, scope of literature review, sources of literature used, and key terms of search used. The second sub-chapter identifies the theoretical and conceptual framework and evaluates the various theories in order to come up with the most relevant theories to guide the study. It also highlights the conceptual framework and explains the basis of its choice. The third sub-chapter discusses the concept of <IR>. The fourth sub-chapter provides the historical background, evolution and adoption of <IR>. The fifth sub-chapter articulates the usefulness as well as the downside of <IR> concept. The six sub-chapter discusses the importance of a firm's <IR> capitals, firm size and leverage towards its financial performance. The seventh sub-chapter discusses the relationship between <IR> and financial performance from the various empirical studies. The eighth sub-chapter identifies the gap in research on <IR> and last but not least is the ninth sub-chapter that provides the summary of the chapter.

The main sources of literature used are the databases in the ProQuest Central periodical resource of Unicaf University. Other sources used are ResearchGate, Google Scholar, EconStor, SSRN, ScienceOpen, JSTOR, SpringerLink as well as Emerald Insight.

## 2.1 THEORETICAL AND CONCEPTUAL FRAMEWORK

This section discusses the theoretical and conceptual framework of the study. Empirical studies require a theoretical framework (Lederman & Lederman, 2015). A theoretical framework as well as a conceptual framework enhances the interconnectedness of the concepts in a scholars' work (Grant & Osanloo, 2014). The current study seeks to establish a relationship between <IR> and financial performance. It is a correlational study. It thus needs to be driven by an established theory. Nurkumalasari et al. (2019) identifies <IR> as the contemporary disclosure practice

containing both latest F&NF information for the reporting company and see it as having implications on financial performance. To date, there is still scarce empirical evidence on how <IR> as a corporate reporting approach is useful in depicting businesses' holistic activities especially on the aspect of the <IR> capitals they use to create value (Camilleri, 2018).

Modugu (2018) observes that corporate reporting does not have a generally accepted theory since different researchers have overtime used different theories in corporate reporting studies. The theoretical framework of <IR> therefore stems from the broader theories of corporate disclosure since <IR> is itself a form of corporate reporting.

The theoretical basis for the relationship between <IR> and financial performance explains what the triggers the relationship between the two variables. The theoretical framework of <IR> has been dealt with in the first section of the literature review chapter. Lederman & Lederman (2015) counsel that an empirical study must base itself on a relevant theoretical framework. Given the purpose of this study which is to establish the relationship between <IR> and financial performance (which are the primary variables of the study) and in view of the need to control two of the most important factors that influence financial performance; firm size and leverage in an effort to further examine the relationship between the main variables of this study, this study is built on two theories: signaling theory as well as the agency theory. Ara and Harani (2020) identify key theories explaining the <IR> practice as the legitimacy theory, signaling theory, stakeholder theory, institutional theory, stewardship theory, and the agency theory. Whereas there are many theories explaining the reasons companies strive to issue quality integrated reports, when it comes to establishing the relationship between profitability and <IR> signaling theories stand out (Fuhrmann, 2019).

<IR> is indeed explained by multiple theories (Fuhrmann, 2019; Modugu, 2018). Different

researchers have claimed some theories to be the most important to explain NFR as well as <IR>. Hetze and Winistörfer (2016) see the most important theories as signaling, legitimacy and stakeholder. Menicucci and Paolucci (2018) identify that the most common theories on disclosure are agency, signaling, stakeholder, and legitimacy. For Ching and Gerab (2017) legitimacy, stakeholder and signaling are most important. Tyson and Adams (2020) identify legitimacy, stakeholder, contingency and agency theories to be most common ones. Aluchna et al. (2019) asserts that it is legitimacy, shareholder-agency, and signaling that are the most popular. A scan in literatures shows key theories; signaling (Fuhrmann, 2019), agency (Nassreddine, 2016), proprietary cost (Cotter et al., 2011), institutional (Cotter et al., 2011), stakeholder (Ito & Iijima, 2018), legitimacy (Mousa & Hassan, 2015), voluntary disclosure (Fuhrmann, 2019), political economy (Cotter et al., 2011) and stewardship (Rezaee, 2016).

Below is a short description of each theory:

a) Signaling theory: if the external parties see signals of more informative to them, they will value the signals and this will influence their decisions (Casonato et al., 2018; Fuhrmann, 2019).

b) Agency theory seeks to address the issue of ownership and control in that shareholders (principals) own the company while managers control the company operations (Cotter et al., 2011; Menicucci & Paolucci, 2018; Rezaee, 2016).

c) Proprietary cost theory posts that information is expensive and therefore access to it will cost the company of its competitive advantage (Cotter et al., 2011; Fuhrmann, 2019).

d) Institutional theory posts that rules, norms, regulations of the country or the environment where the business company operates influence its practices including non-financial

disclosures (Fuhrmann, 2019).

e) Stakeholder theory takes the view that a firm should not only create value to its shareholders but also equally serve its other stakeholders (Fuhrmann, 2019; Ito & Iijima, 2018; Menicucci & Paolucci, 2018).

f) Legitimacy theory assumes that for a company to be seen as legitimate, it should observe and respect cultural norms and regulations of the environment it operates in (Fuhrmann, 2019; Mousa & Hassan, 2015).

g) Voluntary disclosure recognizes that managers have more information than the external parties and it is through voluntary disclosures that external parties can gain of the information (Fuhrmann, 2019).

h) Political economy assumes that the political, social and economic activities go hand-in-hand and therefore the information of the firm is disclosed to meet interests of different people that receive it (Cotter et al., 2011).

i) Stewardship theory contends that the managers will act on behalf of principals to protect their wealth and maximize profits so as to provide good dividends to the principals and to ensure the share prices stands well in the market (Camilleri, 2018; Rezaee, 2016).

Cotter et al. (2011) notes that if a research question is about financial capital providers, like investors, socio-political theories may not be relevant. The fundamental theoretical foundation of arguing that <IR> quality is related to firm financial performance is found in the agency and signaling theory. The agency and signaling theories were selected as the lenses to examine quality of <IR> since the two theories assume that by reducing information asymmetry through quality reporting, it can result into better performance of firms. According to Winter and Zülch (2019) "agency theory and signaling theory play an important role in the explanation of the relationship

between profitability and disclosure" (p. 108). Therefore, these two theories underpin this study. The two theories provide arguments for this study on the rationale and implications of quality <IR>. Moloi and Iredele (2020) argue that <IR> quality disclosure is likely to support investors in making better investment allocation decisions. A key issue that comes from information asymmetry resulting from conflicting interests of capital providers and managers of a firm is the need for firms to provide quality information that benefits the firm as a whole and not individual interests of either part of the agency problem (Tyson & Adams, 2020). The common thread underpinning both the agency and signaling theories is the issue of information asymmetry.

Information asymmetry refers to a situation in which agents (managers) possess insider information concerning the firm which the principals (outsiders) are not aware of thus making it difficult for the latter to make informed decisions on the affairs of the firm and thus inefficient market (Oluwamayowa, 2019). If the insiders as well as outsiders possess same information, then the decision to invest in the firm is equally shared and hence there would be no discrepancy between the state of the firm and the decisions both parties make. Information asymmetry between capital providers and the managers come mainly through traditional financial reporting practices as they fail to give adequate information for informed decision-making on true value creation abilities of a firm. Thus, this results in potential under or over valuation of profitable investments (Meijden, 2016).

It is argued that quality <IR> reduces information disproportionateness among agents (the company's managers) and principals (the suppliers of capital), is likely to support investors in making better investment allocation decisions, and where costs of <IR> are higher than its benefits, it is expected that <IR> and firm value would be inversely related, hence becoming non-beneficial towards stakeholders (Frías-Aceituno et al., 2014; Lee & Yeo, 2016; Moloi & Iredele, 2020).

However, mandatory reporting can diminish information asymmetry (Tiron-Tudor et al., 2020). The quality of <IR> minimizes information asymmetry and therefore gives ample information to the principal to monitor the performance of the agents (Widhiastuti & Harto, 2022). "Information in an integrated report supports capital providers in making more effective capital allocation decisions" (Meijden, 2016, p. 2). It is identified that the quality of <IR> can result into a reduction of information asymmetry, agency costs and meet interests of agents and principals (Abeywardana et al., 2021). Islam (2021) argues too that firms with higher profitability can adequately meet costs of <IR>.

The following sections discuss details the signaling and agency theories which are the two theories selected for this study. The agency theory and signaling theory are related as their focus is how to reduce information asymmetry and both aim to provide incentives of increased disclosure. An adverse selection is likely to result from the poor information sharing (information asymmetry) and this can be greatly addressed by signaling; hence the two theories having a link through consequences of information asymmetry (which is adverse election or moral hazard) but this can be cured if the cost of signaling is low and if the signaled information is of good quality to lead to informative decisions (Winter & Zülch, 2019).

### 2.1.1 SIGNALING THEORY

Signaling theory came to the limelight through Spence (1973) while demonstrating how labor markets work and explained how a candidate to a job can reduce information asymmetry through demonstration of quality education towards a job application process and this demonstrates that the signaling theory is about reduction of information asymmetry between a sender of information and the receiver. "Signaling theory is useful for describing behavior when two parties (individuals or organizations) have access to different information" (Connelly et al.,

2011, p. 39). Abeywardana et al. (2021) note that signaling theory was advanced by Spence in 1973 to explain information asymmetry reduction among agents and principals and the theory signifies that by engaging in appropriate communication via integrated thinking, reporting institutions would increase the quality of their <IR> thus reduction of information asymmetry. The closure of the information asymmetry with its implications to financial performance is the aim of the study hence the relevance of using signaling theory. Signaling theory has been identified in literature as the most suitable theory that explains the relationship between <IR> and financial performance of firms. Signaling theory explains the behavior of managers of firms as well as owners of those firms where the two parties have different information (Connelly et al., 2011).

According to Dilling and Caykoylu (2019), "signaling theory suggests that more profitable companies will voluntarily publish information to distinguish themselves from less profitable organizations" (p. 4). Frías-Aceituno et al. (2014) urges that a positive relationship between profitability and <IR> is a sign of relevance of signaling theory. Basing on the signaling theory provisions, it is expected that firms with better quality of integrated reports will also have higher profitability. Literature demonstrates that it is practical to expect that <IR> quality should lead to a firm's superior financial performance (Islam, 2021). According to the signaling hypothesis disclosure theory, firms that communicated more clearly on their long-term strategy through the <IR> framework use can increase their performance levels (Martinez, 2016). <IR> is expected to enhance disclosure quality of firms and this leading to remarkable firm performance as well as lessening the agency problem described by the agency theory (Islam, 2021). A large size firm is likely to have more stakeholders than a small one and therefore, there is more demand for information (Winter & Zülch, 2019) and this could perhaps affect the relationship between <IR>

quality and financial performance. Studies on <IR> and financial performance have hypothesized a positive relationship between the two (Islam, 2021).

Signaling theory is usually related with a firm's profitability (Hieu et al., 2019). Information asymmetry is the basis of signaling theory (Cotter et al., 2011) and Verrecchia (2001) opines that that information asymmetry reduction should be the starting point in selecting a theory of disclosure which then augurs well with the relevance of signaling theory in <IR> studies. According to Dilling and Caykoylu (2019), signaling theory posts that "the quality of integrated reports of companies will be positively related to the profitability of the company" (p. 5). Besides, signaling theory predicts a positive association between profitability and quality of non-financial disclosure taking an example of Lebanese commercial banks (Mahboub, 2019). According to Dilling and Caykoylu (2019) signaling theory posts that "the quality of integrated reports of companies will be positively related to the profitability of the company" (p. 5). The signaling theory provides that <IR> quality influences profitability of business companies (El-Deeb, 2019). Therefore, signaling theory is the selected theory to explain the relationship between <IR> and financial performance.

The signaling theory provides an explanation why firms struggle with issuance of quality information on non-financial activities (Moratis, 2018). Ara and Harani (2020) note that signaling theory refers to the explanation of why and how signals or messages from an entity to another. De Villiers et al. (2014) in describing the basis of integrated reporting assert that there are varying views on integrated reporting and the theoretical as well as empirical challenges of integrated reporting come "because of the different ways in which integrated reporting is understood and enacted within institutions" (p. 1042). Connelly et al. (2011) notes that "signaling theory is useful for describing the behavior when two parties (individuals or organizations) have access to different

information" (p. 39). The theory explains the motivations for adopting <IR> and that highly profitable firms are expected to exhibit more <IR> quality (Abeywardana et al., 2021). The authors note too that firm performance can be influenced by levels of <IR> allowing a firm to reap from sizeable disclosure of information and this shows that <IR> can substantially lead investors to make informed decision about their investments (Abeywardana et al., 2021).

Signaling theory is supported in Cosma et al. (2018) as quality disclosures (based on awards assigned to integrated reports) can result in better firm performance based on stock market reactions. Signaling theory suggests that company insiders generally know more about the company's prospects than external parties (Utomo et al., 2021) and that the essence of preparing quality integrated reports concerns lowing of information asymmetry charactering the main parties, financial capital providers and the agents (Moloi & Iredele, 2020). <IR> is a signaling tool that provides signals to stakeholders and the theory identifies if the motivation of information sharing is attained (Abeywardana et al., 2021). <IR> can result in information asymmetry reduction towards investors' valuation of the company (Utomo et al., 2021). Therefore, it is the objective of this study to establish the relevance of signaling theory regarding how it explains the relationship between quality of integrated reports and financial performance in an effort to make a contribution in narrowing the variance in the view of <IR>'s value relevance.

### 2.1.2 AGENCY THEORY

In 1970s, agency theory came to limelight whereby the argument arose that there is a discrepancy between information held by business owners (principals) and the managers (agents) and therefore this can affect their decision-making approaches and control of the organizations (Jensen & Meckling, 1976). The agency theory is also identified to be applied to the topic related

to information asymmetry (Eisenhardt, 1989). Agency theory recognizes that the more information a firm discloses the less issues of information asymmetry and <IR> is seen as way of mitigating conflict of interests between the managers and owners of the firms, reducing agency costs especially the monitoring costs (Suttipun & Bomlai, 2019). Due to information advantage that insiders of a firm can have compared to investors, it can result into information asymmetry results and thus an agency problem (Sun et al., 2022).

Agency theory revolves around the information irregularity which can lead to adverse selection if not well managed (Abeywardana et al., 2021). According to Jensen and Meckling (1976), the agency theory explains "why debt was relied upon as a source of capital before debt financing offered any tax advantage relative to equity" (p. 306). According to the agency theory, managers are hired by the principals to run the business on behalf (authority delegation) of the principals with a clear goal of maximizing shareholder's wealth and on the other hand managers accept to do the job in order to satisfy their own desires (Ara & Harani, 2020). Thus, this creates an agency problem. When managers feel so controlled by their masters, this may create unproductivity or even sheer losses due to poor decision making (Davis et al., 1997). The managers can end up using the powers delegated to them in a manner that jeopardizes the interests of the principals (Eisenhardt, 1989). Dumay et al. (2019) argues that stewardship philosophy identifies the delegation of power from principal to agent to use of resources of a firm and aims at building trust between the two parties.

The agency theory explains the aspects of ownership as well as the wealth control in firms whereby business owners (the principals) employ managers/executives (agents) to run their firms and the agents are given a mission of maximizing the wealth of the principals (Camilleri, 2018).

However, the use of the agency theory is cautioned in Ara and Harani (2020) who opine that the theory seems to be abandoned due to consequences of manager's traits of exploitation of firms.

The agency theory though explains "why an entrepreneur or manager in a firm which has a mixed financial structure (containing both debt and outside equity claims) will choose a set of activities for the firm such that the total value of the firm is less than it would be if he were the sole owner" (Jensen & Meckling, 1976, p. 306). The theory is helpful to explain implications of decisions made by managers on behalf of principals and risks involved (Eisenhardt, 1989). It identifies three costs that an organization can incur monitoring cost (for principals to check what managers are doing), bonding costs (on contraventions of agreements between the principals and managers) and residual losses (welfare reductions to principals as a result of decisions by managers) (Jensen & Meckling, 1976).

The agency theory assumes that the agents and principals base their decisions on their self-interest which can result into information-asymmetry, but with high quality <IR>, the agency problem can be reduced due to addressing information asymmetry (Ebimobowei & Onowu, 2021). According to the theory, institutions that have a higher agency problem are expected to provide more information in their disclosure due to issues resulting from information asymmetry (Frías-Aceituno et al., 2014). Agency problems have the potential to reduce the wealth of shareholders (Utomo et al., 2021).

According to Suttipun (2017), in the context of agency theory, a firm is expected to deliver to the expectations of its stakeholders including its investors, suppliers, government and other key groups like the environmental lobbyists, since corporates depend on their stakeholders. The author adds that the agency theory can provide explanations of why <IR> adopted by firms can influence

their financial performance (Suttipun, 2017). The key objective of corporate disclosure is to enable firms to attract investors as a way of increasing their capital (Buallay et al., 2021). Firms with higher ROE as well as ROA are expected to be in a better position to bear with requirements of compliance (Islam, 2021). Agency theory is applied in studies describing relationships between a firm's managers (agents) and shareholders (principals) and the effect of unlined goals as well as risk aversion that may ensue (Tyson & Adams, 2020). Agency theory concerns the issue of informational asymmetry and can reduce agency costs through reduction of information asymmetry through improved quality of <IR> (Buallay et al., 2021). <IR> is identified as having the abilities to reduce information processing costs (Tjahjadi et al., 2020). Integrated reports are used by providers of capitals (the principals) in monitoring the actions and decisions of managers (their agents) and thus making quality reports able to improve financial capital providers' monitoring abilities and thereby diminish any tendencies of misappropriation by the managers (Moloi & Iredele, 2020).

The agency theory explains the relationship between a firm's <IR> practice and its performance and explains how companies avoid the agency problem of adverse selection by providing quality reports (Jorge & Giner, 2002). Moloi and Iredele (2020) find a significant relationship between <IR> quality and firm value and argue that this shows the impact of <IR> in providing information useful for investors in making decisions and adds value to reporting firms. The authors point out that this principle proves relevance of the agency theory in its assumption that quality <IR> reduces information asymmetry between the agents and principals of a company. Lee and Yeo (2016) notes that <IR> lowers information processing costs of firms and this is demonstrated through an association of <IR> and corporate performance and thus <IR> can improve information environment for firms. Abeywardana et al. (2021) note too that <IR> can reduce information asymmetry thereby reducing agency costs which results in harmonized interests between managers and principals.

Theoretically, the agency theory argues that monitoring costs by the board of directors (e.g remuneration) can be reduced due to increased quality of disclosure, and hence a remedy advanced in the agency theory as a way to address the agency problems (Shahria, 2022). Better disclosure of information results in reduction of unbalanced information between principals and agents, reduction of agency costs and this implies better decision-making abilities by the two parties and hence higher benefit (Winter & Zülch, 2019). Quality <IR> has potentials to minimize agency costs as well as information asymmetry inherent in a corporate setting (Lee & Yeo, 2016). Agency theory appears to be a reliable explanation of the behavior of companies in <IR> given that to some extent it explains the determinants of <IR> practices (Abeywardana et al., 2021) and it enables financial capitals providers to know about the firm's non-financial affairs, reducing kinds of risks they would expose themselves to and enabling them to make sound decisions in purchase

of stocks with ease of access to less costly information (Moloi & Iredele, 2020). The importance of adequate disclosure of information is argued for by Harmadji et al. (2020) who claim that when management of a company delays disclosure of bad or good news concerning its performance, it can lead to uninformed decisions by investors who end up respectively overvaluing or undervaluing the stocks of the firm. Lee and Yeo (2016) in their study on the relationship between <IR> and firm value in South Africa find that benefits of quality <IR> outweigh its costs, and as agency theory says, quality <IR> reduces agency costs related to information processing and therefore they find that <IR> improved information on environment. In retrospect, agency theory is also used in that it is related to the concept of information asymmetry just like the signaling theory is. The theory adds in the aspect of the principal and agents.

Therefore, the agency theory backs for quality <IR> which then results in reduction of information asymmetry in the reporting firm (Moloi & Iredele, 2020). <IR> increases market performance through providing relevant information and is the best avenue through which company information is communicated to the investors and thus reducing the agency conflict (Abeywardana et al., 2021). The current study aims at finding how the influence of <IR> on profitability of firms and therefore uses the agency and signaling theories in its evaluation of how the quality of <IR> affects financial performance of firms. The study also uses the agency theory to examine the role the relationship between <IR> and financial performance. Fujianti and Satri (2020) note that the agency theory explains the connection between shareholders who are the principals or the masters and the corporate managers who are the agents of the principals. Integrated reporting "reduces information asymmetry between investors and managers, allowing investors to monitor managers' behaviours and to assess whether managers' actions meet investors' interests" (Sun et al., 2022, p. 6).

Assessing the value relevance of <IR> is crucial as integrated reports need to disclose key information that impact on a firm's performance (De Villiers et al., 2017). There has been an attempt in empirical studies to establish a relationship that might exist between <IR> and financial performance. As such, a number of studies have been conducted to establish the relationship between the disclosure of NFI and performance of a firm. Specifically, an attempt has been made to establish the relationship between <IR> and financial performance. Nurkumalasari et al. (2019) uses signaling theory in their study on the quality of <IR> and how it affects the financial performance of a firm. Aluchna et al. (2019) while studying the <IR> practices in LOTOS Group, a firm in Poland in the years 2006 to 2015 identify the key theories that explain the <IR> practice as the agency, signaling as well as legitimacy theories but reiterates that signaling theory explains NFI reporting to shareholders as a means of decreasing information asymmetry.

Other authors have focused on the signaling theory as the overarching theory in explaining <IR> and its usefulness. Dumay et al. (2019) further specifies that signaling theory explain the behavior of both the sender of the message (in this case the manager) and the receiver (in this case the shareholder) and explains the way stakeholders of a business organization perceive the usefulness of <IR>. Aluchna et al. (2019) see signaling theory as a way that explains if <IR> will be perceived as showing institutional practices. Signaling theory can result in minimization of information asymmetry that usually exists between business organizations and their stakeholders (Aluchna et al., 2019). A similar theory that is also linked to information asymmetry is the agency theory as it is noted that <IR> has the abilities of reducing agency costs and thus more trust in the information relayed (Lee & Yeo, 2016). Hoque (2017) notes that <IR> is a promoter of quality reporting while Lee and Yeo (2016) see the theory as an explanation of the way of establishing a relationship between <IR> and the firm's value.

In this study, two control variables are held constant and thus limited in this study so as to assess the consistency of the correlation between <IR> and financial performance. The study does not overlook their importance in possible influence of the independents variable or dependent variable but wish to check if the relationship between the primary variables is significantly influenced by the presence of these two control variables. Control variables help the analysis to avoid biased results to ensure their effect on variables of interest of the study is checked. It helps to ensure verification of consistency of result as well as increasing internal validity of results, and robustness of the models. The two control variables are selected among other variables that could potentially affect both independent and dependent variables due to their superior recognition in affecting profitability. Consistent with prior literature, the study used two commonly applied control variables while developing the research model for this study; financial leverage (Dey, 2020; Islam, 2021) and firm size (Dey, 2020; Rahman et al., 2020). Firm size is the most used variable concerning its impact on non-financial disclosure (Duran & Rodrigo, 2018). Olawale et al. (2017) argue that "the focus is on firm size as the modern-day phenomenon of economies of scale means this is a crucial factor in firm performance" (p. 2). Leverage concerns financing accessed from debts (Ali et al., 2022) and is an indicator of a firm's financing structure (Dumitru & Dragomir, 2021).

Both leverage and firm size are commonly used as control variables in studies on relationships between <IR> and financial performance. Kaura et al. (2021) study <IR>'s effect on firm performance in Nigeria between 2011 and 2020 by controlling for aspects like leverage and firm size and find an insignificant association of <IR> and ROA considered as a measure of short-term profitability. Irawan and Talpia (2021) investigate the relationship between leverage as well as firm size using a case study of 66 firms in Indonesia in the period 2015 to 2019 and finds that

leverage and firm size have no effect on a firm's performance. In a study on the relationship between leverage as well as size of a firm on its financial performance among 94 companies operating in Malaysia in 2012-2016, Salah and Elewa (2018) conclude "that firm size is positively and significantly related to profitability" (p. 1724). They however find that "leverage is negatively and significantly related to profitability" (Salah and Elewa, 2018, p. 1724). Helmina et al. (2018) while studying the impact of <IR> on performance of 224 listed company on Indonesia Stock Exchange from 2012 to 2014 and using the variables of company value with control of company size and leverage finds that investors respond well to the quality of NFR. However, they find no effect of lagging the annual report on abnormal stock returns.

Given that the control variables could impact both <IR> as well as firm performance (which are respectively independent and dependent variables in this study), they were controlled to avoid biased results or to check on consistency of conclusions on the relationships of the primary variables. The most commonly used control variables in <IR> studies are (Fsize) measured as the logarithm of total assets (Dey, 2020; Rahman et al., 2020) and financial leverage (Islam, 2021) and thus the two are used in this study as control variables. The sections below describe about the rationale of using each of the two variables.

The conceptual framework of the current study is composed of six <IR> capitals of a firm (which form the independent variables), the financial leverage, firm size (which form the control variables) and the financial performance of a firm (which form the dependent variable) and how they are related. The Conceptual framework is based on the IIRC (2013) framework for <IR> as revised to date and the relationships between variables are based on previous studies showing possible relationships. The study examines the variables, the quality of <IR> (independent variables – using six capitals of a firm), financial performance (dependent variable), and two

control variables.

When it comes to non – financial reporting, there are not many frameworks to use. The two frameworks mainly used are the GRI for sustainability reporting and the IIRC framework for <IR>. Hahn and Lülfs (2014) note that to overcome the challenge of some companies basing on voluntary reporting flexibility, for sustainability reporting, GRI came up with standards and guidelines to follow. IIRC framework has endeavored to make their framework as the internationally recognized model for <IR> (Solomon & Maroun, 2012). The IIRC framework is the cornerstone of <IR> (Wen et al., 2017). The conceptual framework results in the following propositions:

a) Disclosure quality of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm are related to its financial performance.

b) <IR> quality is associated with financial performance of a firm.

c) Leverage and firm size affects do not affect the relationship between disclosure quality of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm and its ROE.

d) Inclusion of leverage and firm size as control variables does not affect the relationship between <IR> quality and financial performance of a firm.

Firm size is an important factor in firm's disclosures because large companies are anticipated to have adequate means to meet the increased cost of quality <IR> (Adelowotan & Udofia, 2021). Larger firms have more capacity to signal to the market richer information (Abeywardana et al., 2021). Larger firms can disclose more information than small ones as they may have lower information production costs but as also likely to be more complex and have a wider ownership base than smaller firms (Winter & Zülch, 2019) and hence firm size affects the

level of agency costs (Jensen & Meckling, 1976). Firm size is important due to large size of capital

and hence requirement for more information on firm performance and the larger the firm, the more

the number of stakeholders to satisfy (Oluwamayowa, 2019). While examining NFR in Latin

America through an examination of 643 firms' reports from 2006 to 2015, Duran and Rodrigo

(2018), argue that the size of a firm constitutes elements that pressure companies into quality

reporting; meaning that firm size can lead to increased levels of <IR>. In a study by Demirel and

Erol (2016) on the integrated reporting, they find that large firms were the ones that most preferred

<IR>. Therefore, there is a rational basis to assume that firm size can affect either <IR>, financial

performance or both and therefore can affect the relationship between the two variables.

Concerning use of leverage in this study, it is from the assumptions laid in the agency

theory, since it is expected that leverage can influence firms in disclosure of enhanced information

as a way of reducing the agency costs (El-Deeb, 2019). However, in light of the agency theory,

and with respect to the relationship between quality of <IR> and leverage (Oluwamayowa, 2019)

notes that there is an inconclusive relationship. On the other hand, it is acknowledged that the

higher the leverage the higher the monitoring costs (Abeywardana et al., 2021) and therefore

leverage is expected to negatively influence firm performance. Hoang et al. (2019) note that most

empirical studies on the agency theory assume that agency costs do negatively impact a company's

performance. The authors through their study of the impact of agency costs on the performance of

736 Vietnamese listed companies during the period 2010 – 2015 find that agency costs do

negatively influence firm performance. Leverage results in increased disclosure as a way of

reducing agency costs (Winter & Zülch, 2019). Dey (2020) note that the higher leverage lessens

influence of agency cost and then this could result in reduction of information asymmetry. Jensen

and Meckling (1976) argue that higher leverage is associated with higher agency costs. Hoang et

al. (2019) note that leverage reduces impact of agency costs towards the performance of firms. Agency costs arises out of the need for owners of a business to inspect and ensure that a firm's interests are protected, reduction of agency costs, and while management seeks more profitability, long-term success of the firm could be sacrificed, hence the need for enhancing publication of NFI (Duran & Rodrigo, 2018).

&lt;IR&gt; is used as a way of minimizing costs related to borrowers (leverage issues) and the more profitable firms tend to have increased quality of reporting as an incentive to the creditors and investors and as a way of assuring on their management skills as well as reducing agency costs (Abeywardana et al., 2021). With leverage, the agency conflict is aggravated due to increased monitoring costs by the lenders (Jensen & Meckling, 1976). The aspect of weighting the extent of reliance on leverage is a worthwhile endeavor in management of business of a firm since it can influence long-term sustainability of a firm (Winter & Zülch, 2019). Highly levered firms show more optimism than less levered because it shows lending institutions do trust such firms and are willing to lend to them. This is beneficial to owners of the firm and as provided by signaling theory, those firms are willing to signal their situation to outside parties. It is incumbent on highly levered firms to keep lenders optimistic on the performance of the firms (Duran & Rodrigo, 2018). Firms sourcing sizeable funds from creditors are expected to provide NFI since financial resources are implicated (Duran & Rodrigo, 2018). Companies with more leverage are expected to have higher quality of &lt;IR&gt; due to increased pressure from monitoring by the lenders especially companies that are quoted on stock markets (Adelowotan & Udofia, 2021).

The field of this study is accounting of non – financial information. The study concentrates on the concept of &lt;IR&gt; as the contemporary corporate disclosure approach that contains both the F&NF information of a firm done in a single report (Nurkumalasari et al., 2019). Therefore, the

field of study is corporate reporting and specifically the novel framework of corporate reporting called integrated reporting. The industry is diverse although the firms are selected from those listed on JSE and NSX. These two stock exchanges are the ones that fulfil the requirements of the topic of this study. To provide a rich background about the concept of integrated reporting, it is imperative to see it from the perspective of corporate reporting because integrated reporting is a novel framework of corporate reporting.

In retrospect, the conceptual framework in this study is built around the concept of <IR> and specifically, reporting on the <IR> capitals of a firm. Haji and Hossain (2016) note that in creating value, firms use multiple capitals to reach this objective. McElroy and Thomas (2015) define <IR> capital as a "stock of anything that yields a flow of valuable goods or services important for human well-being" (p. 427). A firm's level of reporting on its capitals and how it uses them to create value may influence its financial performance. The frequency of reporting on the six <IR> capitals of a firm will show the quality of the integrated report. Due to the importance of firm size and leverage in influencing both <IR> and financial performance, they have been selected as control variables. Control variables used in the study were identified in literature as the most important variables that can affect a firm's profitability, and thus for the relationship between the main variables (<IR> and financial performance) to be well analyzed, the effect of the two control variables needs to be identified.

## 2.2 THE CONCEPT OF CORPORATE REPORTING

Corporate reporting is the disclosure of information vital for effective operations of corporations and is essential for reduction of information asymmetry that is usually cited to exist between the principal and agents of a firm, and relays information to investors, customers, government, and other stakeholders for ease of their decision-making (Devi, 2014). Corporate

reporting is a central channel to communicate with stakeholders an organisation (De Oliveira et al., 2021).

The cardinal importance of corporate reporting is to reduce information asymmetry and the IIRC (2013) argues "the primary purpose of an integrated report is to explain to providers of financial capital how an organization creates value over time" (p. 4).

Corporate reporting relates to the provision of information concerning the way a firm sees itself and the role it plays in the society as well as its performance in terms of both F&NF aspects (Krzus & Thornton, 2011). Corporate reporting reflects well or poorly on management of organizations. The external stakeholders of companies can know about the health of the company based on the quality of corporate reporting. Therefore, it is imperative that companies provide adequate resources to ensure timely and quality communication of what they do and how they affect their stakeholders. It is crucial that information relayed through corporate reporting addresses the information discrepancies expected to arise due to having access to differing data or information.

Stock exchange efficiencies depend on the level of information accessed by stakeholders of the listed firms. Improving corporate reporting can promote better corporate sustainability and reputation (Buallay et al., 2021).

Moloi and Iredele (2020) argue that "finding ways to achieve effective communication has become imperative for listed firms because of the need to meet the increasing information needs of all stakeholders" (p. 1).

Basing on estimates in the US and UK firms, Malcolm (2009) argue that more than 80% of their value is in intangibles and thus the increasing levels of intangibles makes it necessary to

adopt new corporate reporting frameworks compared to situations where tangible assets outweigh their counterparts.

Corporate reporting has evolved over years. The traditional corporate disclosure approach is financial reporting which came up in the 1930's but it has been criticized for its focus on providing backwards-looking performance and this constrains decision-making (Krzus & Thornton, 2011). The criticism resulted in an emergence of NFR models in 1960s like social reporting, corporate social responsibility in 1970s, environmental reporting in 1980s and sustainability reporting in 1990s (Buhr et al., 2014). However, whereas the emergence of sustainability reporting became a change maker in corporate reporting for inclusion of environmental, social, economic and governance aspects in one report, it has had weaknesses due to reports being separate from the financial reports (De Villiers et al., 2017). This therefore gave basis for the emergence of the contemporary corporate reporting; the <IR> (Sarioğlu et al., 2019). Before a detailed discussion on the integrated reporting model, which is the subject of this study, the section below provides the background to the birth of the novel framework of reporting which is the integrated reporting. The intention is to identify key corporate reporting frameworks that preceded integrated reporting and identify their limitations which became a key basis for the development of integrated reporting.

## 2.3 CORPORATE REPORTING FRAMEWORKS

There are a number of frameworks for reporting NFI as well financial information and these include the triple bottom line reporting, international financial reporting standards and sustainability reporting. Categories of corporate reporting are financial reporting (also known as traditional or conventional corporate reporting for financial information), sustainability reporting (also known as NFR or ESG), and <IR> (which is the reporting of both F&NF information).

### 2.3.1 FINANCIAL AND SUSTAINABILITY REPORTING

**2.3.1.1 Financial reporting.** Financial reporting origins are traced as far back as 1930s and was developed for an industrial world (Krzus & Thornton, 2011). Companies are traditionally used to report on their performance based on financial reporting of historical information and therefore they face the challenge of shifting their approach in reporting on their future prospects and management of their strategy towards responding to the prospects (PricewaterhouseCoopers, 2015). Financial capital has been a well-known capital in the past (Anifowose et al., 2020). In the past, financial reports containing information used by stock markets were seen to be most important in corporate disclosures to users (Adelowotan & Udofia, 2021). Financial information is critical for any company to identify its financial health as well as aspects like valuation of firms (Reitmaier & Schultze, 2017). Financial reporting principally reports on financial health of a company and specifically on assets, equity, liabilities. However, changes in socioeconomic situations surrounding the businesses are increasingly requiring companies to prepare reports that disclose on how they get affected and they affect sustainable development as well as how their business model informs and is informed by reporting on non-financial information (Dratwińska-Kania & Ferens, 2021).

**2.3.1.2 Sustainability reporting.** Today, forward looking information are being greatly recognized as influential to an organization's future outlook (Mahboub, 2019) and a way to give a view into corporate sustainability. Corporate sustainability is "an approach that creates long-term value with minimum environmental damage" (Delmas et al., 2015, p. 374). Tamimi and Sebastianelli (2017) argue that "stakeholders, analysts, and shareholders are increasingly scrutinizing firms' sustainability disclosures in their assessment of management quality, as it reflects on the practices/policies that are employed to improve firms' environmental and social footprints" (p. 1660). Therefore, this could be a key reason why many researchers in the corporate reporting space have interest in aspects of corporate sustainability and reporting. Sustainability is related to the term sustainable development which was introduced by the World Commission on Environment and Development (1987) where it is refers to sustainability as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (p. 37). While sustainability may not have all-inclusive definition, borrowing from the thinking of sustainable development, sustainability refers to creating value today without comprising value in the future. Sustainability reporting is now a common sought-after practice among corporations in their efforts to meet growing stakeholder demands, addressing criticisms of financial reporting, and ensuring that social, economic, governance and environmental influencers and performance of organizations are well presented in corporate reporting (Boiral, 2013). The importance of information in shaping of decision-making process among stakeholders of firms cannot be overstated (Alade & Odugbemi., 2022).

High quality information helps in protection of shareholder's wealth and therefore the investors can greatly get value from adequate sustainability reporting (Ismail et al., 2022). Sustainability reporting has grown over the years. In an international survey carried out by KPMG

(2008), they find that 80% of Global Fortune 250 firms release sustainability reports and this was an increase from 50% just three years prior. NFR is therefore without doubt on the increasing scale.

Using data from at least 4,000 firms drawn from 58 countries in the period 2002 to 2011, Aouadi and Marsat (2018) notes that the companies that get more interest in the use of ESG also have greater firm value. Sustainability reporting is based on a framework by GRI which provides indicators used in examining a firm's level of sustainability reporting (Tilt et al., 2021). Sustainability reporting is identified by Harmadji et al. (2020) as impactful to share prices. Sustainability reports are used by investors as well as analysts in decision-making and company analysis and can be categorized under the Environmental, Social and Governance (ESG) framework (Radley, 2012). GRI was established in 1997 as an international initiative to provide guidelines on environmental and social reporting and it published its first version of sustainability reporting guides in 2000 as a way of establishing a common language in the area of sustainability reporting through its guidelines/standards and making it the de-facto standard setter of sustainability reporting (De Villiers et al., 2022).

Afolabi et al. (2022) in their study on sustainability reporting find that regulation of sustainability reporting is hardly harmonized because of perceived superiority of each regulator's standards or guidelines. In a study by Radley (2012) find that GRI's sustainability reporting model is the mostly used in NFR while other arrangements like the Carbon Disclosure Project come second at 54% usage and other industry association in the sustainability space take a combined 32% usage; thus, by far GRI is the common framework for sustainability reporting.

Rodrigues and Morais (2021) argue that from the start of the 21st century, society's demands for sustainability and accountability of companies has increased and thereby leading to

improvements in corporate reporting and specifically the emergence of <IR>. Wachira et al. (2020) argue that although sustainability reports are mainly developed to inform external stakeholders, research shows that the reporting model has a business case.

Both financial as well as sustainability reporting are criticized for being backward-looking in reporting on firm performance and fail to provide a linkage concerning corporate sustainability and its core strategy (Moloi & Iredele, 2020). A link between two separate reports; sustainability reporting and financial reporting is missing if they are prepared differently or jointly without integrated thinking. Almăşan et al. (2019) urge that an appropriate response to sustainability reporting limitations is <IR>. <IR> "is integrated thinking that results in a periodic report on the creation of company value" (Bochenek, 2020, p. 107). Alade and Odugbemi (2022) argues that "the demand for better corporate information by various stakeholders across the globe has necessitated a paradigm shift from the traditional financial reporting to more comprehensive financial and non-financial information (NFI) in a single report, known as integrated reporting" (p. 91).

Today, economic perspectives of a firm cannot assure of its sustainability and it is indispensable to consider social as well as environmental viewpoints for a better picture of firm performance in the long-term (Suttipun, 2017). Current debates on effectiveness of corporate disclosure have become of much interest to different stakeholders including firm managers, policymakers, regulators and capital markets at large and they question the appropriateness of the financial reports as they see them incompetent to respond to their needs (Izzo et al., 2020). There is also a rising level of awareness by both corporations and financial capital providers that financial stability is inevitably interconnected with both social and environmental sustainability and this suggests more integration of both F&NF information in their disclosures (Suttipun, 2017).

Rossouw (2020) nails the point on the importance of a corporate entity to serve stakeholder interests by saying that a corporation involves diverse stakeholders' interest and its long-term survival is dependent on recognizing and respecting all stakeholder interests especially as demonstrated in the aftermath of 2008/2009 financial crisis where it become necessary for standard-setters to put in place corporate reporting reforms including strengthening of Non-financial reporting (Winter & Zülch, 2019).

With the aim of providing an up-to-date status on sustainability reporting based on literature gathered for the period 2015 to 2020 after reviewing 44 published studies, Meutia et al. (2021) argue that NFR is a relatively new paradigm shift in corporate reporting. According to KPMG (2020), the adoption of <IR> which combining F&NF information in a single annual report is growing but remains limited and is more seen in some countries than others. <IR> as the contemporary corporate reporting framework changes from short-termism to long-termism with regard to value creation for shareholders as well as all stakeholders who are part of the value creation improvement (Islam, 2021). <IR> is the latest concept of enhanced business reporting and it builds the corporate reporting concept around the value creation objective of an organization (Reitmaier & Schultze, 2017). The advent of <IR> has assured business professionals as well as policymakers worldwide of improved accountability in corporate reporting as a result of availing an integrated thinking through a consolidated financial and NFI that provide value creation and performance of firms (Hoang et al., 2020). As a corporate reporting model, <IR> has come to the limelight due to increased demand for enhanced transparency in corporate reporting and ensuring that the report serves an organisation's stakeholders that include staff, investors as well as creditors. Martinez (2016) view <IR> as a representative of current aspirations of corporate reporting. Ebimobowei and Onowu (2021) describes <IR> to be an emergent corporate reporting

framework which reports F&NF information of an organization <IR> framework is seen as a form of firm reporting that provides a broader view of corporate performance, increases awareness on sustainable development on a future horizon, obtains more comparability among global firms, and reduces risks of reputation to firms (Suttipun, 2017) and thus is increasing in its appeal to firms globally.

With the advent of <IR> as the contemporary corporate reporting framework since early 2000, researchers have endeavored to examine the explanations behind this concept and how it relates to performance of companies (Dumitru & Dragomir, 2021). Researchers like Hoang (2018), Martinez (2016) and Menicucci (2018) finds that NFI reporting quality does impact the profitability of firms. Robertson and Martin (2020) investigate the adoption of <IR> in the UK by interviewing 36 senior managers in 17 organizations using a content analysis and find that the major factor for adoption of the practice is sociological reasons over economic ones. However, they find that the <IR> framework is perceived by most organizations a complex framework and thus partially adopt it. Some researchers have expressed pessimism in the application of the IIRC framework (Bommel, 2014; Flower, 2015) while there are others that have been positive on its relevance and need for adoption (Churet & Eccles, 2014; Doni et al., 2016; Hoque, 2017) hence generating a heated debated in literature on the value relevance of the <IR> framework. The concept of <IR> is discussed in this chapter with an objective of assessing how it relates to the concept of financial performance of a firm.

While financial and sustainability reporting are a great resource of information to users of company reports, their reporting capabilities criticized for having partial information either financial or non-financial and inadequate information on value creation of organizations (Suttipun, 2017). The limitations of both financial and sustainability reporting frameworks gave an impetus

to the development of integrated reporting. Subsections below discuss key limitations of financial and sustainability reporting.

## 2.3.2 LIMITATIONS OF FINANCIAL REPORTING

Financial reporting came up in 1930s during the industrial world and it is criticized for its focus on providing backwards-looking performance and this constrains decision-making; thus, the model found insufficient to address the 21st Century information needs (Krzus & Thornton, 2011). While studying the evolution of financial reporting (Tschopp & Huefner, 2015) note that it has taken close to 100 years to attain its current state as a market accepted corporate reporting concept yet still has the downside of it; mainly lack of forward-looking information and lack of details on how it affects the social and environmental concerns of society.

Financial performance of a business organization does not only profit shareholders of the concerned firm but should also benefit other stakeholders and the society in general and its inability to be informative to a wide range of stakeholders is its major failure (Hoang et al., 2019). Shareholders and other stakeholders are increasingly demanding for more transparency and accountability and neither the financial report nor the sustainability report would me meet those expectations alone (Demirel & Erol, 2016).

A key criticism for the financial reporting model is that it provides a backwards perspective of a company's performance and fails to give adequate relevant information which would ably be applied in decision making by investors as well as the wider community of stakeholders (Krzus & Thornton, 2011). Financial reporting hardly provides required picture on a firm's value creation levels that investors need for their understanding of the process of value creation (Cosmulese et al., 2021). While there is a heavy reliance on tangible assets in the financial reporting model, Cosmulese et al. (2021) notes that to maintain competitiveness today, firms rely more on

performance of their intangible assets, therefore this demonstrates more relevance of <IR> which has a heavy reliance on the intangibles like SRC, IC, and HC and to a large extent the NC. Traditional financial reporting focuses on past data and it provides short term information which does not show current economic consequences, their effects and what the future is likely to bring and this constrains decision-making (Dey, 2020).

While financial reporting is useful in providing information to investors, management of firms as well as a diverse category of users, stakeholders including the accounting profession find them lacking in terms information being historical, lack of data on employees, social aspects, environmental concerns as well as future outlook of businesses. In order to address these concerns, a fundamental shift has occurred in corporate reporting with introduction of the <IR> framework which aligns F&NF aspects with business strategy and its risks in a bid for disclosure of value creation of an organization (Soriya & Rastogi, 2021).

The conventional tools of financial reporting have proved unfit for evolving informational requirements of organizations' stakeholders (Haruna & Msizi, 2020; Satta et al., 2015) and hence this necessitates solutions like inclusion on NFI. Financial reporting model is constrained by use of historical information and reliance on exclusively financial information (Anis & Indira, 2017). Following the 2008/09 financial crisis, corporate reporting standard-setters put in place measures to reinforce reporting mechanisms to address the insufficient information contained in financial reports so that corporate reporting can address needs of diverse stakeholders and importance has been given to corporate governance aspects and sustainability reporting to complement information of financial reports (Montesinos & Brusca, 2019; Winter & Zülch, 2019). The additional information to the traditional financial information constitutes the NFI disclosure aimed at allowing better sense-making of published information (Cerioni et al., 2021). Hameed and

Ahmed (2020) argue that criticisms of insufficiency of information in financial reporting justify need for evaluation of economic, social, governance as well as environment impacts to an organization's performance laid ground for emergence of NFR frameworks. Similar arguments are laid made by Meijden (2016) who sees economic, social and governance information inclusion in corporate annual reports as a legitimate way of addressing the limitations of financial reporting.

Krzus and Thornton (2011) notes that the traditional financial reporting framework is criticized on the following grounds:

a) It provides a historical view of a firm's performance.

b) Is hardly useful for decision-making that is forward looking.

c) It cares more to the internal stakeholders of the firm than external stakeholders.

d) The corporate reports hardly provide substantive information on strategic aspects like the long-term strategy, society, climate change, usage of natural resources and regulatory issues.

### 2.3.3 LIMITATIONS OF SUSTAINABILITY REPORTING

The main corporate performance reporting frameworks recognizing NFR that preceded <IR> which are based on reporting on economic, social and governance aspects are the triple bottom line which came in 1994 and the earlier one developed under Kaplan and Norton; the balance scorecard, which although broader than the financial reporting frameworks, lack harmonization of the information and linkages between organizational information and hence failed to give a holistic and interlinked perspective of a company's performance (Vitolla & Raimo, 2018). Sustainability reporting was a great improvement to business in providing information on social, environmental, and economic & governance but failed to bring the aspect of the relations between the elements of sustainability and the financial metrics. While in the 1990s the aspect of sustainability reporting came up in full force and many companies attempted to take up the challenge and issue both financial and sustainability reports, Krzus and Thornton (2011) notes that a stand-alone sustainability report still has its weaknesses as follows:

a) The reports fail to link the sustainability aspects of ESG to business strategy and financial performance.

b) The investors and other stakeholders tend not to adequately use the sustainability due to the failure in adequately providing an all-round report on performance of a firm.

Elving et al. (2015) notes that debates and studies on NFR including corporate social responsibility and sustainability bring out mixed signals on the seriousness of the business community in making the world a better place to live in by caring about sustainability practices including reporting and therefore sustainability reporting has not brought the desired impact in business practices.

Sustainability reporting is still challenged in that firms that have implemented the framework still separately publish the sustainability report and annual report (Nurkholis, 2020).

Krzus and Thornton (2011) nevertheless observe that whereas both sustainability and financial disclosure models have shortcomings, it has not yet led to widespread demand for change. This could also explain why <IR> has not been fully adopted by businesses world over despite the undeniable importance described in this chapter. Nonetheless, the criticisms of both sustainability and financial reporting models have led to substantial consideration of adopting the <IR>. Kiliç & Kuzey (2018) acknowledges that number of researchers have taken interest in studying on the importance of integrated reporting and specifically how it impacts on the performance of firms. However, gaps still abound on the results. The lack of widespread use of <IR> is not related to it being inferior to the other two reporting frameworks but rather it could be due to it being new, costly, lack of international standards that govern it or just resistance to change. However, IIRC is credited to having promoted the <IR> practice worldwide. It is giving an international reference to <IR>. The IIRC's framework aims at "improved information for outside providers of financial capital and better internal decision making" (Barth et al., 2017, p. 43). The IIRC framework helps in generating a report that discloses an institution's value over time, which includes the capitals of a firm (IIRC, 2013).

## 2.4 THE CONCEPT OF INTEGRATED REPORTING

The concept of integrated reporting is seen as belonging to the field of corporate reporting framework and it uses a single report to provide information on F&NF performance of an organization. It is a reporting approach used as a measure to achieve a sustainable society (Eccles & Saltzman, 2011). A sustainable society is one that can meet today's demands while not sacrificing future demands (Eccles & Serafeim, 2011) and this is related to providing information

on social, environmental and economic aspects of a business organization. The concept of <IR> was described. Although there are various definitions of <IR>, the key aspect is recognition of <IR> as a corporate reporting approach that is used as a measure to achieve a sustainable society (Eccles & Saltzman, 2011). The importance of <IR>, composition of <IR>, and criticisms of financial and sustainability were identified. Whereas financial reporting is the main reporting framework that organizations use since the 1930s, it has been criticized focusing on providing backwards-looking performance and lacking a forward-looking approach (Krzus & Thornton, 2011). Its predecessor, sustainability reporting is also criticized for focusing on aspects of the ESG and not including the aspect of financial reporting (De Villiers et al., 2017). <IR> is thus seen as the contemporary corporate reporting approach that takes care of the concerns of both the financial reporting approach as well as the sustainability reporting approach.

Roth (2014) notes that reports about the social and environments aspects of a business have taken names like green reporting, citizen centered report, and social report and sustainability report but integrated report surpasses all the other forms as it is the reporting of information regarding all performance aspects of a business and these are at least financial, environmental and social information. Financial information relates to financial metrics that organizations issue to depict their financial health. NFI relates to aspects of social, environment, economic and governance aspects of an organization and these items are also used to describe the sustainability of an organization. While describing what <IR> is, Krzus and Thornton (2011) assert that it is a reporting approach that on top of providing information of financial as well as non-financial nature in one document also becomes an effort to better understand how the capitals of a firm are used to create value. Bal (2018) defines <IR> as "a vehicle for long-term value creation for and by the business itself" (p. 48). Feng et al. (2017) define <IR> as a reporting approach that revolves around the

concept of integrated thinking. Integrated thinking refers to the linkage of financial accounting and sustainability reporting (Velte & Stawinoga, 2017).

Integrated report is not just a combination of financial information and social environmental reporting in one report but rather it is the integrated thinking reflected in the report that makes it an integrated report (Appiagyei et al., 2016). It is the contemporary reform of the corporate reporting model (Stubbs & Higgins, 2018). Abeysekera (2013) defines <IR> as the way an organization discloses its use of resources like the financial, human and intellectual capitals and interlinks them with its vision of creating value. Perhaps the International Integrated Reporting Council (IIRC) gives the more elaborate definition of <IR>. The definition of <IR> according to IIRC (2021) is "a process founded on integrated thinking that results in a periodic integrated report by an organization about value creation, preservation or erosion over time and related communications regarding aspects of value creation, preservation or erosion" (p. 53).

Two key concepts that define <IR> are its inclusion of sustainability and financial performance in one report that is well linked and describes the value creation of the organization. Camilleri (2018) sees sustainability reporting to be a subset of <IR>. Casonato et al. (2018) equally reiterate that <IR> came from the aspect of sustainability and therefore benefits from both the sustainability as well as financial disclosure. In retrospect, <IR> is the activity of preparing and disclosing information about the performance of an organization, which information is both F&NF in nature thus giving a more inclusive report than a stand-alone financial and sustainability report.

<IR> is seen as a better corporate reporting framework that describes how a company creates value over time (Utomo et al., 2021). As a new corporate reporting concept, <IR> takes into account an organization's strategy towards value creation and sustainability in today and in foreseeable future (Moloi & Iredele, 2020). <IR> is not only around merging of F&NF information

in a single report but rather report on the integrated thinking of a firm as a whole to provide comprehensive information for ease of use by its readers and to cultivate sustainability culture (Oluwamayowa, 2019). Describing what makes the integrated reporting (where they use the IR notation), Suttipun (2017) notes that the IIRC framework is:

> "Divided into five guiding principles for integrated reporting structure, six content elements, and six corporate capitals. The guiding principles of integrated reporting structure consist of strategic focus, information connectivity, future orientation, responsiveness and stakeholder inclusiveness, and conciseness, reliability, and materiality. The six content elements are an organizational overview and business model, operating context including risks and opportunities, strategic objectives and strategies to achieve those objectives, governance and remuneration, performance, and future outlook. For the corporate capitals, IR includes not only financial capital, but also manufactured, human, intellectual, natural, and social and relationship capitals as well" (p. 135).

Integrated thinking, a concept on which <IR> is built, refers to inter-relationships between an organization's operations and the use and effect on its capitals (Almăşan et al., 2019). Adhikariparajul, Hassan, Fletcher & al., (2021) argue that integrated thinking is the organization's process it follows in order to adopt <IR> practices in a bid to increase its accountability to its stakeholders. As Tjahjadi et al. (2020) notes, the philosophy of <IR> is not about the amount of information disclosed by firms but the art and science of integrating the information for value creation. <IR> is highly driven by management practices depending on the way firms embed integrated thinking philosophy and practice in what they do, affecting their business processes and thus leading to increased value creation abilities towards better organizational performance (Almăşan et al., 2019). In view of the increased significance of <IR> capitals beyond the financial

capital, IIRC for the first time recently made a revision of its 2013 framework version in an effort to strengthen the emphasis of the capitals (Izzo et al., 2020). The main rationale of establishing the 2013 IIRC framework for <IR> corporate reporting is to promote the practice of integrated thinking for the reporting firms (Herbert & Graham, 2021).

<IR> through the integrated thinking towards value creation enables improving the internal processes and practices of firms in order to attain improved performance (Almăşan et al., 2019).

In identifying the place of <IR> in the corporate reporting literature, Seyed et al. (2021) note that <IR> is:

"Between financial reporting, which offers exclusively financial information complying with general accepted accounting principles and other mandatory accounting standards, and sustainability and CSR reporting, whose aims are to serve all stakeholders by supplying them exclusively with NFI about society topics, namely, sustainable development, environment protection, social responsibility and corporate governance" (p. 526).

The six capitals in IIRC (2021) are:

a. Financial capital like debts, equities or government grant

b. Manufactured capital like plant & equipment

c. Intellectual capital like patents and other intangible assets

d. Human capital like the capabilities of staff

e. Social and relationship capital like stakeholder engagement

f. Natural capital like land resources and other environmental assets.

**2.4.1 RATIONALE BEHIND INTEGRATED REPORTING**

The increasing complexity in business operations has introduced growing demand to companies globally to embrace <IR> especially in respect to reporting on their sustainability practices and how they create value and has also demonstrated that financial reporting is an imperfect corporate reporting approach especially on aspects of intangible assets disclosure (Albertini, 2019). The world is increasingly experiencing an environmental damage and the major cause of the damage is identified to be companies (Sejati & Prastiwi, 2014). There are growing concerns of impact that business organizations have on the society they serve (Roth, 2014). Therefore, business organizations have a duty to disclose how they impact the world and the stakeholders they serve since they also derive value for their service to society. Abeysekera (2013) notes that given the importance that investors and society in general place on corporate information, they have heightened the requirements of corporate reporting and are increasingly asking for quality non-financial reports. Actually, the need to improve transparency in business reporting globally was the main trigger to the birth of the <IR> concept (IIRC, 2011). IIRC (2020) notes that the primary audiences of an integrated report are providers of financial capital, but it also benefits other stakeholders including "employees, customers, suppliers, local communities, regulators, and policymakers" (p. 3). So, <IR> has a great coverage of users.

Affan (2019) asserts that sustainability reporting is increasingly becoming a likeable corporate reporting practice and this practice is part of the <IR>. Camilleri (2018) notes that companies are increasingly reporting their NFI in the form of integrated reports. <IR> is now the contemporary attempt in over 30 years to widen NFR initiative as well as accountability in organizations in an effort to increase the inclusion of environmental and social performance of business towards value creation to the organization (Stubbs & Higgins, 2018). Indeed, <IR> is a

contemporary phenomenon of corporate reporting (Oluwamayowa, 2019). Currently, firms have increasingly reported on both their financial performance and the aspects of social and environment because this information gives more information to user of the reports and make the users make informed decisions (Angermund & Plant, 2017).

Bobitan and Stefea (2017) urge too that "the origin of integrated reporting lies in corporate governance, as a solution to demands on corporate leadership regarding the sustainability, strategy, performance and risks" (p. 424). <IR> stands out as a framework that promoted corporate reporting approaches especially after the 2008-2009 financial crises because it includes both the sustainability aspects and the financial performance of a firm (Goicoechea et al., 2019). Perego et al. (2016) note that <IR> came up as an accounting practice that enables firms to understand the process of creating value and as a mechanism to effectively disclose information to a wide audience of stakeholders. Busco (2014) notes that <IR> has the objective of enhancing a firm's accountability and stewardship especially with regard to its six <IR> capitals and their interdependences. Without reporting about the six <IR> capitals, <IR> would not be taking place.

Nowadays, there has been an attempt to consolidate the various perspectives on F&NF reporting so as to come up with a framework that provides an organization's holistic image and the most popular framework is currently the <IR> Framework (Beske et al., 2020). <IR> is a new a model corporate reporting integrates information on an organization's six <IR> capitals to provide value creation perspectives for the organization and this framework is relevant in today's economic, social and environmental turbulent conditions that firms face as well as information required by stock markets (Bal & Dhal., 2019; Satta et al., 2015). <IR> is the latest concept of enhanced business reporting and it builds the corporate reporting concept around the value creation objective of an organization (Reitmaier & Schultze, 2017). Use of the <IR> framework results in

high quality integrated reports and thus a better linkage between financial reporting and NFR (Wachira et al., 2020). Shareholders as well as other stakeholders of corporations are increasingly expecting more transparency as well as accountability in corporate reporting and therefore <IR> which combines sustainability and financial information is increasingly becoming desirable (Demirel & Erol, 2016).

The emergence of <IR> raises questions if it replaces sustainability reporting or whether it actually reduces the level of disclosure on businesses' impact on the social as well as environmental aspects (Tilt et al., 2021). "Organisations are still encouraged to prepare a separate sustainability report, in addition to their integrated report" as this can improve the integrated report as well (Herbert & Graham, 2021, p. 8).

<IR> provides information which financial reporting alone cannot provide (Doni et al., 2016; Hoque, 2017). It thus leads to better decision-making to users (Krzus & Thornton, 2011), enhances corporate strategy (Rensburg & Botha, 2014) and provides users with useful information of the sustainability aspects of the organization (Goicoechea et al., 2019).

## 2.4.2 COMPOSITION OF INTEGRATED REPORTING

<IR> has developed mainly due to the framework that was issued by IIRC. The framework provides and describes what a good integrated report looks like. IIRC (2011) provides that integrated report needs to be composed of: "organizational overview and business model, operating context, including risks and opportunities, strategic objectives and strategies to achieve those objectives, governance and remuneration performance, future outlook" (p. 3). According to Affan (2019), <IR> is built on the constructs provided by the IIRC framework.

Setia et al. (2015) while contrasting the content of <IR> and sustainability reporting notes that <IR> is built on the concept of value creation mainly for providers of financial capital while

corporate sustainability limits itself on the governance, social, economic and environmental aspects which themselves are part and parcel of <IR>.

IIRC (2013) provides that an integrated report should have three elements: firm strategy, business plan as well as the firm's six capitals. The IIRC (2011) defines the six capitals as "financial, manufactured, human, intellectual, natural and social" (p. 3). <IR> combines and links information of F&NF type in a single document whereby the non-financial aspects relate to aspects of governance, as well as social and environment (Affan, 2019).

Bal (2018) building on the model of IIRC, provides the following elements of <IR> to be "organizational overview, strategy and resource allocation, governance, risk and opportunity, business model, performance, outlook, basis of presentation" (p. 51) and provides a firm's strategy, governance, future performance, and value creation in different time horizons of planning.

Fried et al. (2014) in describing the scope of <IR>, note that <IR> is composed of eight content elements that measure the changes in capitals, how value is created, and the provision of the company's strategy, governance, the adopted business model and the financial accounting information.

## 2.4.3 VOLUNTARY AND MANDATORY INTEGRATED REPORTING

**2.4.3.1 Voluntary Integrated Reporting.** <IR> is mostly offered voluntarily by the reporting firms while financial reporting is mandatorily disclosed in annual reports (Tjahjadi et al., 2020). Voluntary disclosures refer to reporting above and over the requirements which by providing adequate information to stakeholders for their decision-making (Meek et al., 1995). Nurkholis (2020) notes that <IR> is currently not fully adopted in many jurisdictions because of being a voluntary reporting framework. While studying the practice of <IR> of five listed companies in Bahrain, Albetairi et al. (2018) note that the concept has gained momentum even though it is not mandatory by regulation. Comparing it to financial reporting, it is seen that financial reporting is mostly mandatory based on IFRS and is addressed mainly to investors to give them a financial perspective of a company's performance (Beske et al., 2020). In recent years however, especially in the aftermath of the 2008-2009 financial crisis, there has been ample dissatisfaction with mandatory financial reporting which has resulted into demands by financial capital providers and other stakeholders for companies to voluntarily disclose information on long term performance (Boesso & Kumar, 2007).

Voluntary <IR> is where a business organization adopts use of <IR> framework on its volition while mandatory is when it is obliged to adopt the reporting practice and failure of which will incur penalties. Dumay and Guthrie (2017) define involuntary disclosure to be the way external stakeholders see and say of the company performance and this implies that what is important is not how a firm describes itself but rather what its stakeholders see it to be and communicate about it. The beauty with use of mandatory <IR> environments is that it eliminates the "self-selection that arise when issuance of an integrated report is voluntary" (Barth et al., 2017, p. 2). Many firms opt to issue reports by a voluntary mechanism especially the non-financial report

(Brammer & Pavelin, 2008). In a study on the role of compliance to regulated corporate governance, Bhuiyan et al. (2013) find the aspect of compliance as a form of regulation that reduces the discretion of managers among listed companies.

Maltby (1997) supports voluntary approach of NFR as a preferred approach of regulation since businesses actually produce good reports that meet their stakeholders' requirements without having to put in place a government regulation. The author also noted that such kind of approach worked well in UK and brought more accountability of businesses. Buhr et al. (2014) while studying the history of corporate reporting rather supports the voluntary approach of <IR>. Camilleri (2018) favors the non-mandatory <IR> due to its potential to create reporting norms of <IR> to realize the NFR agenda.

However, Fallan and Fallan (2009) explore the impact of approaches of voluntary and mandatory environmental disclosure using an experiment on the pre-testing and post-testing disclosure contents of the reports issued by firms in Norway by analyzing 822 reports of the period 1987 – 2005 and find that when firms are used to a voluntary disclosure regime, they take long to fully comply with a mandatory change in the statutory regulations. They also note that there is actually no such a thing as a universal notion of voluntarism due to different legal requirements and political environments in different jurisdictions. This leads to the following section on mandatory reporting.

**2.4.3.2 Mandatory Integrated Reporting.** Early, in its development, some authors like Kiron (2012) caution that mandatory <IR> is the future for corporate reporting. Mandatory NFI reporting regulations are a must if the quality as well as quantity of the disclosures are to improve. Bal (2018) recommends that for comparability of the integrated reports, standards and guidelines that can be enforceable can provide a better way forward. Costa and Agostini (2016) evaluating the role of the Italian approach in legislating which largely followed the European Directive concerning environmental and employee reporting, by using content analysis studied 96 reports from Italian corporations between 2005 and 2010; that is pre and post regulation of NFR notes that the 2007 regulation was rather largely ineffective and called for a better design of mandatory accounting of environmental and social reporting that can adequately provide information to stakeholders with improved value relevance.

When mandated, it gives incentives to business managers to issue reliable information in a consistent manner to the addresses covering the ESG concerns and this can reduce information asymmetry problems and increase firm's legitimacy (Hamad & Graham, 2021). The authors while conducting an examination of the impact of mandatory reporting in Europe note that there has been a positive and significant impact of EU's directive on ESG disclosures and this indicates that mandatory NFR can increase the quantity and quality of ESG disclosure. Hoang et al. (2020) basing on their empirical research in South Africa argue that mandatory <IR> can be appealing to organization's stakeholders in its abilities to minimize information asymmetry and practices of corporate managers with regard to enabling firms to produce reliable sets of corporate reports. Mandatory <IR> has similarly been embraced by some countries in Europe (Suttipun, 2017). In a study conducted by Stubbs and Higgins (2018) on the investors' views towards the adoption of <IR> in both France and Australia, they observe that whereas their appetite towards the reforms

in corporate reporting were little, and 50% of the financial capital providers surveyed do back a mandatory regime of <IR> because they view mandatory NFR leading to better quality in in reporting sustainability practices of businesses. It has also been observed that increased compliance to <IR> framework greatly lessens the level of misreporting (Hoang et al., 2020).

Following legislation of mandatory information of non-financial nature of companies in Europe leveraging on the individual countries' efforts in cases like in France which lubricates the adoption of <IR> in Europe (Simnett & Huggins, 2015), this has enabled countries like the UK and France to have an increase in firms reporting on their non-financial performance (Stubbs & Higgins, 2018). In South Africa, firms on the Johannesburg Stock Exchange are mandated to issue reports that include Economic Social and Governance (ESG) which were broader than IIRC Framework and in 2014, the <IR> Committee on good governance in South Africa adopted IIRC's model and encouraged firms to use it (De Villiers et al., 2014). Indeed, the <IR> represents the contemporary evolution of corporate reporting (Pistoni et al., 2018). This gives the impetus to examine the concept of <IR> given its novelty and unanswered questions on its value relevance, the quality of reporting assumed and the voluminous criticisms that have been leveled against it.

The mandatory adoption of King III governance model in South Africa for listed firms on the JSE is a turning point in driving enhancement of environmental disclosure and supportive of the SDGs (Corvino et al., 2020). While comparing the breadth of <IR> among countries like South Africa with mandatory <IR> and Indonesia where voluntary reporting is used, Tjahjadi et al. (2020) find that integrated reports published by listed companies on JSE provide fairly more thorough information based on IIRC compared to Indonesia and this increases transparency, responsibility, and maintaining of company value. South Africa is credited as the pioneer through its King III corporate governance which recommended the use of <IR> mandatory among firms

and the JSE made <IR> a rule to all listed firms (Solomon & Maroun, 2012; Steyn, 2014; Tlili et al., 2019). South Africa's approach to <IR> has provided good practices to look to when it comes to mandating the <IR> practices (De Villiers et al., 2014). Their model informed the IIRC framework and the IIRC ultimately become relevant in guiding the <IR> practice in South Africa and other countries that borrowed the same practices.

While voluntary <IR> has the advantage of giving freedom to reporting agencies as well as being less expensive to implement since an institution would implement as and when they feel they can afford to so, it can lead to abuse. Therefore, the mandatory approach is preferred for the benefit of comparability of reports as well as ensuring a better quality. The downside to mandatory <IR> is that it is costly and can be resisted by some companies or countries as it is seen to be against the freedoms a reporting institution could wish for.

This sub-topic provided the definition of <IR>, its importance, composition, criticism of financial and sustainability reporting which gave reason for the birth of <IR> and the IIRC framework and ends by discussing the voluntary and mandatory <IR> approaches. It sets the tone to other sub-topics that will follow since the main discussion revolves on the <IR> concept.

## 2.4.4 HISTORICAL BACKGROUND, INCENTIVES AND EARLY ADOPTION OF <IR>

**2.4.4.1 Historical Background of Integrated Reporting.** This subsection intends to describe the historical background to <IR>, the role of the 2008 global financial crisis, regulation for NFI reporting, international adoption of <IR> and narrows down to the adoption of <IR> in both South Africa and Namibia.

<IR> picks up from sustainability reporting. The history of <IR> is traced from sustainability reporting initiatives like the 1992 balanced scorecard framework designed by Kaplan and Norton aimed at assessment of firm performance (Herbert & Graham, 2021). Then came the

triple bottom line. GRI was formed in 1997 and it came up with sustainability reporting guidelines. Due to challenges in sustainability reporting as well as financial reporting, the <IR> concept came in to ensure integration of both financial and sustainability information (Herbert & Graham, 2021). With the objective of addressing the limitations in financial reporting, improving reports' quality and also offering solutions to the evolving needs of stakeholders concerning corporate reporting, the IIRC was founded (Radley, 2012). This was the third model of <IR> and it is the current one under the IIRC (Dumay et al., 2017). Seyed et al. (2021) note that the intention of the 2009 creation of IIRC was for the council to come up with an <IR> framework to facilitate predicting of an entity's performance through linkages of financial as well as the NFI and reflecting value creation process in an entity and that the framework can accelerate the adoption of <IR> practices across the world and put in place Integrated Reporting Framework (<IRF>).

The <IR> framework is credited to be a corporate reporting approach built around a corporate strategy to create and sustain value (Moloi & Iredele, 2020). It can be argued that <IR> arose from the failures of corporate reporting frameworks of both financial and well as sustainability reporting. <IR> is built on combining NFR and financial reporting. Buhr et al. (2014) undertake a study aimed at summarizing major developments in NFR and note that the key forms of reporting started with financial reporting, then with time added information about employees in the 1900s, social accounting in the 1960s to 1970s, environmental reporting in the years between 1980s and 1990s and around 2000 a new form of reporting which links social, economic and environmental corporate performance stemming from the notion of triple bottom line came up. Elkington invented the triple bottom line concept in 1997 as a way of identifying the minimums that a business organization should care about if it is to claim to be on the path of sustainability (Alhaddi, 2015). From the start of the 21st century, society's demands for sustainability and

accountability of companies have increased and thereby leading to changes in corporate reporting and specifically the emergence of <IR> (Rodrigues & Morais, 2021).

Bochenek (2020) notes that "the origins of the integrated reporting are considered a document issued by the Institute of Directors in South Africa" (p. 107). The author notes that the document was known as King I Report. Therefore, the first model of <IR> is the King Report in South Africa and the second model introduced in 2010 by Eccles and Krzus (Dumay et al., 2017). Two key initiatives have promoted the use and adoption of <IR>; King III Report concerning corporate governance which recommended adoption of <IR> in South Africa, especially for listed firms on the JSE and the IIRC (Seyed et al., 2021). While King I initiated the spirit of <IR>, it was until 2011 that the JSE-listed firms adopted the practice of integrated reports (Genevé & Elza, 2021). Eccles and Serafeim (2011) traces the history of <IR> from 1990s whereby ideas that companies should on top of the traditional financial reporting include communication on their non-financial performance as increasingly demanded by investors as well as other stakeholders in general arose. As for Solomon and Maroun (2012) and Stubbs and Higgins (2014) note that the emergence of NFR can be traced back in 1970s where emphasis was corporate social responsibility and mainly in the US and Europe. However, focus on corporate reporting in 1980s shifted to sustainability reporting especially by large multinational corporations and this greatly improved in 1990s (Stubbs & Higgins, 2018).

In 1990s, companies were still mainly using two separate reports of corporate reports; the financial one and the sustainability one especially in the context of the triple bottom line perspective (Villiers et al., 2014). Goldstein (2015) notes that it was in 2010 that the first scholarly publication on <IR> was made and it was through the scholarly work of Robert Eccles. Therefore, the subject of <IR> and scholarly work in the field is relatively new and this gives interest to

researchers to study more on the aspect of <IR>. Eccles et al. (2019) note that the IIRC Framework that was released in 2013 aims at providing guidance on the use of integrated reports. The 2013 IIRC framework is the globally recognized <IR> framework (Solomon & Maroun, 2012). Bal (2018) reviews most recent literature on <IR> especially on the progress made in the field and finds that <IR> has brought about a radical transformation in corporate reporting. Camilleri (2018) argues that "investors and the other financial stakeholders remain the key stakeholders of many organizations" (p. 1). <IR> has generally broadened the scope of reporting to companies in an attempt to meet stewardship and legitimacy expectations with other stakeholders apart from financial capital issuers, in effect becoming a better reporting tool that appeals to a wide range of stakeholders.

Indeed, over years, different models of corporate reporting frameworks have arisen and adopted by business organizations and the trending one today is <IR> (Sarioğlu et al., 2019). Some of the reasons identified for the rising of the <IR> framework is the 2008 global crisis discussed in the sub-section below.

**2.4.4.2 The 2008 Global Crisis and its Relevance to Integrated Reporting.** The global crises exposed the inadequacy of the financial reporting model, affected stakeholder confidence in using reports issued by firms and showed that it is imperative to disclose information of financial as well as the non-financial type for the users to make improved business decision making (Affan, 2019). Thus, <IR> emerged as a way of addressing the 2008/09 Global Financial Crisis whereby at the time, there was scarcity of corporate information on social, environmental and governance aspects as well as the transparency of their operations which were in question marks since the information found in financial reports was less than what stakeholders need for informed decision making (Higgins et al., 2014). Krzus and Thornton (2011) identifies the 2008 financial crunch consequences to be that people lost homes to foreclosure, increase in government debts, unemployment, bankruptcy of many businesses and austerity measures of governments coupled with the effect on climate change and dwindling natural resources and last but not least the weak regulatory framework especially in the way companies were reporting, hence necessitating change in the way governments, regulators, and businesses respond to sustainability initiatives and with <IR> seen as a measure that brings in enhanced accountability. Dilling and Harris (2018) reiterate that <IR> came as a result of global financial crisis whereby the challenges faced in the crisis forced firms to shift focus to long-term value creation instead of making short-term gains.

In a bid to address the concerns arising from the 2008 financial crisis, some leading firms started to include NFI in their annual reports as a way of providing comprehensible reports to facilitate their stakeholder engagement efforts (Frías-Aceituno et al., 2014). The IIRC in 2013 came up with <IR> framework and the adoption of <IR> in countries like South Africa, US, Japan, Turkey, UK, Thailand and a number of other countries in Asia and Europe is a sign of the framework's popularity (Soriya & Rastogi, 2021). Zanellato (2021a) notes that through the

European Directive 2014/95/EU, companies in Europe were encouraged to include NFI in their reports with effect from 2017 and in their study on the use of the international <IR> framework, find a higher compliance towards <IR> among the sampled firms in Europe.

<IR> was indeed inevitable in the aftermath of the crisis meaning due to reduced public confidence in the way business organizations work ultimately threatening organization's legitimacy (Beck et al., 2017). IIRC (2020) also argue that <IR> was a perfect response to 2007/08 global financial crisis whereby there was need inclusive capitalism in order to recognize the importance of environmental and social aspects of business in decision makers in capital markets and its value to the global economic setup. On the side of Goicoechea et al. (2019), they urge that there were two major outcomes of the 2008/09 financial crunch, one the critique of traditional financial reporting approaches and the need for reform of corporate reporting to promote non-financial disclosure especially through sustainability reporting, environmental accounting, social accounting, and integrated accounting. It also resulted in the need to have a more transparent corporate reporting model that can restore confidence in the investors and the public in general vis-a-vis the business and financial markets which became apparent and led to the birth of <IR>. Whereas <IR> could have come as a natural trend in corporate reporting, the 2008/09 financial crisis had its place in expediting its birth.

**2.4.4.3 Early Adoption of Integrated Reporting.** Since 1980s some companies have made substantial progress in complementing the traditional financial reporting with NFI (Setia et al., 2015). The pioneers of integrated reports issued their reports in early 2000s as a way of improving information to shareholders and stakeholders (Eccles et al., 2019). Dilling and Caykoylu (2019) note that <IR> is becoming increasingly popular in usage by companies. Adams et al. (2016) while studying the evolution NFR, finds a global wave in adoption of <IR>. NFR in general is becoming increasingly institutionalized over time (Haji & Anifowose, 2017). Bal (2018) provides major milestones in the development of <IR> as follows:

a) 2002 – Novozymes, a Danish enzyme firm to be the first issuer of integrated report.

b) 2009: South Africa becomes the premier among countries to make <IR> issuance by listed firms mandatory.

c) 2013: IIRC develops the framework for <IR> and many companies did participate its pilot phase.

Simnett and Huggins (2015) note South Africa considerably embraced <IR> and even if they do not entirely endorse the IIRC framework, important aspects like reporting on capitals are applied. It was in 2011 that South Africa issued the world's first guidance on how firms can prepare and issue integrated reports and required that the firms that operate on the JSE issue integrated reports (Bal, 2018; Eccles & Serafeim, 2011).

**2.4.5 REGULATION FOR NFI REPORTING**

**2.4.5.1 Early Development of Reporting Frameworks**. Following the development of the sustainable development concept by United Nations Conference on Environment and Development (UNCED) in 1992, various initiatives to put in place standards that regulate NFR were initiated and these include Global Reporting Initiative (GRI), the Prince's Accounting for

Sustainability Project (A4S), and IIRC (Rowbottom & Locke, 2016). The regulations or guidelines, which came at different times, are also part of the history of the development of NFR and specifically the <IR>. Camilleri (2018) traces the foundations of non-financial disclosures and <IR> in particular and using the GRI and IIRC as the regulatory frameworks of reference.

In other countries apart from South Africa, Denmark was the first country to legislate mandatory NFI reporting in 1995 instructing companies to issue green accounts and other European countries like The Netherlands and Sweden and Spain followed (Holgaard & Jørgensen, 2005). A company that embraced integrated reporting first is said to be a in Europe in a Danish company named Novozymes in early 2000 and is acknowledged in literature as the one that came up with the first integrated report in 2002 (Soriya & Rastogi, 2021). Novo Nordisk's (a Danish firm as well) published and integrated report in 2004 a report which contained both financial and nonfinancial information and in the same year, Canadian Cooperative Bank published a write-up on the rationale for <IR> while in the US, United Technologies Corporation was the premier firm to issue an <IR> in 2008 (Eccles & Serafeim, 2011).

Manes-Rossi et al. (2018) note that through the 2014 European Union Directive and 2017 guide "to mandate European entities of public interest to convey NFI to improve such organizations' accountability toward their stakeholders" (p. 1162) has resulted in many jurisdictions domesticating it and encouraging their companies to comply. Examples are the domestication of the NFR legislations in France, Italy and UK.

NFR regulation advanced especially when the GRI came up with new standards in 2018 replacing the earlier sustainability reporting guidelines become global best practice with which corporations should comply in corporate reporting to show negative or positive impact towards

sustainable development measured through economic, environmental and social aspects and to adopt sustainability reporting as a business strategy (Camilleri, 2018).

**2.4.5.2 The IIRC Framework.** Nowadays, there has been an attempt to consolidate the various perspectives on F&NF reporting so as to come up with a framework that provides an organization's holistic image and the most popular framework is currently the International Integrated Reporting Framework – IIRC (Beske et al., 2020). The IIRC Framework provides the relationships as well as resources that are used or which are affected by organizations during value creation and it is founded on the six <IR> capitals which are human, financial, intellectual, manufactured and social & relationship (Roberts, 2014). <IR> gained substantial importance with the coming in of IIRC and with some of the stock exchanges making <IR> mandatory for its listing (Oluwamayowa, 2019). Abeysinghe (2020) note that IIRC put in place <IR> framework so as to advance integrated thinking and to promote corporate sustainability. Adhariani and Sciulli (2020) note that there is a global demand for enhanced corporate reporting on ESG matters in addition to disclosure of financial information and the emergence of IIRC framework in 2013 went a long way in meeting these requirements with provision of interconnections of a firm's <IR> capitals. According to ACCA (2013), <IR> is useful to investors in enhancing their understanding of a company's long-term position. <IR> is viewed to be having potential of improving corporate reporting efficiency (Bochenek, 2020).

<IR> is the framework that can adequately meet the needs of corporate reporting users to facilitate their decision-making, to enable investors make forecasts on economic development of a company as well as the growth in worth, identify issues of corporate social responsibility as well as ensuring long-term sustainability of the corporate strategies (Bochenek, 2020). Subscribing to the framework put forth by IIRC has the ability to nurture integrated thinking leading to better

investments, improved financial stability and long-term sustainability (Buallay et al., 2021). Balasingam et al. (2019) argues that IIRC was launched with a purpose of providing information to financial capital providers on the value creation of firms. Flower (2015), a known critic of the <IR> paradigm, acknowledges that IIRC was formed by the Prince's Accounting for Sustainability Project and the GRI as leading institutions to promote the subject of sustainability reporting. The <IR> framework provided by IIRC is not mandatory but adhering to it helps companies evaluate themselves in terms of the integrated thinking of their integrated reports and also helps promote comparability of the reports (Affan, 2019). The IIRC came up as a result of interest in <IR> and earlier initiatives towards voluntary corporate disclosure and it is the corporate <IR> regulation in South Africa that provided prototype in shaping other countries <IR> initiatives and the IIRC framework (Rowbottom & Locke, 2016). Fundamentally, the advancement of <IR> is directly related to the emergence of IIRC framework to regulate <IR>.

**2.4.5.3 King Report.** King I in South Africa, which came into force in 1994, advocated for the inclusion of the ESG aspects in corporate reporting. In 2002, King II encouraged inclusion of social and environmental aspects with governance and actually this made South Africa to be the premier country on world stage to mandate <IR> (Solomon & Maroun, 2012). King III requires firms to prepare and avail integrated reports (Elda et al., 2017). King III in 2009 made <IR> to include sustainability and finance aspects (De Villiers et al., 2017). Setia et al. (2015) argues "the King III Code of corporate governance requires companies listed on the JSE to prepare annually an integrated report or provide reasons for not doing so" (p. 397).

While relating the Corporate Governance Code in South Africa (which code is also known as the King Report) and the IIRC's Framework (the Framework) on <IR>, Herbert and Graham (2021) observe that:

"The recommendations of King III are largely in line with the requirements of the Framework, although King III was published in 2009, four years prior to the Framework. A key difference between King III and the Framework is that King III makes specific mention of sustainability reporting within the integrated report, which is not mentioned in the Framework. In addition, King III maintains that the integrated report should be directed at all stakeholders, while the Framework makes it clear that the integrated report should be directed at the providers of financial capital" (pp. 8-9).

King IV sees and recommends <IR> as the best suitable way of communicating with a firm's stakeholders, recognizes IIRC Framework as the right instrument to have that needed communication and recognizes the relevance of <IR> capitals of a firm as suitable to communicate firm performance and appealing to a variety of stakeholders (Rossouw, 2020). <IR> framework is seen as a model that is flexible vis-à-vis the content of integrated reporting, yet the King Code is more prescriptive (IoDSA, 2016).

**2.4.5.4 Demonstration of Compliance to IIRC.** A number of studies have also attempted to narrow down to the compliance of firms with the IIRC framework. Martinez (2016) examines 384 organizations that were part of IIRC database in 2016, identifies that 152 were on from South Africa; and finds that <IR> affects market value of a firm. Affan (2019) studies the relationship between <IR> and corporate performance by adopting the IIRC framework constructs. He bases his study on firms on Indonesia Stock Exchange in 2017, uses a linear regression and finds that there is a relationship that is significant existing between <IR> and the performance of the firms. Akhter and Ishihara (2018) evaluate integrated reports form UK firms on the usage of the IIRC framework and find disclosure rates ranging from 51% to 70% in terms of their compliance with the content elements of IIRC. Almăşan et al. (2019) examine the alignment levels of integrated

reports of 49 European companies with the IIRC framework in the period 2013 to 2016 find that firms that adopted <IR> capitals of the IIRC had their performance improved. Anifowose et al. (2020) in their study on integrated capitals reporting on the Asian continent find that <IR> capitals significantly influence revenue growth of the companies. Despite the positive note shown for the compliance with IIRC framework, the model is heavily criticized as noted in the section on cons of <IR>.

## 2.4.6 ADOPTION OF INTEGRATED REPORTING

**2.4.6.1 Justifications to the adoption of Integrated Reporting Framework.** While critics of the <IR> concept may have a point in their view of the practice and theoretical basis of the concept, the fact that the concept has had a widespread adoption as discussed in this sub-topic gives some reasons to understand what users may consider to be justifications or mitigations to the drawbacks of <IR>. Apart from the benefits of <IR>, there is an attempt to explain or put in context some of the criticisms of <IR>.

Adams (2015) defends the IIRC framework by saying that actually a firm's value creation cuts across different stakeholders although, ultimately financial capital issuers should have a prominent recognition and profitability of a firm is a key success factor. Camilleri (2018) notes that most companies identify financial capitals issues as the primary recipients reports issued by companies and therefore it makes sense that of even in <IR>, investors are identified as the primary recipients. Lai et al. (2018) urge that it is undeniable that financial stakeholders continue to be the main addressees of integrated reports since indeed the investors remain are the financial capital issuers. The question then remains, is financial capital the main capital compared to types of capital. The answer to this question is not straightforward since the capitals feed into each other. But definitely financial capital can be used to purchase other types of capitals. Tweedie and

Martinov-Bennie (2015) note that while <IR> is criticized for being focused on providers of financial capital (investors), if viewed in the long-term lenses, if investors value is maximized overtime, sustainability goals would as well have been served because there is no way a firm would continue to do well financially without meeting other stakeholders needs.

Eccles and Serafeim (2011) find <IR> relevant to address the challenges of confidence and trust in business companies' operations in light of scandals of 2008 that resulted in the financial crisis and also as a measure to encourage improved regulation in corporate reporting. Although some critics see <IR> as lacking contribution to sustainability, actually they are wrong because IIRC's model encourages firms to disclose key indicators driving their performance for all its capitals and thus this rather has the potential to result into integrated view of elements of the firm instead of silo thinking (Stacchezzini et al., 2016).

While there is an attempt to justify the <IR> framework, this corporate reporting framework just like its predecessors; financial reporting as well as sustainability reporting has gaps which ought to be filled to further reap from its advantages.

The sub-section above has discussed justifications on why <IR> is becoming adopted by many companies worldwide have also been provided. The major one is that users of the reports can have both F&NF information in a single well-linked report. A historical background, evolution and adoption of <IR> has been identified and discussed. It was identified that factors that contributed to the rise of <IR> as a corporate reporting approach include the 2008 global crisis. The regulation for NFI reporting was also discussed whereby the IIRC is seen today as the issuer of the <IR> guidelines albeit still being on a voluntary basis, which remains a key challenge of IIRC. Criticisms of the <IR> concept were also identified. However, the advantages associated

with the <IR> are more than the criticisms and just like any other corporate reporting framework, improvement in the design and practice of <IR> can be improved.

**2.4.6.2 International Experiences.** Various countries have endeavored to practice <IR> although they in some cases differ in the quality of reports issued by their countries (Abeysekera, 2013). Countries that came on board in encouraging companies to issue integrated reports include the United Kingdom; coming first among countries to do so in Europe followed by France, Finland, Denmark, Germany, Sweden and Portugal (Bal, 2018). Demirel and Erol (2016) note that most companies that do issue integrated reports are in Europe given that in 2014, the EU issued a Directive that requires firms with more than 500 staff to issue non-financial reports. In South America, Brazil encouraged companies to adopt the <IR> framework too while in Asia (countries like South Korea, India and Japan) and in North America (the US and Canada) embraced the <IR> practice although they did so much later than those in Europe, Africa (specifically South Africa) and South America (Bal, 2018; Eccles & Serafeim, 2011). De Villiers et al. (2014) note that in some countries like Brazil, companies' practice <IR> although the quality is still low.

Several investors in Australia see mandatory integrating reporting as necessary and publish integrated reports annually (De Villiers & van Staden, 2011). However, while <IR> is found useful in Australia, Camilleri (2018) finds that the six <IR> capitals in the IIRC framework hardly used by the Australian financial capital issuers which raises questions on the application of the IIRC framework in Australia. Enacting <IR> in France has facilitated the adoption of <IR> (Higgins et al., 2014). France companies also practice <IR> (De Villiers et al., 2014) but the quality of reporting is judged medium (Eccles et al., 2019). Albertini (2019) study <IR> in French companies for the years 2013–16 and find information asymmetry has not been reduced mainly because companies report on a few capitals as relevant to their value creation process and they mainly

exclude natural capital. Germany companies also embraced <IR> and the quality of reporting is appreciated and assessed as high (Eccles et al., 2019). Italy has embraced <IR> although firms practice the reporting model at a medium level (Eccles et al., 2019). In Japan, although several companies have adopted <IR> (IIRC, 2020), it is found that quality reporting is still low (Eccles et al., 2019). In Spain, some companies have adopted social, environmental and governance included in their annual reports and is identified as among countries that have adopted the <IR> practices (De Villiers et al., 2014).

In the Netherland, many companies are trying the <IR> practice but struggle with the definitions and measurements of the concept (De Villiers et al., 2014) and the quality of <IR> is seen to be low (Eccles et al., 2019). In South Korea, some of its companies embraced <IR> although quality of reporting is still at medium level while indeed in the United Kingdom, many companies have embraced the <IR> practice although the <IR> quality is judged to be at medium level (Eccles et al., 2019). In the USA, <IR> or even sustainability reporting is less developed but some companies like the American Electric Power have fully embraced the <IR> practice (Parrot & Tierney, 2012). Albetairi et al. (2018) while assessing the adoption of <IR> in the Middle East find that the adoption rate is still low and largely voluntary.

By 2010, at least 1860 global firms made sustainability disclosure by basing on the GRI by 2011, at least 1,861 companies were using GRI's guidelines for sustainability reporting and of them, 237 had integrated reports (Eccles & Serafeim, 2011). Stubbs and Higgins (2014) notes that by 2011, at least 95% of global 250 largest firms were reporting on no-financial performance. Churet and Eccles (2014) studying 2,000 companies on <IR> find that 12% of the surveyed firms issue integrated reports. ACCA (2017) in their reviewed reports of selected 41 companies that had participated in the IIRC framework implementation finds that 66% of reports explained well on

how they create value for themselves and others which is an advantage derived from using the IIRC framework. IIRC (2020) asserts that by 2020, at least 2,000 institutions in 70 markets worldwide had adopted <IR>.

Indeed, <IR> has become a serious issue that is taking a global attention and equally is the academic research increasing on the issue. The growth of sustainability reporting and <IR> has been monumental over the last decade. Countries worldwide adopted several reforms in enhancing the quality of their disclosure following the 2008 financial crisis (Buallay et al., 2021). Chanatup et al. (2020) note that <IR> practices at first was low since firms adopting <IR> remained relatively in its initial years. However, while the adoption rate was low at the start, it has since taken root. KPMG (2020) in its most extensive survey conducted the latest study on sustainability reporting and finds that 80% of companies worldwide report on sustainability with North America having the highest rate of 90% (a country like the US is at 80%). In Africa, the highest sustainability reporters are South Africa at 96% and Nigeria 85%.

KPMG (2020) also find that GRI remains the dominant institution to set standards for sustainability reporting. In an earlier survey conducted by ACCA (2013), it is shown that at least 90% of investors prefer that an integrated report which combines financial and non-financial information get used as the preferred method of corporate reporting. Haji and Hossain (2016) conduct a study on <IR> in South Africa using 246 firms over the period 2011-2013 and find increasing information reliability, connectivity, materiality and completeness in the reports. The authors also observe that although the <IR> practice is increasing, the field symbolic and ceremonial. Oluwamayowa (2019) studies the quality of <IR> from 2013 to 2017 among 20 listed firms in South Africa and find that <IR> quality reporting is related with the length of the practice.

Several other studies have pointed out the adoption of <IR> practices around the world. In a study by Izzo et al. (2020) on <IR> trends, they find SDGs agenda to be growing in importance and increasingly requiring firms to enhance their disclosure levels connecting business to environment. They find that a sizeable number of European companies (specifically 134) report on <IR> capitals as well as SDGs and this is a commendable thing of promoting accountability, transparency and sustainability. While examining the level of <IR> in institutions of higher learning in Scotland, Northern Ireland and Wales, Adhikariparajul, Hassan, Fletcher & al., (2021) find a substantial upsurge in levels of <IR> in higher education in the years 2014 to 2016. In their study of <IR> 1,590 international companies in the years 2008 to 2010, Frías-Aceituno et al. (2014) referring to the relevance of the Efficient Market Hypothesis note that corporate disclosure is generally endorsed due to the importance market participants see as needed information for an efficient capital market.

Bochenek (2020) in a study on <IR> in Europe Union (EU) countries notes that the concept is a central element to the development of corporate reporting in the European countries, companies undertake more efforts to promote social and environmental activities and there is a growing popularity of <IR> among the EU countries. The author argues that by 2011, a high interest on <IR> was growing in many European Union countries and has since constantly been growing and European countries as well as organizations do undertake to put in place regulations as well as recommendations seeking to improve and standardize <IR>. In a study on environmental reporting among extracting organizations in Europe using a qualitative content approach, Zanellato (2021b) finds that more of environment material is reported among the companies compared to the social disclosure. In Europe, "regulations regarding nonfinancial disclosure are weakly developed—the EU Directive 2014/95/EU does not indicate any framework to be used by

companies for corporate and nonfinancial reporting. Nevertheless, companies adopted the IIRC framework as a mean to publish their nonfinancial and corporate information" (Tiron-Tudor et al., 2020, p. 2). Research studies have noted increasing use of the Directive with reference to promotion of non-financial disclosure practice (Beleneşi & Popa, 2021). Bochenek (2020) with respect to corporate reporting in Europe argues that stakeholders are increasingly requiring NFI in addition to financials of companies because of changes in the social and environmental aspects of firms.

While analyzing 98 integrated reports from 61 companies in Europe based on lists accessed from 2013 - 2017, Hurghiş (2020) notes that their reports do conform to the IIRC framework. Adhikariparajuli, Hassan et al. (2021) while undertaking a study on <IR> implementation in 123 higher education institutions in the United Kingdom from 2015 to 2018 find <IR> influential to the institutions' engagement with prospective students, their staff as well as other stakeholders and therefore advocate that higher learning institutions should adopt <IR> framework. While conducting an empirical study on 180 NASDAQ as well as NYSE listed firms from 2007 to 2016, Cosmulese et al. (2021) using a regression analysis find a relationship of disclosure compliance to be valuable to the firm and advocates for increased <IR> quality among the firms. By studying <IR> practices among 117 firms listed on the Indonesia Stock Exchange during 2016 – 2018 period, Jerico and Utami (2021) find that <IR> can considerably decrease investment risk and is therefore a useful reporting model for companies that desire to reduce their investment risks. Ciubotariu et al. (2021) examine the quality of <IR> based on sampled firms from the Americas and Europe that published integrated reports from 2015 to 2017 observe that firms can make their businesses more sustainable by enhance their <IR> quality.

As Hassan et al. (2019) suggest, <IR> does not only concern business enterprises. It can be applied to any other type of organization that seeks to increase its accountability and transparency. They specifically discuss the extent to which the UK higher education institutions can publish integrated reports using the IIRC framework. In their study, they find that UK higher education institutions have significantly increased their <IR> content elements in their annual reports. Chanatup et al. (2020) while examining the determinants of <IR> basing on 240 firms listed on the Thailand Stock Exchange in 2015 by use of content analysis find that corporate governance is a key determinant of <IR>. While examining global developments in <IR> from 1999 to 2015 using the GRI database, Demirel and Erol (2016) find that compared to previous years, 2012 was the year with the highest integrated reports among the firms in the database. They also noted that <IR> was mostly practiced on the European continent. Navarrete-Oyarce et al. (2022) studies <IR> in Chile using a qualitative methodology and found that listed companies on the stock exchange in Chile conduct <IR> especially on strategic focus aspects of the <IR> framework. Dey (2020) examine <IR>'s determinants and its relationship with firm value as well as liquidity using 144 observations from 2013 to 2018 in the banking sector in Bangladesh and show that larger firms in terms of board size, diversity of representatives on membership to directors on boards, as well as higher growth prospects influence the adoption of <IR> practices.

While carrying out an empirical study on drivers of <IR> in 90 listed companies in Nigeria in the years 2013 to 2017, Adelowotan and Udofia (2021) applying content analysis, find that corporate structure and firm age do not significantly influence application of <IR> framework. Dratwińska-Kania and Ferens (2021) carry a study on business model disclosures in Polish listed firms using content analysis and find that firms that prepare integrated reports are better placed in business model disclosures than those that do not. In a study on <IR> and business sustainability

of 51 firms selected North America, Europe and South America, Ciubotariu et al. (2021), in an attempt of providing an overview companies' views on <IR> quality companies in the infrastructure, services and transport highly value the importance of <IR> in view of their stakeholders' interests and note that companies with a need for promoting a sustainable business outlook seek to present their performance using <IR>. Adhariani and Sciulli (2020) examines the state of <IR> in Indonesia in 2016 and finds that 60% of sampled firms mainly in the banking sector conform to the IIRC framework based on content disclosures.

While carrying out their study on <IR> in Australia with a purpose of finding out the mechanisms that companies employ in practicing <IR>, Stubbs and Higgins (2014) through interviewing 23 managers of 15 organizations, find that they were issuing kind of integrated reports. Adams et al. (2016) use content analysis in studying integrated reports of four multi-national corporations; Unilever, the National Bank of Australia, Heineken and the Glaxo Smith Kline over the years 2009-2013 and find those companies practice <IR> to report on the performance, strategy and their risks.

It has been observed that the IIRC framework on <IR> to a large extent has compatibility with other frameworks that encourage adoption of <IR> practice. An example that is commonly cited is South Africa's Corporate Governance Code which fully recognizes the IIRC framework's guidelines (Tjahjadi et al., 2020; Wachira et al., 2020). <IR> is an integral part of King IV and given that King IV uses apply and explain compared to apply or explain in King III, it implies that firm's flexibility in adoption of <IR> strengthens under King IV (Dumay et al., 2017).

Although South Africa took the lead in <IR>, other countries like Japan, Malaysia, Korea have also taken mandatory reporting aspect seriously encouraging listed firms to use <IR> as a way to show stewardship (Anifowose et al., 2020). It is noted that the adoption of <IR> is greatly

influenced by how companies or countries are already practicing sustainability reporting; such that those countries like the US where sustainability practices are not with a high tone, <IR> is also not well practiced there whereas those leading players in sustainability also easily adopt <IR> (De Villiers et al., 2014). Therefore, <IR> practice has become an international practice albeit the fact that countries are at different levels of its application based on whether they have made the practice mandatory or voluntary, or whether they have legislated the practice or not.

   **2.4.6.3 Integrated Reporting in Namibia And South Africa.** Namibia and South Africa were selected as the focus for the current empirical study because they are the only countries in Africa that have made non-financial reporting a rule and require <IR> by the time of the study. South Africa pioneered <IR> and made it mandatory on a comply or explain basis for companies listed on the JSE, originally emphasizing on the environmental, social and governance aspects but in 2014 it adopted the IIRC framework (De Villiers et al., 2014; IIRC, 2020; Solomon & Maroun, 2012; Steyn, 2014). As per King III which provides Code of governance principles for companies in South Africa, all listed companies on JSE are required to issue integrated reports with effect from 2010 to enable financial capital providers and other stakeholders have a more informed assessment of the standing of the companies (Doni et al., 2016). The enactment of <IR> in South Africa played a great role in making firms adopt it (Higgins et al., 2014) and make South Africa lead the way in adopting the <IR> (Rensburg & Botha, 2014). However, while a substantial number of firms in South Africa have embraced <IR>, Haji and Hossain (2016) through a study of 246 large firms in South Africa on their integrated reports in the years 2011-2013 and find that there are still many firms that prepare the integrated reports for ceremonial purposes and to only gain legitimacy.

In the past, most of the businesses in South Africa were owned by a group of minorities and there was a need for governance practices of business to follow developments in the country's new inclusive approaches in the early 1990s including aspects of corporate reporting (Wachira et al., 2020). Moloi and Iredele (2020) acknowledges the role of South Africa in driving the advancement of <IR>.

The tendencies to <IR> can be traced from 1994 when South Africa put in place its Code of Corporate Governance named King I and these progressed from King I to IV. The King Report concerning the aspects of corporate governance in South Africa are contained in four successive sets of codes with the first version which came in 1994, the second in 2002, the third in 2009 and latest version came in 2016, although it became effective in 2017. Noting a key difference with King III, Van Der Merwe (2020) notes that King IV mandates firms to apply and explain the corporate governance practices while King III provided for them to apply or explain.

The common thread through various King Report editions is the emphasis on the aspect of corporate ethics of governance, focusing on regulatory environment for ethical businesses, their decision-making processes and their overseer roles over other organizations (Rossouw, 2020). The point is emphasized by Van Der Merwe (2020) that the 1994 political and societal orientations in South Africa came with the desire and resolve of better governance of corporates through the Corporate Governance Code known as the King Report. The approach of South Africa to make sure that corporations adhere to principles of transparency and accountability can therefore be traced from King I as well as its successive versions and ultimately its recognition of the IIRC framework as a guide to <IR> practices in South Africa. Van Der Merwe (2020) while conducting a comparative analysis of South Africa Corporate Governance Codes from King I to King IV especially on the issue of stakeholder inclusiveness, Van Der Merwe (2020) finds that stakeholder

inclusivity as a principle does cut across the four codes and they greatly rely on human interventions as well as ethical leaders to safeguard stakeholder-inclusivity in all the companies do.

Rossouw (2020) articulates that King I Report, which was designed from 1992 to 1994 came in at a time the country was deciding to adopt principles of democracy. The author identifies that:

"At that time, South African corporations stood accused of collaborating with, and thus sustaining the old Apartheid order. The African National Congress (ANC) lead by Nelson Mandela was bent on laying this dispensation to rest, and the official ANC policy at the time was one of socialism and nationalisation of business. In this context, it was of cardinal importance that corporate South Africa should be seen as willing to change its stance and willing to govern itself in a manner that would not harm the interests of its stakeholders" (p. 189).

Narrating the experience of <IR> in South Africa, Herbert and Graham (2021) identify that integrated reports grew substantially from 2011 when most firms had separate sustainability reports and financial reports to integrated reports where sustainability disclosures were integrated into the annual report and named integrated reports by 2015. South Africa is seen to have a unique position in the development of <IR> and as noted by Tlili et al. (2019), and the authors in respect to the aspect of mandating integrated reporting note that "Johannesburg Stock Exchange is the first to mandate listed firms to adopt integrated reporting following King III report in March 2010" (p. 642). King-I came in therefore to increase business accountability to the public while King II came in with guidelines on ESG disclosure (Eccles & Serafeim, 2015). King III in 2009 mandated <IR> (Solomon & Maroun, 2012). <IR> has therefore mainly advanced from the King I Code on

corporate governance in 1994 which was amended to introduce the <IR> system in King II in 2002 and thereafter evolving to King III that required listed firms on JSE to do <IR> (Soriya & Rastogi, 2021). Corvino et al. (2020) also note that the development of King III which resulted in the mandatory adoption of <IR> became a turning point on the regulation of corporate governance. King IV report which followed King III report, adopted the capitals in the IIRC framework as a framework of integrated thinking (IoDSA, 2016). However, King III which guided integrated reports seem to be a combined sustainable report and financial report unlike the IIRC requirement of a linked report (Wachira et al., 2020).

According to Altarawneh & Al-Halalmeh (2020), the IIRC framework and the King Code mandated JSE listed firms to prepare integrated reports. When IIRC published the <IR> guide, firms in South Africa were encouraged to use guidelines and they adopted the IIRC framework to guide their <IR> (Herbert & Graham, 2021). While South Africa already had an <IR> mandatory reporting regime, it adopted IIRC framework guidelines in full (Tjahjadi et al., 2020; Wachira et al., 2020). Wachira et al. (2020) note that in South Africa, use of <IR> framework is significantly related with a firm's transparency level and helpful in meeting capital markets information requirements. Pitrakkos and Warren (2020) identifies integrated practices among South African companies where they state that listed firms prepare integrated reports or give reasons if they do not to do so. While <IR> is mandatory for listed firms on the JSE, they are allowed to use their discretion on what they can disclose and thus this creates variation in the quality of their published integrated reports (Barth et al., 2017; Moloi & Iredele, 2020).

Soriya and Rastogi (2021) claims that it is only South Africa that has adopted <IR> framework. However, whereas there are reporting guidelines for the firms to use in reporting, sustainability disclosures embedded in integrated reports is in a varying manner between

organizations (Herbert & Graham, 2021). In a study of 40 integrated reports from firms listed on the JSE in August 2015, PricewaterhouseCoopers (2015) finds that firms struggle in reporting on non-financial capitals and the survey notes that the level of integration of non-financial capitals in integrated reports was still low where only 39% of firms integrated the information on the capitals.

Many authors commend to the <IR> efforts in South Africa. They note that by making <IR> mandatory, this has given a voice to the advocates of <IR> as well as a mandate to the listed firms to report on their sustainability practices as well as all the elements of <IR> but where they do not do so, they should disclose reasons for departure from the norm.

While the discussion in the subsection above is mainly on South Africa, Namibia follows South Africa's footsteps in <IR> practices. The NamCode which is the corporate governance code in Namibia since 2014 is based on King III as well as international best practices on corporate governance, guides companies on aspects including <IR> (Deloitte, 2014). From 1990 after Namibia's independence, King I – III on corporate governance were applicable in Namibia until the country introduced the NamCode in 2014 which also borrows the best practices including aspects of <IR> requirements applicable in the corporate governance codes from South Africa (Asheela-Shikalepo, 2021).

The NamCode, which governs corporate reporting in Namibia promotes corporate governance especially in the context of firms, listed Namibia Stock Exchange and the Institute of Directors in Southern (2004). Akwenye et al. (2016) note that in 2014 when the Code for corporate governance in Namibia was launched, it brought with it the best principles that would enable corporate managers to take their companies in the right direction in terms of NFR. Deloitte (2016) note that just like South Africa, companies in Namibia are not obliged to issue integrated reports but rather use 'apply or explain'. According to Angermund and Plant (2017), the NamCode

provides that business organizations are called upon to practice business ethics effectively including behavior in the workplace. However, the two researchers noted that there is limited research concerning the non-financial performance and reporting of companies in Namibia. Enterprises in Namibia including public owned enterprises have embraced the concept of <IR> and an example is Namport which is leading the <IR> in Namibia (Shifidi, 2014). Limbo (2019) also reiterates that the NamCode of Namibia just like King III of South Africa recommends <IR> as a mechanism towards sustainability performance.

In conclusion, as highlighted in the sub-topic of historical background, evolution and adoption of <IR>, the failures in the precedent corporate reporting models of financial reporting and sustainability report led to the novel reporting practice called <IR>. The <IR> started on a low level mainly in South Africa and in some European countries like France but has now gained observable momentum looking by sheer number of countries and companies that have adopted the practice. However, the questionable levels of quality of reporting and the mixed results on the business case of <IR> gave the impetus to undertake an empirical study to further examine the issues of <IR> and its value relevance, which are of increasing interests to researchers as well as practitioners.

It was acknowledged that South Africa took the lead in making <IR> mandatory. In Africa, so far, the other country that has made non-financial reporting a rule and also requires <IR> is part of sustainable stock exchanges is Namibia. Hence, the case of South Africa and Namibia was discussed. South Africa as the first country to introduce mandatory <IR> is part of the cases studied. The second is Namibia, which is the second African country that made <IR> mandatory. Setia et al. (2015) find the rise <IR> use in South Africa brought an increased disclosure of capitals: "human, social and relational, natural and intellectual capital information of the listed companies"

(p. 397). Therefore, the current study endeavors to study the six <IR> capitals of IIRC and how they are reported in listed firms in South Africa as well as Namibia.

## 2.4.7 THE USEFULNESS AND DOWNSIDE OF INTEGRATED REPORTING

<IR> as the contemporary corporate reporting model has its benefits and costs as well as proponents and critics. To have a fair review of the standing of the model, this sub-topic endeavors to evaluate the <IR> model of disclosure so that its strong points or usefulness can be appreciated but also for its weaknesses or downsides are identified. There is undeniably a growing interest in <IR> as its proponents advance notable benefits to firms and investors (Churet & Eccles, 2014). However, overreliance on the <IR> model of corporate disclosure can go wrong if its shortcomings are not identified and addressed. This sub-topic therefore discusses the pros of <IR>, cons of <IR> and observations on the criticisms leveled against <IR> as well as justifications for the adoption of <IR>.

**2.4.7.1 Pros of Integrated Reporting.** Pros of <IR> refer to the endorsement points in favor of the concept. This can be based on the benefits or advantages associated with the <IR> concept and practice and the viewpoints of the proponents.

The <IR> provides a better reporting framework than either financial or sustainability reports issued individually. ACCA (2017) which is an authority in accounting and finance believes that <IR> provides better financial performance. The reason is that <IR> includes the NFR which provides data that financial reporting alone cannot provide (Doni et al., 2016; Hoque, 2017). It thus leads to better decision-making on the relations between F&NF drivers, gives managers a tool they can base on to establish non–financial performance (Krzus & Thornton, 2011), fosters corporate strategy (Rensburg & Botha, 2014) and is useful in informing stakeholders on sustainability prospects of an organization (Goicoechea et al., 2019). Adams and Simnett (2011)

in a study on <IR> in Australia with an objective of assessing how the reporting practices fairs

argue that the new reporting model represents a journey to more meaningful corporate reporting

for both private and public sector organizations. Ultimately, the <IR> as a corporate reporting

approach is a better reporting framework in view of the advantages.

The <IR> provides business companies with a framework to report on intangibles of a firm.

Research show that an entity's value is mainly derived from reporting on intangible assets (Krzus

& Thornton, 2011) and therefore the <IR> as a novel corporate reporting framework gives firms

an opportunity to report on how they derive value from the intangible capitals. Related to this is

the fact the <IR> provides organizations with ways in which they report their processes and extent

of value creation. Any serious business exists to deliver something of value to its stakeholders.

Integrated reports give the users the opportunity to have at a holistic outlook of a firm's

performance as well as value creation both in the short term and long-term (Dilling & Caykoylu,

2019). Therefore, <IR> should be implemented around the world for a better business value

creation between business and society (Krzus & Thornton, 2011).

The <IR> provides firms with a better comprehensive report. Deegan (2013) notes that

there is universal acceptance by firms that they need to issue both the accounts related to finance

data as well accounts as social and environmental performance. Bommel (2014) while studying

the practices of <IR> in the Netherlands by interviewing 64 interviewees finds that <IR> is well

appreciated as a green reporting form and the reporting framework is valued as more

comprehensive than the traditional corporate disclosure framework.

<IR> can be implemented with voluntary as well as mandatory setup although there are

tendencies to appreciate more of the mandatory setup as it brings in more quality and comparable

integrated reports. Rowbottom and Locke (2016) though note that IIRC's framework works well

in promoting <IR> without having to have State legislation. Nevertheless, Eccles and Serafeim (2011) believe that <IR> needs to ultimately be mandated without any further delay for users of the information to have quality report and for preparers to have a mandate of providing the required information. In the same vein, Fortanier et al. (2011) studies 250 firms under the Fortune Global list and note that mandatory requirements for reporting improves the quality of reporting on NFI. So, while <IR> practice is more voluntary, the tendency today is for more countries to embrace the mandatory regime in search of more quality reports.

<IR> gives the opportunity and requirement for better accountability, transparence and corporate governance to reporting firms. It provides more clarity on business performance (ACCA, 2017) and is a beneficial reporting framework for businesses to enhance transparency and responsibility to its stakeholders (Solomon & Maroun, 2012). Abeysekera (2013) note that <IR> informs stakeholders on performance of a firm and its commitment to accountability. The reporting approach also facilitates increased engagement with staff (ACCA, 2017), provides deeper engagement with the users of the reports (Krzus & Thornton, 2011) and provides improved practices of corporate governance, which addresses bad practices, like fraud and corruption (Eccles & Serafeim, 2011). As business organizations have diverse stakeholders with different types of interest and given information asymmetry that exists between the managers and the owners of the business or even the stakeholders in general, a corporate reporting framework that provides clarity of business activities, enhanced accountability and promotes transparency is needed. This is an advantage that <IR> provides. While comparing corporate reporting forms in South Africa, Atkins and Maroun (2015) note that <IR> is superior to the traditional annual reporting among listed companies.

&lt;IR&gt; promotes integrated thinking which ultimately provides the bigger picture of a firm. This breaks the barrier of isolated thinking. It is not a specific department that reports on social and environmental aspects but rather a holistic concern of the institution as a whole including the senior management (ACCA, 2017; Roth, 2014). &lt;IR&gt; brings to light a firm's sustainability commitment at all levels of operation and the linkage between the financial and sustainability aspects all provided in a single document (Bal, 2018). Rowbottom and Locke (2016) note that &lt;IR&gt; provides a more holistic view of corporate activity by including corporate reporting aspects like sustainability and financial performance. &lt;IR&gt; is seen as a framework that addresses the perennial criticisms of sustainability reporting especially on issues of integrated thinking of systems and processes of an organization (Camilleri, 2018). It provides greater clarity as it gives better linkages between the firm's financial outcomes as well as the no-financial ones in a consolidated report (Krzus & Thornton, 2011). Hoque (2017) notes that integrated reports help stakeholder engagement by providing an integrated thinking of the activities of a company. The IIRC's model, which is the bedrock of &lt;IR&gt;, demonstrates linkages between strategy, governance, financial, and non-financial (social, environmental and economic) performance of a company (Eccles & Serafeim, 2011).

The &lt;IR&gt; provides a balanced view of corporate reporting. Camilleri (2018) argue that the IIRC's framework encourages institutions or businesses to disclose the negative as well as positive aspects of their business demonstrating value creation abilities in the different time horizons. &lt;IR&gt; addresses the increasing demands by stakeholders to have a holistic view of operations of a company (Eccles & Serafeim, 2011). The model gives adequate tools to businesses to be able to contextualise information concerning their capitals (Camilleri, 2018) and shows the extent of use of each capital of the firm.

IR aims at providing a quality report. By improving and aligning both financial and sustainability reporting (Roth, 2014) it provides a better quality of information to stakeholders (Bal, 2018). A firm has an incentive in publishing quality F&NF reports for consumption of its stakeholders, according to the stakeholder theory (Ching & Gerab, 2017) and therefore <IR> provides firms with opportunities to prepare and issue the needed quality information.

<IR> helps in mitigation of business risks that can otherwise result in lack of concern of performance of a firm (Roth, 2014) and brings to life the business' sustainability strategy and how different risks and opportunities are treated, associated with a lower reputational risk since it incorporates key sustainability and financial information in an integrated thinking way as well as facilitating the risk management functions of a firm (Krzus & Thornton, 2011). Additionally, <IR> provides firms with an opportunity for effective communication to stakeholders (Roth, 2014) and enhances cohesiveness and efficiency in corporate reporting (Roman et al., 2019) by enabling the preparers to have a framework they can use to issue substantial and relevant information about their operations.

<IR> articulates relevance of a firm's capitals and has the advantage of providing a wider analysis of all the six <IR> capitals of a firm and they are accounted for in a better way (Bal, 2018). It provides clarity of how capitals relate to each other, how best capitals can be used and reduces the reputational risks since firms reap the advantages of reporting holistic and well-coordinated information (Krzus & Thornton, 2011). ACCA (2017) find <IR> to be extremely useful to sustainability performance and reporting due to the use of six <IR> capitals of a firm like the manufacturing, financial, intellectual and human capitals, which gives it the strategic thinking perspective.

<IR> provides business organizations with an opportunity to increase their reputation to their stakeholders (ACCA, 2017) due to the enhanced and comprehensive corporate reporting and this ultimately improves their goodwill within the operating environment (Bal, 2018). This results in better stakeholder satisfaction. Manes-Rossi et al. (2018) note NFR is increasing in its popularity because it tends to satisfy stakeholders' information needs due to being comprehensive in their accountability disclosures.

The <IR> results in better coordination in an organization and breaks down the bad culture of departments working in silos (Bal, 2018). It results in improved collaboration between units of a firm as each unit's function is seen as a building block to a greater value creation and does not want to remain behind in reporting performance (Krzus & Thornton, 2011). It saves organizations the cost of having differential information and brings in the aspect of cohesion and unity in reporting.

The <IR> framework is internationally recognized, and this is through the guidance of IIRC. ACCA (2017) notes that the IIRC has been greatly successful in crafting and promoting the <IR> concept. Humphrey et al. (2017) studies the emergence of IIRC and how it has made an attempt of institutionalization of <IR> towards becoming a worldwide practice of corporate reporting and find that IIRC's framework has been successful in reengineering corporate reporting. Therefore, the <IR> practice is well supported by a reputable and internationally body, that is, the IIRC.

Investors as well as society in general are increasingly demanding that companies become more transparent as well as accountable in what they are doing for society (Abeysekera, 2013) and they can get their concerns addressed through the new reporting framework. <IR> aims at presenting a holistic view of organizations with a focus on value creation for those organizations

(Montesinos & Brusca, 2019). <IR> aims at improving the quality of disclosure by reporting firms and encourages integrated thinking for decisions by stakeholders with interest in the firms' reports and their use in value creation in different time horizons of a firm (IIRC, 2013). Benefits of <IR> also include increased corporate sustainability, and broadened reputation broadly informed by social, environmental, governance and other NFI impacting by an organization or impacted by it (Buallay et al., 2021).

Corporate managers prepare corporate disclosures like integrated reports with an attempt to provide information that can influence decision-making abilities of its stakeholders (Akbaş et al., 2021).

From the perspective of an organization's stakeholders, transparency is a must from reports issued by business leaders (Coebergh, 2011). As financial reports could not meet stakeholders' information needs, adoption of <IR> allows better sense-making of published information (Cerioni et al., 2021). The principal drive of <IR> is to explain how an organization creates value over time to financial capital providers (Hurghiş, 2020). <IR> was indeed developed to overcome the drawbacks of previous corporate reporting frameworks and is a major tool for informed decision-making of a company's stakeholders (Akbaş et al., 2021) and appears to be in alignment with the needs of an organization's stakeholders (Moloi & Iredele, 2020). Lee and Yeo (2016) note that integrated reports help its preparers to improve quality of information for the users and this can help the investors in making sound decisions on the allocation of their capital. Reporting on ESG aids investors in making decisions regarding their capital allocation (Moloi & Iredele, 2020). Economic challenges like the global financial crisis, social issues like unemployment, and environmental aspects like the climate change at least get a recognition in reporting through <IR> which provides a holistic approach and reports a company's value creation (Jayasiri et al., 2022).

In a literature review of <IR> scientific article for the period 2011 to 2020, Soriya and Rastogi (2021) argue that <IR> has gained importance because it has the ability of quantifying tangible as well as intangible assets and thereby enabling an organization in reporting its value creation (Soriya & Rastogi, 2021).

Due to the failures of both sustainability and financial reporting in availing a sound image and information regarding organisations' economic, social, governance and environmental health and better transparency levels, there has been an effort by different institutions like the GRI and IIRC to come up with guidelines for entities to be able to come up with better annual reports that can enable better decision making by stakeholders (Ciubotariu et al., 2021). <IR> is therefore a critical development in improvement in corporate reporting (Frías-Aceituno et al., 2014; Suttipun, 2017) and its launch by the IIRC in 2010 is good news to corporate reporting (Suttipun, 2017). The advent of <IR> has assured business professionals as well as policymakers worldwide of improved accountability in corporate reporting as a result of availing an integrated thinking through a consolidated financial as well as NFI that provide value creation and performance of firms (Hoang et al., 2020).

Tweedie and Martinov-Bennie (2015) notes that <IR> improves the sustainability reporting by:

a) Providing a comprehensive picture of an organization, which facilitates holding organizations accountable.

b) Creating linkages between different items like social and environmental which result in improved sustainability reporting.

c) The entitlements of investors over other stakeholders are recognized.

Setia et al. (2015) finds <IR> to be providing efficiency of the capital market and in helping financial capital providers in making sound capital allocation decisions. The adoption of <IR> has numerous advantages to the reporting organization as well as to the users of the information. Information is power and the fact that <IR> provides more rich information than the stand-alone reports of financial and sustainability information, it shows that this new corporate reporting framework is more useful to the user of the information in terms of ease of decision-making and having a wider view of the long-term value creation of the reporting organization. Krzus and Thornton (2011) also reiterates that information is power in enabling management, investors, and stakeholders in successful decision-making.

Enderle (2018) carries out a study to identify ways in which business ethic help strengthen societal cohesion. The researcher uses the social, natural, human and economic capitals and finds that for a business to be considered ethical, it should see a bigger picture on how its financial performance supports the real economy, honesty in its business behavior, consuming of less natural resources through innovative mechanisms, and caring about human resources through skills development and support to the education fabric of the society it serves.

Not all is a bed of roses though, <IR> has its challenges chief of which is the cost involved in preparing the information, lack of an international standards to follow (one that can be equivalent to the International Financial Reporting Standards) and problems in measurements of <IR> capitals of a firm which is a key constituent of <IR>.

Tschopp and Huefner (2015) caution too that whereas the importance of <IR> is undeniable, its adoption by the corporate sector as a corporate reporting is still in its infancy and will take some years to grow. No wonder this concept has permeated and taken scholars' attention (Martinez, 2016).

**2.4.7.2 Cons of Integrated Reporting.** Cons of <IR> refer to the viewpoints that are against the concept and practice of <IR>. These can be due to costs or drawbacks involved in implementing the <IR>, sheer dislike of the concept, practical as well as theoretical basis to disapprove the concept and critics viewpoints in general. The sub-section discusses downside of <IR>. Whereas there is ample evidence that financial reporting is well regulated under IFRS, and there is a good attempt to regulate sustainability reporting through the GRI standards, Krzus and Thornton (2011) laments though that "there is no globally accepted standard for integrated reporting" (p. 275). The IIRC framework while internationally recognized as the <IR> guide, is criticized for not issuing standards that can universally be applied to bring comparability of the integrated reports.

It is recognized that the adoption of the <IR> framework has monetary costs. Initially, it is costly to integrate different information of the firm like strategy, governance, current and projected performance and capitals in one single report (Bal, 2018) and training of staff to understand the new practice. Many companies are used to collect data on social and environmental aspects but not linking it with the financial aspects (Roth, 2014) and therefore there is need to change the mindset and skills of the preparers of the reports. <IR> requires firms to redesign their information management system and collect all data required in a concise, comparable and consistent manner which can require more time to adapt (Bal, 2018).

<IR> requires enhanced coordination of organizational functions and data collection requires to be done from different sources like human resources, finance, accounting, and operations (Roth, 2014) which therefore becomes more expensive. There are also time costs. ACCA (2017) notes that it takes time for a firm to evolve from its current reporting approach to a new disclosure approach that is based on multi-capital value creation and it takes between one to

three years to implement such a shift. Another challenge identified is that regulatory framework designs take quite some time and firms equally take time to get used to the new reporting framework and requirements. There are challenges relating to the information apparatus and it requires that significant change in business reporting processes take place to enable information relating a firm's strategic performance be identified and reported (Roth, 2014).

There is lack of an internationally recognized <IR> standard with same or similar status like the International Financial Reporting Standards (IFRS) that can be used the measurement of information of non-financial nature as well as complex to quantify nonfinancial items and this results in a differing adoption of <IR> across different jurisdiction, which makes harmonization and comparability of reports difficult (Bal, 2018).

Firms tend to issue biased integrated reports by disclosure of mainly good achievements and ignoring disclosure of areas poorly being performed especially in environmental and social aspects (Stacchezzini et al., 2016). Krzus and Thornton (2011) notes that <IR> does not have globally recognized standards, which makes it difficult for reports to be comparable or even be externally assured.

There are criticisms leveled against the IIRC itself and the <IR> framework in particular. Reuter and Messner (2015) finds that during the early set up of the IIRC framework, the approach used was more of lobbying by parties like accountants and large multinational firms for recognition of their views and the users of the framework have concerns on scope of audience of the reports, materiality and how the new model is related to the financial reporting and sustainability disclosure models. Brown and Dillard (2014) critically assess the impact of <IR> in broadening the scope of corporate reporting and find that the <IR> model of IIRC as provided has limitations concerning reporting on sustainability issues. Flower (2015) studies the evolution of IIRC's framework for a

period of four years since its inception and notes that whereas it was formed with an objective of promoting sustainability accounting the model abandoned the sustainability accounting since it focuses on satisfying the investors' requirements compared to other stakeholders. An additional explanation of this as Bommel (2014) notes while examining the differing accounts concerning the <IR> model by interviewing 64 proponents is that investors and accountants dominate the ideas embedded in the <IR> framework and fails to observe the broader requirements of sustainability goals.

There are questions on the seriousness of people, firms, or bodies that advocate for green reporting, sustainability reporting or even <IR>. While studying a sample of 135 integrated reports using content analysis in the 2014 –2016, Santis et al. (2019) find that majority of firms tend to issue superficial information. Albertini (2019) in their study in France finds that firms tend to disclose only positive information on the financial capitals mainly and hardly mention their role in destruction of other capitals. Roman et al. (2019) studies 30 integrated reports to see how they relate to IIRC framework, using a regression analysis and finds that firms with better financial performance and engaging in social, environment and good governance tend to issue quality integrated reports leaving behind information on what they are not doing.

Flower (2015) by tracing IIRC's history over a period of four years from the time of its inception in 2010, laments that although it was founded on the principal objective of promoting sustainability accounting, its framework of 2013 did abandon the sustainability accounting aspect due to the value it gives to investors and not for society and the fact that it does not mandatorily require firms to report on the harm they cause to the environment and society at large. Bommel (2014) identifies that IIRC has not lived to its expectations since its framework largely ignores the aspect of sustainability. Bommel (2014) warns that <IR> suffers from risks primarily serving the

interests of accountants and investors at the expense of other stakeholders. Deegan (2013) notes that since the accounting profession took much interest in the design of the <IR> model, they are not likely to abandon their accounting principles for the sake of broadening the integrated accounting practice to cater for the needs of other stakeholders apart from the investors, creditors, and lenders and this will remain a challenge for the <IR> model for a long time. De Villiers et al. (2014) identify the closeness between corporate manages and the investors as a reason for prepares of integrated reports failing to adequately cater for the information interests of other stakeholders.

Flower (2015) also bases criticism on observation that IIRC's governance has suffered a regulatory capture whereby multinational companies and the accountancy bodies dominate its governance thus controlling its functioning. Milne and Gray (2013) also doubt the usefulness of NFR frameworks like sustainability reporting and its TBL approach, the GRI approach and the <IR> as not fit for purpose since the reports do not actually address sustaining of livelihoods of various species. Beck et al. (2017) notes that <IR> faces two challenges; first is having elements of IIRC framework aligned to diverse interests of a company's stakeholders and secondly is for IIRC to convince preparers of the reports on value relevance of adopting <IR>. Casonato et al. (2018) note that the IIRC's framework strays from its mission since it at the start wanted to address the sustainability issues but now has ended up being concerned cardinally to serve issuers of financial capital.

McElroy and Thomas (2015) note that the <IR> capitals classifications usually overlap and there are hardly any strict demarcations or working of the capitals in silos and it requires examination of each capital individually to avoid double counting. Humphrey et al. (2017), notes that the six <IR> capitals are vague and can generate differing meanings. Robertson and Samy (2015) criticizes the <IR> capitals due to the tradeoff that arises. Zappettini and Unerman (2016)

equally see the validity of the <IR> capitals as a representative of a firm's value as a problem. Additionally, the measurement of the <IR> capitals is also criticized for being ambiguous (Searcy & Buslovich, 2014) and Chen and Bouvain (2009) too, identify the measurability of sustainability performance as a major challenge of disclosure of NFI. Bal (2018) identifies challenges of value identification, value creation, value measurement, value preservation and value reporting as the key issues that the <IR> approach faces. Cheng et al. (2014) identify the major problem on <IR> capitals as being their definition and lack of harmony while applying the concept. The definition, categorizations, content and measurement of <IR> capitals of a firm are therefore a key challenge to the IIRC framework, yet the capitals are a key basis of applying the <IR> framework.

It is until an integrated report can be assured through being audited by external auditors that it can bring in confidence and trust to the users on the sustainability aspects of a firm (Goicoechea et al., 2019). Bal (2018) equally identify the challenges of audit and assurance services of <IR> which are usually needed to gain confidence and trust by users in terms the reliability, materiality and completeness of the reports. Maroun (2017) notes that the traditional assurance methods of corporate reports as put in place by the professional standards setters are more risk-based and do not suit <IR> or non-financial reports in general which are forward-looking and thus this requires assurance methods that are interpretive in nature. Goicoechea et al. (2019) while soliciting the views of auditors and the users of integrated reports concerning the quality of assurance note that quality assurance of <IR> generated reports is lacking and acknowledge the methodological issues of quality assurance of non-financial reports in general. It is quality assured reports that would provide confidence and trust to the users of integrated reports and therefore this remains a key challenge to <IR> to-date.

Critics of the <IR> concept cite lack of internationally recognized standards, which make resultant reports vague (Bal, 2018). There is also a stunning rebuke from Flower (2015) who sees IIRC as diverting from its original mission of enhancing the sustainability agenda and identifies the involvement of accountants as captors of the framework for their selfish ends. Goicoechea et al. (2019) sees the lack of standards to enable assurance of the reports a major hindrance to their credibility. Elving et al. (2015) lament that while the World Economic Forum that took place in Davos in 2015 had the climate change as the main topic, most executives that attended the forum came in 1,700 separate private jets and thus wondered if the leaders walk the talk and what the impact would be to a common person. These aspects therefore show the red lines that <IR> should care for if it is to deliver on its expectations.

<IR> is also criticized for lack of a standardized and mandatory reporting framework and this results in the reports generated by using the IIRC framework end up being compiled at the discretional levels of the preparers (Beck et al., 2017). Bal (2018) notes that given that <IR> is mainly voluntary, this creates imbalanced playing field where some firms are genuine in reporting while others misreport and rather provide misleading propaganda about their performance. Stubbs and Higgins (2014) doubt the comparability of integrated reports. Companies possess the discretion to decide what to disclose in their <IR> and this brings differences in the extent of alignment between what the companies report and the framework and thus this leads to degrees of varying levels of disclosures among the firms (Moloi & Iredele, 2020). Greenwashing practice where firms tend to report good information and leave out or report little on their dark side is a limitation to utility of integrated reports. Calu et al. (2015) while analyzing reports of 19 institutions that participated in piloting the IIRC framework find that 53% of firms report indicators that only show positive information while 33% include indicators that show negative

information. While greenwashing (where mainly positive information is disclosed in <IR>) is not studied in the current research, it is seen to be a possible and grave problem in corporate reporting, and therefore recommended for further studies.

Bek-Gaik and Surowiec (2022) evaluate the understanding of practitioners concerning business models used in <IR> based on 74 integrated reports in selected companies in Poland in the 2016 to 2019 and find that the business models are mostly qualitative and provide narrations on strategy, the firm's capitals, business activities as well as the outputs but provide less on how the firms' outcome do affect the capitals. Boiral (2013) conducts a study on sustainability reporting using content analysis through examination of 23 sustainability reports using GRI indicators and finds that 90% expressively negative activities hardly became disclosed hence not complying with the requirements of GRI reports in relation to transparency and fails to adequately reflect impacts of the activities of companies.

Integrated reports principally aim at service investors and thus leaving a whole host of other stakeholders of an organization (Herbert & Graham, 2021). <IR> growth since its inception has not resulted into desired increased public confidence because of it is majorly exercised in a voluntary manner (Genevé & Elza, 2020) and therefore mandatory leanings may hit a snag.

It is noted that while the US corporations are fond of the <IR> concept is hardly adopting the <IR> in their practices, its use is low (Dumay et al., 2017). In Europe, while <IR> is appreciated, the success of the <IR> is constrained by lack of support of European Union Directive on non-financial Disclosure. La Torre et al. (2018) also identifies a limitation of the <IR> with regard to disclosure of NFI in that "compared to the IFRS or the GRI guidelines, the <IRF> has no explicit rules and metrics to frame NFI consistently at the cost of comparability and completeness" (p. 609).

While progress has been made in improving quality of integrated reports, there is a perceived level of disparity of information contained in those reports due to discretion allowed by the IIRC framework (Moloi & Iredele, 2020) which raises issues on its impact on firm performance.

Some authors like Demirel and Erol (2016) question whether perhaps the IIRC framework was confusing to the users and perhaps that could have explained the decline. De Villiers et al., (2017) argue too that integrated thinking seems to be taking an upper hand than integrated report quality.

A key argument against the model by IIRC concerns the reports giving prominence to more economic related aspects than sustainability aspects (Abeysinghe, 2020). Aras and Williams (2022) note that integration of both F&NF information in corporate disclosure is not yet at equal footing. Some organizations face employee resistance in implementation <IR> and ensuring business model (Soriya & Rastogi, 2021) perhaps due to their less understanding of the model. Limitations of NFI disclosures include the issue of lack in content standardization as well as common information dimensions in the reports which should then concern interventions of both standard setters and policymakers to put in place frameworks to enable adequate corporate reporting of NFI (Cerioni et al., 2021). Nevertheless, there is a great appeal to the <IR> model and the section below provides the international practices of <IR>.

## 2.5 EFFECT OF INTEGRATED REPORTING ON FINANCIAL PERFORMANCE

### 2.5.1 FINANCIAL PERFORMANCE

The word performance comes from the word *parfourmen* meaning to carry out, render or achieving or executing a given undertaking (Balatbat et al., 2010). It shows hard work undertaken to arrive at a given goal (Kamran et al., 2017). "Performance is the most important gauge for

profitable firms" (Matar & Eneizan, 2018, p. 2). Narrowing down to financial performance, it refers to the monetized actions of an organization and it measures the extent of achievement of economic goals of a firm (Kamran et al., 2017). Financial performance of a firm defines its market value and its respect in the market (Kamran et al., 2017) and refers to achieving the object of maximizing shareholders wealth. It is "the company's financial condition over a certain period that includes the collection and use of funds measured by several indicators of capital adequacy ratio, liquidity, leverage, solvency, and profitability" (Fatihudin & Mochklas, 2018, p. 554).

Profit remains the ultimate object of business organization although they also have other strategic goals (Ongore & Kusa, 2013). "Profit and its maximization are important objective of any business entity" (Hoang et al., 2019, p. 78). Salah and Elewa (2018) notes too that profitability defines a firm's success. Ghofir and Yusuf (2020) sees profit as 'the center of attention of investors" (p. 2018). Alghusin (2015) defines profitability as a metric of economic success that a company attains in comparison to the capital invested. Profitability of a firm is synonymous to its financial performance. Batchimeg (2017) notes that profitability is the best accounting measure when it comes to how well a company is doing in terms of its financing as well as investment decisions. It shows how well the assets and operations of the firm are yielding value to the firm and its stakeholders. To survive in a competitive business environment, any business firm needs to perform well and be profitable so as to have adequate resources to be at the forefront of competition. Thus, financial performance is the achievement of certain financial metrics associated with good performance. Examples are return on assets and return on investment. This is realized when value derived from use of assets exceeds the costs of utilizing the assets.

The concept of financial performance with a focus on the influence of a firm's <IR> capitals in the presence of firm size and leverage was discussed. It was identified that profitability is at the heart of every manager especially as corporate profitability remains a key concern to firm managers given that the long-term sustainability of a firm can be attained by maximizing its profits (Nanda & Panda, 2018). While a business organization pursues a multiplicity of goals relevant to its stakeholders, profitability remains at its heart. The study therefore endeavors to identify how the quality of <IR> affects financial performance of a firm.

It is appreciated that financial performance refers to a firm's profitability and can be measured using profitability metrics like the Return on Assets (ROA) or Return on Equity (ROE) (Batool & Sahi, 2019). The use of financial ratios like ROA and ROE has been empirically tested and proven to be effective measures of profitability or financial performance of a firm (Alghusin, 2015). "ROE is a calculation of how efficiently a business makes use of resources to produce revenue" (Oprean-Stan et al., 2020). Sofian and Dumitru (2017): "the purpose of a business is to be profitable and have liquid assets. However, beyond financial performance, a company creates and strengthens its market image if it contributes to society's welfare, through social actions and environmental protection" (p. 1).

Pursuing organizational performance is at the heart of every manager and corporate profitability remains a key concern to firm managers since a firm can attain long-term sustainability by maximizing its profits (Nanda & Panda, 2018) although as observed by Sofian and Dumitru (2017), a firm is expected to also pursue other goals in favor of other stakeholders apart from shareholders. Mirza and Javed (2013) assert "performance of firms is of vital importance for investors, stakeholders and economy at large" (p. 43). The primary objective of any business company is to increase the returns that shareholders derive from the company they

have invested in and this is measured by the increase in the profitability that the firm attains

(Mohsin, 2020). Investors are more interested in a high return on their investment, which

inevitably implies that firms need to ensure a high profitability (Mirza & Javed, 2013). Not only

is financial profitability beneficial to investors in terms of dividends they would get, it is as well

beneficial to employees of the concerned firm since it can result into better incomes and working

environment for the employees, better quality goods and services for clients, assurance to suppliers

that they can get more orders, as well as assurance to Government that there will be a tax generated

from the profits (Mirza & Javed, 2013). The value derived from the profit of a firm is therefore of

much interest to the firms and its stakeholders.

Financial performance of business companies is important for investors as well as a diverse

group of stakeholders who wish to study the determinants of financial health of companies (Matar

& Eneizan, 2018). Kiradoo (2019) in his study on importance of profitability finds that profitability

remains a very important factor in business firms and business managers undertake all measures

to increase corporate profitability. This is because the long-term sustainability of a firm depends

on its financial health. If its financial health is good, it can afford to get budget for development

expenditures as well as meeting its short-term obligations with much ease. However, Bapuji et al.

(2018) warns that whereas firms focus their attention to wealth creation, the maximization of

shareholder wealth tends to be skewed towards shareholders as well as the top executives of a firm.

There are multiplicities of factors that determine the profitability of a business organization

and these include internal factors (like asset quality and liquidity management) as well as external

factors like the macroeconomic situation of the country of operation (Ongore & Kusa, 2013).

Reaching a certain performance results a combination of resources like human, financial, and

natural resources, and other capitals of a firm (Kamran et al., 2017) and Managers of business firms use different interventions in an effort to influence the financial performance of their entities. The managers are interested in aspects like the size of the firm, the capitals of the firm, and leverage using debt instruments. The interest of the current study is to find out the nexus between quality of <IR> and financial performance. Given that financial performance is influenced by a multiplicity of factors, this study narrows down to the role of quality of <IR>. However, two most influential factors that impact on financial performance are also of interest to the study as far as controlling their effect is so that the influence of <IR> (represented by capitals of a firm) the main issue of this study is identified.

**2.5.2 THE CAPITALS OF A FIRM**

      **2.5.2.1 Definition of Integrated Reporting Capitals.** The <IR> capitals of an institution are assets it possesses or has control over which it can exploit to its benefit. The capitals are an important concept in the current study since the quality of <IR> is built around the capitals of a firm.

      While there is hardly any consensus on definitions of a firm's capitals especially those that are intangible like intellectual, human social capitals (Weqar & Haque, 2020), a number of authors have endeavored to define what capitals of a firm are.

      Capitals refer to asset or items of value from which future benefits are expected (Maack & Davidsdottir, 2015). Sheridan (2017) sees the capitals of a business as stocks of value, which do increase, decrease or transformed into other forms as the firm works to create value of the business or organization. Firms large and small are increasingly reporting their F&NF capitals given the importance that stakeholders attach to the capitals (Camilleri, 2018). The overarching definition

comes from the IIRC (2013), which is the body that has put in place an <IR> framework that is internationally recognized. IIRC (2013) define the capitals of a firm as "stocks of value on which all organizations depend for their success as inputs to their business model, and which are increased, decreased or transformed through the organization's business activities and outputs" (p. 6). Fried et al. (2014) note that capitals of a firm as advanced by the IIRC refer to the categorization of inputs and outputs of a firm in the value creation process, which ultimately generate wealth for the firm (Hitt et al., 2012).

While creating value, firms use multiple capitals to reach this objective, use of the capitals is of interest to users of the reports and it is also important that firms report on the kinds of capitals they use and trade-offs endured (Haji & Anifowose, 2016). This study like many other prior studies focuses on the disclosure of the <IR> capitals of a firm as part of a deeper analysis of the <IR> concept. Setia et al. (2015) use annual and integrated reports of top 25 firms listed on the JSE in the years 2009-2012 and they use content analysis in studying reporting on <IR> capitals. They use t-tests in analyzing their hypotheses. They also use coding as 1 if information on capital is disclosed and 0 if not and find that "the increment in the disclosure of social and relational capital is statistically significantly greater than the increment in the disclosure of other capitals." (Setia et al., 2015, p. 397). The section below provides the categories of <IR> capitals.

**2.5.2.2 Categories of Integrated Reporting Capitals.** Different authors categorize the capitals differently. For example, Maack and Davidsdottir (2015) categorize the capitals of a firm into five types: "natural, manufactured, human, social and financial capital" (p. 1338). Dhakal (2011) also identifies five forms of capital as FC, HC, NC, as well as the physical and social capitals. Haji and Anifowose (2016) categorized the capitals into intrinsic value (like human, social and natural resources) and the economic value capitals (like manufactured, financial and

intellectual). Dumay (2016) categorizes forms of capital as physical capitals (which are natural, financial and manufactured) and intellectual capital (which are the human, social & relational and intellectual). For Almășan et al. (2019), the firms tend to use and report about four capitals financial, human, natural, social and relationship and less of manufactured and intellectual capitals.

The IIRC, which came up with the framework to be used in <IR> (and which is the framework used in this study) established a six <IR> capitals framework. According to the IIRC (2013) there are six <IR> capitals any business organization should report on and these are "financial, manufactured, intellectual, human, social and relationship, and natural" (p. 3). Its recent revision of the framework maintained the capitals. Building on the definitions and categorizations of the capitals by the IIRC framework, McElroy and Thomas (2015) identifies the components of the capitals to natural (like air and land), human (like knowledge and skills), social and relationship (like networks and individuals), constructed (like material objects), internal economic capital (like the financial - pool of funds) and lastly the non-financial (value of brands not monetized). The preceding authors also note that the multi capital concept is key in measuring the TBL aspects of governance, environmental, social, and economic aspect of a company in an integrated way. Setia et al. (2015) identify that the IIRC framework as very useful especially on its six capitals. The use of capitals in a firm helps in creation of an organization's value and is used by the institutions to achieve their level of performance and for their success (IIRC 2013; Oll & Rommerskirchen, 2018). Dilling and Caykoylu (2019) see the IIRC's six capitals as the key disclosure drivers in the preparation of integrated reports as they facilitate comparability of reports. Thus, the six capitals framework offered by IIRC is the widely recognized framework that defines the capitals of a firm and is the one used in this study.

**2.5.2.3 The Subcomponents of Integrated Reporting Capitals.** As articulated in the subsection on categories of <IR> capitals, the overarching <IR> model is composed of six capitals. This sub-section describes the composition of each of the six capitals.

Financial capital is those funds a company generates from its day-to-day business activities for value creation (Fried et al., 2014), represents the source of funding for a company and is composed of debt, equity and grants (Cosmin et al., 2015). Financial capital enables productivity of a firm (Dhakal, 2011).  The financial capital is seen as the pool of funds that a firm owns or has the right to use (Bal, 2018). They are important to contribute to the financial performance of a firm since using the pool of funds will actually purchase the other types of capitals for wealth creation in the firm.

Manufactured capital refers to the infrastructure like roads, property, plant and equipment and inventory that a firm owns or has control over in its usage in business towards contributing to value creation (Fried et al., 2014 and Cosmin et al., 2015). This categorization of capitals includes physical objects that are manufactured and distinct from natural ones (Bal, 2018). They are material types of assets, which are in form of plant, and equipment that a firm uses to create value and enhance financial performance.

Intellectual are the intangible assets, which include intellectual property, systems; procedures, which a firm uses to generate value (Fried et al., 2014). Some researchers also include human, organizational and relational aspects as elements of intellectual capital (Cosmin et al., 2015). Alabass (2019) define intellectual capital to be composed of "capital-employed efficiency, human capital efficiency and structural capital efficiency" (p. 1) and finds a higher positive influence of the human capital on financial performance than other forms of capital in the banking institutions in Iraq. Albertini and Berger-Remy (2019) defines intellectual capital as taking the

form of human (knowledge, abilities, and behaviors), structural (technological and organizational), and relational (customer-based relationship & brand equity and relations to society) capital. Bal (2018) asserts that patents, software, licenses, knowledge, systems and procedures providing competitive advantage are all part of the intellectual capital. While comparing capitals of a firm; Fried et al. (2014) note that intellectual capital is the capital that contributes to the performance of a firm including the financial aspect than other non-financial capitals. Intellectual capital is mainly key in knowledge-based economies (Mondal & Ghosh, 2012).

Human capital is the value derived from employees or persons working for an institution by use of their skills, knowledge or abilities to the benefit of the institution they are working for (Garrigos-Simon et al., 2018). Dhakal (2011) sees human capital as "people's health, knowledge and skills that are either inherited or acquired through education or training" (p. 136). Turekulova et al. (2016) in their study in in Kazakhstan identifies human capital as the foundation of innovation. According to Bal (2018), human capital refers to skills, competencies, capabilities, and experience and innovation urge of the human resources. Human capital includes competences, capacities and experiences of a firm's human resources or those of subcontracted resources like capital pooled from suppliers of skills, which ultimately result in an increase to business value (Fried et al., 2014). The skills and competences that a staff owns are a critical factor in enhancing the financial performance of an organization and is an essential ingredient in value creation.

Social and relationship capital refers to the "benefits of social connectedness in diverse communities and the relevance of social networks for the development of resources and skills" (Garrigos-Simon et al., 2018, p. 1). It is an intangible asset derived from the networks established, the working relationship with other entities or people or the benefits derived from the social interrelationships that have been established by the parties concerned. It is a stock of value that

comes from the established social relations or networks and used for the mutual benefit of the institution (Dhakal, 2011). Social capital is today a fundamental issue in coming up with business strategies (Hongyun et al., 2019) and due to the complexity as well as the multidimensionality of the concept; it is associated with a lot of confusion and vagueness (Membiela-Pollán & Pena-López, 2017). It is therefore imperative to study its role in the performance of a firm. Many mangers of business companies find social and relationship capital to be the most imperative for long-term success, building of brand reputation but they also see it as the trickiest to measure and manage (Fried et al., 2014).

Natural capital refers to as range of natural assets that provides benefits from the environment like air, land, or water. Other examples are mineral resources and resources from forests (Dhakal, 2011). The economics of a firm especially in the manufacturing sector is greatly influenced by the natural capital (Barter, 2015) and generally the ecosystem (Bal, 2018).

Whereas the capitals have a role in the performance of an institution, initial empirical studies on the use of multiple capital integrated framework questioned the use of the capitals in the integrated reports as to whether they were genuine or just a show-off by the reporting companies especially since they hardly demonstrate how each of the reported capitals are operationally relevant to them (Haji & Anifowose, 2016; Setia et al., 2015; Solomon & Maroun, 2012). Authors like Brown and Dillard (2014) and Milne and Gray (2013) criticize the use of multiple capitals due to heavy value put on the investors and doubt its importance in the enhancement of a firm's performance. Coulson et al. (2015) notes that whereas the IIRC improves corporate reporting by including five other capitals on top of financial capital, the measurement of those capitals that are not monetary is a daunting task. Therefore, an empirical analysis on the relationship between the various capitals of a firm and its financial performance is needed to

contribute to filling the gap on the value relevance of the six-capital model. Besides, whereas tangible capitals like financial factors are easier to measure and account for, intangibles like intellectual, human and relationships are complex and difficult to report in specific terms and firms tend to ignore their inclusion in their reports (Bal, 2018). Given the importance of the six <IR> capitals of a firm, it is imperative to find out the extent to which they are reported in the context of integrated reports. The <IR> is built on the concept of a firm's capitals. Yet, as Stubbs and Higgins (2014) note, there are few studies in the aspect of <IR> especially because it is relatively new compared to the financial and sustainability reporting and there is still lack of knowledge of <IR> by firms in their effort to practice this new reporting phenomena.

The concept of the six <IR> capitals of a firm was introduced by IIRC through its reporting framework aimed at redesigning corporate reporting. The capitals sit at the center of <IR> framework and represent the foundation for an innovative way to evaluate performance of organizations (Izzo et al., 2020). The IIRC introduced the notion of basing <IR> on six capitals as way to reflect on value creation as capacities as well as organization's performance (Almăşan et al., 2019). Capitals of firms are the stock of value which can increase, decrease, or be transformed based on and organization's activities as well as its outputs (Cici & Centrone, 2021). While one capital can decrease, for example financial capital like cash, manufactured capital can increase as a result due to construction of a facility of operation. It can be reiterated that financial capital includes aspects like capital employed while manufactured capital is about the facilities used by a company. Other four capitals; intellectual capital concerns the research and development, natural capital is about the usage of water, air, and land resources as well as aspects like carbon emissions management while human capital concerns the number and capacities of staff and social & relationship capital concerns relations between a company and its stakeholders (Bal & Dhal.,

2019). The IIRC Framework requires organisations to use integrated information from all the six capitals in value creation with interaction of its environment (Herbert & Graham, 2021). In recognition of the broad scope usage of the <IR> capitals, Altarawneh & Al-Halalmeh (2020) argue that all organizations need the six capital to achieve success although the level and the use may differ.

Given the evolution of corporate reporting towards <IR> which emphasizes value creation, it is recognized that <IR> uses the six <IR> capitals to improve resource allocation and decision making. <IR> came in due to failures of financial reporting as well as sustainability reporting as the existence of the two would not mean interconnectedness. An organisation does not necessarily have to use the same categorization of the six IIRC capitals but the categories were provided by IIRC as guideline in order to ensure that organisations do not overlook any of the capitals that it uses or affects (Roberts, 2014).

The disclosure of use and performance of the six <IR> capitals enhance informed decision-making by stakeholders (Almăşan et al., 2019). Reporting on six capitals enables organizations to apply integrated thinking to better understand factors that affect their ability for value creation over time. Commenting on the role of <IR> capitals, Altarawneh & Al-Halalmeh (2020) note that <IR> capitals refer to a firm's inputs in its business model and their processing and value creation towards the firm. <IR> defines how companies interact with external environment and demonstrate their value creation through the six capitals (Izzo et al., 2020). Whereas there is a possibility of an overlap among the six capitals of <IR>, the reporting framework focus on corporate value creation generated by these capitals (Anifowose et al., 2020). The value creation of a company can be explained through the six <IR> capitals (Van der Lugt & Mans-Kemp, 2022).

Companies that have integrated the IIRC's six capitals in their business model are increasingly attractive to stakeholders (IoDSA, 2016).

<IR> promotes the goal of integrated thinking in order to arrive at the appreciation of material influences of a firm's ability of creating long-term value (Almăşan et al., 2019). The <IR> model of IIRC requires application of connectivity principle for a sound integrated report and this helps in viewing the quality of <IR> not only through the eyes of each individual capital of a firm but also as a whole through quality index of <IR> as a reflection of durable value (Ciubotariu et al., 2021). For an organization to create its value, it has to maximize the six capitals (Herbert & Graham, 2021).

## 2.5.3 CONTROL VARIABLES

Firm size and leverage are the control variables used in this study. The two are seen as the most interest to firm managers since they reflect financing and investment decisions that a firm makes in its pursuit of better financial performance which ultimately leads to maximization of stakeholders' wealth (Al-Slehat, 2020). Financial leverage (or solvency position) is the level of a firm's indebtedness relative to its capacity (Tzelepis & Skuras, 2004). Leverage (which also reflects the financial structure of a firm) as well as firm size decisions is a means to maximize a firm's profitability and therefore the wealth of its shareholders remains a critical issue in business due to the increase in financial risk and cost to the business. Decisions on both the firm size and leverage (debt to equity relationship) are key financing decisions of a firm contributing to profitability of a firm (Mohsin, 2020). Firm size is factor that shows a firm's command of assets, which it employs to attain a given level of performance. On the other hand, leverage is defined as the debt position (compared to equity) of a firm's capital structure as far as financing decisions are concerned and has the potential to affect the financial performance of the firm (Al-Slehat, 2020).

Mohsin (2020) asserts "to enjoy the total benefit of growth in business the company should use the optimum mixture of debt and equity level and focus on to increase in revenue" (p. 448). The choices made by management of a company to have equity intensive or debt concentration are the hallmarks of the capital structure of the firm and if a firm borrows at a higher interest rate, it will negatively affect financial performance, which is in essence low profitability (Alghusin, 2015). Business companies require substantial amounts of resources for their growth and sustained performance (Mirza & Javed, 2013). Given that they cannot generate all resources through equity, most of the time businesses borrow funds to expand their operations. Leveraging strategies of a firm can create value and therefore help firms gain competitive advantages (Hitt et al., 2012). Batchimeg (2017) notes that leverage influences performance of a firm. Whereas firms use debt to finance the realization of shareholders' wealth, when the effect from the leverage negatively hits profitability, there are far reaching consequences arising from high financing cost or default risks, which erodes whatever financial gains will have been attained (Mohsin, 2020). Therefore, firms have to take caution to ensure that the borrowed funds are affordable and used to generate value that surpasses their cost. They ought to ensure that they have a manageable ratio between their debts and equity.

The relationships between firm size, leverage and profitability remain a critical issue given the importance of profitability in the business success. Salah and Elewa (2018) argue that whereas there are several studies on the nexus between firm size and profitability, their conclusions differ with some exiting positive relationships and others depicting no relationship and the reasons for the conflicting results may relate to sample size or business environments. The authors also note that literature so far provides conflicting evidence concerning the association between firm size as well as leverage and firm profitability. Further discussion on this will be under the sub-topic of

empirical studies on the control effect of firm size and leverage on the relationship between <IR> and financial performance (Salah & Elewa, 2018) which thus highlights to mixed results on the relationships.

**2.6 EMPIRICAL REVIEW**

The first objective of the study was to determine how the quality of disclosures of <IR> capitals of a firm affect its ROE. The relationships between <IR> capitals and ROE aim to examine the value relevance of the various <IR> capitals to firm performance from the viewpoint of investors which is an external outlook on its performance (Dayana et al., 2020). "ROE is a profitability ratio from the investor's point of view, not from the company's point of view (Choiriyah et al., 2021, p. 110). The authors note too that the ROE is "the success/failure of the management in maximizing the return on investment of shareholders and emphasizing the return on income with the amount invested" (Choiriyah et al., 2021, p. 112). Prior studies that carried out an analysis of individual or a multiple of <IR> capitals show that quite a number of studies have been done specifically for intellectual capital compared to other <IR> capitals. Albertini and Berger-Remy (2019) from the meta-study of 72 empirical studies with 78,858 companies find a negative influence of the relational capital of a firm and its ROE. <IR> capitals that a positive association between intellectual capital and corporate profitability taking a 95% confidence interval level. Other similar studies carried out by various researchers establish a relationship between intellectual capital and financial performance (Afshari et al., 2014; Fathi et al., 2013; Firer & Mitchell, 2003; Haji & Anifowose, 2017; Hamdan et al., 2018). Nixon and Tumwine (2017) use intellectual, structural, human and relational capitals in explaining competitive advantage in Uganda's microfinance industry (that is, regressed intellectual capital against competitive advantage) and find that intellectual, human, structural capital positively influences the

competitiveness of microfinance institutions. Dayana et al. (2020) in their study in Malaysia using the six <IR> capitals of the IIRF in a bid to find out how the <IR> capitals influence on financial performance from the perspective of ROE finds that HC, IC, and S&RC are have a significant negative influence on ROE. They however find no significant relationship between HC, NC and FC with ROE. Sudha (2020) finds a strong relationship between the influence of natural capital on ROE. Lambe et al. (2022) while carrying out a study on the relationship between the <IR> capitals of listed firms in Nigeria find that while intellectual capital has a significant influence on ROE, natural capital has no effect on ROE. It is apparent that mixed results exist in literature on the relationship between <IR> capitals and ROE. The current study therefore poses a research question on what the state is concerning the relationship between <IR> capital disclosure quality and ROE. Prior studies have also tended to use fewer <IR> capitals (Albertini, 2019; Eccles & Serafeim, 2015) hence limiting having a compressive view of the impact that all <IR> capitals may have on financial performance.

The second objective was to ascertain the relationship between ROA of a firm and the disclosure quality of its <IR> capitals. This objective examines value relevance if <IR> capitals from viewpoint of managers of a firm. ROA is a measure of operational performance of a firm and provides a firm's managers' views on performance (Islam, 2021). Albertini and Berger-Remy (2019) in a meta study of 72 empirical studies finds that relational capital is negatively associated ROA. This implies that from the point of view of firm's managers, quality reporting on social aspects has a higher cost compared to returns it brings. Dayana et al. (2020) in their study on the <IR> capitals influence on ROA find that financial capital, human capital and natural capital have no significant impact on ROA. ROA is key in evaluating the extent to which a firm utilizes its funds (Choiriyah et al., 2021) and therefore, given the mixed findings on the relationship between

the <IR> capitals and ROA, it is vital to assess the current behavior so that users of integrated reports can see the current trend.

The third objective was to establish whether there is a statistically significant relationship between the quality of overall integrated reporting and financial performance of a firm. Ito and Iijima (2018) note that there are many companies in Japan that have the practice of <IR> and also note that companies in Japan do not prepare <IR> only to investors but rather other stakeholders too. Adegboyegun et al. (2020) examine the nexus between <IR> and corporate performance of firms in Nigeria in the years 2009 to 2018 and notes that whereas <IR> does not have a significant influence on corporate performance in the short-run, the influence is established in the long-run. Specifically, Affan (2019) using IR to denote integrated reporting index (IRI) find that find that ROA = -0.036 + 0.099 IR whereby it shows a positive relationship between the variables. Boonlua and Phankasem (2016) studies companies in Thailand and uses the IIRC framework in 2016 by using 42 questionnaires for a randomly sampled respondents, find business model positively impacting corporate performance at the 5% level of significance. In a study conducted on listed firms on JSE in South Africa, Barth et al. (2017) find that there is a positive association when the <IR> quality is regressed on the firm's value. While undertaking a study on <IR> in South Africa, Lee and Yeo (2016) find similar results. In a study on the relationship between integrated reporting and return on equity in Egypt, El-Deeb (2019) finds a positive relationship between the level of integrated reporting and return on equity ROE= -.093+.240IR.

Alsartawi (2018) while studying the relationship of financial reporting and firm performance in the Gulf Cooperation Council find a positive association between the two variables. Mohamad et al. (2014) study the quality of NFR in 100 publicly listed firms in Malaysia using multiple linear regressions and show that non-financial disclosure positively influences a

firm's profitability. Lee and Yeo (2016) in their study concerning <IR> influence on firm value in South Africa find the two to be significantly and positively correlated and this this can lead to an assumption that <IR> practices in South Africa are good for businesses and it shows that <IR> is of value to the adopters. Appiagyei et al. (2016) examines how <IR> affects firm performance among top 20 listed companies in South Africa and Australia and finds evidence of the business case for <IR>. El-Deeb (2019) studies data from firms listed on the Egyptian stock exchange in the years 2012 – 2017 and finds that there is positive association between <IR> and firm performance. Mahboub (2019) uses a sample of 29 Lebanese banks from 2008 to 2017 and finds that profitability is positively associated to the level of corporate reporting. Almăşan et al. (2019) in their study on benefit of adoption of <IR> by firms in Europe found that it improved the performance of 69% of the firms.

Through a study on correlation between <IR> and firm value based on 100 listed firms listed on the JSE in 2017, Moloi and Iredele (2020) uses the both the content elements and guiding principles of the IIRC framework and finds firm value to be significantly related to <IR> quality. The costs of <IR> are also identified to be less compared to benefits and this is based on better performance among firms that adopted <IR> (Lee & Yeo, 2016). In a study on economic impact of <IR> among firms in South Africa, Barth et al. (2017) find a significant correlation between <IR> quality and firm performance. In their study on the listed companied in Poland (Dratwińska-Kania & Ferens, 2021) there is relationship between companies that prepare integrated reports do disclose more components of their business models than entities that do not and thereby making their reports more informative to their stakeholders than those that do not prepare the detailed information. Using event study methodology, Cosma et al. (2018) find firms adopting quality <IR> influence stock market reactions. In a study on the association of <IR> and financial performance

of firms in Nigeria between 2010 and 2019, Ebimobowei and Onowu (2021) find them significantly related. Akbaş and Canikli (2019) analyses determinants of Greenhouse Gas disclosure of 84 listed firms in Turkey from 2014 to 2016 and find that profitability is positively related to transparency among firms. Utomo et al. (2021) study <IR> among 60 manufacturing companies in Indonesia and Singapore and find <IR> significantly impacting firm performance.

Tamimi and Sebastianelli (2017) explore levels of ESG reporting among S&P 500 companies using data from Bloomberg and find that there is a significant level of differences and variability across the ESG areas of reporting among the S&P 500 companies with the highest reported area being governance while the lowest is the environment dimension. They also find that the higher the firm capitalization the higher the ESG disclosure scores. Ismail et al. (2022) while testing the practice of sustainability reporting and financial performance finds that "sustainability reporting results in high financial performance in emerging market" (p. 403). In addition, <IR> can mediate the impact of manager compensation on increasing firm value. In a study conducted on firms listed on the Australian Stock Exchange in the years 2008 - 2010, Renard et al. (2013) find that firms that issue non-financial reports do have superior financial performance compared to those that do not although the correlation is weak.

While investigating the extent to which firms listed on Vietnam Stock Exchange in 2016 complied with reporting regulations, Hieu et al. (2019) find that mandatory reporting on information that is non-financial in nature is significantly correlated with profitability of company. Barth et al. (2017) examine the relationship between <IR> quality and aspects of cashflows, liquidity and interest rate in South Africa and find a significant relationship between <IR> quality and liquidity, while there is no relationship between integrated report quality and the interest rate. They find a significant relationship between <IR> and the firms' cashflows forecasts and hence

reach a conclusion that <IR> achieves both the objective of better reporting as well enabling <IR> achieving its dual objective of improved external information and improved internal decision-making. These studies do provide empirical evidence that the relationship between <IR> and financial performance skews to being positive. Nevertheless, as evidence shows too, there are a number of studies who established a non-existent relationship or a negative relationship thereby leaving questions on <IR> value relevance.

Through a study on 643 firms' reports in the period 2006 to 2015, Duran and Rodrigo (2018) find a reverse relationship between profitability and the quality of NFR. Coebergh (2011) notes that a company's level of quality disclosures is negatively associated with its profitability. Delmas et al. (2015) investigates 1,095 US companies in the period 2004-2008 to find out how environmental performance is related to financial performance and find that in the short term, the levels of corporate environmental reporting are inversely proportional to financial performance although the long-term prospects with firm value (Tobin's q) increases. Nurkumalasari et al. (2019) study the relationship between <IR> and the the firm value the Asian region which published their integrated reports in the years 2015-2017, applies a moderated regression analysis in testing the hypotheses of study and find that <IR> does not influence the value of a firm. While conducting a study in Taiwan and China on the nexus of intellectual capital and return on investment, Wang (2011) fails to reach a conclusion because some elements of intellectual capital (like the efficiency of investment in the capital has a negative influence on profitability) though the author finds intellectual capital element of R&D to influence firm profitability in a significant level. While analyzing 75 listed companies in South Africa, Firer and Mitchell (2003) find that the relationship between a firm's <IR> capitals and its financial performance is mixed; with relational and human capitals more significant drivers of performance while other capitals like intellectual

capital is weak in that regard. They find that reporting on intellectual capital does not influence profitability in the 75 South African listed firms. Albertini and Berger-Remy (2019) using 75 different empirical studies that took place in the years 1992 to 2017 on the aspect of the relationship between intellectual capital and financial performance notes that the relationship remains unclear. <IR> quality is negatively related to firm value due to <IR> quality associated costs and risks is higher that the benefit they bring in hence <IR> quality negatively affecting firm value/firm performance (Moloi & Iredele, 2020).

Some studies find no relationship between <IR> and financial performance and hence contradict the findings on either positive or negative effect of <IR> on financial performance. Oluwamayowa (2019) explores the effect of <IR> quality on the characteristics of a firm and urges that majority of the studies on the relationship between the <IR> quality on firm profitability find a non-significant association. Dube (2018) base on the IIRC framework to study sampled South African based firms and examined the impact of <IR> quality on profitability of the firms and argue that there is no relationship between the two. Other prior studies who find that <IR> not related to financial performance include Matemane and Wentzel (2019). Mokabane and Du Toit (2022) find no significant relationship between <IR> and firm performance. Nurkumalasari et al. (2019) and Mokabane and Du Toit (2022) did the study in South Africa while Nurkumalasari et al. (2019) did the study in Asia. Dey (2020) while assessing the determinants of <IR> from 2013 to 2018 in Bangladesh finds no significant relationship of ROA on <IR>. In an empirical study by Meijden (2016) on 58 firms from the IIRC database concerning the impact of <IR> towards market performance of organizations, they find no significant relationship between the two variables.

Degboyegun et al. (2020) in their study on financial institutions practices of <IR> in Nigeria from 2009 to 2018 finds no significant correlation between <IR> and financial

performance among those firms. Churet and Eccles (2014) find no definitive relationship between <IR> and the performance of a firm. Wijnhoven (2014) as well as Doni et al. (2016) do not find value relevance of <IR>. Dumitru and Dragomir (2021) through a meta-analysis of 91 articles from top journals in the period 2013 to 2021 finds that financial performance and <IR> quality do not relate in a substantial manner. Winter and Zülch (2019) on the relationship between financial performance and disclosure levels in 110 sampled firms in Germany found reporting levels unrelated to profitability. Dilling and Caykoylu (2019) while assessing the quality of <IR> in 110 global companies in the year 2017 by using qualitative text analysis on the six <IR> capitals; social and relationship, intellectual, human, manufacturing, natural, and financial and using a regression analysis find a significant negative correlation between the quality of <IR> profitability. They note that <IR> is negatively related to ROA. Duran and Rodrigo (2018) conduct an empirical study on the relationship between non-financial disclosure and firm performance in Latin America and finds a negative relationship between NFR and profitability. It can be concluded that studies on the relationship between overall <IR> has mixed results concerning the relationship between disclosure of integrated reporting capitals of a firm and its financial performance.

The fourth objective was to establish the controlling effect of leverage and firm size on the relationship between disclosure quality of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm is related to its ROE. The objective is to identify whether firm size and leverage as control variables matter in the relationship between ROE and the six <IR> capitals. The firm size and leverage; as control variables, are expected to affect the <IR> and at the same time the firm performance. Empirical evidence on how the control variables affect <IR> and the financial performance are discussed in the fifth research question of this study. Ali et al. (2022) while using 70 firms' data for the period 2010 - 2016 in Pakistan finds a that leverage

has a negative influence on ROE and the influence is statistically significant. Oyelade (2019) in a study in Nigeria finds a significant relationship between both firm size, leverage and ROE. Vitolla et al. (2020) identifies determinants of quality of <IR> and finds financial leverage as well as firm size to be positively and significantly related to <IR> quality.

The fifth objective was to ascertain how the quality of overall integrated reporting affects financial performance of a firm in the presence of control variables of firm size and leverage. In order for firm size and leverage to have a control effect on the relationship between <IR> and financial performance, it ought to affect either one of the variables or both. Some of the prior studies on leverage and firm size show that both have a significant controlling impact on the relationship between <IR> and firm performance (Adegbie et al., 2019). Nurkumalasari et al., (2019) find that external financing sources do not influence <IR> and firm performance yet El-Deeb (2019) finds a significant and negative correlation leverage of a firm and ROE using 0.05 level. Whilst studying the impact of firm size on profitability in listed firms in Sri Lanka, Sritharan (2018) finds that firm size influence profitability was not conclusive and thus recommended more research should be conducted on the impact of firm size to profitability. Whereas most studies have established the expected relationship between <IR>, firm size, leverage and financial performance, there are a number of studies with results that do not affirm the theoretical underpinnings and therefore, further studies to find the role of both firm size and leverage in the relationship between <IR> and financial performance is worthwhile.

Other researchers that assess the effect of leverage in terms relationship with <IR> include Islam (2021) who finds leverage to be negatively and insignificantly related to <IR> quality. Dumitru and Dragomir (2021) through a meta-analysis of 91 articles from top journals in the period 2013 to 2021 finds that firm leverage does not significantly relate to <IR> quality. While

examining <IR> quality in South Africa from 20 JSE listed firms, Oluwamayowa (2019) finds no significant correlation between <IR> quality and leverage. Therefore, it can be expected that leverage could to a large extent have no effect on <IR> given a number of studies that say so. The firm size and leverage are used in the current study as control variables; whereby they are recognized as influencers of financial performance and therefore, in order to observe the possible relationship between <IR> quality and financial performance, an attempt is made to rule out other explanatory factors; specifically, the two control variables. A number of studies took a look at the role of firm size in influencing financial performance. Afshari et al. (2014) in their study on the nexus between intellect capital and firm financial return for firms listed on Tehran Stock Exchange from 2006 to 2012, see a positive association of firm size and profitability. Firm size is significantly and positively correlated with ROA due to better visibility and capabilities (Ismail et al., 2022). While examining how firm size affects ESG score, Drempetic et al. (2020) use ESG ratings from Thomson Reuters and find that firm size actually affects the level of ESG reporting. This is so since large firms can have the more capacity for ESG reporting and therefore higher <IR> scores (Tamimi & Sebastianelli, 2017). This "becomes logical as firms bigger in size want to show maximum disclosures in their annual reports to legitimize their worth in front of their shareholders" (Islam, 2021, p. 237). Alade and Odugbemi (2022) conducts a study on some factors that influence <IR> quality in listed firms in Nigeria from 2011 to 2020 and finds that a firm's size does positively influence <IR> levels.

In conducting a study on 110 firms in Germany from 2014 to 2018, Winter and Zülch (2019) note that there is a positive relation between firm size and the level of corporate reporting; and that financial leverage has no significant relationship with disclosure. El-Deeb (2019) argue that "high leverage implies higher risk, the higher risk increases the cost and decreases the

confidence of the investors, thus, lead the companies to disclose more information in integrated reports" (pp. 27-28). Kaura et al. (2021) note <IR> is significantly related to the size of the firm although the relationship is negative and the authors with respect to leverage note that "with a p-value of 0.026 indicates that higher levered companies are more likely to comply with the content of IRF than the less levered firms" (p. 10). A sizeable number of studies find the relationship to be negative. Singh and Narwal (2016) finds a negative relationship between firm size and profitability which means that those firms that are large tend to be less profitable. In their study on the impact of the size of a company and its performance levels based on data for the period 1995 - 2016 in Asia, Yadav et al. (2022), find that there is a negative relationship between firm size and its financial performance on the basis of the fact that gains in profit rates get reduced as firm size increases and this shows that large size can result into firm inefficiency. The authors also find a negative effect of leverage to profitability. Olawale et al. (2017) analyses the relationship between firm size and performance in Nigeria from 2005 to 2013 based on data from listed firms the capital market in Nigeria and finds that firm size is negatively related with firm performance. Dey (2020) also confirm that firm size has an inverse relationship with firm value.

Some studies have concentrated on the relationship between leverage and firm performance. According to Gleason et al. (2000) there is a negative slope existing in the relationship between leverage and profitability and this suggests that agency problem can be a cause of managers using more than appropriate financial leverage levels leading to lower performance. El-Deeb (2019) note that "companies with higher leverages might tend to disclose more information in integrated reports: to satisfy their creditors' information needs, to reduce risk premiums in required rates of return on equity, and to comfort their shareholders" (p. 28). Despite this, the author in a study conducted in Egypt discovers that leverage inversely relates to firm

profitability. Alghusin (2015) studies the nexus between leverage and profitability in companies in Pakistan and sees a significant and negative relationship between firm leverage and its profitability. The higher the debt-to-equity ratio, the less the profitability of firms (Shubita & Alsawalhah, 2012). Dawar (2014) carries out a study on capital structure of firms in India and finds that there is evidence for a negative nexus between leverage and profitability of firms.

Alghusin (2015) studies the effect of leverage on financial performance of 25 listed firms in Jordan in the period 1995-2005 find that leverage significantly affects profitability of firms. Leverage does influence ROA in a positive and significant manner; the lower the risk the higher the financial performance (Ismail et al., 2022). Robb and Robinson (2014) find that leverage is positively related to firm performance. In a study on the impact of aspects like firm size on firm profitability of 214 listed firms in Vietnam from 2012 to 2016, Dang et al. (2019) finds firm size to be positively associated with profitability while leverage is negatively correlated. Other studies have however noted a non-existent relationship between leverage and financial performance as well as a non-existent relationship for firm size. Ghofir and Yusuf (2020) bases on financial reports collected from firms listed on the Indonesia stock exchange since 2014 to 2018 and finds leverage as well as firm size do not significantly relate to a firm's reported performance (earnings management). Leverage is not significantly related to ROA. In a study conducted on 693 Vietnam's listed firms, they find firm size to be positively associated with profitability (Vu et al., 2019). Becker-Blease et al. (2010) finds a negative relationship between firm's size and firm financial performance.

Firer and Mitchell (2003) find that firm size is not associated with firm performance and neither is leverage associated with profitability performance. While analyzing the impact leverage and the size of a firm on financial performance of 20 listed firms from 2008 to 2015 in Pakistan,

Mohsin (2020) finds that both leverage and firm size do not significantly influence financial performance firms. Durand and Coeurderoy (2001) find no significant influence of firm size on profitability. There are also studies that endeavored to study role of both firm size and leverage on financial performance. Nanda and Panda (2018) undertake a study on relationship between leverage and corporate profitability with reference to firms in India studied between 2000 and 2015 and finds a positive association between firm size and profitability and a negative one when it comes to leverage. Akinlo and Asaolu (2012) studies the consequence of the leverage and the firm size to financial performance in firms in Nigeria in the years 1999-2007 and finds a positive association when it comes to firm size while it is a negative one when leverage is used in the relationship. Babalola (2013) while studying the impact of firm size on firm profitability in Nigeria in the years 2000-2009 find firm size positively related to financial performance while leverage is negatively related. Dawar (2014) note that issuing debt (leverage) may lower agency costs and affect firm performance and also the firm size, is positively related to firm performance. While studying the influence of leverage on company's performance for firms listed on Karachi Stock Market, Khatab et al. (2011) find that leverage is positively related to performance of firm and also find that a negative association between the size of a firm and performance. Chadha and Sharma (2015) studies a sample of 422 firms on the Bombay Stock Exchange and finds that leverage does not influence profitability of a firm while firm size is a significant determinant of firm financial performance.

A number of empirical studies that establish the relationship between <IR> and financial performance have been identified and other contradicting studies have also been discussed. The empirical studies identified show that the debate on the relationships between <IR> and financial performance (both represented by ROE and ROA) as well as the controlling effect of leverage and

firm's size on possible relationship between <IR> and a firm's performance is not ye over. This leads to identifying and articulating theoretical as well as research and empirical gaps. The gaps are discussed in the next section.

## 2.7 RESEARCH GAPS IN LITERATURE

This sub – topic identifies research gaps in literature in terms of both theoretical and empirical gaps. They constitute the missing gaps in literature so far, gaps in theory and gaps in empirical studies. These gaps therefore provide a basis for the current thesis. The sub – topic is composed of a discussion on gaps in theory and gaps in empirical studies on the relationships between <IR> and financial performance, relationships between <IR> capitals and financial performance, as well as controlling role of firm size and leverage in the relationship between <IR> and financial performance, gaps in methodology, and lastly hypotheses of the study.

## 2.7.1 GAPS IN THEORY

This section describes the gaps in theory behind integrated reporting and its impact on financial performance. De Villiers et al. (2014) argue that theoretical gaps in the field of integrated reporting exist due to differing ways in how the <IR> concept is understood as well as the way the concept was developed and thus advocates for more academic research on <IR> to provide guidance to policymakers and practitioners. Affan (2019) advocates for more studies in the area of integrated reporting especially in the mandatory integrated reporting environments. <IR> is seen as having a complicated theoretical background and therefore organizations generally find difficulty in understanding and appreciating whether or not their reports are integrated (Demirel & Erol, 2016). Tjahjadi et al. (2020) argues that there is a gap in application of the theories of <IR> and practical implementation processes of the disclosure framework. Signaling and agency theories have been identified in literature as theories applicable in studies relating to the concept

of integrated reporting and its impact on financial performance and therefore have been adopted in the current study.

Signaling and agency theories have been applied in this study to find the extent to which they provide explanations to the value relevance of <IR>. Signaling theory is adopted in this research given its relevance to the study as has been discussed in the theoretical framework section of literature review. Dilling and Caykoylu (2019) argue "signaling theory suggests that more profitable companies will voluntarily publish information to distinguish themselves from less profitable organizations" p. 4). Whereas signaling theory explains the benefits of issuing non-financial reports, Ching and Gerab (2017) lament that the quality of the signals of the reports often varies making companies fail to reap the benefits of reporting. Nurkumalasari et al. (2019) while using signaling theory to establish the relationship between <IR> and firm performance note that their findings do not support signaling theory and actually state that signaling theory vis-à-vis <IR> does not signal to firms the need for reporting especially in the Asian region. Dilling and Caykoylu (2019) in their study on the 2017 integrated reports of 110 global companies and especially on the six <IR> capitals of IIRC, assume "the quality of integrated reports of companies will be positively related to company size" (p. 4) and their research results do support signaling theory. Whereas some researchers have advocated for the relevance of the signaling theory in explaining the practices of integrated reporting as has been articulated in the theoretical framework section of this study, there is hardly a conclusive view on the theory concerning its relevance in explaining the association between disclosure (and especially <IR>) and financial performance. The present study endeavors to contribute bridging of this gap.

Agency theory has been adopted in this study given its relevance in explaining the relationship between <IR> quality and financial performance as has been articulated in the

theoretical framework section of literature review. Davis et al. (1997) find the agency theory to be the main influence of business policy in that it assumes that the interests of the agent differs from those of their principals as both try to maximize their gains from the company. Dumay et al. (2019) while examining theoretical explanations of intellectual capital reporting in explaining performance, note "stewardship over a company's resources is necessary for increasing trust" (p. 1469) and any dishonest conduct of the managers as well as the shareholders as attributed to the agency theory should be abandoned. Whereas the agency theory posits that there is an inherent conflict between managers and principals since each party acts to satisfy its needs, Lauterbach and Vaninsky (1999) in a study on 280 firms in Israel finds that firms that managed by professionals are more efficient than firms managed by owners. This therefore gives evidence that it is worthwhile for firms to be managed by professionals like managers instead of owners taking the risk to manage the firms without the professional knowledge to do so. Even corporate governance principles promote this idea. Some researchers have questioned the validity of the agency theory. Tschopp and Nastanski (2014) assert that the agency theory is no longer useful in explaining corporate reporting. However, they acknowledge the relevance signaling theory in explaining <IR> practices since <IR> diminishes information asymmetry between managers and shareholders and other stakeholders. Eisenhardt (1989) note that whereas the agency theory is important, it is quite a controversial one. Tyson and Adams (2020) assert that theorizing of the aspects of non-financial information reporting can enhance researchers' capabilities of interpreting that their data is still characterized by an empirical gap.

The current study endeavors to test possible consistency of both theories with respect to ROA (which appeals to management) and ROE (which appeals to investors) using data collected from listed firms on sustainable stock exchanges, that is JSE and NSX. The intention of testing the

theories is to check whether they hold with regard to the influence of <IR> quality on financial performance under examination and if so, whether they are consistent with both measures of financial performance. The aim concerning testing the validity of both signaling and agency theories is to fill the gaps identified in theory behind <IR> and specifically finding out if signaling and agency theories can explain the relationship between <IR> and profitability are valid.

**2.7.2 GAPS IN RESEARCH AND EMPIRICAL REVIEW**

Whereas many studies have studied the benefits of <IR> and its relationship with performance of companies, studies on the subject are still scanty (Nurkumalasari et al., 2019) and to date, there is still scarce empirical evidence on how <IR> is useful in depicting businesses' holistic activities (Camilleri, 2018). Dumay et al. (2016) using IR to denote integrated reporting notes that "there is little research examining of the IR practice" (p. 166). There is a gap between the required <IR> qualities and the practice seen (Camilleri, 2018). There is also limited empirical research in assessing how firms comply with IIRC framework (Kılıç & Kuzey, 2018). Camilleri (2018) notes that despite a growing number of studies in <IR>, there is still scant empirical evidence on the effectiveness or value relevance of <IR>.

Given that <IR> practices have majorly existed from 2010, few studies have so far been conducted about it (Suttipun, 2017) and as a new corporate reporting framework, literature on it remains at an infancy stage (Anifowose et al., 2020). It is an evolving area of research in many parts of the world (Hamad et al., 2020), thus contributing to the relevance of the current study. More scholarly work is needed to articulate the content and form of <IR> as well as its value relevance (Vitolla et al., 2019b). Additionally, further studies are desired so as to verify the extent of inclusion of sustainability information in integrated reports (Herbert & Graham, 2021).

In line with Tlili et al. (2019), the current study aspires to expand the debate and conclusions concerning the value relevance of quality of <IR> (specifically the firm's capitals) in the African context. The study contributes and expands the debate concerning the importance of adopting the IIRC framework and specifically the <IR> capitals as way of promoting <IR> in line with prior studies (Almăşan et al., 2019). <IR> in developing countries is at infant stage and empirical evidence on the application of the concept is scarce although research on the subject has been on the increase in since IIRC's framework of 2013 (Hamzeh & Noorhayati, 2021). Almăşan et al. (2019) identify that a gap in literature concerning the subject of <IR> is that apart from the subject being relatively new, empirical studies on its adoption and effect are still few.

<IR> being a new corporate reporting form, studies on the extent to which sustainability reporting are also still few (Herbert & Graham, 2021). In a study based on 210 articles on <IR> that were published in 64 journals featuring empirical studies on <IR> for from 2009 to 2020 (Jayasiri et al., 2022), notes that research on <IR> is still relevant today in order to advance knowledge as well as awareness of the concept among researchers, practitioners and standards setters. At a global stage, empirical studies on the subject of <IR> are still few thus there is need for further studies on this (Hamzeh & Noorhayati, 2021). Anifowose et al. (2020) argue that with scanty literature on the subject of <IR>, it leaves a research gap to examine. There is lacking evidence in literature on evidence concerning how <IR> relates to a firm's financial performance in other countries other than the developed world (Suttipun, 2017).

A number of empirical studies have been carried out on the importance of <IR> as well as its business relevance. However, researchers observe that empirical evidence on the relation between firm profitability and disclosure is mixed (Winter & Zülch, 2019) thus casting doubt <IR>'s value relevance (Mahboub, 2019). Three key results to the relationship between <IR> and

financial performance are distinct in literature. The relationship is either positive, negative or none. Suttipun (2017) argues that "overall, the results of studies of the relationship between integrated reporting and corporate financial performance have been mixed" (p. 136). Whereas studies like Barth et al. (2017) and Lee and Yeo (2016) find the relationship between <IR> and financial performance to be positive, studies like Dilling and Caykoylu (2019) find a negative relationship. Several other examples also provide differing conclusions. The study therefore sought to add value to the studies on the relationship between <IR> and financial performance in jurisdictions with mandatory <IR> in Africa especially by making a contribution in addressing the issue of mixed results. It examined the value relevance from the viewpoint of the providers of capital (ROE) and firm managers (ROA). This also provides an opportunity to analyze whether results are mixed with reference to how they inform the principals and agents of the firms.

Hoang (2018) identifies a link between a firm's NFI disclosure and profitability. Martinez (2016) in their study on the influence of <IR> and corporate performance, find that there is a positive relationship between <IR> and some elements of firm performance like market value of a firm. However, the researcher notes that when it comes to other performance aspects like the cost of capital, the relationship is not sustained. Lee and Yeo (2016) in a study in South Africa finds a positive association between <IR> and firm performance and thus sees <IR> as beneficial to investors. Other researchers like El-Deeb (2019), Alsartawi (2018), Boonlua and Phankasem (2016) and Barth et al. (2017) find a positive association between <IR> quality and firm performance. Van Zyl (2013) in their study on the adoption of <IR> by companies listed on the JSE in South Africa find that the new reporting framework had led to quality improvement in relaying sustainability information. However, they note that the level of integration of information reported was still very low.

Researchers like Dilling and Caykoylu (2019), Duran and Rodrigo (2018) and Coebergh (2011) while studying the relationship between <IR> and firm performance found the relationship to be negative.

Studies like Dube (2018), Mokabane and Du Toit (2022) in South Africa, and Matemane and Wentzel (2019) while relating <IR> to firm performance find no significant relationship between the two. Therefore, in line with observations by Suttipun (2017) and Moloi and Iredele (2020), it can be concluded that there are mixed results that have characterized the studies on <IR> impact on financial performance. Albeit benefits of forward-looking information like the facilitation of stakeholders to make decisions on the future performance of a firm, many studies point to differing opinions and this has resulted in inclusions about the relationships (Mahboub, 2019). Suttipun (2017) argues that the reason behind resultant mixed results in the studies on <IR> relationship with firm performance is that the principles of disclosure may point to two differing impacts on financial performance where if the disclosure satisfies stakeholders' demands, it encourages firms to performance better while if costs are more than benefits, then it lowers performance.

While the benefits of <IR> adoption have been the subject of a sizeable number of studies, its value relevance is yet to satisfactorily be investigated especially in light of costs of adoption by firms of which therefore management of firms need to examine resultant economic advantages (Cosma et al., 2018; Shahria, 2022). Even with several scientific research studies on the topic of <IR> that have proliferated corporate reporting literature since the emergence of the concept of <IR>, conflicting opinions on usefulness of the concept abound, calling for more studies to enable better understanding of its value relevance (Vitolla et al., 2019b). Anifowose et al. (2020) argue

that <IR> literature is still insufficient to understand its performance and this leaves a research gap. They also cast doubt of the extent to which <IR> has delivered its intention and this remains a subject of review. Wachira et al. (2020) note that while there has been ample prior research about corporate reporting like <IR>, questions on why and how firms prepare the reports still need to be explored to settle these debates at hand.

This therefore calls for an investigation into the value relevance of <IR> to establish a clear-cut position (Suttipun, 2017) and fill the research gap established in Moloi and Iredele (2020) where they note that literature hardly provides any consensus concerning the relationship between <IR> and firm valuation and existing studies scarcely recognize the value relevance of mandatory <IR>. It is imperative therefore to establish the value relevance in <IR> mandatory jurisdictions to verify on contradicting assertions as advocated too by Affan (2019).

There exists a gap on the scope of the <IR> capitals used in studies as well as conclusions on their value relevance defined from the viewpoint of how reporting of <IR> capitals affect a firm's financial performance. Tlili et al. (2019) notes that although studies on <IR> are increasing, most of those studies only focus on the aspects of either financial capitals or sustainability aspects of a firm.

Initial empirical studies on the use of multiple capital integrated framework questioned the use of the <IR> capitals in the integrated reports as to whether there were genuine or just a show-off by the reporting companies especially since they hardly demonstrate how each of the reported capitals are operationally relevant to them (Haji & Anifowose, 2016; Setia et al., 2015; Solomon & Maroun, 2012). However, Santis et al. (2019) argue that in order for firms to create and sustain long term value, the six <IR> capitals as provided by the IIRC Framework is a must even if they may not be of equal importance towards value creation. Albertini (2019) note that whereas there

are six capitals that companies should report about, they tend to only report on a few like financial, social and human capitals and less on other capitals and therefore concludes that companies have not been successful in reporting on all the six <IR> capitals with equal treatment. On the other hand, authors like Brown and Dillard (2014) and Milne and Gray (2013) criticize the use of multiple capitals due to heavy value put on the investors.

Santis et al. (2019) examine how 135 firms report non-financial aspects specifically the intellectual capital in their 2014–2016 integrated reports among firms in the IIRC database and find that 84 integrated reports reported at least two of the six capitals provided by the IIRC Framework, 100% of the integrated reports provide financial capital, 38% of the firms issued a single capital especially the financial capital aspect, those with manufactured capital are just 51% while those on natural capital are 62% becoming the two least reported. From this, it is regrettable that firms only concentrate on financial capital even when the report is dubbed integrated. Kardeş & Yeşilçelebi (2018) while studying 256 <IR> reports from 2011 to 2016 in the IIRC database by 2017 find just 51 reports out of 256 had firm capitals disclosed in their reports.

Setia et al. (2015) provided the "first initial evidence on the impact of the introduction of integrated reporting regulation, followed by limited guidance to preparers, on the nature and extent of disclosure of capitals" (p. 397) and used the categorizations of the IIRC framework, using 37 disclosure items, four capital categories (human, natural, social & relationship and intellectual capitals) and content analysis method of 10 major South Africa firms listed Johannesburg Stock Exchange but 10 is actually not representative sample in their study to find out the <IR> of listed companies. They applied predefined disclosure coding technique using the IIRC framework for a firm's value creation and used some of the capitals provided by IIRC, providing initial evidence concerning the extent of adoption of <IR> in South Africa, which mandated the reporting practice

and the extent to which capitals are disclosed and thereby extended the study by Solomon and Maroun (2012) on <IR> in South Africa who assessed capitals of intellectual, relational and human type.

However, Setia et al. (2015) study only studies four capitals, which are natural, human, social/relationship and intellectual only compared to the six capitals provided by the IIRC (2013) framework. Yet Doni et al. (2016) in their study on the reporting on <IR> capitals among South African companies find that reporting to be weak, as most capitals are not well reported and provides an example of intellectual capital.

Singh and Narwal (2016) carries a study on electronic companies in India with a purpose of empirically finding out the nexus between intellectual capital and profitability. Through a regression analysis, they establish a significant relationship between human capital and profitability at a significance level of 5%. There are other similar studies that have supported the influence of a firm's <IR> capitals on financial performance, as earlier articulated. However, while some studies have supported the existence of the relationship, some other studies have note.

Apart from the issue of mixed results on the influence of a firm's <IR> capitals on its performance, the question of robustness of a number of <IR> capitals included in the integrated reports of organizations; and whether the robustness is related to financial performance still remains. This study is to the best of the researcher's knowledge, the first of its kind to measure quality of <IR> from the viewpoint of a firm's <IR> capitals (using all the six capitals of IIRC framework) in the context of mandatory reporting jurisdictions and its impact of financial performance.

According to Dilling and Caykoylu (2019), NFR is still in its infancy even if it has been around for some time. <IR> as a novel approach that combines NFR as well as the traditional

reporting on financial information is by extension at an infancy stage too. Whereas there has been increasing adoption of <IR> model, Camilleri (2018) notes that fewer scholars have taken an optimistic view of <IR> due to ambiguous definitions of terms and meanings of concepts like the capitals. The researcher reiterates that a notable number of researchers find a significant information gap between what firms report and what financial markets expect them to report.

Sarioğlu et al. (2019) note that the extent to which companies adopt <IR> and its value creation essence draws significant debates. Whereas many companies worldwide have made efforts to report on both their financial and sustainability performance, concerns still remain on the quality of information reported (Setia et al., 2015). Rensburg and Botha (2014) argue that whereas there has been increased corporate reporting by listed companies, the value relevance of such reporting to stakeholders is not clear. Pistoni et al. (2018) note that whereas the benefits of <IR> to stakeholders and efforts to ensure widespread adoption of <IR> are notable, the model is still scarcely adopted among most companies and the IIRC is yet to be fully implemented. Stubbs and Higgins (2018) is of the view that most of the organizations that practice <IR> do so on a voluntary basis and actually it is too early to regulate the corporate reporting practice. They however contend that <IR> will be a corporate reporting norm over time with more firms adopting the practice. Adams (2015) advocates for more research on how <IR> can contribute to accounting development and sees this as a basis for further research on <IR>.

Several other researchers have undertaken empirical studies on the concept of <IR> and have pointed out missing gaps in the concept and its practices. Perego et al. (2016) note that whereas <IR> is seen positively especial among early adopters, the development of the field remains controversial and consensus on its business value remains an open question. They through

a qualitative study, taking interviews with experts in the academic literature of <IR> to find their views find that they perceive the field as fragmented, and find that experts in the field of <IR> see most companies as having a weak appreciation of the business value of <IR>. Elda et al. (2017) in their study on NFR in South Africa argue that <IR> is still at a development phase given the gaps on reporting on social, environmental and governance aspects and the gap gets even worse when it comes to mandatory <IR>. Van Zyl (2013) in their study concerning the acceptance of <IR> by companies in South Africa for those listed on the JSE find that the new reporting framework had led to quality improvement in relaying sustainability information although they note that the level of integration of information reported is still very low.

Rivera-Arrubla et al. (2017) examines the quality of annual reports from 91 firms that were part of the IIRC's pilot programme on the issues of governance, materiality and business model and find that they can be described as medium levels of disclosure. Pistoni et al. (2018) assess the quality of <IR> of 116 reports issued by diverse firms from 2013 to 2014 and argue that the quality of <IR> is low. They also note that whereas firms endeavor to issue integrated reports, their reports have scarce information disclosed on issues like the capitals of the firm and the value created and actually they care more on the form rather than the content. Simnett and Huggins (2015) call for academics to independently and expertly study the value proposition of the 2013 IIRC framework. The current study thus heeds to the call to contribute towards filling the noted gaps.

Alghusin (2015) note that whereas there have been numerous studies on the relationship between leverage and profitability, the conclusions have not been decisive since some show that the relationship is positive while others show that the relationship is negative. Singh and Narwal (2016) in their study on intellectual capital and firm profitability in Indian electronic companies

find a negative association among firm size and profitability which means that those firms that are large tend to be less profitable. The authors also find that that leverage does not have a significant relationship with firm performance. Mixed results are also identified in literature on the impact of firm size and leverage on financial performance. While researchers like Singh and Narwal (2016) find a negative relationship between firm size and profitability and Gleason et al. (2000) note that a negative slope exists in the relationship between leverage and profitability, for Dang et al. (2019), they find firm size to be positively associated with profitability. Salah and Elewa (2018) argue that whereas there are several studies on the nexus between firm size and profitability, their conclusions differ with some exiting positive relationships and others depicting no relationship and the reasons for the conflicting results may relate to sample size or business environments.

With mixed findings on the effect of both firm size and leverage on financial performance, it points to lack of established conclusion on the controlling effect of the two variables on the relationship between <IR> and financial performance and thus a gap to be filled. The focus of this study is to analyze the role of both leverage and firm size in as far as their controlling effect is on the relationship between the primary variables of the study.

## 2.8 HYPOTHESES DEVELOPMENT FOR THE STUDY

The key question of the current study is to find out if the level of quality of <IR> influences financial performance of a company, which <IR> capitals are stronger out of the six in influencing financial returns and whether control variables do affect the relationship between <IR> and financial performance of firms. Whereas several studies have been undertaken in the field of <IR>, there is scarcity of empirical evidence that can help in concluding on the business case of <IR>

since some studies show a positive relationship, others a negative relationship and others a non-relationship.

## 2.8.1 THE BASIS OF THE PRIMARY HYPOTHESES OF THE STUDY

According to Bini et al. (2010), signaling theory "posits that the most profitable companies provide the market with more and better information" (p. 1). The signaling theory provides that <IR> quality influences profitability of business companies (El-Deeb, 2019). Anifowose et al. (2017) assert that signaling theory explains the relationship between a firm's <IR> practice and its performance. Signaling theory posits that the quality of a company's reporting directly affects its profitability (Kiliç & Kuzey, 2018). According to Suttipun (2017) "agency theory may be able to explain why <IR> can affect corporate financial performance" (p. 135). Therefore, theoretically, it is assumed that signaling and agency theories may explain the relationship between <IR> and financial performance of corporations. It is incumbent on scientific studies to demonstrate this possibility. The aspect of the nexus of between the quality of <IR> and firm performance is studied by examining two primary hypotheses:

a) There is no statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE.

b) There is no statistically significant relationship between ROA of a firm and the disclosure quality of its <IR> capitals.

c) There is no statistically significant relationship between the quality of overall integrated reporting and financial performance.

## 2.8.2 THE CONTROLLING EFFECT OF FIRM SIZE AND LEVERAGE

The control variables are not a focus of this study and thus did not constitute a hypothesis on their own. They are included to test the consistency of models from the primary hypotheses of

this study which are the disclosure quality of <IR> capitals and the overall <IR> as dependent variables and financial performance as the independent variable. The control variables verify the stability of the model being examined in terms of the conclusions drawn (Sarstedt & Mooi, 2019). The authors argue that "stability of the measurement means that if we measure something twice (also called test–retest reliability) we expect similar outcomes" (Sarstedt & Mooi, 2019, p. 38). Klarmann and Feurer (2018) note too that "control variables are an important tool to rule out rival alternative explanations for the observed relationships" (p. 26). Stability helps to know whether with inclusion of the control variable(s), the outcome of the relationship between independent variable(s) and dependent variable is unchanged or changed. Control variables affect the independent and dependent variables of a study and therefore it is safer to include them than not (Spector & Brannick, 2011).

While controlling for leverage and firm size in the relationship between <IR> and financial performance in their study in Nigeria, Kaura et al. (2021) find that there is a substantial correlation between firm size and <IR>. The study also finds a positive correlation with regard to leverage while negative for firm size. The current study is based on listed firms on JSE and NSX which used <IR> in 2018 and 2019 in order to test the hypotheses of the study. A test of consistency of the theory in the face of firm size and leverage as control variables is also tested. Based on the possible explanations that the signaling theory as well as agency theory on the potential relationship between <IR> and financial performance of firms, as well as the potential effect of both leverage and firm size on the primary relationship under study, the following secondary hypotheses were developed for this study:

d) There is no statistically significant controlling effect of leverage and firm size on the relationship between the quality of reporting on human, social & relational, financial, manufactured, intellectual and natural capitals of a firm and its ROE.

e) There is no statistically significant relationship between the quality of overall integrated reporting and financial performance in the presence of control variables of firm size and leverage.

## 2.9 SUMMARY

The literature review chapter has identified and discussed the theoretical and conceptual framework that guides this study. Whereas a number of theories have been identified by prior studies as the basis for the concept of <IR> as has been discussed under the theoretical framework section, Dilling and Caykoylu (2019), El-Deeb (2019) and Fuhrmann (2019) argue that when it comes to the relationship between <IR> and financial reporting, the relevant theory is the signaling theory. Therefore, signaling and agency theories were selected for the current study given that they are the relevant theories. The concept of <IR> has been extensively discussed. The IIRC framework has been identified as the cornerstone of <IR> (Wen et al., 2017) and given its international appeal in relation to <IR>; the six <IR> capitals of a firm have been adopted in this study in line with the international integrated reporting framework. Literature review also provided the research and empirical review on the relationships between disclosure quality of <IR> and ROE. The same analysis was made when ROA is used as the measure for financial performance. An overall <IR> measure was also discussed and empirical studies on how <IR> impacts financial performance was discussed. Finally, the controlling role of firm size and leverage on the relationships between integrated reporting and financial performance was discussed.

Gaps in theory, research and empirical reviews was provided. It was identified that there is a gap in the use of the agency theories and signaling theories due to contradictions on their usefulness in explaining <IR> and its likely outcomes as argued by Tjahjadi et al., 2020.

A gap in literature has been identified in relation to the relationship between <IR> and financial performance as well as the controlling effect of firm size and leverage on the relationship between <IR> quality and financial performance. This is due to mixed results on the relationship between the various <IR> capitals and financial performance. It was identified too that while a number of studies have been undertaken in relation to the relationship between the various <IR> capitals of a firm and performance of the firm, researchers hardly use all the six capitals as provided by the IIRC framework. The current study endeavors to fill this gap.

In conclusion, while the concept of integrated reporting has a sizeable number of benefits like providing financial and non-financial information in one report with an integrated thing approach, its value relevance has not yet been adequately established as identified by researchers like Affan (2019) and Mahboub (2019). Besides, gaps in literature in terms of application of both of signaling and agency theories has hardly been established due to mixed results where some researchers like Dilling and Caykoylu (2019) support the use of theories like signaling while other like Nurkumalasari et al. (2019) do not. The gaps in identified in literature review resulted in formulating of five null hypotheses and their related alternative hypotheses.

# CHAPTER THREE

# RESEARCH METHOD

The study endeavors to find out the relationship between <IR> and financial performance of listed firms on sustainable stock exchanges in Africa. Mirza and Javed (2013) note that "performance of firms is of vital importance for investors, stakeholders and economy at large" (p. 43). Financial performance is the major factor of assessing a firm's performance (Khan et al., 2015). <IR> has been shown to have potential in influencing financial performance of firms although the debate on the subject is not conclusive given divergent findings (Nurkumalasari et al., 2019; Vitolla et al., 2019a).

<IR> is the current corporate reporting paradigm (Ivan, 2018), which provides the opportunity to enhance the accountability as well as business sustainability (Sarioğlu et al., 2019). This is due to the ever-increasing demand for more transparency in corporate reporting especially on the issue of providing more non-financial corporate information (Adegbie et al., 2019). This points to the fact that there is still a need of finding out the prospects of <IR>.

<IR> is built around six capitals of a firm provided by the IIRC framework of 2013 (as revised to-date), and these capitals are the manufactured, human, natural, financial, social & relational as well as intellectual (Jian & Binghan, 2018). These six <IR> capitals form the independent variables of the current study, while financial performance is the dependent variable. However, since financial performance of a firm can also be affected by other factors, two key such factors controlled in this study are the firm size and leverage.

The problem that this study identifies is the need to establish the nexus between the quality of <IR> and profitability in listed firms. Zhou et al. (2017) identify that while <IR> is becoming popular worldwide, the momentum is constrained because of inadequate evidence of its business value. Lipunga (2015) also argues "there is dearth of empirical studies on the subject worldwide" (p. 132). Besides, empirical studies on <IR> are predominantly emerging in the developed world but there is scarcity of studies in other economies (Iyoha et al., 2017). Worldwide, there is a gap when it comes to integrated reports mainly due to misunderstanding of the concept in the IIRC framework (Eccles et al., 2019).

Two main methodologies are abundantly used in studies on <IR> and these are the qualitative approach and the cross-sectional content analyses (Haji & Hossain, 2016). The authors however note that there are gaps with the use of interview qualitative approach due to the subjectivities involved and thus the cross-sectional content analysis is preferred for this study. Solomon and Maroun (2012) uses a qualitative approach of content analysis by identifying how themes of sustainability come from the various integrated reports and not using a predefined coding technique. Therefore, the current study fills this gap by using quantitative content analysis approach. Seyed et al. (2021) notes a gap in <IR> literature as most studies have relied on conventional annual reports in their empirical studies instead of integrated reports.

This study endeavours to fill this gap in literature by relying on integrated reports from mandatory <IR> jurisdictions. In a study on the value relevance of <IR>, Tlili et al. (2019) through their research in South Africa on <IR> from 2006 to 2015 find that <IR> significantly influences the value relevance of organizational capital (intellectual capital). The gap in that study is that the authors base their conclusions on only one capital out of the six capitals of a firm. For an integrated thinking of the IIRC framework, it is preferred to get an integrated view of the <IR> six capitals.

Using firm value, Cooray et al. (2020) examine 117 integrated reports in Sri Lanka based on the IIRC framework and find that while there has been increase in adoption of the IIRC framework in integrated reports, this has not resulted in significant of firm value in Sri Lanka. However, their work is limited by the size of the sample used, where their study was based on 39 companies. Helmina et al. (2018) uses a sample of 224 out of a population size of over 1,000 firms, which is in effect a relatively small sample. Martinez (2016) equally studies the business value of <IR> but use a small sample size, which reduces generalizability of their results. Stubbs and Higgins (2014) note that if the sample studied is not representative the conclusions on the phenomena being studied cannot be conclusive and or can at best be tentative until such a methodology gap is addressed. Anifowose et al. (2020) examine the capitals in Asia, they do so for 83 firms raising issue of generalizability and they do not consider how the quality of <IR> affects financial performance of the firms.

Many studies on the subject of <IR> in South Africa have used a limited number of companies in their sample. For example, among recent studies, Herbert and Graham (2021), in their study of integrated reports of firms listed on JSE, they use 45 firms. Others who study the <IR> among firms include Pitrakkos and Warren (2020) using 50 firms, Dube (2018) uses 40 firms listed on the JSE in their study on <IR> quality. PricewaterhouseCoopers (2015) study integrated reports from only 40 firms listed on the JSE. While the study by Anifowose et al. (2020) is one of the most recent studies on <IR> and specifically on the <IR> capitals, they only use a sample of 83 which make their data limited in terms of representation and generalization of the results. They identified this issue as one the limitations of their study. Haji and Anifowose (2016) use 82 firms in their study of sustainability including firm's capitals in the integrated reports. Moloi and Iredele (2020) in their study on the <IR> quality in South Africa, base <IR> quality on the "Ernst and

Young Excellence in Integrated Reporting Awards annual rating" (p. 1) in South Africa. While this is a good basis, as it bases on <IR> capitals, it only includes 100 firms which may not be representative sample of firms listed on JSE and also therefore not representative to a wider Sustainable Stock Exchanges (mandatory <IR> jurisdiction).

Therefore, while they recognize the need for examination of value relevance of <IR> just like the current study, they use a very small sample and also focus on differences in firm value based on differences in <IR> quality. The findings of the current study overcome the issue of representation and generalizability through use of sampled firms and using a large sample that was selected through a scientific method.

Wang (2011) in their study in Taiwan and China uses time lag and finds time lag does not change the nexus between intellectual capital like the aspect of structure of capital and financial performance of a firm. This study fills the gap of using only one capital but maintains the time lag between <IR> and financial performance in order to observe the effect of reporting on firm performance. There is need to identify levels of <IR> since prior studies note varying degrees of <IR> quality. Also, it is not enough that companies claim that they do <IR>. In Germany for example, Beske et al. (2020) examine materiality reporting within integrated reports as well as sustainability using 132 reports in Germany and find that firms report little amount of the recommended <IR> content and hardly explain reasons for the information presented. Studies on levels of <IR> quality show that firms lack quality reporting in some areas (Moloi & Iredele, 2020).

Most studies on NFR consist of single-case studies (Geerts et al., 2021). Winter and Zülch (2019) also identifies that since 1960s information analysis has mainly been country specific and explanatory. The gap here is that data analysis is to be country specific. The current study fills this

methodology gap by taking interest in the firms listed on sustainable stock exchanges in Africa that use <IR> as a rule and this resulted in firms listed on JSE and NSX which are sustainable stock exchanges that fulfil the parameters of the study. Therefore, the study addresses the issue of using a single-case study by undertaking the research on the <IR> mandatory disclosure jurisdictions in Africa.

The dearth of empirical studies on <IR> especially in emerging and developing economies notwithstanding, empirical studies carried out so far provide mixed results. Whereas studies like Baboukardos and Rimmel (2016), Lee and Yeo (2016), Vitolla et al. (2019a), Affan (2019) and Martinez (2016) establish an influence of <IR> on profitability, other studies like Nurkumalasari et al. (2019) and Matemane and Wentzel (2019) find no significant relationship between the variables while Dilling and Caykoylu (2019) find a negative relationship. Mrigakshi (2015) conclusively notes that literature does not present any consensus on direction or strength of the nexus of <IR> and performance of a firm. Additionally, there is a shortage of research when it comes to the nexus between <IR> capitals of a firm and its profitability; studies either considered fewer <IR> capitals or ignored relationships (Albertini, 2019; Eccles & Serafeim, 2015). By using signaling theory that a firm's quality of <IR> positively relates to its profitability (Dilling & Caykoylu, 2019), this research sought to enrich the value relevance of <IR>.

The purpose of this study is to identify the nexus between <IR> and financial performance in selected firms. Through employing a multiple regression analysis, the research examined the nexus between the six <IR> capitals (independent variables) and profitability (return on Assets – ROA and return on equity – ROE) and also controls for leverage and firm size. The study sought to contribute towards establishing the value relevance of <IR> and has the potential to be beneficial to firms that have adopted the reporting practice or that plan to introduce the practice. It opens up

an area that had not earlier been studied, by examining the quality of the six <IR> capital disclosures and how this impacts profitability of a firm from both internal and external perspectives of a firm.

This chapter provides the research methods as well as the data collection procedure. It is composed of the introduction to the methodology chapter, the research approach and research design, the population and sample, as well as the research materials and research tools used in the study. It provides the operational definitions of the variables used in the study, the study procedures as well as the ethical assurances, data collection and analysis and lastly the summary of the chapter.

## 3.1 RESEARCH APPROACH AND DESIGN

Research approach and design refers a research view undertaken by a researcher as well as the plan, procedure, assumptions that guide the methods of data collection as well as data analysis (Creswell, 2009). The sections below discuss the positivism paradigm and correlational design, the quantitative research approach and the content analysis methodology taken by the study.

The study applies quantitative approaches in testing the hypotheses of the research in line with previous studies (Islam, 2021; Tlili et al., 2019). While examining the level of <IR>, some researchers use quantitative research approaches. However, the researchers in some cases conduct such qualitative studies as a complement to the quantitative studies and to enable provision of explanations behind their findings (Adhariani & Sciulli, 2020) depending on their research objectives. For the current study, quantitative research, which is the approach that enables correlational research hypotheses testing was ideal.

This study employs a positivism research paradigm (Aliyu et al., 2014) given that it augurs well with the research objective and hypothesis. A paradigm in a research study refers to the predominant philosophy that a researcher uses to conduct research (Ogunbiyi et al., 2014). The

paradigm defines the philosophy that orients a researcher while undertaking a study (Kivunja & Kuyini, 2017). Burke (2007) observes that "philosophy can be defined as the questioning of basic fundamental concepts and the need to embrace a meaningful understanding of a particular field" (p. 476).

While there are a number of research paradigms, the major ones identified in literature are four: Positivist, Interpretivist/ Constructivist and Critical /Transformative and lastly Pragmatic which borrows elements from the other three (Kivunja & Kuyini, 2017). In a study by Iofrida et al. (2018) of 133 papers, they find that 73 % use interpretivism paradigm while 24% are positivist and the rest take shared characteristics of the paradigms. Thus, research demonstrates that the major paradigms are interpretivism as well as positivism although the latter seriously trails the former.

Positivism paradigm takes an epistemology approach that asks what a researcher can know in a given research pursuit compared to ontology (tailored to interpretivists) that concentrates on questions on nature of reality or existence of a phenomena and the assumptions made to believe that something is actually real and exists (Kivunja & Kuyini, 2017).

The positivist paradigm fits the current study in that it seeks to pose and test hypotheses, results are expected to be quantifiable and generalizations can occur basing on the validated knowledge (Kivunja & Kuyini, 2017). It is also referred to as the functionalist paradigm, which identifies with the searching for explanations of a social phenomenon basing on a realist or logical view of things with the approach of measuring, evaluating and monitoring the aspect under study (Burke, 2007). On the other hand, interpretivism relates to understand the context, characteristics of an individual and more qualitatively inclined to understand the social world rather than making

universal assumptions or generalizations (Idika & Waribugo, 2015). Thus, the interpretivism paradigm does not fit the current study.

The research objective seeks to establish the nexus between <IR> and financial performance of listed firms. It takes a positivist approach based on the nature of the study, which is quantitative and correlational. This is in line with prior empirical studies that conduct surveys, quantitative research methods and correlational design to investigate research problems (Rafiq et al., 2020; Rashid, 2015). Mngwengwe and Dlamini (2020) note that positivism is that it strives to investigate, confirm, and predict law- like patterns of behaviour" (p. 10).

Taking a positivist research approach and correlational design is helpful in enabling the study to test its hypotheses in relation to the presence or absence of disclosure of the six <IR> capitals. It enables the study to identify how the quality of reporting is related to the financial performance of a firm; a basis of which the value relevance of <IR> would be identified. A correlational research design is a popular design that examines the relationship between variables of a study and therefore suitable for the current study (Russell, 2005) and is a suitable strategy in testing hypothesis (Bukvova, 2009). The use of positivism approach as well as correlational research design coupled with the quantitative approach gives assurance on the quality of the study and these are methodology approaches appropriate in achieving the aims of the study in line with the observation by (Norkett, 2013).

## 3.2 POPULATION AND SAMPLE OF THE RESEARCH STUDY

This section describes the population as well as the sample that is used in the current study. It also provides reasons behind the choice of the population as well as the sample to be used.

By definition, population is a term used to consist of objects or subjects of interest to a given study which satisfy specified characteristics while a sample is a selected number of elements from the population (and thus a subset of the population) to be used in a given study in order to infer or draw conclusions about the population (Umair, 2018). A selected sample should be reflective of underlying population parameters if it is to represent it (Suresh & Chandrashekara, 2012).

Given the title of the study; "the nexus of Integrated Reporting and Financial Performance in firms listed on sustainable stock exchanges in Namibia and South Africa", the appropriate population is the firms that operate on NSX and JSE given that they mandate <IR>. According to the lists of firms listed on websites of the stock exchanges, JSE has 477 listed firms while NSX has 50 listed firms fulfilling conditions of the study. Hence the total population for the study is 527 firms.

The sample of the current study is selected from the firms listed on JSE and NSX. Given that the population size is 527 firms, there was need to determine which sample of firms to use for the study. The study design influences the sample size to be chosen; while correlational studies require hundreds of data, case studies on the other hand require smaller samples (Hanga & Johargy, 2014). This study uses the correlational research design and therefore required a sizeable sample size.

Determining a representative and adequate sample size for a study is a critical step in research protocols because it is not only linked to statistical significance and representation of the population but also has implications on the expenses and relevance of the results, therefore it is crucial to use an optimum size of sample in any scientific study (Suresh & Chandrashekara, 2012).

In all cases, the sampling size needs to be statistically representative of the population so as to enable reaching of inferences about the population of interest (Umair, 2018).

To arrive at the sample size, there are a number of ways that it can be done. These include using a desired level (degree) of precision (Bellera & Hanley, 2007), the required power to detect statistical significance (Suresh & Chandrashekara, 2012) and perhaps the most popular is using Slovin's formula (Ansar et al., 2017). The formula to be used in determining a sample size depends on study design and the kind of information available to the researcher (Chander, 2017). The size is dependent on the study design chosen as well as the type of hypotheses made prior to beginning of a study and it influences statistical inference from the study. Slovin's Formula of determining the sample size in a scientific study is used where both the margin of error as well as the population size is known and in cases where the population size is less than 1000 (Syahrizal et al., 2020). According to Tejada and Punzalan (2012), Slovin's sampling formula to determine sample size is $n = N \div (1 + Ne^2)$ where n is the sample size, N is the population size, and e is the error tolerance (margin of error).

In the current study, since the population size is a given and the margin of error predetermined was specified to be 5%; given the fact that the population size of this study is less than 1000 firms, using Slovin's sampling formula is ideal. By calculations using Slovin's formula, sample size is 227. This method is used in other scientific studies too where the population size as well as the error level are known (Atmadja & Saputra, 2018; Farman et al., 2019; Pawoko et al., 2019; Sadiartha & Apsari, 2019).

In research, to reject a true null hypothesis is to commit type I error (α) while if otherwise false (which is the correct conclusion), it would mean the power is $1 - \beta$ where $\beta$ is type II error

(β); on the other hand, if a researcher fails to reject a true null hypothesis (1 - α), then the researcher

is committing Type II error (Kim, 2015). The relationship between β (risk of missing an effect)

and α (risk of finding an effect) is 4-to-1 (Brunnström & Barkowsky, 2018). The current study

assumes an α of 0.05 and since Power is β equal to 0.2, the resulting the Power of the study is 0.8.

To arrive at the list of firms that comprise the of 227 firms, there is need to identify a

sample selection technique to use. There are generally two broad ways of selecting the sample, the

probabilistic as well as non-probabilistic sampling. Schreuder et al. (2001) notes that probabilistic

as well as non-probabilistic sampling methods have their unique roles in enabling a researcher to

understand a question at hand. However, they note that cost and practicality of using one method

over the other come into play in deciding which one to use. Additionally, what the researcher

intends to find out should be important in enabling the researcher to decide which method is more

feasible.

According to Tansey (2007), probability sampling has the advantages of avoiding selection

bias, enables a researcher to generalization about the population based on the sample, but has the

disadvantage of omitting some of the key respondents given the chance selection. The author notes

key advantages of non-sampling to be the control the researcher has on the selection process,

inclusion of key respondents by purpose while disadvantages emanate mainly from more bias in

selection of respondents and limited generalization prospects.

In view of the objective and topic of the current study, a probabilistic sampling approach

is chosen to gain on the advantages of the method of avoiding bias in selection as well as enabling

generalization of the results of the study. A probabilistic technique (taking an example of stratified

random sampling) is a sampling technique, which uses probability or giving equal chances of all

elements in the population to be selected for inclusion in the sample while a non-probabilistic

technique (for example the convenience sampling) does not provide an equal chance of representation in the sample (Umair, 2018).

In the current study, given the sample size of 227 firms selected from the population of 527, by using a stratified sampling technique whereby the percentage of the NSX firms to total population is 9.5% (50/527*100) and 90.5% for JSX (477/527*100), the applicable number of firms to select as part of the sample for NSX is 22 while for JSE 205. To arrive at the list of those firms, the study used simple random sampling technique based on excel-generated random numbers between the first and last firm in the sample frame for each of the two strata (JSE and NSX).

## 3.3 MATERIALS/INSTRUMENTATION OF RESEARCH TOOLS

The intention of this section is to discuss the materials/instrumentation of data collection tools or instruments used to gather the data for the study. It is noted from literature that the kind of data needed to answer a given research question determines the data collection tools to use in a study (Johnston, 2014). Research can either be based on primary data or secondary data or even using both techniques depending on which type of data answers the research question (Akinleye et al., 2019; Osang et al., 2013). While most scientific studies base their findings on primary data, researchers are increasingly gaining interest in using secondary data in empirical studies (Nicholson & Bennett, 2009; Unachukwu et al., 2018). However, "secondary data analysis remains an under-used research technique in many fields" (Johnston, 2014, p. 620) and this study is a further contribution to the use of secondary data in research.

The section below discusses both the primary and secondary data tools and the reason for using secondary data collection tool. A conclusion is provided at the end.

Primary data refers to the type of data that a researcher directly collects from the

respondents (Osang et al., 2013). It is the raw data collected firsthand to address a current problem (Unachukwu et al., 2018).

Primary data is more current, accurate and can provide information with more accuracy compared to secondary data (Osang et al., 2013). The authors also note that the researcher collecting primary data can do probing in order to understand better or get more information from the respondent to clarify the data collected and the data can be collected with more accuracy.

Collecting primary data can be time consuming, and there can be some influences of either the respondent or the researcher if not controlled (Niraula, 2019; Osang et al., 2013). However, depending on the research question, primary data collection may be the only way to get the required data and therefore regardless of its limitations, the researcher would need to use it.

The data collection tools used in primary data collection are mainly interviews, questionnaires, focus group discussions, telephone surveys, observations, and analysis of text or visual materials (Gill et al., 2008; Niraula, 2019; Osang et al., 2013; Paradis et al., 2016).

Secondary data refers to the collection of already existing data (Osang et al., 2013). It is data that has been collected by a different person or institution to the one using it, with a different purpose and at a different time (Osang et al., 2013; Panchenko & Rahman, 2017; Samovilova, 2020; Unachukwu et al., 2018).

Secondary data collection can be cost and time efficient especially those that are internet-based which facilitates quick access to quality data (Benfield & Szlemko, 2006; Niraula, 2019; Unachukwu et al., 2018). Advances in the use of technologies have resulted in more accessibility of secondary data and this is a great advantage to the users of the data including researchers

(Johnston, 2014; Panchenko & Samovilova, 2020). Data available on the Internet usually do not require author's extra permission for their use since it is information available for public use (Bowen, 2009).

Secondary data published in both print or online data from reliable sources is efficient and ready to use since it is data cleaned by the professionals, accurate, edited and covers wide subject matter thus embodying qualities of good data for research especially if it is published by corporates, government institutions, or other credible agencies (Bowen, 2009; Cheng & Phillips, 2014; Niraula, 2019; Olabode et al., 2019; Unachukwu et al., 2018).

Replication of studies based on secondary data can easily be done since the data is readily available without alterations (Bowen, 2009; Niraula, 2019) and can as well help a researcher to understanding a research problem and have its wider view (Unachukwu et al., 2018). Besides, secondary data can provide a foundation to collect primary data and also provide ideas to be exploited (Unachukwu et al., 2018).

Secondary data provides a researcher with rich and large amount of data (Olabode et al., 2019) and can as well help to corroborate the primary data and lead to verification of validity of primary data (Unachukwu et al., 2018). Additionally, there is no influence of either the investigator or respondents during data collection, which reduces any biases in using of secondary (Bowen, 2009).

Data compiled in a document (secondary data) is for a specific purpose and may not be able to address all the concerns of a specific research (Bowen, 2009). Additionally, some of the variables that a researcher may be interested in may lack details and due to lack of probing, the researcher is limited in gaining adequate data from the respondent (Cheng & Phillips, 2014).

Accuracy as well as reliability of the data collection tool used by third party is sometimes in question especially because the researcher using secondary data does not have access to the primary data collection tool (Unachukwu et al., 2018).

Secondary data may not be exhaustive to answer a research question given that it was collected for a different reason and the researcher using secondary data may not understand the concept in which the data was collected (Cheng & Phillips, 2014; Mirza et al., 2019; Niraula, 2019).

Secondary data may be outdated and, in some cases, data difficult to retrieve due to restrictions in use (Bowen, 2009; Niraula, 2019; Unachukwu et al., 2018) or even sometimes a researcher experiences missing data (Aguinis et al., 2019). This may limit the quality of secondary data (Osang et al., 2013).

The key secondary data tools are computer databases of institutions, government publications, company records, published financial report and reports from the industry provided by the media (Akinleye et al., 2019; Niraula, 2019; Osang et al., 2013). According to Paradis et al. (2016), secondary data collection tools are "newspaper or research articles, governmental reports, organization policies and protocols, letters, records, films, photographs, art, meeting notes, or checklists" (p. 264). The data collection tools according to Panchenko and Samovilova (2020) includes statistical databases as well as research papers.

The advantages of using secondary data outweigh its limitations. Johnston (2014) cautions that whereas secondary data is flexible in its use, empirical studies that use it should base on systematic methods and procedural steps to guarantee quality research just like in primary data. In conformity to the methodology in primary data usage, secondary data exploitation should follow the steps of defining of research problem, reviewing of literature, formulating of hypotheses of the

study, data collection, analysis and interpretation and thereafter documenting the results in a scientific report (Niraula, 2019). Being secondary data does not mean it is of secondary value compared to primary data. Johnston (2014) notes, "secondary analysis is an empirical exercise that applies the same basic research principles as studies utilizing primary data and has steps to be followed just as any research method" (p. 619). Unachukwu et al., (2018) too, observe that secondary data research follows a rigorous systematic methodology whose results are no less to the primary data approach thereby making the research method increasingly prevalent.

The use of data from mandatory <IR> jurisdictions have the advantage of avoiding concerns of self-selection of information to report which can arise with use of integrated report on voluntary basis (Barth et al., 2017). However, in mandatory <IR> jurisdictions like South Africa, firms still apply discretion on content of reports which rises into variations in quality of integrated reports from these firms. As investors and management are sensitive on quality of the integrated reports as well as its economic benefits, empirical studies to establish value relevance of <IR> as well as quality of reporting in mandatory jurisdictions is ideal (Moloi & Iredele, 2020). Besides, according to Anifowose et al. (2020), although there have been voluminous empirical studies on the subject of <IR>, the aspect of <IR> capitals and the quality of their reporting is still insufficient.

Yet, the overarching concept that underpins integrated thinking and thus <IR> is the use and effect on an organization's <IR> capitals (Almăşan et al., 2019). The concept also depends on the quality of a firm's reporting of different <IR> capitals as well as their capability of generating value using those resources (Tlili et al., 2019). IIRC framework promotes integrated thinking based on a firm's six <IR> capitals as inputs and outcomes in its pursuit for creation of business value (Dumay et al., 2017). Therefore, given that integrated reporting is a listing rule in the selected sustainable stock exchanges of NSX and JSE, compliance to disclosure as well as ease of

availability of published integrated reports are expected. Getting data from <IR> mandatory jurisdictions would enable the researcher in attaining the objectives of the study.

Besides, prior research identify need for further research in mandatory jurisdictions like South Africa. The study by Tlili et al. (2019) identify that the quality of <IR> influences financial performance of firms in South Africa. The authors point out to the need to expand inquiry with new data after 2016 and also to increase the number of the capitals investigated. The current study fills these gaps. The study aimed at establishing the value relevance of <IR> through articulating the relationship between <IR> capitals and financial performance. Also, it has been observed that most studies on NFR were conducted in developed countries leaving other jurisdictions underserved (Meutia et al., 2021) and therefore, a selection of both Namibia and South Africa contributes to filling this gap.

While selecting a data collection tool to use, in addition to considering the data collection tool relevance to answering a research question, researchers choose a data collection tool considering the aspects of expenses involved, the time it takes as well as the ease with which the data can be collected (Spurlock et al., 2008). It is worth noting too that secondary data analysis is applied when a study wishes to use existing data in order to answer a given research question (Johnston, 2014).

The current study relies solely on secondary data sources. Secondary data can be qualitative or quantitative. In this study, data is collected from integrated reports as sentences or words that depict presence or absence of the six <IR> capitals of a firm. Through coding, this data is converted into quantitative data. Data collected from the reports too relate to financial performance as well as firm size and leverage, which are outright quantitative data. Prior studies on content analysis with regard to <IR> have used secondary data (Affan, 2019; Dilling & Caykoylu, 2019; Lipunga,

2015; Zhou et al., 2017).

The current study uses the content analysis methodology whereby information is codified and classified based on the research question. It is based on document analysis and secondary data or desk research. Bowen (2009) urges that "document analysis is a systematic procedure for reviewing or evaluating documents—both printed and electronic" (p. 27). In cases where secondary data is sufficient to reach the objective of a give research study, primary data is not called for (Martins et al., 2018; Unachukwu et al., 2018). The relevant data collection tools for the study were published integrated reports for firms listed on JSE and NSX for trading of shares. The secondary data used relates to the years 2018 and 2019. Given the high-quality requirements of stock exchanges concerning publishable reports of this magnitude, the data from these secondary sources can be trusted to provide the kind of data needed for the study.

Data collected from integrated reports of the selected firms listed on JSE and NSX was captured in form of words depicting the presence or absence of the six <IR> capitals of the firm following the IIRC Framework. This data has a code of 0 (denoting the absence) and 1 (denoting the presence) of the given <IR> capitals of the firm; a methodology adapted from prior studies (Boolaky, 2011; Lipunga, 2015; Kılıç & Kuzey, 2018). Data on financial performance, firm size and leverage was also collected.

The instrument used to collect research data were the integrated reports for 2018 and 2019 published on JSE and NSX and relevant firms selected which are reliable and valid sources of data. To collect the data for the independent variables (the six <IR> capitals of a firm), textual data was collected from the 2018 integrated reports basing on the checklist of indicators to form each <IR> capital. The indicators are adapted from Setia et al. (2015) and Anifowose et al. (2020) who

actually base themselves on the IIRC framework checklist. This is publicly available data for use

basing on published peer reviewed articles and the indicators for <IR> capitals of a firm contained

in IIRC (2013) framework publication (which were maintained in the revised version of 2021).

The data collected on quality of <IR> from the integrated reports of firms listed on JSX and NSX

was based on the presence or absence of the indicators of the six <IR> capitals reflected in table

1.

**Table 1**

*49 Indicators of the Six <IR> Capitals*

| Human capital | Natural capital | Social and relational capital | Intellectual capital | Manufactured capital | Financial capital |
|---|---|---|---|---|---|
| Employee competence and capabilities | CO2 emissions | Customer health safety and privacy | Corporate governance | The production of goods or the provision of services | Debt, equity or grants; operations; investments |
| Employee experience | Energy consumption | Customer satisfaction | Intellectual property | Information on buildings | Information on equity share capital |
| Employee loyalty and motivation | Amount of waste | Relations with competitors (e.g., anti-competitive behaviour) | Information technology and information systems | Information on equipment | Information on debt share capital |
| Employee diversity | Environmental accidents | Relations with suppliers | Research and development | Infrastructure (such as roads, ports, bridges, and | Information on government grants |

| | | | | |
|---|---|---|---|---|
| | | | | waste and water treatment plants) |
| Employee morale | Recycled waste | Relations with lenders | Processes, policies and procedures | |
| | | | | Operations |
| Human resource management | Environmental protection investments | Relations with shareholders | Organisational structure | |
| Employee benefits | | Human rights | Brands | |
| Human resource development | | Indigenous rights | Corporate image | |
| | | Involvement in social action | Market share | |
| | | Social investment | | |
| | | Donations and charitable work | | |

Involvement

in cultural

projects

Relations

with

legislator,

regulators

and policy

makers

Relations

with business

partners

Corporate

culture

Claims and

lawsuits

Relations

with

employees

*Note.* Adapted from *Integrated capitals reporting and companies' sustainable value: evidence from the Asian continent*, by Anifowose, M. et al., 2020, p. 588; *Integrated reporting in South Africa: Some initial evidence*, Setia, et al., 2015, p. 414; *The international < IR> framework,* International Integrated Reporting Council, 2013, pp. 11-12.

The IIRC framework of 2013 was revised in 2021 but the six <IR> capitals were maintained (IIRC, 2021).

While the textual data was collected on the presence of each<IR> capital in conformity to past studies, the textual data is converted into quantitative data through coding processes. For the dependent variable (financial performance) as well as control variables (leverage and firm size), quantitative data was also collected directly from the integrated reports.

In literature, data collection from integrated reports from websites of the companies has been used by prior research as a scientific way of collection of secondary data (Jerico & Utami, 2021).

## 3.4 OPERATIONAL DEFINITION OF VARIABLES

The study sought to establish a relationship between <IR> and financial performance of firms listed on sustainable stock exchanges in Africa. The study's intention was to find if the null hypotheses hold. The hypotheses are composed of the variables of the study whereby there are six independent variables (six capitals of a firm), and one general independent variable (which shows the overall <IR> built from the capitals), two control variables and one dependent variable. Specifically, the variables are:

a)  Financial Performance. This is the dependent variable.

b)  <IR> quality: This is an independent variable.

c)  Quality of disclosure of human, social & relational, financial, manufactured, intellectual and natural capitals. The <IR> capitals are independent variables.

d)  Leverage: This is a control variable.

e)  Firm size. This is a control variable.

### 3.4.1 VARIABLE 1. FINANCIAL PERFORMANCE

Assessing financial performance depends on using financial ratios but the choice of which methods to use depend on the purpose of study (Myšková & Hájek, 2017). Financial performance in this study is represented by Return on Assets (ROA) as well as Return on Equity (ROE) in conformity with prior studies (Affan, 2019; Albertini & Berger-Remy, 2019; Dey, 2020; Mohamad et al., 2014). Financial performance is the independent variable of the study. Albertini and Berger-Remy (2019) note that "ROA and ROE are generally accepted standard measures of financial performance found in strategy research" (p. 222). Dey (2020) sees ROA as the commonly used indicator to measure a firm' profitability. The ROA is defined as ratio of net income to total assets in line with prior studies (Lee & Yeo, 2016; Nurkumalasari et al., 2019). ROE is defined as ratio of net income/total equity (Cosmulese et al., 2019; and Vitolla et al. (2019a). Data on net income, total equity, and total assets were collected from the 227 sampled firms basing on their 2019 integrated report.

One of the key proxies used for performance is firm value measured by Tobin's Q (which is the quotient between the sum book value of liabilities & market value of equity and total assets) as noted by Lee and Yeo (2016). However, profitability remains the key indicator defining financial performance. Ghofir and Yusuf (2020) while identifying the major issue that investors pay attention to notes that "financial reports provide all the information needed for stakeholders, especially investors, and what investors pay attention to is profit as a proxy for management performance" (p. 218). While relating ROA and ROE to Tobin's Q representation of firm performance, Ishaq et al. (2021) notes that ROE and ROA can represent efficiency measures of firm performance. However, Khatab et al. (2011) argue that whereas Tobin's Q can measure level of delivery on corporate governance, ROE and ROA are for firm performance.

**3.4.2 VARIABLE 2. QUALITY OF \<IR\>**

The quality of \<IR\> refers to the overall picture of integrated reporting which comes from the ratio generated from disclosure of each of the six \<IR\> capitals. Most studies on \<IR\> quality use a scoring approach (Dumitru & Dragomir, 2021) and this gives basis for its use since the method enables the study to achieve its objectives. \<IR\> quality measured is represented by the following equation in line with prior studies (Affan, 2019; Boolakay, 2011; El-Deeb, 2019; Islam, 2021; Kılıç & Kuzey, 2018; Lipunga, 2015).

$$IRI = \frac{\sum_{t=1}^{n} Xij}{Nj} \tag{1}$$

*Note.* Equation 1 was adapted from Lipunga, A. M. (2015). Integrated Reporting in Developing Countries: Evidence from Malawi.

Where:

a) IRI is the \<IR\> index

b) $n_j$ is the number of indicators for the $j^{th}$ firm while $X_{ij}$ refers to the $i^{th}$ indicator of the disclosure.

The quality of \<IR\> is an independ variable in the study.

To come up with the comprehensive view of the \<IR\> quality, the sum of all dummy measurements of presence or absence of disclosure of the six \<IR\> capitals in integrated reports is taken in line with other prior studies like (Affan, 2019; Islam, 2021). The quality of \<IR\> is identified as the number of indicators reports in each capital and then cumulative frequencies of reporting for all the \<IR\> capitals divided by the maximum number expected indicators to be disclosed. This measurement approach is consistent with (Affan, 2019; El-Deeb, 2019; Kiliç & Kuzey, 2018; Lipunga, 2015). Cooray et al. (2020) argue that \<IR\> quality

is increasingly becoming an important measure to demonstrate firm's value creation process and as an effective communication tool to send signals to external stakeholders.

Alignment method is used in this study to come up with the <IR> index as an indicator of <IR> quality. Through content analysis and in line with Tiron-Tudor et al. (2020), the study adopts a binary scoring approach in measurement of the alignment levels of the integrated reports the <IR> capitals as provided by the IIRC framework with 1 if the indicator among the 49 indicators of the capitals is reported and 0 if not. The authors note that the scoring can be replicated even in other studies in determining alignment levels of integrated reports against the provisions of the IIRC framework. The higher the <IR> quality score, the higher the alignment of the report with the IIRC framework and therefore the better the score (Tiron-Tudor et al., 2020).

### 3.4.3 VARIABLE 3. QUALITY OF <IR> CAPITALS

The quality of disclosures of the <IR> capitals is represented by HCDI, NCDI, SRCDI, ICDI, MCDI, FCDI, where:

a) HCDI is Human Capital Disclosure Index

b) NCDI is Natural capital Disclosure Index

c) SRCDI is Social and relational Capital Disclosure Index

d) ICDI is Intellectual Capital Disclosure Index

e) MCDI is Manufactured Capital Disclosure Index

f) FCDI is Financial Capital Disclosure Index

The disclosure quality is represented by the ratio between total scores of indicators in each capital to expected maximum score in line with prior studies (Kılıç & Kuzey, 2018; Lipunga, 2015; Nurkumalasari et al., 2019). The quality of disclosure of each <IR> capital is an independent

variable. The form of data in this study is secondary data and the variables are in line with prior studies with regard to <IR> (Affan, 2019; Dilling & Caykoylu, 2019; Zhou et al., 2017). The data on <IR> capitals was collected from published integrated reports of sampled firms listed on the NSX and JSE for the years 2018. From the reports, data for each <IR> capital was collected and recorded in an excel worksheet basing on absence (denoted 0) or presence (denoted 1).

In accordance with prior studies, the IIRC framework is used in determining the <IR> scores/index based on disclosure scores identified from integrated reports (Dube, 2018). (Dey, 2020) use an <IR> index based on the IIRC framework and also use content analysis in measuring the adoption of <IR> among the firms.

Self-constructed measures are applied in corporate reporting in case of lack of a comprehensive database on intended disclosure (Dey, 2020). Without generally accepted metrics, self-scores can be used in empirical studies (Dilling & Caykoylu, 2019). Generating an <IR> index through self-constructed disclosure index is a realistic scientific methodology used in prior studies and is widely used in determining the level to which integrated report content is aligned to the IIRC framework (Tiron-Tudor et al., 2020). Data collection, measurement and analysis performed through self-scoring using content analysis of <IR> is adopted by this study in reference to prior studies (Herbert & Graham, 2021).

Dey (2020) recognizes that self-constructure <IR> scores can have subjective judgment or biases. In their study on <IR> in South Africa, Lee and Yeo (2016) do use self-constructed measures of <IR> ranging between 0 for non-compliance to 5 for strong compliance with the <IR> framework in coming up with <IR> index. Moloi and Iredele (2020) in their study on the <IR> quality in South Africa, bases <IR> quality on the <IR> ratings by Ernst and Young in South Africa and the measure they used in coming up with <IR> quality was 4 for excellent, 3 for good,

2 for average and 1 for poor or where progress needs to be made. However, the use of a range of <IR> index scaling is criticized for relying heavily on self-judgements of the scores (Healy & Palepu, 2001). According to Tiron-Tudor et al. (2020), while <IR> raters like in the Ernst &Young Awards do rate integrated reports for firms on JSE based on their quality levels by using attributes of poor, good and excellent, they observe that using a scale scoring model like this implies high subjectivity which is closely linked to the user's previous experience and professional judgment and what may be excellent for a given rater or user may actually be bad to another rater or user.

Depending on the objective of a study, a content analysis scoring model can either be weighted or unweighted (Winter & Zülch, 2019). A method that minimizes the biases in self-constructed measures of an <IR> index is use of a binary score of 0 (non-disclosure) and 1 (disclosure) an <IR> index item (Dey, 2020). This is the same method used in this study to greatly minimize the impact of self-constructed scores. Besides, the researcher conducted a corroboration of the results with similar studies conducted in the past. The results of the <IR> index got corroborated with other similar on <IR> quality. As an extra measure, the researcher conducted a pilot study basing on 30 randomly selected firms' data to check that the data was relevant. Through a Cronbach alpha test, the results showed internal consistency of the data adequate for use as it is within the acceptable limits.

Operational-wise, the index of each of the <IR> capital is based on the summation of indicators of the respective firm's capital in terms of presence in the integrated report (code 1) or absence (code 0) and then divided by expected maximum score for each capital per firm. To get the scores used in both the quality of <IR> and the quality of disclosures for each of the six <IR> capitals, a content analysis was used to the code the 49 indicators of capitals.

The study also considered two control variables; firm size and leverage although they were not analysed as standalone variables since they were not the focus of the study. Firm size and leverage have been adopted as the controls variable in this study because they are the commonly used control variables in literature in relation to their potential effect on financial performance of a firm and are thus used in this study in line with Nurkumalasari et al. (2019), Dey (2020), Adegbie et al. (2019), Islam (2021), Vitolla et al. (2019a) and Affan (2019). The natural logarithm of total assets is used as a measure of the size of the firm in line with Vitolla et al. (2019a) and Affan (2019) while leverage is measured by the ratio of total liabilities to total assets in line with Korkmaz (2016), Dilling and Caykoylu (2019) and Dey (2020).

Table 2 shows how each variable of the study is transformed from its raw form to the final form to be used (under the column of variable measurement).

**Table 2**

*Variable Description and their Measurements*

| Variable Type | Variable Name | Variable Symbol | Variable Measurement | Source |
|---|---|---|---|---|
| | Human Capital Disclosure Index | HCDI | Ratio between total scores of | Lipunga (2015), Kılıç |
| Independent variables | Natural capital Disclosure Index | NCDI | indicators of the respective capital | and Kuzey (2018), |
| | Social and relational Capital Disclosure Index | SRCDI | to expected maximum score | Nurkumalasari et al. 2019) |
| | Intellectual Capital Disclosure Index | ICDI | | |
| | Manufactured Capital Disclosure Index | MCDI | | |
| | Financial Capital Disclosure Index | FCDI | | |
| | <IR> Index | IRI | $$IRI = \frac{\sum_{t=1}^{n} Xij}{nj}$$ | Islam (2021), Affan (2019), Lipunga (2015), Kılıç |

| | | | Where nj is the number of indicators for the $j^{th}$ firm while Xij refers to the $i^{th}$ indicator of the disclosure | & Kuzey (2018), Boolakay (2011) and El-Deeb (2019) |
|---|---|---|---|---|
| Control Variables | Leverage | LEV | Ratio of total liabilities to total assets | Dey (2020), Korkmaz (2016) and Dilling and Caykoylu (2019) |
| | Firm size | FSIZE | Natural logarithm of total assets | Vitolla et al. (2019a), Affan (2019), Martinez (2016), Dey (2020) |
| Dependent Variable | Return on Assets | ROA | Ratio of net income to total assets | Nurkumalasari et al. (2019), Lee and Yeo |

| | | | (2016) |
|---|---|---|---|
| Return on Equity | ROE | Ratio of net Income to total equity | Cosmulese et al. (2019), Vitolla et al. (2019a) |

*Note.* Own compilation.

Whereas data was analyzed by use of SPSS, the raw data was first entered into an excel worksheet.

## 3.5 STUDY PROCEDURES AND ETHICAL ASSURANCES

The study received approval from Unicaf Research Ethics Committee (UREC) on 18th March 2021 before data collection was done.

The study was not based on human subjects. The reason is that the study is based on secondary data, which was sufficient to answer research questions as well as examining the hypotheses of the study. The study used data from published integrated reports of the sampled firms.

For the independent variable, basing on presence of absence of the indicator for each <IR> capital in the 2018 integrated reports for each firm, a code of 1 or 0 was entered into a table in an excel worksheet. Each column contained a separate indicator. The data coding was done manually whereby if a word or phrase for each indicator is reported in the integrated report, then code was 1 and if not, the code was 0. If an indicator was reported as not being relevant for the firm and thus explaning about not reporting it, this was still given a score of 1 in the spirit of report and/or explain. The presence or absence of the indicators comprising of each <IR> capital of a firm

received a code of 1 or 0 respectively in line with prior studies (Affan, 2019; Islam, 2021; Kılıç & Kuzey, 2018) and El-Deeb, 2019) whereby the code is 1 if disclosure of the indicator was made in the integrated report and 0 if not. 49 indicators of capitals of a firm were adapted from Setia et al. (2015), Anifowose et al. (2020) and the IIRC framework.

For the dependent and control variables, data was directly collected from the 2019 integrated reports and straightaway entered in an excel worksheet. There was no need to code the data since the data was already in a numeric form. The excel worksheet containing the data was composed of 49 columns containing each of the 49 indicators and then after each <IR> capital, a column providing the ratio between total scores of indicators in each <IR> capital to expected maximum score was generated. The number of indicators for each <IR> capital is as in table 3.

**Table 3**

*Number of Indicators under each <IR> Capital*

| Capital type | Number of indicators in the capital |
|---|---|
| HC | 8 |
| NC | 6 |
| SRC | 17 |
| IC | 9 |
| MC | 4 |
| FC | 5 |
| **Total** | **49** |

*Note*. Own compilation.

The data was collected from March to July 2021. It was collected from the integrated reports of 227 sample of firms listed on the JSE and NSX websites. The selection of the firms was based on a stratified random sampling to get firms for each stratum (JSE and NSX). To come up with the exact list of the firms from whom data was collected, a simple random sampling technique was used as detailed in the section on population and sample of the research study.

## 3.6 ETHICAL ASSURANCES

Researchers have cautioned that in conducting research, a researcher should ensure to abide by ethics of data authenticity, beneficial research and no harm to the respondents, informed consent, getting permission from the respondents before collecting data from them and ensuring anonymity as well as confidentiality while treating and reporting the data (Bruno & Haar, 2020; Sim & Waterfield, 2019; Walker, 2007). Favaretto et al. (2020) note that the first thing to ensure is to do no harm to respondents. Respondents should have the right to stop providing data to researchers at any time if they so wish, hence participation must be voluntary (Eriksson & Helgesson, 2005). Apart from the aspects of anonymity and confidentiality, most of the other highlighted ethical research considerations relate to studies that involve human subjects.

The current study is based on secondary data collected from published integrated reports on stock exchanges (JSE and NSX). These reports are open for public use since they are published on the websites of those stock exchanges. There is no human element involved while collecting the data. To ensure that the study complies with confidentiality and anonymity, each firm from which data was collected, chronological numbers were applied to list of firms for identification and hence firm number was rather used instead of firm name.

The study follows a correlational research design and ensures to comply with the assumptions of a linear regression analysis.

The role of the researcher in this study is that he is a professional in corporate sustainability given his academic background (a holder of an Master of Business Administration in leadership and sustainability) as well as being a professional accountant (Fellow Chartered Management Accountant – Chartered Institute of Management Accountants, Fellow Financial Accountant – Institute of Financial Accountants, and Certified Public Accountant, Institute of Certified Public Accountants of Rwanda) and also holding a Master of Science in Accounting and Finance. The researcher therefore masters the subject of sustainability reporting (NFR) as well as financial reporting and thus <IR> which seeks to report both F&NF reporting in a single integrated report.

The researcher developed the liking of analyzing the sustainability as well as financial aspects of companies through a conference he attended in 2017 while at the University of Cumbria whereby the general feeling around the conference was that activities of companies affect the environment and the people yet there is still a lacuna in how the firms report their non-financial performance aspects. From then, the researcher picked great interest in the subject. The researcher is also the Chief Finance and Operations Officer of one of the leading non-Governmental local organizations operating in Rwanda and this brings an opportunity to practice sustainability reporting as well as identifying best practices in compiling annual reports. This also provides an opportunity for the researcher to understand the challenges of compiling integrated reports and how the institution that the researcher serves can benefit from adopting the practice.

To be able to contribute to the topic, this study was conducted in an effort to articulate the <IR> aspects on the African landscape and specifically the aspect on the nexus between <IR> and financial performance. Firms listed on sustainable stock exchanges were chosen because it would be expected that since they are highly regulated (otherwise if they do not comply with regulations of the stock exchanges, they would not be listed) and specifically JSE and NSX because they are

the only sustainable stock exchanges that have made <IR> a listing rule. Therefore, the selected firms would be representing a situation of good practices in <IR> in Africa if they abide by the regulations of the stock exchanges concerning <IR>.

In ensuring that the experiences of the researcher do not influence analysis and findings of the study, scientific methods were used to select the minimum required sample. In coding elements in the independent variables, the study followed a standard procedure in literature whereby if an element is reported it scores 1 and if not, it scores 0 basing on prior studies (Affan, 2019; El-Deeb, 2019; Islam, 2021; Kılıç & Kuzey, 2018). The control variables and well as dependent variables were also adopted from previous studies (Anifowose et al., 2020; Affan, 2019). The analysis of data followed a quantitative approach and with usage of statistical software (SPSS). To use the data, verification was important to establish internal consistency of data as provided by Cronbach alpha to ensure it lies between 0.65 – 0.8 or higher as in (Dilling & Caykoylu, 2019). Data findings and their interpretation followed the results generated by SPSS.

### 3.7 DATA COLLECTION AND ANALYSIS

Data was gathered from integrated reports of selected firms. Integrated reports of 227 firms that are listed listed on NSX and JSE was used in the study. Data collected was for 2018 (concerning <IR> capitals and control variables) and 2019 (concerning financial performance).

The study follows the data collection steps recommendation in White and Marsh (2006) relating to content analysis usage as detailed in the research approach and design. The study is conducted to establish the validity of five null hypotheses.

The form of data in this study is secondary data. Prior studies on content analysis with regard to <IR> have used secondary data (Affan, 2019; Dilling & Caykoylu, 2019; Lipunga, 2015; Zhou et al., 2017). Two forms of data collection used in scientific research are secondary and

primary data. Primary data has not been selected for this study, as secondary data suffices to answer the research questions in line with the recommendation by Martins et al. (2018).

For scoring the presence or absence of disclosure of capitals, the study uses self-generated scores in line with Dilling and Caykoylu (2019). Saldaña (2013) cautions, "rarely will anyone get coding right the first time" (p. 10). Therefore, for data collected on reporting of capitals of a firm, given the concerns of Saldaña (2013) a pilot test of 30 firms was carried out. A pilot testing of a sample size of 30 can measure reliability by use of Cronbach's alpha (Nawi et al., 2020). The Cronbach alpha test for the pilot firms generated a value of 0.84 and this meets the minimum of 0.65 in line with Dilling and Caykoylu (2019). Therefore, the tool used to collect data was reliable. Additionally, since it had been used before in prior scientific studies, its use was trustworthy. For the control variables and dependent variable, the data collected from integrated reports was numeric and thus checking for internal consistency was uncalled for.

The study employs a quantitative deductive research approach and employs an empirical analysis basing on correlation and linear multiple regression analysis in line with assertions by Firer and Mitchell (2003) on what quantitative and deductive approach looks like. The study uses SPSS software in data processing and analysis due to popularity and rigor in research (Arkkelin, 2014; Priyanka, 2020). Triangulation, which is the use two or more sets of data collection or use of both qualitative and quantitative research techniques to corroborate the data (Kelle et al., 2019) was not applied to this study since using of secondary data was adequate for the study.

Statistical analysis is used as a basis to identify the extent of significance of research results and relationships between the variables. Employing statistical analysis ensures the credibility and significance of the results of a research study (Hoe & Hoare, 2013).

Descriptive statistics provide a summary of data, condenses the data and is the first step in conducting research analysis before working on inferential statistics to prove measures like frequency, the mean, standard deviation (Yellapu, 2018). Descriptive statistics used in the study are the mean, minimum, maximum, and standard deviation for the variables.

To examine inferential statistics, the study tested five research hypotheses:

a) There is no statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE.

b) There is no statistically significant relationship between ROA of a firm and the disclosure quality of its <IR> capitals.

c) There is no statistically significant relationship between the quality of overall integrated reporting and financial performance.

d) there is no statistically significant controlling effect of leverage and firm size on the relationship between the quality of reporting on human, social & relational, financial, manufactured, intellectual and natural capitals of a firm and its ROE.

e) There is no statistically significant relationship between the quality of overall integrated reporting and financial performance in the presence of control variables of firm size and leverage.

In order to establish the validity of the hypotheses of this study, a regression analysis was carried out since the study is correlational and quantitative. The first and second hypotheses examined the validity of the assumption that the disclosure quality of the six <IR> capitals significantly influence financial performance in both ROE and ROA. It should be noted that while both ROE and ROA are measures of profitability, they measure different perspectives of profitability. ROE provides and external view while ROA provides an internal view of firm

performance. The third hypothesis sought to measure the relationship between the overall <IR> and profitability. Since there are other factors that affect financial performance, the study endeavored to assess whether the two factors; leverage and firm size significantly control the relationship between the independent (both the <IR> capitals as well as the overall <IR> quality and dependent variable (financial performance represented by ROE and ROA). Therefore, the fourth and fifth hypotheses sought to establish the role of the control variables (leverage and firm size) on the aforementioned relationships. This is against the background that including leverage and firm size could change the relationship between the variables of interest and the dependent variable. Inferential analysis was used to test the validity of the hypotheses using a 5% significance level as the threshold. The study was guided by both the signaling and agency theories on the aspect of the explanations of the relationship between the quality disclosure of <IR> capitals and its financial performance as well as the relationship between the overall <IR> quality and financial performance. Basing on both the objectives and hypotheses of the study, seven models were specified.

To examine the aspect of <IR>, the study was based on disclosure quality of the six <IR> capitals as provided by the IIRC framework and the overall <IR> quality took into account the overall picture of quality of integrated reporting. The <IR> capitals as well as the overall <IR> were the primary variables of interest to the study. The study then endeavored to find the controlling effect of leverage and firm size on the relationships of the primary variables of interest. The analysis of data was informed by other prior studies that used ordinary least squares (OLS) in studies concerning <IR> (Affan, 2019; Albetairi et al., 2018; Dilling & Caykoylu, 2019; Lipunga, 2015).   A linear regression is a dominant tool when it comes to establishing relationships between multiple variables and dependent variables and the ordinary least squares (OLS) is used to estimate

the model (Verbeek, 2017). "The ordinary least squares method of linear regression is a more powerful procedure than any of its non-parametric counterparts" (Ernst & Albers, 2017, p. 5). The OLS is the statistical model befitting this study in line with prior studies (Affan, 2019; Albetairi et al., 2018; Dilling & Caykoylu, 2019; Lipunga, 2015).

According to Sarstedt and Mooi (2019), there are eight steps involved in applying the OLS and these are:

a) Satisfaction of data requirements for the model.

b) Model specification and estimation.

c) Testing the regression model assumptions.

d) Interpretation of the results of regression analysis.

e) Overall model fit.

f) Results of individual variables.

g) Validating regression results.

h) Application of the regression model

The sample size of 227 firms was selected as determined in Slovin's formula (Ansar et al., 2017). Data variability in variables is ensured through a simple random sampling. The data type was ratio. In order to rule out multicollinearity, a cut-off point of Variance Inflation Factor (VIF) of at most 10 and tolerance above 0.10 was used (Ernst & Albers, 2017; Gujarati 2003; Osborne & Waters, 2002; Sarstedt & Mooi, 2019; Vitolla et al., 2019a).

Seven models were specified as indicated in chapter one.

To estimate regression coefficients, the standard errors and their assumptions, OLS estimators should meet condition of best linear unbiased estimator (BLUE) as per the Gauss–

Markov theorem (Gujarati, 2003; Williams et al., 2019). The conditions that the researcher used to verify for compliance with the OLS requirements are:

a) Linearity of the model.

b) Zero expected mean for the error term.

c) Homoscedasticity

d) Absence of autocorrelation.

e) Normality of distribution of errors.

f) Issue of outliers.

For model significance, an F-test was performed. A p-value below 0.05 was assumed for significance of the model. Where F-value is significant, a coefficient of determination ($R^2$) was used for interpretation of model fit and predictions of dependent variable. Adjusted $R^2$ was also used to complement the coefficient of determination measure since it has an advantage of not necessarily increasing with increasing predictors. Both the standardized as well as unstandardized β coefficients were used with the highest standardized β coefficients (those statistically significant) indicating the level of strength of relationship between independent variables with the dependent in case of the overall <IR> quality.

The overall model fit was based on the strength of $R^2$, adjusted $R^2$ as well as the F-value significance level in alignment with arguments of Sarstedt and Mooi (2019). $R^2$ was used for measuring the relationship between the overall index of <IR> and financial performance in line with Dilling and Caykoylu (2019), Lipunga (2015) and Affan (2019). The F-value was used to show whether the model is significant to enable further analysis of the results and especially the strength of each variable in the model; absence of which, there would be no need of interpreting

the model (Sarstedt & Mooi, 2019).

The coefficients were used to interpret the extent to which each variable is related to the dependent variable if all the other variables are held constant. The stability of the model was verified by adding in the control variables so as to be sure if it be used for predictions (Sarstedt & Mooi, 2019).

## 3.8 CONTENT VALIDITY OF RESEARCH INSTRUMENT AND SCALE RELIABILITY

To establish the validity of the research instrument used in this study, a content validity index (CVI) was used. In addition, a scale reliability test was conducted using Cronbach's alpha. The sub-sections below describe how the tests were conducted, the results from the test and conclusion drawn from the results of the two tests.

### 3.8.1. CONTENT VALIDITY

Content validity is defined as the extent to which items in a research instrument represent the construct under study is often measured through content validity index (CVI) based on the relevance of items rated by subject matter experts in the field being studied (Polit & Beck, 2006). CVI establishes the relevance of the items in a research tool to what is being examined (Rutherford-Hemming, 2015). It indicates the content validity of a research instrument (Tseli et al., 2023).

To carry out a content validity test, six subject matter experts in the area of corporate reporting and integrated reporting were invited to rank the level of relevance of the items of the research instrument in line with recommendations of Polit & Beck (2006) in conducting a CVI. Six subject matter experts are recommended in literature as an adequate size of experts that can suffice in carrying out rating of a research instrument (Rutherford-Hemming, 2015).

The researcher engaged six subject matter experts in the area of corporate reporting, integrated reporting and specifically Professional Accountants with relevant accounting credentials to rate the relevance of the 53 items comprising of the variables of the study in view of the construct under study. These are return on assets, return on equity, leverage, firm size and the 49 items composing <IR> capitals identified in table 1. The   researcher explained the 53 items comprising the variables of the study and the subject matter experts ranked the relevance of the items as either 1 to indicate not relevant, 2 to indicate somewhat relevant, 3 to indicate quite relevant or 4 to indicate highly relevant. Table 4 provides the profile of the subject matter experts that ranked the 53 research items.

**Table 4**

*Profile of Subject Matter Experts that provided Ranking of items of the Research Items*

| Subject Matter Expert (SME) | Firm | Professional qualification | Professional experience | Position |
|---|---|---|---|---|
| SME 1 | 3N PRIMO Ltd | FCCA, CPA | 20 years in audit and corporate reporting | Partner |
| SME 2 | HLB MN International | CPA | 22 years in assurance services | Partner |
| SME 3 | Ernst & Young | CPA | 10 years in accounting practice | Practicing Accountant |
| SME 4 | OX Rwanda Ltd | CPA | 8 years in corporate reporting | Finance Manager |
| SME 5 | TEARFUND | ACCA | 5 years in auditing services | Practicing Accountant |
| SME 6 | GARNET PARTNERS LTD | ACCA | 20 years in assurance services. Member for the IESBA | Partner |

*Note*. Own compilation.

According to Nurul et al. (2022), there are two forms of CVI; one is based on the individual items being rated (I-CVI) while the other is for the scale (S-CVI). Concerning the S-CVI, two ways are used in its calculation; S-CVI/Ave provides the average of I-CVI while a universal score (S-CVI/UA) takes into account the sum of scale items with a relevance rating of either 3 or 4 divided by the total number of items (Yusoff, 2019; Adefolarin & Gershim, 2022).

The scores of each item were put in an excel worksheet. A column for number of Subject Matter Experts that gave an item a relevance rating of 1 or 2 and another one that shows the number of Subject Matter Experts that gave an item a relevance rating of 3 or 4 were generated from the ratings by the Subject Matter Experts on each item of the research instrument (see appendix C).

Results show that I-CVI for each item is at least 0.83.S-CVI/Ave is 0.97 while S-CVI/UA is 0.81. It is recommended that in case of six subject matter experts, the I-CVI should be 0.78 or higher while S-CVI/Ave and S-CVI/UA should be 0.8 or higher (Shrotryia, & Upasana, 2019) to reflect acceptable content validity. Therefore, given that the results of I-CVI, S-CVI/Ave and S-CVI/UA meet the minimum thresholds, content validity of the items and variables used in the study is confirmed.

### 3.8.2 RELIABILITY

To verify the reliability, the study conducted the tests using a renown and commonly used test of Cronbach alpha. Hayes and Krippendorff (2007) note that Cronbach alpha is reliable in verifying if the data is internally consistent and reliable. "Cronbach's alpha is the most frequently used measure to investigate the reliability" (Hoekstra et al., 2019, p. 351). Using the measure to verify on the reliability as well as validity of the data helps to make the results reliable for inference and generalizability purposes. It creates confidence that once the research is replicated, similar

results can be expected. Besides, it mitigates the possibility of judgement errors in using content analysis.

While the data was not generated through use of a questionnaire; since the study relied on secondary data sources and in such circumstances normally there would be no need for a reliability and validity test (Affan, 2019), the study took the view that since content analysis is being used especially on recording of presence or absence of an indicator of the capitals of a firm (Milne & Adler, 1999), then carrying out a reliability as well as internal consistence test would be adequate. While the scores for presence or absence were self-constructed, this is an acceptable procedure in content analysis and has been used by previous studies like Dilling and Caykoylu (2019) where it is noted that self-scoring is a valid way of coming up with data for content especially in cases there are no generally accepted metrics.

To ensure generalizability of the findings is attained, a representative sampling size is required. 227 firms were sampled using a sampling frame composed of firms' lists on NSX and JSX. A simple random sampling technique was used in line with prior studies on sample selection (Boonlua & Phankasem, 2016). This is an adequate sample size given that it was derived from a scientific process using Slovin's formula (Ansar et al., 2017). After correcting the issue of outliers, the remaining sample was 225 firms which is within the threshold provided in literature where the minimum recommended is 160 valid observations for multivariate statistical analytical approaches (Memon et al., 2020). Therefore, the sample size of 225 firms used in this study gives the assurance for generalizability of the findings.

There were no weights used in coming up with the data on presence or absence of each of the 49 indicators and this is a safe way of avoiding biases in assigning weights (Winter & Zülch,

2019). As a caution on assessing the reliability and validity of the data collected on the <IR> capitals of a firm, the data for the six variables from the list of 225 firms was fed in SPSS. Cronbach's alpha is "commonly used in studies as an indicator of instrument or scale reliability or internal consistency" (Keith, 2018, p. 1284). The SPSS software was used to generate Cronbach alpha for the data and the alpha was 0.82 as given in the figure 1:

**Figure 1**

*Cronbach's Alpha for Internal Consistency and Reliability of Scores of <IR> Capitals*

| Cronbach's Alpha | N of Items |
|---|---|
| .82 | 6 |

*Note*. Own calculations using SPSS.

In analyzing and interpretating the data, the outputs of SPSS were based on each model generated and therefore there was no room for bias. Nawi et al. (2020) after an extensive study on the acceptable levels of Cronbach's alpha concludes that most scientific studies narrowed down to a value of 0.9 or higher as an excellent level of reliability. The same view is held by Keith (2018). "The closer the Cronbach's Alpha value to 1, the greater the internal consistency of the item within the scale" (Saidi & Siew, 2019, p. 655). However, other authors like (Dilling & Caykoylu, 2019) put the threshold to be 0.65. In view of these references and given that the coefficient value of Cronbach's alpha in this study is 0.82, it shows that there is reliability as well as validity of the data used in the study. This therefore shows that the data used from content analysis has an acceptable level of internal consistency of data as provided by Cronbach alpha, which is the most commonly used method in evaluating internal consistency as well as reliability given that it meets

and exceeds the required threshold (Dilling & Caykoylu, 2019).

While the overall Cronbach alpha fulfills the minimum requirements since it is above the threshold of 0.65 (Dilling & Caykoylu, 2019), the study also looked at individual <IR> capitals to establish their Cronbach alpha. The following provides a picture on reliability of individual <IR> capitals.

**Table 5**

*Cronbach Alpha for <IR> Capitals Disclosure Index*

| <IR> Capital | Number of indicators | Cronbach alpha |
|:---:|:---:|:---:|
| NC | 6 | 0.743 |
| HC | 8 | 0.835 |
| IC | 9 | 0.903 |
| SRC | 17 | 0.884 |
| MC | 4 | 0.796 |
| FC | 5 | 0.793 |

*Note.* Own compilation.

Looking at the Cronbach alpha values by <IR> capital, they range from 0.7 for NCDI to 0.9 for ICDI and therefore the six capitals were individually reliable to be included in the study since their Cronbach alpha meets the minimum levels of 0.65 (Dilling & Caykoylu, 2019).

**3.9 SUMMARY**

This third chapter discusses research methods and research approach and design used. It also discusses data collection techniques used in the study. The content analysis methodology is explained and the basis for population size as well as the sample size and research instruments used is discussed. The categories of data used in scientific research, rationale for using mandatory jurisdictions of <IR> as well as the selected data collection tool for the study and tool used for data collection are explained.

It discusses the positivism paradigm as well as the correlational research design chosen for the study. It highlights that the population for the study is all firms listed on the JSE and NSX

because they fit the topic of this study Given that it is JSE and NSX that fits the purpose of the study, firms listed on the two stock exchanges form the population for the study. It discusses the rationale behind the selection of 227 firms from a population size of 527 firms listed on the JSE and NSX in South Africa and Namibia respectively.

The chapter also identifies the research tool adopted for the study, which is based on secondary data. The tool is a checklist provided by IIRC framework as captured in Setia et al. (2015) as well as Anifowose et al. (2020). The operational definitions of the variables of the study have also been provided. The study procedures as well as ensuring compliance with ethical precautions have been highlighted. The chapter also provides measures of content validity using CVI and also conducts a reliability test using Cronbach alpha. Results provide assurance on content validity and reliability.

The aspect of permission to use <IR> capitals indicators and selection of data is explained. The operational meaning of terms and the variables used is provided. The procedure used by the study as well as the ethical assurances are discussed. Lastly, the discussion on techniques used for data collection and analysis is presented including principles of using the OLS as the model used for data analysis.

**CHAPTER FOUR**

**FINDINGS**

The purpose of this study was to establish the value relevance of <IR>. This was done through establishing the relationship between <IR> quality and financial performance. The chapter concerns the discussion of research findings. Key aspects presented in the chapter are trustworthiness of the data presented as well as discussion of research findings. The connection between quality of <IR> capitals, and <IR> quality, control variables and the FP is examined. This chapter also provides an evaluation of findings to provide meaning from the data collected and its analysis.

The study provides the level of <IR> quality in mandatory <IR> jurisdictions in Africa; specifically, South Africa and Namibia using the most recent data. <IR> is the corporate reporting framework that aims at enhancing accountability as well as the sustainability of business organizations (Sarioğlu et al., 2019). Despite the growing desire to enhance <IR>, the aspect of its value relevance and specifically the necessity to report on the <IR> capitals of firms to a large extent still lacks (Kılıç & Kuzey, 2018). This study therefore aimed at establishing the extent to which the adoption of <IR> framework can be of interest and relevance to business enterprises and specifically to listed firms. The study examined the quality of disclosure for the six <IR> capitals of a firm as provided by the <IR> framework. IIRC is an international body that was established to create a globally recognizable and adoptable framework for <IR>. The <IR> capitals refer to stocks of value that a firm can exploit in its business model towards creating and sustaining its value of existence.

The <IR> capitals provided by the IIRC framework are human, manufactured, financial, natural, social & relationship and intellectual capital (IIRC, 2021). The study's aim was to find the linkage between the quality of reporting on the six <IR> capitals as well as the overall <IR> and financial performance of the reporting firms. Ultimately, the study sought to fill the existing research gap concerning the value relevance of developing quality integrated reports specifically stressing the role of <IR> capitals of a firm.

The study was conducted on firms listed on the Namibia Stock Exchange (NSX) and Johannesburg stock exchange (JSE) which were reported to be the only sustainable stock exchanges in Africa that have made <IR> mandatory by the time of the study. Sustainable stock exchanges are those kinds of stock exchanges which seek to promote sustainability aspects of reporting as well as <IR> ideals. Given that stock exchanges have listing rules that are a must follow if a firm is to be listed, it would be a great channel to enhance sustainability reporting as well as <IR>. In terms of the differences between sustainability reporting and <IR>, the latter includes the former. However, <IR> is mainly promoted by the IIRC while sustainability reporting which was the predecessor to <IR> is promoted by Global Reporting Initiative (GRI).

This chapter is organized under five sections. The first section provides an introduction to the chapter. The second section discusses the credibility of the data, conditions of the study, dependability of the data, auditability as well as description of weaknesses in data collection and the implications thereof. The third section discusses the results of the study. This is organized under five hypotheses of the study. The fourth section provides a description of what the results mean in light of the hypotheses that guided the study as well as the theories and conceptual framework. The fifth section gives a summary of the key findings.

**4.1 TRUSTWORTHINESS OF DATA**

This section discusses the means used to ensure that the collected data is trustworthy and fit to serve the purpose of the study. The study relied on the content analysis methodology. The credibility of the data was ensured through use of 49 indicators of <IR> capitals of a firm based on published work by Anifowose et al. (2020) and Setia et al. (2015). These scientific publications highlighted the indicators to use in empirical research work on the aspects of <IR> capitals and the two studies based their work the IIRC (2013) framework. This makes corroboration possible since the results can be compared to other scientific studies carried out in similar conditions.

The study was based on quantitative data whereby data was collected based on the 49 indicators and then converted into quantitative data. This is a common method used in <IR> studies especially with regard to the impact of disclosure on financial performance (Affan, 2019; El-Deeb, 2019; Lipunga, 2015). The data on dependent variable (return on equity and return on assets) and control variables (financial leverage and firm size) data was directly picked from the integrated reports as quantitative data and due quantitative transformations were carried out to ensure applicability to the study. Additionally, using statistical analysis safeguarded the credibility of the data (Hoe & Hoare, 2013).

While coding the indicators of independent variables (<IR> capitals of a firm), a scientific method was followed where if an indicator was identified in the report, it would be given a score of 1 and if not 0 in line with prior studies (Affan, 2019; Lipunga, 2015). Data analysis was purely based on quantitative analysis using the outputs of SPSS which itself had data fed therein by the researcher in view of its power and popularity in data (Priyanka, 2020) and ability to undertake the required data processing and analysis for the study. This ensured confirmability of the data and the audit trail that can be conducted to verify the data. Remarkable shortcomings are that the study

solely depended on secondary data as well as quantitative analysis. Aspects like explanation of the reasons behind identified reporting practice would not be carried out since this was outside the scope of the study. This can to some extent affect the interpretation of the findings on aspects of answering the why side of the observations. However, every study has a scope depending on its objectives and the methodological approach adopted for this study enable it to achieve foretasted research objectives.

In order for the regression model to enable the study draw sound conclusions, the model was required to meet the conditions of a best linear unbiased estimator by fulfilling the assumptions of its use (Gujarati, 2003; Williams et al., 2019). The following conditions were thus assessed.

Linearity test establishes whether the relationship between independent and dependent variables is linear (Setiawan et al., 2021). A line of fit between Return on Assets (ROA) and <IR> Index (IRI) shows a linear relationship whereby ROA = -0.18+0.3IRI+$\epsilon$. For Return on equity (ROE), a line of fit is expressed as ROE = -0.38 + 0.6IRI+$\epsilon$ which is also shows a linear relationship. The relationship between the variables in the study fulfills the linearity condition in conformity with Elcioglu (2021).

Zero expected mean for the error term condition is fulfilled in line with the submission by Verbeek (2017) who states that once data is selected on a probabilistic random sampling basis and originating from a larger population, the condition is fulfilled.

Homoscedasticity refers to a situation where independent variables (IV) have "variance of errors is the same across all levels of the IV" (Osborne & Waters, 2002, p. 4). A Breusch–Pagan test was conducted for heteroscedasticity in line with Adegbie et al. (2019). The Breusch–Pagan test uses a null hypothesis for the residual variances to verify if they are constant. The null hypothesis for the Breusch–Pagan test is that homoscedasticity is present (equal variance in

residuals) while the alternative hypothesis states that there is heteroscedasticity in the distribution of residuals. Using a cutoff point of 0.05 as the significance level, if the significance in the Breusch–Pagan test ANOVA is less than the critical significance test, then the null hypothesis is rejected concluding the presence of heteroscedasticity.

A test of the relationship between the independent variables and the square of residual values was performed using Breusch–Pagan test. All the P-values in the ANOVA were more than 0.05 which shows that the data is in conformity with homoscedasticity requirements.

ANOVA generated by use of SPSS regressing squared residuals on IRI showed that F value is 0.12 and p-value was 0.73 when ROE is used. This is higher than the threshold of 0.05 which attests to the result that there is homoscedasticity, based on Breusch–Pagan test. This shows that there is presence homoscedasticity. Therefore, the data for independent variables of <IR> quality as well as the dependent variable satisfies homoscedasticity conditions. Other tests also showed p-value of 0.47 and F value of 0.53 when ROA is used in the relationship of squared residuals and <IR>. The p-value in the relationship of squared residuals and <IR> capitals when ROE is used is 0.84 and an F value of 0.46 while the relationship of squared residuals and the <IR> capitals when ROA is used yields a p-value of 0.73 and an F value of 0.60. Therefore, homoscedasticity condition is fulfilled for the variables used in the tests.

The Durbin-Watson (DW) was used in accordance with prior studies by Affan (2019) and Nurkumalasari et al. (2019). Based on the fact that the DW was between 1.8 and 1.9 in line with Abdulhafedh (2017), models meet the threshold requirement and hence shows absence of autocorrelation. This is shown in model summaries figures for each run regression.

Normality test was conducted by skewness as well as the kurtosis measures in line with Vitolla et al. (2019a). According to Matore and Khairani (2020), "the value of the acceptable range of values is less than 3 for skewness and less than 10 for kurtosis" (p. 691). The normality test was performed, and the results had both skewness and kurtosis in the norm. Skewness ranges between -1.44 and 0.61 while Kurtosis ranges from -0.92 to 7.84. All the variables in the models had values within Kurtosis and Skewness requirements and fall within acceptable range (Matore & Khairani, 2020); hence normality was confirmed.

To assess the possibilities of outliers in the data, a Cook's test was conducted and in conformity with Elcioglu (2021), data points considering a cut-off point of maximum distance of 1 were identified as outliers. In line with Osborne and Waters (2002), removing the outliers was helpful in addressing their impact. Using this method, two datasets were identified as outliers. To correct this, they were removed, and the sample size became 225. The remaining data was in compliance with the threshold for Cook's distance as follows:

a) Relationship between ROE, the capitals, leverage and firm size had a Cook's distance of 0.15.

b) The relationship between ROA and the overall <IR> quality with control variables inclusive had a Cook's distance of 0.22.

c) Relationship between ROE, the capitals, leverage and firm size had a Cook's distance of 0.14.

d) The relationship between ROA and the overall <IR> quality with control variables inclusive had a Cook's distance of 0.14.

The Cook statistics were all below 1 and thus the related regression models were using data free of harmful outliers.

The study bases multicollinearity analysis on the tolerance and variance inflation factor (VIF) values for each model generated in SPSS to verify the absence or acceptable levels of multicollinearity. Deraman et al. (2019) do argue that "if the predictor's tolerance value is greater than 0.10 and the VIF value is less than 10, it indicates that no multicollinearity is present, and the predicted regression model is valid and satisfies goodness-of-fit" (p. 6). Therefore, with a test of multicollinearity on the variables, when its VIF is below 10, it indicates no multicollinearity hence is okay for multiple regression model and can thus be used to examine the stated hypotheses in line with prior studies like Suttipun (2017).

The same view is held by Dey (2020) who notes that VIF of less than 10 is acceptable and shows that such data does not possess collinearity problems. The tolerance and VIF values for the data is shown under each model of the study in the inferential statistics section. Given that all the VIF appearing under coefficient tables under each figure in the results section is below 10 and tolerance values are above 0.10, it shows that the data used in the study meets the acceptable levels of multicollinearity.

Given that the regression model assumptions for the ordinary least squares model are valid, the OLS model was then used to analyze the data.

**4.2 RESULTS**

The study's focus is on inferential statistics given that it is based on a correlational research design. The objective of the study, questions and hypotheses are provided in the context of a correlational study and therefore inferential statistics resulting from the study have been provided objective by objective. However, it is imperative to first provide the descriptive statistics.

Descriptive statistics is used to give summarized data which provides the mean, standard deviation and other descriptive statistics and it is the first step used in research analysis before the inferential statistics (Yellapu, 2018). Figure 2 presents the description of key statistics for the study.

**Figure 2**

*Descriptive Statistics of Variables*

|  | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
|  | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic |
| NCDI | 225 | .00 | 1.00 | .67 | .31 | -.53 | -.92 |
| HCDI | 225 | .25 | 1.00 | .82 | .25 | -1.06 | -.32 |
| SRCDI | 225 | .06 | 1.00 | .75 | .25 | -.72 | -.44 |
| ICDI | 225 | .11 | 1.00 | .83 | .28 | -1.28 | -.03 |
| MCDI | 225 | .25 | 1.00 | .84 | .28 | -1.43 | .24 |
| FCDI | 225 | .20 | 1.00 | .86 | .25 | -1.44 | .53 |
| IRI | 225 | .22 | 1.00 | .79 | .21 | -1.00 | -.27 |
| ROA | 225 | -.38 | .48 | .05 | .09 | .61 | 7.84 |
| ROE | 225 | -.73 | .98 | .09 | .20 | .60 | 6.75 |
| LEV | 225 | .00 | .98 | .43 | .26 | .12 | -.75 |
| FSIZE | 225 | 3.83 | 22.99 | 14.07 | 3.30 | .09 | -.13 |
| Valid N (listwise) | 225 |  |  |  |  |  |  |

*Note.* SPSS output based on own calculations.

Results show that financial capital is the highest reported with a mean disclosure quality of 0.86 while natural capital is the least reported with a mean disclosure quality of 0.67. This implies that firms tend to provide more financial information in their integrated reports compared to other <IR> capitals. The mean reporting quality for human capital, social and relational capital, intellectual capital and manufactured capital are reported at a disclosure quality rate of 0.82, 0.75, 0.83 and 0.84 respectively. Both skewness and kurtosis indicators are in the norm given that skewness is below 3 and kurtosis is below 10 in line with recommendations by Matore and

Khairani (2020). The maximum value of 1 on quality of reporting implies that the indicators of some of the <IR> capitals were fully reported. The overall average <IR> is 0.79.

Inferential statistics is presented based on an endeavor to test the hypotheses that guided this research and followed the analytical methods articulated in the methodology chapter. For this study, the presentation of the results is based on its objectives, research questions and research hypotheses. In order to establish the validity of the research hypotheses, a regression analysis was performed since the study is correlational and quantitative.

## 4.2.1 RESEARCH HYPOTHESIS 1

The first research objective was to determine how the quality of disclosures of <IR> capitals of a firm affect its ROE. The research question asked was whether there a statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE. The null hypothesis (H10) was that there is no statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE while the alternative hypothesis (H1a) was that there is a statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE. This research hypothesis sought to test the preposition that the relationship (if it exists) between the six <IR> capitals, taken simultaneously and return on equity of the sampled firms is not statistically significant at a significance level of 0.05.

The test of ROE regressed against the six <IR> capitals had the results reflected in figure 3. The coefficient of determination ($R^2$) is 45% and it shows that when all the six <IR> capitals are jointly considered they influence the changes in return on equity at 45% leaving 55% attributable to other factors. Figure 3 provides the magnitude for F-test for model significance for a selected p-value. The F-statistic is 30.2 and it is significant given that its significance level is below the threshold of 0.05. It is actually below 0.001. This shows that the model is useful in

establishing the relationship it seeks to find. The Adjusted $R^2$ 44%. The results show that the relationship between the disclosure quality of the <IR> capitals and firm performance in terms of return on equity is 67%. To interpret the relationship, adjusted R squared is in view of the various independent variables included in the model and hence its strength shows that the included variables are of importance to the model. The Adjusted R Square is 44% and shows the extent to which the model is fit for the data in view of the presence of the various predictors. Durbin-Watson statistic which measures whether there is autocorrelation is 1.8 which meets the OLS requirements. The various statistics in the figure show the extent to which the model can be useful for analyzing the hypothesis of the study. The analysis of variance was also generated which shows which data is linked to the regression and the data linked to the error term. The data taking into consideration ROE is respectively reflected in figure 3.

**Figure 3**

*Summary of the Regression Model considering ROE as the dependent variable*

| | | | | | Change Statistics | | | |
|---|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | Sig. F Change | Durbin-Watson |
| 1 | .67[a] | .45 | .44 | .15 | .45 | 30.15 | <.001 | 1.83 |

[a.] Predictors: (Constant), FCDI, NCDI, SRCDI, MCDI, HCDI, ICDI

*Note.* SPSS output based on own calculations.

Figure 3 provides a model summary for the regression analysis of the relationship between the disclosure quality of <IR> capitals and ROE. The model is significant given that F-statistic has a significance of <0.05 and therefore the model resulting from the regression is usable for prediction of ROE based on variations in disclosure levels of <IR> capitals.  Figure 4 provides an

analysis of variance which provides a comparison of variances of the average values of regression and residual values by providing sum of their squares.

**Figure 4**

*Analysis of Variance considering ROE as the dependent variable*

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 3.90 | 6 | .65 | 30.15 | <.001[b] |
| | Residual | 4.70 | 218 | .02 | | |
| | Total | 8.59 | 224 | | | |

[b.] Predictors: (Constant), FCDI, NCDI, SRCDI, MCDI, HCDI, ICDI

*Note*. SPSS output based on own calculations.

The analysis of variance (ANOVA) shows that overall regression model was significant whereby F = 30.2, the p-value was less than 0.05. The sum of squares for the regression are explained by the model is 3.9 and is significant compared to residual sum of squares of 4.7. When the various <IR> capitals were regressed against ROE, it was identified that the variables with positive influence on ROE were HCDI, SRCDI and FCDI. HCDI, SRCDI and FCDI influence ROE by a factor of 0.19, 0.39 and 0.00 respectively. NCDI, ICDI and MCDI have a negative influence where the beta coefficient -0.03, -0.01 and -0.04. The standard coefficients which make the variances unitary also show the similar result albeit stronger. The variable that has the highest influence in terms of magnitude of the change it can cause is SRCDI as shown by the highest value of standard coefficients of beta. The model on the relationship between the disclosure quality of the various <IR> capitals of a firm and ROE can be reflected as follows:

$$ROE_1 = -0.30 - 0.03NCDI + 0.19HCDI + 0.39SRCDI - 0.01ICDI - 0.04MCDI + 0.00FCDI$$

$+ \varepsilon_{i1}.$

The item denoted by $\varepsilon_{i1}$ stands for other factors that may impact the financial performance of the firms; but which are not included in the ROE model. The descriptive of the statistics of the various variables were highlighted and explained in the subsection on descriptive statistics. Tests of linearity, homoscedasticity, non-autocorrelation, normality of distribution of errors, aspect of outliers, and multicollinearity for the model were generated. As was discussed under the trustworthiness of data section, the data was compliant with the requirements of OLS and the used data meets the thresholds for application of regression analysis. In order to test the hypotheses, it is observed that the equation under test is a multiple regression model. In a multiple regression model, to "determine how well the regression line obtained fits the given data points, F-test of overall significance is conducted" (Sureiman & Mangera, 2020, p. 116). The F-test which is an omnibus test for such an equation and provides an overall model fit in line with Sarstedt and Mooi (2019) where the authors state that in "assessing the overall model fit starts by interpreting the F-test, which determines whether or not the model is significant" (p. 227). The F-test provides the comprehensive statistical significance in multiple regression analysis (Sureiman & Mangera, 2020). From both the ANOVA table and Model Summary, the value of F is 30.15 and its p-value is less than 0.001. This falls under the critical point of 0.05. Therefore, this results in rejecting the null hypothesis that there is no statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE in line with both Sarstedt and Mooi (2019) and Futschik et al. (2018) on F-statistic. Following the statistical analysis, the decision concerning H10 was to reject it based on F-statistic whose p-value is less than 0.001 in line with the observation by Sureiman and Mangera (2020) and hence below the cut-off significance level of 0.05.

Based on the results of the study in testing the first null hypothesis, the resulting decision is to reject the null hypothesis that there is no statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE and thus accept its alternative that there is a statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE. Therefore, firms that have more quality reports of <IR> capitals can expect to appeal better to investors and attract more investments.

**4.2.2 RESEARCH HYPOTHESIS 2**

The second research objective was to ascertain the relationship between ROA of a firm and the disclosure quality of its <IR> capitals. The research question posed was "how is ROA of a firm related to disclosure quality of its <IR> capitals?" Null hypothesis was that there is no statistically significant relationship between ROA of a firm and the disclosure quality of its <IR> capitals. In order to meet the objective, research and hypothesis, a regression analysis for the relationship between disclosure quality of <IR> and ROA was conducted. Use of ROA in the equation differs from the first objective because ROA views firm performance from management's perspective thus takes into account an internal outlook of a firm's performance. The issue examined here is to find out how the disclosure quality of <IR> affects a firm's efficiency in utilizing resources at its disposal in generating profits. ROA "is a useful measure if one wants to evaluate how well the company has used its funds" (Choiriyah et al., 2021, p. 109).

By measuring financial performance through ROA, the coefficient of determination changes from 45% to 47% compared to the case when ROE was applied. This implies that the relationship is a little stronger under ROA compared to ROE. It shows that when ROA is considered in the equation, 53% of the relationship is attributable to other factors as reflected in

figure 5. In terms of the relationship between the quality of reporting on the six <IR> capitals and the financial performance, the relationship is at 69%. The F-statistic is 32.8 and it shows that the model is significant in measuring the effect it seeks to assess. The model is dependable. The Durbin-Watson statistic stands at 1.8 which is acceptable for absence of autocorrelation.  The use of return on assets as the measure for financial performance, shows a stronger correlational relationship since the R-statistic is 0.69 for the case of ROA as reflected in figure 5 compared to 0.67 in the case of ROE as reflected in figure 3. However, both regression models are statistically significant given that F-value in both cases has a significance level of <0.05. The standard error of the estimate is 0.07 shows that there is quite smaller distance of between the estimation and true value in comparison to the case in figure 3 when ROE was used as the dependent variable. This implies that the fit in the regression when ROA is used is better than when ROE.

**Figure 5**

*Summary of the Regression Model considering ROA as the dependent variable*

| | | | | | Change Statistics | | | |
|---|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | Sig. F Change | Durbin-Watson |
| 1 | .69[a] | .47 | .46 | .07 | .47 | 32.82 | <.001 | 1.81 |

[a.] Predictors: (Constant), FCDI, NCDI, SRCDI, MCDI, HCDI, ICDI

*Note*. SPSS output based on own calculations.

The ANOVA generated in the case of ROA and the disclosure quality of <IR> capitals is reflected in the figure 6:

**Figure 6**

*Analysis of Variance for the Relationship between ROA and the Quality of <IR> Capitals*

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | .83 | 6 | .14 | 32.82 | <.001[b] |
| | Residual | .92 | 218 | .00 | | |
| | Total | 1.76 | 224 | | | |

[b.] Predictors: (Constant), FCDI, NCDI, SRCDI, MCDI, HCDI, ICDI

*Note*. SPSS output based on own calculations.

The analysis of variance (ANOVA) here shows that the regression model was significant whereby F = 32.8, the p-value was less than 0.05. The sum of squares for the regression are explained by the model is 0.83 and is significant. By using ROA instead of ROE, the model's constant term of the model is -0.16. It is the term that ROA would be equal to if all other variables in the model were to be zero. The variables with positive influence on ROA are similar to the model under case of ROE and except NCDI which attains a positive coefficient meaning that the more quality pursuits of natural capital disclosure can be expensive by the management. This is unlike the case when financial performance is viewed from the investors' perspective where it attained a negative value under ROE. The variable that has the highest influence in terms of magnitude of the change it can cause is SRCDI just like it is under ROE. It has a Standard Coefficient (Beta) of 0.18 which is a little lower than in case of ROE. The model on the relationship between the disclosure quality of the various <IR> capitals and ROA can be shown as follows:

$$ROA_2 = -0.16 + 0.01NCDI + 0.06HCDI + 0.18SRCDI - 0.00CDI - 0.01MCDI + 0.04FCDI + \varepsilon_{i2}$$

The item denoted by $\varepsilon_{i2}$ stands for other factors that may impact the financial performance of a firm which are not included in the ROA model. The descriptive of the statistics of the various variables were highlighted and explained in the subsection on descriptive statistics.

On the issue of homoscedasticity, it was measured through A Breusch–Pagan test. The significance level of squared residuals on the test variables is above 0.05 and hence shows that the condition is met. The Durbin Watson statistic is in between the limits of the statistic threshold. Multicollinearity was ruled out by use of VIF and tolerance levels highlighted in the model coefficient results since the statistics lie between the required thresholds. Normality of distribution of errors was tested through Skewness and Kurtosis. Outliers were measured through use of Cook's test and the statistic meets the required threshold. From figure 5, the aspects of multicollinearity, linearity, homoscedasticity, autocorrelation, normality of distribution of errors and the aspect of outliers for the model show similar characteristics as the model on ROE.

To test the hypothesis that there is no statistically significant relationship between ROA of a firm and the disclosure quality of its <IR> capitals, in line with the recommendations in Sureiman and Mangera (2020) and Sarstedt and Mooi (2019) that the F-test provides the comprehensive statistical significance in multiple regression analysis; i.e., the overall statistical significance of the relationship between the independent and dependent variables, the model shows that that the F-statistic is 32.82. F-value is statistically and is <0.001. This finding results in rejecting the null hypothesis and therefore accepting the alternative hypothesis that there is a statistically significant relationship between ROA of a firm and the disclosure quality of its <IR> capitals and thus accepting H2a. This means that firms with better disclosure of <IR> capitals should expect better performance of turning their assets into higher returns.

**4.2.3 RESEARCH HYPOTHESIS 3**

The third research objective is to establish whether there is a statistically significant relationship between the quality of overall integrated reporting and financial performance of a firm. The research question being addressed is whether there a statistically significant relationship between the quality of overall integrated reporting and financial performance. The research hypothesis states that there is no statistically significant relationship between the quality of overall integrated reporting and financial performance. The study sought to test the preposition that the relationship (if exists) between the overall <IR> quality whereby the 49 indicators of <IR> were taken as a whole in line with previous studies (Affan, 2019; Islam, 2021; Lipunga, 2015) and financial performance of a firm is not statistically significant at a cut-off point of 0.05. What is being measured here is whether the quality of reporting on all the 49 indicators of <IR> as combined to form a single <IR> index is significantly related to financial performance. The test involved examining the relationship taking into consideration both ROE and ROA since both are considered as proxies of financial performance. The evaluation was based on a regression analysis using SPSS.

The test of ROE regressed against overall <IR> index had the following results reflected in figure 7. The coefficient of determination ($R^2$) is 40% showing that when <IR> is considered, it influences the changes in return on equity at 40% leaving 60% attributable to other factors. Figure 7 provides the F-test for model significance for a selected p-value, the applicable coefficient of determination ($R^2$) and related Adjusted $R^2$. The results show that the relationship between the disclosure quality of the <IR> and firm performance in terms of return on equity is 63%. To interpret the relationship, adjusted R squared was used. The Adjusted R Square is 0.40 and shows the extent to which the model is fit in view of the presence of the various predictors. The F-statistic

is 145.9 and it shows that the model is useful since the significance level of the F-statistic is below the threshold of 0.05. Durbin-Watson statistic which measures whether there is autocorrelation is 1.8. To identify the statistical significance of the relationship between the quality of overall integrated reporting and ROE.

**Figure 7**

*Summary of the Regression Model considering ROE as the dependent variable*

| | | | | | Change Statistics | | | |
|---|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | Sig. F Change | Durbin-Watson |
| 1 | .63[a] | .40 | .39 | .15 | .40 | 145.92 | <.001 | 1.75 |

[a.] Predictors: (Constant), IRI

*Note*. SPSS output based on own calculations.

To compare the averages of the regression and the residuals, an ANOVA was generated as indicated in figure 8.

**Figure 8**

*Analysis of Variance with ROE as the dependent variable*

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 3.40 | 1 | 3.40 | 145.92 | <.001[b] |
| | Residual | 5.19 | 223 | .02 | | |
| | Total | 8.59 | 224 | | | |

[b.] Predictors: (Constant), IRI

*Note.* SPSS output based on own calculations.

ANOVA in figure 8 shows an F-statistic of 145.9 and the statistic is significant since *p*-value is less than the critical value of 0.05 and hence the overall model is useful to predict the relationship between IRI and ROE.

When the measurement of financial performance is done through return on assets, the coefficient of determination changes from 40% to 44% implying that the relationship is stronger. It shows that when ROA is considered in the equation rather than ROE, 56% of the relationship is attributable to other factors. For the correlation R, it is 66%. The F-statistic is 174.4 and significant in measuring the effect it seeks to assess. The model is dependable and thus serves the purpose for the study. The Durbin-Watson statistic stands at 1.8 signifying absence of autocorrelation.

**Figure 9**

*Summary of the Regression Model considering ROA as the dependent variable*

| | | | | | Change Statistics | | | |
|---|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | Sig. F Change | Durbin-Watson |
| 1 | .66[a] | .44 | .44 | .07 | .44 | 174.41 | <.001 | 1.82 |

[a.] Predictors: (Constant), IRI

*Note*. SPSS output based on own calculations.

Apart from the model summary information discussed in Figure 9, analysis of variance was also generated which shows data linked to the regression and the data linked to the error term. The results from data analysis shows that the regression model has a sum of squares of 0.77 compared to the residual term with 0.99. This implies that the variation in ROA explained by the overall integrated reporting disclosure is lower than unexplained variation. However, the explained portion is significant and has a strong relationship since the explained portion is 44% as shown in

figure 9.  In figure 10, ANOVA is presented.

**Figure 10**

*Analysis of Variance with ROA as the dependent variable*

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | .77 | 1 | .77 | 174.41 | <.001[b] |
| | Residual | .99 | 223 | .00 | | |
| | Total | 1.76 | 224 | | | |

[b.] Predictors: (Constant), IRI

*Note.* SPSS output based on own calculations.

The analysis of variance (ANOVA) shows that overall regression model was significant whereby F = 174.1, the p-value was less than 0.05.  The error term has more sum of squares just like the case was when ROE is used in the analysis.  The model is useful since the F-statistic is significant.

The relationships between each <IR> and financial performance are provided in the following figures. The figure 11 provides the t-values as well as significance values for the unstandardized β which is used to show the extent to which <IR> does influence changes in financial performance. The model fulfills the requirements of use of OLS in terms of linearity, homoscedasticity, non-autocorrelation, normality of distribution of errors, aspect of outliers, and multicollinearity. The model's constant term is -0.38. This is a value which defines ROE in case IRI value is zero. Data from the Figure 11 shows that the beta coefficient is 0.6. The standard error is below 0.05. The standardized coefficient for IRI is 0.6 and it is the one that can be compared to similar studies to show the strength or weakness of the coefficient vis-à-vis other studies.  From

the data, the model on the relationship is featured as $ROE_3 = -0.38 + 0.6IRI + \varepsilon_{i3}$. The unstandardized beta of -0.38 shows the intercept when the explanatory variable of IRI is zero. The value of -0.38 shows the extent to which ROE would be less than zero in case IRI is zero. The student test in this model has a value of 12.08 and it is significant since its p-value is <0.001. This is below the cut-off point of 0.05.

**Figure 11**

*The Coefficients of the relationship between <IR> Quality and ROE*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | -.38 | .04 | | -9.38 | <.001 | | |
| | IRI | .60 | .05 | .63 | 12.08 | <.001 | 1.00 | 1.00 |

*Note*. SPSS output based on own calculations.

When ROA is used instead of ROE, the relationship in in the figure 12 is observed. This enables the generation of the model for return on assets as $ROA_4 = -0.18 + 0.3IRI + \varepsilon_{i4}$. The model's constant term changes from -0.38 in the case where financial performance is viewed from the investors' perspective to -0.18 from the management perspective. This is what ROA would be if IRI was equated to zero, that is if integrated reporting would be seen as worthless. The beta coefficient for IRI is 0.3 and the standard error is below 0.05. To test the hypothesis that there is no statistically significant relationship between the quality of overall integrated reporting and financial performance, this was examined by examining whether the slope of the equation is equal to zero. From both the equations involving ROE and ROA, for the relationships of the financial performance and IRI, the slopes are positive with values of 0.6 in the case of ROE and 0.3 in the

case of ROA. In both cases, the student t values are significant since the statistical significance is less than 0.05. The conclusion is therefore that the null hypothesis that there is no statistically significant relationship between the quality of overall integrated reporting and financial performance is rejected and the alternative hypothesis that there is a statistically significant relationship between the quality of overall integrated reporting and financial performance is accepted.

**Figure 12**

*The Coefficients between <IR> Quality and ROA*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | -.18 | .02 | | -10.21 | <.001 | | |
| | IRI | .29 | .02 | .66 | 13.21 | <.001 | 1.00 | 1.00 |

*Note*. SPSS output based on own calculations.

**4.2.4 RESEARCH HYPOTHESIS 4**

Objective four attempts to establish the controlling effect of leverage and firm size on the relationship between disclosure quality of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm is related to its ROE. The research question being addressed here is "how does leverage and firm size affect the relationship between the disclosure quality of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm related to its ROE?" To answer this question, a test of the null hypothesis that there is no statistically significant controlling effect of leverage and firm size on the relationship between the quality of reporting on human, social & relational, financial, manufactured, intellectual and natural capitals of a firm and its ROE was tested. This research hypothesis sought to test the preposition that there is a controlling effect of both leverage and firm size on the relationship between the disclosure quality of <IR> capitals of a firm and its ROE. What is being measured here is to assess if there is a significant role that the controlling variables (leverage and firm size) have on the relationship between the <IR> capitals and ROE. The concept here is that if a controlling effect is established, then the strength of the relationship between the primary variables of the study could be questioned. If the relationship between the primary variables of the study is steady even after inclusion of the controlling variables, then it would mean that the model under examination is more reliable for use in predicting ROE.

Results from analysis of data show that the relationship between <IR> capitals and return on equity shows a rate of 68% as depicted in figure 13. The coefficient of determination is 46% while its adjusted value is 44%. The R square change is the same as R square since the independent and control variables were entered in SPSS in one step. The model is significant at F = 23.42 since the $p$-value of the F-statistic is <0.05. The conditions for use of regression analysis in terms of

multicollinearity, linearity, homoscedasticity, non-autocorrelation, normality of distribution of errors, aspect of outliers was respected. Figure 13 shows the relationship between the disclosure quality of MCDI, NCDI, SRCDI, FCDI, HCDI with ROE when firm size and leverage are used as control variables in the equation results in a correlation coefficient of 0.68. This is quite a strong relationship.

**Figure 13**

*Model Summary for the Relationship between <IR> Capitals and ROE when Controlled for Leverage and Firm Size*

| | | | | Change Statistics | | | |
|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | R Square Change | F Change | Sig. F Change | Durbin-Watson |
| 1 | .68[a] | .46 | .44 | .46 | 23.42 | <.001 | 1.84 |

[a.] Predictors: (Constant), FSIZE, MCDI, LEV, NCDI, SRCDI, FCDI, HCDI, ICDI

*Note*. SPSS output based on own calculations.

In figure 14, the result of the Analysis of variance for ROE against <IR> capitals, leverage and firm size is reflected. It shows that the explained variation is smaller than the residual term and this confirms the observations made in figure 13. The F-statistic in figure 14 is 23.42 and is significant since it is below the cut-off point of 0.05. This confirms that the data gives sufficient evidence that the regression in figure 13 is reliable in fitting the data.

**Figure 14**

*Analysis of Variance for ROE against <IR> Capitals, Leverage and Firm Size*

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 3.99 | 8 | .50 | 23.42 | <.001[b] |
| | Residual | 4.60 | 216 | .02 | | |
| | Total | 8.59 | 224 | | | |

[b.] Predictors: (Constant), FSIZE, MCDI, LEV, NCDI, SRCDI, FCDI, HCDI, ICDI

*Note*. SPSS output based on own calculations.

The analysis of variance shows that the sum of squares explained by the regression is 3.99 while those explained by the error term is 4.60. As highlighted in figure 14, ANOVA gives further evidence that the relationship is significant.  Figure 15 provides the coefficients of the relationship between the disclosure quality of natural capital, human capital, social and relational capital, intellectual capital, manufactured capital and financial capital against return on equity. Leverage and firm size are included in the regression as control variables. The aspect of controlling for leverage and firm size distinguishes this model from the one reflected in the first research question. This aimed at establishing the stability of the model reflected in $ROE_1$.

**Figure 15**

*The Coefficients for the Controlling Effect of Leverage and Firm Size on the Relationship between*

*<IR> Quality and ROE*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | -.31 | .07 | | -4.57 | <.001 | | |
| | NCDI | -.02 | .03 | -.03 | -.63 | .53 | .92 | 1.08 |
| | HCDI | .21 | .11 | .27 | 1.99 | .05 | .14 | 7.25 |
| | SRCDI | .37 | .07 | .47 | 5.17 | <.001 | .30 | 3.37 |
| | ICDI | -.02 | .10 | -.03 | -.20 | .84 | .12 | 8.54 |
| | MCDI | -.03 | .07 | -.05 | -.47 | .64 | .24 | 4.08 |
| | FCDI | .01 | .09 | .01 | .06 | .95 | .19 | 5.25 |
| | LEV | .07 | .04 | .10 | 1.89 | .06 | .95 | 1.05 |
| | FSIZE | .00 | .00 | -.03 | -.64 | .52 | .93 | 1.08 |

*Note*. SPSS output based on own calculations.

Results in figure 15 show that the resultant model when leverage (LEV) and firm size (FSize) were added as control variables into the model containing ROE where ROE is the dependent variable and the <IR> capitals as independent variables. The focus of the model was not on individual <IR> capitals but the joint significance of the model and thus the use of the F-statistic rather than the unstandardized beta values. Given the importance of each <IR> capital to theoretical explanation of the influence of integrated reporting on financial performance, each <IR> capital was retained in the model $ROE_5$:

$$ROE_5 = -0.31 - 0.02NCDI + 0.21HCDI + 0.37SRCDI - 0.02ICDI - 0.03MCDI + 0.01FCDI + 0.07LEV - 0.00FSize + \varepsilon_{i5}$$

The study on both leverage and firm size was in the context of whether or not their presence affects the relationship between primary variables of the study. This is the reason the study did not venture into more analysis on the control variables or building standalone models of firm size and

leverage with financial performance. In order to identify the controlling effect of leverage (LEV) and firm size (FSize) on the relationship between <IR> capitals and ROE, the statistical significance levels of the two control variables were examined, and it shows a *p*-value of 0.06 and 0.52 respectively as provided by figure 15 generated by SPSS. The *p*-values are above the threshold value of 0.05 which results in failing to reject the null hypothesis that there is no statistically significant controlling effect of leverage and firm size on the relationship between <IR> capitals and ROE.

Following the recommendation by Sureiman and Mangera (2020) and Sarstedt and Mooi (2019) that in a multiple regression analysis, the F-test provides the overall statistical significance of the relationship between variables under study, given that in both tests of the relationships between the various <IR> capitals and ROE have F-statistics being significant. Given the lack of statistical significance of both leverage and firm size as controlling effect on the primary relationship between <IR> capitals and ROE, it results in failure to reject the null hypothesis number 4 that there is no statistically significant controlling effect of leverage and firm size on the relationship between the quality of reporting on human, social & relational, financial, manufactured, intellectual and natural capitals of a firm and its ROE. The conclusion therefore is that the controlling effect of both leverage and firm size on the relationship between <IR> capitals and ROE cannot be statistically confirmed due to lack of statistical significance.

To corroborate the results on the impact of the control variables concerning the relationships between the variables of interest, a hierarchical regression analysis was performed with the control and independent variables entered in SPSS through different blocks. The control variables (leverage and firm size) were entered first and then <IR> capital variables were entered next and regressed on ROE.

**Figure 16**

*The Hierarchical Model of the Relationship between Disclosure Quality <IR> Capitals and ROE*

*Controlled for Firm Size and Leverage*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | Sig. F Change | Durbin-Watson |
| 1 | .17[a] | .03 | .02 | .19 | .03 | 3.41 | .03 | |
| 2 | .68[b] | .46 | .44 | .15 | .43 | 29.22 | <.001 | 1.84 |

[a.] Predictors: (Constant), FSIZE, LEV

[b.] Predictors: (Constant), FSIZE, LEV, MCDI, NCDI, SRCDI, FCDI, HCDI, ICDI

*Note*. SPSS output based on own calculations.

In figure 16, the model relates to the regression of leverage and firm size on ROE. What is of interest in this case is to analyze what happens to the relationship between <IR> capitals and ROE with inclusion of leverage and firm size as control variables. R square change shows that the contribution of the <IR> capital to the model is 44% which is greatly higher than what the control variables had contributed. Additionally, R square change's F- statistic is 29.22 and it is significant. Therefore, even when the control variables are introduced, the relationship between the variables of interest for the study is still significant. It can therefore be deduced that the introduction of the control variables has not changed the statistical significance of the relationship between <IR> capitals and ROE at the cut-off point of 0.05. The results in the hierarchical model in figure 16 corroborate those in figure 13.

**4.2.5 RESEARCH HYPOTHESIS 5**

The fifth objective to ascertain how the quality of overall integrated reporting affects financial performance of a firm in the presence of control variables of firm size and leverage. The research questions stated that "how is the overall integrated reporting quality of a firm related to its financial performance in the presence of control variables of firm size and leverage?". The research hypothesis tested in this case was there is no statistically significant relationship between the quality of overall integrated reporting and financial performance in the presence of control variables of firm size and leverage. What is being measured here is the examination of the extent to which the quality of disclosure of the overall <IR> whereby the 49 indicators of <IR> are taken as a whole in line with previous studies (Affan, 2019; Islam, 2021; Lipunga, 2015) and financial performance of a firm is significant at a cut-off point of 0.05. The hypothesis is that there is no statistically significant relationship between the quality of overall integrated reporting and financial performance in the presence of control variables of firm size and leverage. The test involved examining the relationship taking into consideration of both ROE and ROA since both are considered as proxies of financial performance in line with many previous research studies.

Results reflected in figure 17 show that <IRI> (an index measure of overall <IR> disclosure quality) is strongly related with ROE at a rate of 64% in the presence of the control variables. 41% of the variances in ROE are explained by the predictors. F-statistic is 51.98 and it is significant at 0.05 and therefore the model is reliable. The adjusted R squared maintains the same value as the coefficient of determination which shows that having added firm size and leverage in the model does not bring about the change in coefficient of determination. The adjusted R squared provides considers <IRI> as the independent variable that has an effect on the importance of the model. An analysis of variance was also performed for the relationship between overall integrated reporting

disclosure quality and return on equity when firm size and leverage were included in the model as

control variables. The results in figure 18 show that the sum of squares for the regression model is

3.55 and it is significant at 0.05. This therefore confirms the finding reflected in the model

summary in figure 17. Given that the F-statistic in figure 18 is 51.98 and is significant, it shows

that the variation in ROE resulting from changes in overall integrated reporting disclosure quality

is real.  Figure 17 is the summary of the model on the relationship between <IR> and ROE when

firm size and leveraged are included in the model as control variables.

**Figure 17**

*Summary of the Model on the Relationship between <IR> and ROE when Control Variables are*

*included*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | Sig. F Change | | |
| 1 | .64[a] | .41 | .41 | .15 | .41 | 51.98 | <.001 | | 1.78 |

[a.] Predictors: (Constant), FSIZE, IRI, LEV

*Note*. SPSS output based on own calculations.

Figure 18 presents the results of an analysis of variance for the regression model involving

ROE, overall integrated reporting metric and the control variables of leverage and firm size. The

results from figure 18 confirm that the regression model resulting from the analysis is significant.

The total degrees of freedom in ANOVA calculations come from the sample size of 225 and

deducting 1. The model predictors are the degrees of freedom for regression while the difference

between total degrees of freedom and the regression degrees of freedom become the degrees of

freedom for the residual. Degrees of freedom show the number of regressors that may vary in a

model. In this case, they are 3 although one is the independent variable (overall integrated reporting disclosure quality) while leverage and firm size are control variables. The role of mean square of 1.18 in the model is to identify whether the regressors in the model are significant. In this case they are as reflected with the significance level of <0.05.

**Figure 18**

*Analysis of Variance for the Relationship between IRI, LEV, FSize and ROE*

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 3.55 | 3 | 1.18 | 51.98 | <.001[b] |
| | Residual | 5.04 | 221 | .02 | | |
| | Total | 8.59 | 224 | | | |

[b]. Predictors: (Constant), FSIZE, IRI, LEV

*Note*. SPSS output based on own calculations.

The study also analyzed the coefficient overall integrated reporting disclosure quality, leverage and firm size as reflected in figure 19. Results reflected in figure 19 shows that IRI is significantly related to ROE with a beta coefficient of 0.59. This means that a unit change in the level of overall <IR> quality results in an increase in ROE by 0.59 and in a statistically significant way. The presence of leverage and firm size as control variables have not affected the relationship between the main variables. The generated model is $ROE_6 = -0.36 + 0.59IRI + 0.08\ LEV + 0.00$ FSize $+ \varepsilon_{i6}$.

**Figure 19**

*The Coefficients between <IR> Quality, ROE with presence of Control Variables in the*

*Model*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | -.36 | .06 | | -5.56 | <.001 | | |
| | IRI | .59 | .05 | .62 | 12.03 | <.001 | 1.00 | 1.00 |
| | LEV | .08 | .04 | .11 | 2.08 | .04 | .97 | 1.03 |
| | FSIZE | .00 | .00 | -.06 | -1.20 | .23 | .97 | 1.03 |

*Note*. SPSS output based on own calculations.

A similar situation is observed in the situation when ROA is used in the model instead of

ROE.

**Figure 20**

*Model Summary in the Relationship between IRI, LEV, Fsize and ROA*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | Sig. F Change | |
| 1 | .69[a] | .48 | .47 | .06 | .48 | 67.31 | <.001 | 1.83 |

[a.] Predictors: (Constant), FSIZE, IRI, LEV

*Note*. SPSS output based on own calculations.

Evidence from figure 20 shows that <IR> is strongly related with ROA at a rate of 69% in

the presence of the control variables.

**Figure 21**

*ANOVA Statistics in the Relationship between IRI, LEV, Fsize and ROA*

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | .84 | 3 | .28 | 67.31 | <.001[b] |
| | Residual | .92 | 221 | .00 | | |
| | Total | 1.76 | 224 | | | |

[b.] Predictors: (Constant), FSIZE, IRI, LEV

*Note*. SPSS output based on own calculations.

From figure 21, the sum of squares for the regression is lower than the residual explanations of the variation in the dependent variable. The model is significant with F-value of 67.31.

In figure 22, beta coefficients for the model are established on the relationship between <IR> quality and return on assets in the presence of leverage and firm size as control variables is established. The resulting model from figure 22 is that $ROA_7 = -0.14 + 0.29IRI - 0.07\ LEV - 0.00\ FSize + \varepsilon_{i7}$.

**Figure 22**

*The Coefficients between <IR> Quality, ROA with presence of Control Variables in the Model*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | -.14 | .03 | | -4.95 | <.001 | | |
| | IRI | .29 | .02 | .67 | 13.78 | <.001 | 1.00 | 1.00 |
| | LEV | -.07 | .02 | -.20 | -4.03 | <.001 | .97 | 1.03 |
| | FSIZE | .00 | .00 | -.05 | -.98 | .33 | .97 | 1.03 |

*Note*. SPSS output based on own calculations.

Results from the overall model reflecting the relationship between overall <IR> quality and financial performance shows that inclusion of leverage and firm size as control variables has not deterred the statistical significance of the relationship between the primary variables, meaning overall <IR> quality and financial performance. This is because the F-statistics which that reflects the overall significance of the model in the case of ROE and ROA have *p*-values of <0.001 in both cases and therefore this leads to the rejection of the hypothesis there is no statistically significant relationship between the quality of overall integrated reporting and financial performance in the presence of control variables of firm size and leverage. The H5a was therefore note supported.

To corroborate the findings and decision from ROE and ROA models generated through multiple regression analysis, a hierarchical regression model in figure 23 on the relationship between IRI and financial performance when leverage and firm size are control variables. The results from the use of both ROE and ROA which are respectively used as financial performance proxies shows that the relationship between the variables of interest is significant in both cases.

**Figure 23**

*Model Summary in the Relationship between IRI, LEV, FSize and ROE*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | Sig. F Change | Durbin-Watson |
| 1 | .17[a] | .03 | .02 | .19 | .03 | 3.41 | .03 | |
| 2 | .64[b] | .41 | .41 | .15 | .38 | 144.71 | <.001 | 1.78 |

[a.] Predictors: (Constant), FSIZE, LEV

[b.] Predictors: (Constant), FSIZE, LEV, IRI

*Note*. SPSS output based on own calculations.

Figure 23 provides the output of a hierarchical regression for the control variable of leverage and firm size entered first in the model followed by IRI and maintain ROE as the dependent variable. The results show a weak relationship of 17% between the control variables and ROE. While this model was not adopted as control variables are not variables of interest in this study, they were considered in as far as their presence may impact the primary relationships concerning quality of <IR> capitals as well as <IR> quality with profitability. Data in figure 23 shows that Adjusted R squared under the case for ROE is 0.41 and is significant (<0.001). The result using the hierarchical model in figure 23 compared to regular multiple regression analysis conducted in figure 17 and therefore the results in the regression relevance was corroborated using both methodologies. The analysis of variance for the regressions in two models has statistics that show a significant F which reveal that the relationships in models are significant. The data also shows that there is a significant relationship between IRI (which represents <IR> quality) and financial performance (represented by ROE) and the conclusions is that the presence of control

variables do not deter the statistical significancy of the relationship between <IR> quality and financial performance.

## 4.3 EVALUATION OF FINDINGS

The evaluation of findings was conducted in two sub-sections. The first sub-section is about descriptive statistics and characteristics of the sampled firms. The second sub-section is about evaluation of findings on inferential statistics.

## 4.3.1 DESCRIPTIVE STATISTICS AND <IR> PRACTICES OF FIRMS

Data from figure 2 shows that a firm's <IR> capital on average had high numbers on financial and manufactured capitals which were reported at 86% and 84% respectively. A similar result was found by Dayana et al. (2020) in their study on <IR> in Malaysia. Anifowose et al. (2020) also argue that "the most disclosed capital is financial capital" (p. 575) and is in agreement with findings of this study. Standard deviations show the level of variability of the data which is all below 0.32 except firm size. However, some other studies carried out in other countries find that manufactured capital is the least disclosed capital. An example is Anifowose et al. (2020) who found that it is manufactured capital to be reported at 40.5% which was the lowest among other capitals in their study. Three human-related <IR> capitals; also known as the tripartite human related capitals, consisting of the human capital, intellectual capital and social and relationship capital (Dayana et al., 2020) are well reported at rates of 82%, 83% and 75% respectively and are thus highly regarded in mandatory <IR> jurisdictions like South Africa. This is confirmed in Corvino et al. (2020) who find that in emerging economies like South Africa, the aspect of human rights and health safety standards are very crucial. While doing a study on how often the various <IR> capitals are cited by scholars, Coulson et al. (2015) find that human and social capital

supersedes other types of <IR> capitals and that manufactured capital is the one that has been least cited.

The mean disclosure for natural capital 67% and was the least disclosed among the <IR> capitals in agreement with Suttipun and Bomlai (2019) in their study on level of <IR> among 150 firms listed on the Thailand Stock Exchange in the period 2012-2015 where they investigate <IR> quality in yearly reports and found that among the <IR> capitals, natural capital is the least reported. However, the results are in contrast with the results of Zanellato (2021b) who through the examination of the quality of integrated reports in the extracting sector in Europe using 15 oil, gas and mining companies that adopted IIRC framework find that the firms disclose more information related on environment than social aspects. Results from prior studies therefore corroborate the current findings.

The results of this study also agree with those by Dayana et al. (2020) in terms of low rates of disclosure of natural capital with exception that their finding revealed a lower natural capital disclosure of 35%. Anifowose et al. (2020) in their study find the average disclosure rates to be 49.2% for natural capital, 49% for human capital, 47.2% for social and relationship capital and 47% intellectual capital. Adegbie et al. (2019) find closely similar results in Nigeria. The results being low could be showing "that these capitals have been on disclosure over the years but using different nomenclatures" (Anifowose et al., 2020, p. 575). In Malaysia, Dayana et al. (2020) finds disclosure of 23.6%, 22.4%, and 21.3% for human, intellectual, social and relationship and natural capitals respectively. The results of this study therefore show that for jurisdictions with mandatory <IR>, their disclosure quality is to a large extent higher than in those where it is not mandated in conformity with the view of (Islam, 2021; Lipunga, 2015). The results of this study are consistent with findings in Almăşan et al. (2019) showing that experiences from European companies on the

adoption of <IR> capitals are that environmental, human and the social & relational are less represented in the integrated reports compared to the financial and manufactured capitals which represent the economic indicators.

IRI stands for the overall <IR> quality standing of disclosure in comparison to the 49 indicators of all <IR> capitals of a firm. Date from figure 2 shows that the minimum disclosure value is 0%, mean of 79% and maximum value of 100%. This shows that some of the firms reported fully on all the indicators for the <IR> capitals in line with the finding in Anifowose et al. (2020). Prior studies in some cases reveal similar average results for <IR>. Nurkumalasari et al. (2019) finds mean reporting value to be 74% in Asia, Islam (2021) finds it to be 79% in Bangladesh which was an improvement from 61.5% found by Nakib and Dey (2018) in 2016 in the same country. Anifowose et al. (2020) find the rate to be 74%. Lipunga (2015) in a study on <IR> in developing countries with a case of Malawi finds that the average of IRI was 43% showing that there was an <IR> gap of 57% and Dayana et al. (2020) find it to be below 50% in Malaysia. In a study in Egypt, El-Deeb (2019) finds the mean of <IR> index to be 48%. The results of the current study are also supported by the findings in a study by Radley (2012) where they find that perceptions of <IR> among investors and analysts, show that over 80% of them believe <IR> to be useful to them in their company assessments thus showing the utility of <IR> from the viewpoints of the investors as well as the analysts. The findings are a little higher compared to results in Tiron-Tudor et al. (2020) during their study of 98 integrated reports in European firms between 2013 and 2017 based on the IIRC framework where they find that the <IR> index was 70%.

The <IR> is also a little higher compared to findings by Anis and Indira (2017) in a study of 58 manufacturing firms listed on the JSE and using a regression analysis where they find that

<IR> is at 70% of the items that were reported. Through this, it can be said that <IR> quality in South Africa and Namibia is relatively similar to other jurisdictions in Africa and to some extent those in Asia. This supports the observation by Adegboyegun et al. (2020) that mandatory <IR> has value in promoting the disclosure practice. In line with Lipunga (2015), there is need for more efforts to further promote <IR> so the listed companies can improve <IR> quality and mandatory reporting can relatively make a difference.

Financial performance was measured through return on assets and return on equity which are the common ways in literature to represent the dependent variable. The average for ROA was 5% and is similar to 5.24% found in Amirrudin et al. (2020) in their study on 120 listed firms drawn from the IIRC website. However, it is high in comparison to 3% in Asia (Nurkumalasari et al., 2019) but lower compared to 8.9% (Islam, 2021) and 13% in (Rahman et al., 2020). ROE average was 9%. This is similar to 9.4% of return on capital employed by Amirrudin et al. (2020) but higher than some cases like 2.3% in other studies (El-Deeb, 2019). It can be concluded that on average the firm's sampled from NSX and JSE had a positive profitability position. To control the effect of other common factors that impact financial performance, firm size and financial leverage were used. The average firm size was 14.07 and this is comparable to some studies like Nurkumalasari et al. (2019) in Asia where the average size was 14.04. Similar too in Rusdiyanto and Narsa (2020). It is however lower compared to findings by Ismail et al. (2022) in their study on sustainability reporting in emerging markets where they find mean of natural log of assets to 18.9. For leverage, the mean value is 0.43. This is higher than findings by findings by Ismail et al. (2022) where leverage is to 0.231. This shows that the firms are quite resourced with assets. However, they are quite levered.

The study notes that most firms address the <IR> capitals well since the lowest average disclosure is 67% and this is natural capital while the highest is 86% for financial capital. The overall picture for <IR> shows an average of 79%. This is quite high in comparison to some other cases reported in a number of other jurisdictions. While <IR> is impressive in most of the listed companies given the level at which it stands, there are areas that are underreported. Basing on the 49 indicators of <IR> capital disclosures as adapted from Setia et al. (2015) and Anifowose et al. (2020) and with reference to the IIRC framework, the following areas are below general average of 79%:

a) Natural capital: energy consumption, amount of waste, recycled waste.

b) Human capital: Employee competence and capabilities, human resource development, employee diversity, and human resource management.

c) Social and relational capital: Relations with competitors, customer health safety and privacy, claims and lawsuits, relations with shareholders, human rights, relations with lenders, involvement in social action (volunteering and community work), relations with suppliers, indigenous rights and customer satisfaction.

d) Intellectual capital: Corporate image and market share.

e) Manufactured: Infrastructure (such as roads, waste and water treatment plants).

f) Financial capital: Operations and information on government grants.

Given the financial implications of under-reporting on <IR>, it is imperative that firms take note of the less reported items (a to f above mentioned) and address this area through enhanced reporting. If the reporting level is to improve from the current level of 79% to a higher level, it requires that the identified gaps be filled.

As part of description of the characteristics of how farms practice integrated reporting, an effort was mad to find out 30 of the firms with the highest integrated reporting index are reporting. This aims to show the key aspects of <IR> capitals reported in those firms so as to have a feel of key contents of the reports. The firms identify <IR> capitals as resources and outputs of value and report what they do to achieve sustainability across the capitals. One report mentions: "We keenly understand the complex interplay between the capitals or resources that underpin our long-term sustainability as a company" (Anonymous, p. 16). Financial capital items reported in the integrated reports include debt, equity, use of resources according to their strategy, investment in new business initiatives, balanced funding mix, creating and managing stakeholder value, financial ratios, sales, profit, and return on investment. Under intellectual capital, common items reported are the number of brands and labels, new products, reputation and goodwill, strategic partnerships, R&D for better business, value of their brands, reputation, technical studies conducted, patents, licenses, copyrights, MIS infrastructure, knowledge-based assets, procedures and processes, users that effectively use MIS in their operations, and innovation awards.

In terms of human capital, common items reported are the number of talented staff, investment in human capital development, capabilities of human capital, diversity in workforce, number of hours invested by each human resource in training, strength of leadership team, human resource ethics, health and safety of staff, employees as ambassadors, selection, development and management of the staff, rewards for top performers, talent development for staff to attain senior leadership, succession plan, women representation, percentage of black employees, black senior managers and employee turnover. For social and relational capital, items reported include work done for the communities including corporate social responsibility (CSR) activities, number of lives impacted by their activities, stakeholder engagement, amount invested in support to black-

owned businesses, employee relations, customer relations, level of trust, stakeholder engagement, responsible corporate citizen, stakeholder management as a way to achieving success of the organization, taxes paid, amount on CSR activities, support to schools and new jobs created. One of the companies mentioned that for disclosure on social & relational capital, it is about "our relationships with suppliers, tenants, property and asset managers, communities and other networks" (Anonymous, p. 1). Another company said that "management identified disregard of the safety guidelines as the main reason for the major incidents" (Anonymous, p. 42). Companies invest to grow talent.

Under manufactured capital, reported items include number of physical assets, technological capital like physical infrastructure and IT infrastructure, investment in artificial intelligence, machinery for production, facilities, tangible and intangible infrastructure used to conduct business activities, as well as plant and equipment. Natural capital items include energy and water use in their operations, commitment to reducing environmental footprint through efficiency in use of energy and water, energy consumption, marine biomass, environment management systems, environmental management, resource acquisition, economic value of the mineral resource, as well as consultation with the relevant authorities on environmental management matters, which include bunded fuel areas; plant storm water run-off and storage; water usage and recycling and dust emissions. On natural capital, one firm said "We support the transition to a low-carbon economy and believe we can make a meaningful impact in addressing climate change. We look for opportunities to either reduce the negative impact or prolong the life on our planet" (Anonymous, p. 2). Concerning intellectual capital, firms do leverage the skills of their human capital to give solutions to clients' issues.

Integrated reports with the items exemplified above show that they are quite rich with inclusion of a sizeable number of indicators of a quality integrated report. Therefore, it can be said that the firms that have to some extent understood the essence of reporting on the various <IR> capitals have gone a long way to articulate the way they have used them to create value for different stakeholders, attain their strategic goals as well as strive to do better in sustainability. However, some firms still refer to the reports as annual reports showing that the discipline and practice of <IR> is yet to fully be adopted by all listed firms in South Africa and Namibia. This is a challenge that can be addressed through increased vigilance in ensuring the listing rules of both JSE and NSX are fully adhered to including the requirements on <IR>. Also, it will be beneficial for the reporting companies as well as the users of the reports if a comparable format of reporting is used by the companies. This too can be made a requirement further improve the level of quality of integrated reporting.

## 4.3.2 INFERENTIAL STATISTICS OF THE STUDY

The significance threshold of 0.05 was used to establish whether the variables under study were significantly related and therefore whether null hypothesis is validated or not. The F-values were used to test the multiple regression analysis where multiple <IR> capitals were involved in the regression while t-values were interpreted in order to test the overall <IR> quality relationships with financial performance. Where the coefficient of correlation (unstandardized $\beta$) was found significant (less than 0.05), the researcher rejected the null hypothesis and thus accepted the alternative hypothesis. Where insignificant; it would result in failure to reject the hypothesis. The standardized $\beta$ coefficient was also used to show the relative effect of a one unit increase in the independent variable within the same model towards financial performance variable keeping other variables constant in line with argument by Sarstedt and Mooi (2019).

The study showed that there were no variables among the independent variables without a relationship; that is, where the coefficient is zero and this therefore shows that all the variables have something to contribute towards financial performance even though the contribution can be in the reverse direction (negative), in the positive direction and with significance or not. The issue therefore was whether the relationships between those variables would be significant or not. It is in that framework that each hypothesis was examined to verify whether it is valid or not in view of the stated thresholds. Presentation of empirical results was undertaken through descriptive statistics as well as inferential statistics. The inferential statistics facilitate the testing of the hypotheses and this enabled the evaluation of the study findings. To evaluate the impact of quality of <IR> as well as quality of disclosure of <IR> capital, the independent variables' data were lagged for a year (therefore 2018 data was used) to find its impact on 2019 financial performance and this was done in line with Helmina et al. (2018).

The six <IR> capitals of a firm have been found to be mostly well reported in comparison to a number of studies in other countries. This can be attributed to the fact that both South Africa and Namibia have made <IR> mandatory. Financial capital was found to be the most reported capital followed by manufactured capital. The human related capitals: human, social & relational, and intellectual capitals were well reported as well. Financial and manufactured capitals are more of a statutory requirement since most of the data relate to what is found in international financial reporting standards and thus not surprising that they are the most reported capitals. As Setia et al. (2015) who was among the pioneers to study the <IR> capitals notes, the two capitals are statutory. The study finds that natural capital is lagging behind other capitals in terms of reporting. This is surprising given the need to increase environmental concerns and its reporting. Therefore, there is need to have a closer follow-up on the implementation of <IR> framework at both NSX and JSE.

In the first hypothesis, the coefficient of determination ($R^2$) shows that the changes in ROE is explained by the quality disclosure of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm at a level of 45%. The remainder of the changes in financial performance can be explained by other factors including leverage and firm size. The model is mildly strong. The F-statistic in all the models is significant, it shows that the models can be relied upon as a way of estimating the dependent variable. The F-statistic also shows that the relationships between the independent and dependent variable is significant. The relationship of the independent and dependent variable even gets stronger when ROA is used as a proxy for financial performance since $R^2$ increases from 45% to 47%.

In case of ROE, the relationship with the <IR> capitals are at $R^2$ of 45% and the relationships with each individual <IR>capitals: HCDI, SRCDI and FCDI are positive at 0.19, 0.39 and 0.01 respectively. This shows that a unitary change in HCDI results into 0.19 change in ROE. A unitary change in SRCDI results into 0.39 change in ROE. A unitary change in FCDI results in a 0.01. This shows that the highest change in ROE results from quality reporting of social and relationship capital. This is also confirmed by looking at standardized beta coefficients. NCDI, ICDI and MCDI are negatively related with ROE where the beta coefficient is 0.03, 0.01, and 0.04 respectively. This shows that a unitary increase in NCDI, ICDI and MCDI results in a negative ROE by 0.03, 0.01, and 0.04. Therefore, reporting on ICDI, NCDI and MCDI results in more costs than benefits and hence less profits. Of the six <IR> capitals, it is SRCDI that significantly influences changes in profitability.

Based on the findings of the study, the null hypothesis that there is no statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE was rejected. The reason is that the F-test which provides the overall significance of the regression

model (Sureiman & Mangera, 2020) is significant since it is below the cut-off point of 0.05. In this respect, the alternative hypothesis that there is a statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE was confirmed. This means that variations in the disclosure quality of the six capitals of <IR> which are manufacturing, human, intellectual, financial, natural and social and relational, will influence variations in return in equity. The degree of the variations has been elaborated in the section on results.

Results on testing hypothesis #2 show there is no statistically significant relationship between ROA of a firm and the disclosure quality of its <IR> capitals. $R^2$ is stronger in the case of ROA than in ROE since it is 47% when return on assets is used as the proxy for financial performance and then when ROE was used, the coefficient of determination of the regression model was 45%. This implies that return on assets responds more to the variations in the disclosure quality of manufacturing, human, natural, financial, intellectual and social and relational capitals of a firm. It implies that the managers of companies are eager on changes in the disclosure levels of <IR> capitals compared to the investors (reflected through a return on equity perspective). Results from testing null hypothesis that there is no statistically significant relationship between the quality of overall integrated reporting and financial performance result in rejecting the null hypothesis and therefore confirming the alternative hypothesis that there is a statistically significant relationship between the quality of overall integrated reporting and financial performance. The meaning of this conclusion is that variations in the disclosure quality of <IR> capitals do matter for return on assets.

Results from testing hypothesis # 3 on the aspect of statistical significance in relationship between the quality of overall integrated reporting and financial performance shows that overall <IR> quality influences ROE by 60% while it influences ROA by 30%. This shows that when it

comes to overall <IR> quality increases by one unit, ROE increases by 60%. The increase in ROE is two times that of ROA for a unit increase in overall <IR> quality. It therefore means that investors would be more interested or gain more from an increase in the disclosure quality of overall integrated reporting. This shows that investors are more interested in better overall integrated reporting than the managers of companies do. The test of the hypothesis that there is no statistically significant relationship between the quality of overall integrated reporting and financial performance, resulted in rejecting the hypothesis since the student t values are less than 0.01. This results in accepting the alternative hypothesis that there is a statistically significant relationship between the quality of overall integrated reporting and financial performance. The correlation coefficient for the relationship between overall integrated reporting and ROE is 63% and is a little lower than correlation 66% when ROA is used as a proxy for financial performance. Therefore, there is a strong relationship between overall integrated reporting disclosure quality and financial performance. The linear relationship between the independent and dependent variables is strong in both ROE and ROA although it is a little stronger in the case of ROA. While the correlation coefficient of 66% in the case of ROA and 63% in the case of ROE shows how the change in the overall IR disclosure quality affects financial performance, the beta value of 0.6 in the case of ROE and 0.3 in the case of ROA shows the amount of change in ROE and ROA for a unit change in the level of overall IR disclosure quality. The amount of change in ROE is therefore more than in the case of ROA.

Testing hypothesis # 4 results in failure to reject the null hypothesis that there is no there is a statistically significant relationship between disclosure quality of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm and its ROE. The alternative hypothesis (H5a) was not supported. It is observed that F-statistic of 23.4 whose *p*-value is less

than 0.05 and this shows that the model is useful. Inclusion of leverage and firm size as control variables in the model between <IR> capitals and ROE shows no change in statistical significance of the relationship between the primary variables of the study (<IR> capitals and ROE) and it also shows that the contribution of both leverage and firm size is statistically insignificant. This therefore shows that when control variables are included in the equation, it does not change the statistical significance of the relationships between the disclosure quality of <IR> capitals and ROE. The controlling effect of both leverage and firm size on the relationship between the quality of <IR> capitals and ROE is not confirmed in this case and therefore the alternative hypothesis (H5a) is not confirmed. This fortifies the view that the regression model between disclosure quality of <IR> capitals and ROE is stable since it is hardly affected by inclusion of control variables.

Results from testing hypothesis # 5 that there is no statistically significant relationship between the quality of overall integrated reporting and financial performance in the presence of control variables of firm size and leverage resulted in rejecting the hypothesis. This means that the alternative hypothesis that there is a statistically significant relationship between the quality of overall integrated reporting and financial performance in the presence of control variables of firm size and leverage is accepted. It is also observed that a unitary increase in IRI results in increase in ROE by 59% while it results in 29% for ROA. This further confirms that overall integrated reporting disclosure quality is more appealing to investors compared to the managers of firms given the substantial influence that <IR> quality has on ROE in comparison to ROA. The amount of change in both ROE and ROA when leverage and firm size are included in the regression equation as control variables is not substantially changed since it only changes from 60% to 59% in the case of ROE and 30% to 29% in the case of ROA. This shows that inclusion of control variables has not substantially changed the amount of the changes in financial performance

resulting from a unit change in the overall <IR> disclosure quality. This is also fortified by the fact that the statistical significance of the relationship is maintained. This confirms that the regression model between ROE and overall <IR> disclosure quality is stable just like the same is the case when ROA is used as a proxy for financial performance.

The findings in the study are similar to a number of previous empirical studies on the relationship between <IR> and financial performance as well as the relationship when <IR> capitals are considered. Islam (2021) find that financial performance on IRI shows a coefficient of 0.4271. Other studies find a significant relationship between <IR> and the performance of firms Cosma et al. (2018) and Iyoha et al. (2017).

The results of the study are in line with findings of Wachira et al. (2020) that in <IR> regimes like South Africa, information given in integrated reports is found to be better aligned with investors' needs. Also, they are in line with Lee and Yeo (2016) findings in South Africa where their analysis shows that the more quality <IR> of firms, the higher their accounting performance as well as stock market performance. Results also confirm the findings in Moloi and Iredele (2020) who study the value relevance of <IR> quality in the case of South Africa and find a significant relationship between <IR> quality and firm value thereby noting that <IR> quality adds value. The current study additionally fills the gap in Moloi and Iredele (2020) where whereas they used a sample of 100 firms listed on JSE without regard to representativity and replication of the results, the current study uses a representative sample. The results of the study show that firms in Namibia and South Africa listed respectively on NSX and JSE with a higher quality <IR> in the previous year performed better in terms of ROE and ROA in the following year and therefore it was beneficial to them to adopt quality disclosures. Suttipun (2017) in a study in Thailand find no

significant effect between FCD, ICD, HCD, with financial performance at the 0.05 level. Adegbie et al. (2019) find that MCDI, ICDI, HCDI, and NCDI are not significantly related to financial performance which have also been proved to be valid in the current study.

However, the results of the study are in contradiction with some other prior studies that found an insignificant relationship between <IR> and the performance of firms. These include Mokabane and Du Toit (2022), Nurkumalasari et al. (2019), Adegboyegun et al. (2020), Bijlmakers (2018). The findings of this study also contradict results in Dube (2018) examining the relationship between <IR> and firm financial performance in South Africa based on the IIRC framework but finds no relationship between <IR> quality and firm performance in terms of share returns. Unlike the author's conclusion that the application of <IR> does not appeal to investors, results of this study show that <IR> is beneficial to reporting firms and can be used to inform investors in making their investment decisions. Perhaps, the reason for the result of Dube (2018) are that they used only 40 firms in their sample and thus could not have observed a representative picture. Dayana et al. (2020) find a significant association between the tripartite human related capitals of HC, IC and SRC and financial performance. Vitolla et al. (2019a) find a positive and significant relationship between ICDI and financial performance and (Anifowose et al., 2020) notes that "on the individual capital reporting, natural and human capitals are of significant impact on the sustainability of the sampled companies" (p. 582).

Seen in totality, the overall <IR> disclosure quality meets the expectations that it significantly influences on both ROE and ROA. This is conformity with prior studies. Dayana et al. (2020) in a study in Malaysia find that <IR> is positively related to financial performance and notes that this is helpful "increasing the internal management's value." (Adegbie et al., 2019) also note "integrated reporting has a significant effect on firms' value as observed from the probability

value of the F-statistics at 0.00" (p. 53). Other studies that confirm the results from the current study include Cosma et al. (2018), Iyoha et al. (2017) who find a significant relationship between <IR> and financial performance.

The findings back theoretical assumptions and the hypotheses which themselves are based on the agency theory as well as signaling theory. The study results confirm the relevance of both agency theory and signaling theory in explaining the importance of <IR> in reducing information asymmetry in line with Abeywardana et al. (2021) who argues that <IR> reduces information asymmetry and thus the agency problem. The results provide evidence that the signaling theory was supported with respect to <IR> since it results in improved financial performance. This is in conformity with Dilling and Caykoylu (2019), Dey (2020) and Martinez (2016). The study results confirm the agency and signaling theories which conform to other prior studies asserting that firms with more <IR> quality tend to have higher firm value (performance) (Cosma et al., 2018; Lee & Yeo 2016; Utomo et al., 2021) taking <IR> as a whole.

The results support the agency theory that quality <IR> can reduce discrepancy of information held by the management and the outsiders and hence reduce agency costs thereby influencing decision-making of both parties of firm insiders and outsiders (Shahria, 2022). This is also in line with other prior studies like Utomo et al. (2021) in their study on <IR> among 60 manufacturing companies in Indonesia and Singapore where their research theoretically supports agency theory and signal theory. The findings of this study support the agency theory also in line with conclusions by Moloi and Iredele (2020) on the relevance of the agency theory concerning <IR> where they find that the theory is supported by reason that <IR> quality reduces information asymmetry to report users and also significantly influence firm value in terms of share prices. Therefore, results of the current study support the assumption that <IR> quality reduces

information asymmetry as provided by both the agency theory and signaling theory. However, the results are contrary to Adegboyegun et al. (2020) who find the signaling theory on <IR> unsupported.

To verify on the application of the results, the concern was the issue of whether the regression model(s) is stable so as to be considered unshakeable. This would also confirm the models' reliability for use in predictions. Therefore, leverage and firm size were used as control variables. The concern was whether the models developed for this study would stand in the presence of control variables. The findings confirm that the relationships between quality disclosures of <IR> capitals as well as the overall <IR> quality with financial performance were significant even in the presence of control variables. Leverage was found to be significantly related to financial performance while firm size was not. However, jointly, the control variables had relationship with financial performance viewed from a squared R perspective albeit weak. The control variables enabled the researcher to make conclusions about the relationship between <IR> capitals and financial performance as well as the effect of the overall picture of <IR> on financial performance. This makes the models of this study stable and can be relied on to make projections regarding what the effect of financial reporting can become if the conditions in the independent variables change.

The findings note the work of Doni et al. (2016) in their study on the degree of compliance of firms in relation to <IR> in South Africa in terms of various capitals to be impressive but cautions on non-impressive reporting on aspects of environmental factors.

Based on the findings of the study, H10, H20, H30 and H50 were rejected hence accepting their respective alternative hypotheses while there was failure to reject H40 and hence H4a not supported. This confirms that there is a significant relationship between the <IR> capitals and

financial performance as well as the preposition that there is a significant relationship between the overall picture of <IR> based on the 49 indicators and financial performance. Inclusion of firm size and leverage as control variables did not deter the statistical significance of the relationship between the primary variables of the study. The findings in the current study are in tune with Moloi and Iredele (2020) in their study in South Africa on the influence of the quality of <IR> on firm value where they find a significant relationship and hence conclude that <IR> quality adds value to the firms that undertake the practice. The findings show that <IR> is of value to firms in line with the findings by Lee and Yeo (2016) while assessing the relationship between <IR> and firm value of firms listed in South Africa where they find that the <IR> costs are less compared to its benefits. However, the findings are in sharp contrast with results of Meijden (2016) in their study on impact of <IR> on firm performance where the author concludes that there is no significant relationship between the two and that the <IR> framework has not fulfilled its promise. The current study like (Islam, 2021) concludes that firms that perform better have had better quality of <IR>.

## 4.4 SUMMARY

The models for this study were built on testing the hypotheses. The independent variable was financial performance and was represented by ROE and ROA. The independent variables were the disclosure quality of <IR> capitals where the <IR> are those prescribed by the IIRC framework. An overall < IR> quality was also adopted as another independent variable. Two control variables (leverage as well as firm size) were used.

The models were based on the use of ordinary least squares (OLS) as a tool in regression analysis in line with Verbeek (2017) and Ernst and Albers (2017). The significance threshold of 0.05 for a regression coefficient was used to establish whether the variable(s) significantly relate

to the dependent variable. If so, it would result in a null hypothesis being rejected. Both descriptive and inferential statistics were used in the analysis of the study.

Reference was made to each hypothesis to identify if any is supported and which ones are not supported, possible reasons, and how the results relate to previous studies, possible generalizations, and the recommendations for future research in line with the assertions by Creswell (2009). In order to ensure that at least 95% of the samples reflect the population, a cut-off point of 0.05 was used for significance level purposes. According to Williams et al. (2019), "If a 95% confidence interval has corrected coverage, this means that if a large number of samples are drawn from the population of interest and a confidence interval calculated based on the data from each sample, 95% of these intervals will contain the true parameter value" (p. 5).

The reports of firms sampled in this study provide information on the firms' value creating business model/shared value approach, nature of business activities, their business values, strategic objectives, significant risks faced, market risks, value propositions, enablers of value creation, use of strategy as a channel for value delivery, and how they share the value created from inputs to outputs. Mention is made in the reports on the firms' efforts to conducting business with respect for the environment. The main reporting format identified is that the firms tend to use the input, process and output model of <IR> capitals and some prefer using columns of <IR> capital, inputs, activities, outputs and outcomes.

Cronbach's alpha for the data was 82% and it is seen as ensuring data consistency and reliability in line with arguments by Hayes and Krippendorff (2007). A CVI test showed evidence of content validity of the items used in the study where I-CVI for each item scored at least 0.83, S-CVI/Ave was 0.97 and S-CVI/UA was 0.81. Key control variables are firm size and financial leverage (Islam, 2021). Therefore, leverage and firm size have been used as control variables in

consistency with prior studies like Martinez (2016), Nurkumalasari et al. (2019), Mondal and Ghosh (2012) and Dey (2020). Leverage was measured as a ratio of total liabilities to total assets in line to Korkmaz, 2016; and Dilling and Caykoylu (2019), and Dey (2020). Firm size was measured by natural logarithm of total assets in conformity with prior studies like Dey (2020), Vitolla et al. (2019a), Affan (2019) and Martinez (2016). For profitability, leverage and firm size; since they are secondary data collected from integrated reports, their validity and reliability were assumed in line with Affan (2019).

Financial performance was proxied by ROA and ROE as in line with many of previous studies (Mohamad et al., 2014). Albertini and Berger-Remy (2019) note that "ROA and ROE are generally accepted standard measures of financial performance found in strategy research" (p. 222) and see the two as accounting indicators of financial performance.

The findings of the study show that the firm's <IR> capitals generally have most indicators of <IR> reported. Financial and manufactured capitals were the highest reported with 86% and 84% respectively. The finding was similar to some prior studies like Dayana et al. (2020) and Anifowose et al. (2020). Human, intellectual and social and relationship capitals were also high. Natural capital was the least disclosed similar to studies like Dayana et al. (2020). However, in some cases, the findings of this research differed with prior studies. While this study finds that manufactured capital is second in terms of quality of reporting, Anifowose et al. (2020) found it to the lowest reported among other <IR> capitals in the context of firms in Asia.

On inferential statistics and regression analysis, the F-statistics and their significance levels were used to test the null hypothesis #1, #2 and #5 while the t-statistics and their statistics significance were used to test null hypotheses # 3 and #4. Results show that in line with provisions of Veazie (2006), Futschik et al., 2018 and Sureiman and Mangera (2020) in composite null

hypothesis, the null hypotheses (# 1, #2, #3 and #5) were rejected since their *p*-values were lower than the critical value of 0.05. However, there was failure to reject hypothesis #4 since the *p*-values of both leverage and firm size as controlling variables in the relationship between disclosure quality of <IR> capitals and ROE was not statistically significant. The failure to reject the H05 resulted in not confirming H5a. The overall <IR> disclosure quality was also used in the study and it was computed using equation 1 which was adapted from Lipunga (2015) in his study on integrated reporting in Malawi.

Where $n_j$ is the number of indicators for the $j^{th}$ firm while $X_{ij}$ refers to the $i^{th}$ indicator of the disclosure in line with Islam (2021), the results of the regression analysis showed the <IR> is positively correlated with financial performance. Therefore, the alternative hypotheses on <IR>'s relatedness with financial performance were confirmed. The study results are in line with prior studies in many aspects and the stability of the models is confirmed by introducing leverage and firm size as control variables and with a finding that this did not alter the relationships' significance. The study also confirms the validity of signaling theory as well as the importance of the agency theory in explaining the effect of <IR> quality on financial performance of firms.

**CHAPTER FIVE**

**IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSIONS**

Integrated reporting is the new breed of corporate reporting seeking to enhance organizations' disclosure of strategic thinking and value creation in sustainability aspects (Navarrete-Oyarce et al., 2021). The objective of the study was to find out the value relevance for firms to engage in <IR>. The study based on the <IR> practices of firms listed in South Africa and those listed in Namibia to verify the quality of disclosure and then find the relationships with financial performance. Namibia and South Africa were identified as the ideal countries for this study given that they were the only countries in Africa with non-financial reporting made a rule and also require <IR> a reporting for listed firms by the time of this study.

The results of this study relate to the level of quality of <IR> of firms listed on NSX and JSE. Quality here means the alignment level of the integrated reports with IIRC framework in line with prior studies like Tiron-Tudor et al. (2020). It is based on indicators of the six <IR> capitals of a firm which reflect levels of <IR> compared to the maximum level of <IR> capitals disclosure that a firm is expected to have. There are a total of 49 indicators in the six <IR> capitals of a firm based on the work of Anifowose et al. (2020) and Setia et al. (2015) who also base on the IIRC framework. The more of the 49 indicators are present in the integrated report of a firm the higher the quality of reporting. The 49 indicators are contained in the six <IR> capitals whereby 8 are for human capital, 6 are for natural capital, 17 are for social and relational capital, 9 are for intellectual capital, 4 are for manufactured capital while 5 are for financial capital.

The study used seven model specifications and estimations to test five null hypotheses. The OLS was used. A verification was carried out to verify on suitability of the data for the study as well application conditions of the OLS. The study verified on the linearity conditions, zero expected mean for the error term, homoscedasticity, normality, addressing of outliers and ruling out autocorrelation. Among these aspects, the only concern was with identified outliers. Two cases were identified and removed from the final data used to eliminate the outlier effects. Therefore, the model requirements were fulfilled for use in this study. In using a linear regression model, identifying inferential statistics sought to establish:

a) Whether there is a statistically significant influence of the quality of disclosure of <IR> capitals of a firm and its ROE.

b) Whether there is a statistically significant influence of the quality of disclosure of <IR> capitals of a firm and its ROA

c) Whether the relationship between the disclosure quality of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm is related to its financial performance in the presence of control variables of firm size and leverage

d) Whether there is a controlling effect of leverage and firm size on the relationship between <IR> capitals and ROE.

e) Whether statistical significance (if any) of the relationship between the quality of overall integrated reporting affects financial performance of a firm in the presence of control variables of firm size and leverage.

When the control variables of leverage and firm size were introduced in the models, the study verified the stability of the seven models. This led to making a decision on the null

hypotheses concerning the possibility of a change in the significance of the relationships in the primary variables.

The essence of this chapter is to provide implications, articulate research contributions, and to offer recommendations for practical applications and also conclusions about the study. This chapter discusses the study's limitations and how the researcher went about them to ensure they do not needlessly affect the results. The chapter also discusses originality of the study and its contribution. The research's implications were articulated. The study ends by providing key recommendations for application as well as future research. Conclusions drawn are discussed lastly to highlight deductions from the study.

## 5.1 IMPLICATIONS

This section discusses the implications resulting from the findings of the study. This research aimed at establishing the relationship between <IR> and firm performance. Financial performance was measured through ROE and ROA. The difference between ROE and ROA is that ROA is the performance of the firm measured from management's perspective and therefore by nature is internal perspective performance while ROE is the firm performance that is based on shareholders' viewpoint and therefore takes an external outlook (Dayana et al., 2020). The six <IR> capitals provided by the IIRC framework are financial, manufactured, human, natural, social & relational, and intellectual capitals and this study confirms the value relevance of reporting on these capitals. These <IR> capitals which were published in IIRC (2013) were maintained in the revised IIRC framework of 2021 (IIRC, 2021).

The results on the first hypothesis (H10) established the basis to test the validity of the preposition that there is no statistically significant relationship between disclosure quality of <IR> capitals of a firm and its ROE. Given that the statistical significance level of the F-statistic

(measuring overall significance of the regression model) was <0.001, the deduction is that the null hypothesis is rejected in line with the principle on testing a composite null hypothesis Sureiman and Mangera (2020), Sarstedt and Mooi (2019), Veazie (2006) and Futschik et al., 2018) and thus accepting the alternative that there is a significant relationship between a firm's quality of <IR> capitals disclosure and its ROE.

The study concludes that firms with significantly better quality of <IR> capitals perform better in terms of return on equity and hence appeals better to the investors. This study adds voice to the debate on the relevance of <IR> capitals in the corporate reporting literature. It provides current evidence on the relationships between quality of disclosure of <IR> capitals and financial performance. The study's focus was a multiple regression with a composite (multiple) regression for the <IR> capitals quality indices and financial performance.

The coefficient of determination ($R^2$) of 45% characterizing the relationship between <IR> capitals and ROE shows that the changes in the dependent variable attributable to ROE are 45%. The rest is attributable to other factors.

Zhang et al. (2021) note that natural capital relates to environmental or ecological factors and its protection is important. Given that the reporting of natural capital is the least as identified in this study, it implies that the environmental reporting levels in South Africa and Namibia are the lowest of the IIRC framework. By implication the reporting on carbon footprint, air pollution, waste processing plants and safeguarding of environment is low. This reduces the quality of integrated reporting in the two countries and therefore can affect the decision-making abilities of investors, regulators, management, government and other stakeholders. It can negatively affect the reputation of the firms in terms of their commitments to sustainability ideals. This is bad especially

given that South Africa is one the mineral rich countries and therefore extraction activities expected to be high with sizeable environmental consequences.

There is need to tighten the mandatory regime of integrated reporting to ensure that all social, economic, environmental, governance, financial and physical assets are well reported. There is need to tighten the aspect of report/explain part of the integrated reporting rules of corporate governance if the mandatory aspect of disclosure is to have enhanced meaning. Otherwise, if some aspects of integrated reporting are not reported, there needs to be a reason given for not reporting. The reasons may include that a given indicator is not relevant for a given company's activities.

The study established high levels in reporting of human related <IR> capitals. It could be due to high consideration of human related issues. Given high accidents at work noted by Doni et al. (2016), it seems the firms in South Africa have greatly prioritized human capital reporting. The results of the study thus provide evidence to back this practice.

This study adds a voice to the debate on the relevance of integrated reporting capitals in the corporate reporting literature. It provides current evidence on the relationships between integrated reporting capitals and financial performance. Taken as a whole, <IR> capitals significantly influence the level of financial performance of a firm. Taken individually, the debate on value relevance is far from over in light of those <IR> capitals that do not have a significant relationship with financial performance.

Testing of hypothesis two that there is no statistically significant relationship between ROA of a firm and the disclosure quality of its <IR> capitals resulted in its rejection since the resultant F-value is significant at less than 0.05. This is in line with Sureiman and Mangera (2020), Sarstedt and Mooi (2019) and Veazie (2006) and Futschik et al., 2018). The alternative hypothesis that

there is a statistically significant relationship between disclosure quality of <IR> capitals and ROA is accepted. The relationship of the <IR> capitals and ROA yield a closely similar result with a 47% which implies that the quality of reporting on <IR> results in a more or less of similar impact on internal operational performance (Dayana et al., 2020) and returns to shareholders or external performance outlook (Islam, 2021).

Implications are that both the investors and management value quality of <IR> capitals. Firms can derive value from better quality <IR> capitals disclosure. The management of firms' viewpoints can be positively influenced by <IR> capitals (FCDI, SRCDI, NCDI and HCDI) while ICDI and MCDI influence is negative. This implies that better reporting of the four <IR> capitals will be beneficial to firms while the cost of reporting on intellectual and manufactured capital is likely to be more than benefits derived.

The second hypothesis concerns the relationship between overall <IR> index (representing <IR> quality) and financial performance. Based on the findings, the hypothesis that there is no statistically significant relationship between the quality of overall integrated reporting and financial performance is rejected hence accepting its alternative that there is a significant relationship since the student t -statistic was significant (below 0.05 cut-off point).

History has made South Africa to play a pivotal role with regard to <IR> development (Mokabane and Du Toit, 2022). Results show that King's Code of Governance is effective in making <IR> mandatory in South Africa and since the code guided the NamCode in Namibia, it shows it has been effective. By attaining the <IR> quality of 79%, it means that 21% of the <IR> indicators are not reported. This implies that either those key activities not reported may not be relevant to firms, are not regarded material by the firms, or are ignored on purpose. The aspect of

report or explain therefore becomes handy whereby the non-reporting firms could be disregarding the requirement to explain the lack of reporting on those non-disclosed items.

The level of <IR> may reflect the extent to which the firms regard the level of efficiency of the stock exchanges in view of the efficient market hypothesis with strong, semi strong and weak forms (Frías-Aceituno et al., 2014). Stock market exchanges in a strong form would not be affected by the level of <IR> since the investors and other users are aware of the available information for decision making and thus already have insider information, current and past information. Those in semi-strong form assume that the current and past information is known already while the weak form assumes the past information is already factored into their decisions.

Perhaps those firms not reflecting some of the key information are either doing it by assuming the investors have other ways to access information for their decision making. However, this would be a weak thinking in terms of strategic management of firms since the study shows that firms with quality <IR> are rewarded with high returns. High returns would inevitably speak volumes to the investors in terms of share prices and dividends from the high performing companies. Therefore, a better strategy is to report the value creation abilities of the firms.

The study supports the view that mandatory reporting results in better quality of <IR> and therefore should be adopted by jurisdictions that have not done so. The study contributes to the promotion of adoption of the IIRC framework and as evidence from this study shows, there is value relevance in adopting <IR> practices. Mandatory reporting looks to be making a difference in the level of <IR>. Wachira et al. (2020) note that the level of sustainability reporting as well as <IR> in Africa (with exception of South Africa that has made <IR> mandatory) has in the past been shown to be less than 13% on a world scale. Boiral (2013) points to the issue of quality of reporting, because while substantial percentage of companies have adopted NFR, the issue of those

that publish relevant information is put at 10%. Given that the level of <IR> on average is 79% in South Africa and Namibia, it could be a sign that mandatory <IR> makes a real difference.

The reporting level is higher than some of the jurisdictions highlighted in some of the prior literature. An example is Shahria (2022) who conducts a study on the role of <IR> value creation of companies using 30 firms in Bangladesh based on a disclosure index developed using the 2013 IIRC framework and finds that reporting level based on IIRC standards is 60%. Therefore, it can be inferred that mandatory reporting is helpful in improving levels of <IR>.

It can be argued that firms whose level of <IR> is low can hardly show the process of value creation and how integrated the efforts of value creation is. This can affect their ability to show integrated thinking in their reports, yet integrated thinking is a key advantage of preparing integrated reports. Integrated thinking demonstrates how inputs, processes and outputs in terms of <IR> capitals add value to the firms.

Since hypotheses # 4 and # 5 relate to the effect of control variables on the stability of the primary hypotheses of the study, their implications are presented in the same section. This is because they both related to analyzing whether the significance between the independent variables and dependent variable is still supported if the control variables come into the equation. To analyze this, two hypotheses were used and both OLS and hierarchical regression analysis was used. The results showed that the established significant relationship between the independent variables and dependent variable still stands in the presence of leverage and firm size. Therefore, when controlled for leverage and firm size, the relationship between disclosure quality of human, social & relational, financial, manufactured, intellectual and natural capitals of a firm and ROE, the relationship is still significant. Actually, both leverage and firm size do not have a statistically significant controlling effect to the relationship between <IR> capitals and ROE. The alternative

explanations for the relationship do not alter the findings in the primary variable relationships given that the inclusion of the control variables has not altered decisions in hypotheses #1, #2, and #3 in line with arguments by in Klarmann and Feurer (2018).

The findings of this study may be beneficial to <IR> standard setters, managers of firms wishing to adopt <IR> practices, investors, as well as researchers in the space of corporate reporting concerning the value relevance of <IR> and specifically on the influence of <IR> quality and financial performance. The findings can aid policymakers, <IR> standard setters and firms to make informed decisions on areas that yield maximum effect in the relationship between <IR> capitals and financial performance, areas with gaps so they can be improved and the rationale behind this. In line with observations by Hoang et al. (2020), the study can be useful to the <IR> regulatory authorities as well as policymakers and users of the <IR> reports who can be informed on areas that need further guidelines or even areas of amendments in the current standards and thus can take note of gaps in <IR> among the firms and issue out corrective guidance.

In line with observations by Wachira et al. (2020), the findings of this study fortify the observations that IIRC as well as stock exchanges wishing to demonstrate value relevance of <IR> can look at the example from the mandatory regimes like South Africa and Namibia where they can encourage other jurisdictions to replicate the report/explain or report and explain disclosure model. As observed in Anifowose et al. (2020) concerning the importance of <IR>, results can support regulators in Africa and developing countries in general in monitoring of <IR> practices in their respective domestic companies and also inform the IIRC on how its <IR> framework is currently applied as well as gaps still experienced in <IR> practice.

In retrospect, the study shows the importance of <IR> and the importance of reporting on the <IR> capitals of a firm and hence the study contributes to international efforts of promoting

<IR>. The results provide confirmation to support the view that there is reasonable evidence to expect that <IR> quality results in a firm's superior financial performance in agreement with Islam (2021) hence as provided by signaling as well as agency theory, firms that communicated better on the <IR> framework can expect increased performance levels (Martinez, 2016). This is because quality <IR> lowers information asymmetry between managers and shareholders (Frías-Aceituno et al., 2014; Lee & Yeo, 2016; Moloi & Iredele, 2020).

With reduction of information asymmetry among the listed firms in Namibia and South Africa, possibility of adverse selection as well as moral hazard can reduce in line with agency theory (Winter & Zülch, 2019). The study shows the importance of <IR> and contributes to international efforts of promoting <IR> and findings are in tune with prior studies like Dayana et al. (2020), Adegbie et al. (2019), Lipunga (2015), El-Deeb (2019), Barth et al. (2017), Martinez (2016) and Islam (2021) who find a significant relationship between <IR> and financial performance. In line with a study by Dayana et al. (2020) in Malaysia, <IR> is positively related to financial performance and increases internal management's value as demonstrated. Ultimately, the results of the study support the adoption of IIRC framework by firms and specifically the <IR> capitals given the model's value relevance. Results imply that King's Code of Governance is effective in making <IR> mandatory in South Africa and since the Code guided formulation of NamCode in Namibia, the Codes have been successful.

On the other hand, the results contradict studies like Matemane and Wentzel (2019) and Nurkumalasari et al. (2019) who find no relationship between <IR> and financial performance. The results do not agree with the findings by Van Zyl (2013) following a study conducted in South Africa on listed firms on JSE with a conclusion that the quality of information reported was still

low. The results in Van Zyl's findings could have due to the fact the IIRC framework was still at its infancy.

In comparison to a number of jurisdictions, the current practices of integrated reporting in South Africa and Namibia are among the highest quality in terms of disclosure given that the average disclosure quality is 79%. For example, Suttipun (2017) in a study on integrated reporting of a firm's capital in Thailand finds that intellectual capital 30%, social capital at 24%, financial capital at 19%, human capital at 12%, manufactured capital at 10% and lastly natural capital at 7%. Integrated reporting is perceived as beneficial to companies and this could be the reason that it is gaining worldwide acceptability as observed by Lipunga (2015).

Financial capital has been identified as the most reported capital among the six <IR> capitals. Anifowose et al. (2020) note that "it is also understandable to have financial capital to have highest disclosure to the fact that there is a framework in which this capital is expected to be disclosed alongside the <IR> framework" (p. 575). In the same vein, Dayana et al. (2020) find that the most reported capitals are financial and manufactured. Therefore, it is not surprising that sampled firms have reported the two <IR> capitals more than others. It implies that firms may be more compliant to the IFRS compared to their compliance to the IIRC framework.

The positive return on equity and return on assets show that returns have been generally positive in 2019 and hence a good financial performance of the firms. This is a good sign that the firms are doing well. Given that integrated reporting is high, it is therefore no surprise that the firms have done well generally in the backdrop of relatively high levels of good performance in integrated reporting quality with an average score of 79%.

ROA is a measure of operational performance of a firm (Islam, 2021). ROE shows the commitment of the firm towards its shareholders that they will turn equity into good returns

(increase shareholders' value). A good mean signifies that the firms generally have a good use of equity turning it into value. Dayana et al. (2020) notes that ROE is about a firm's performance founded on financial capital providers' viewpoint which provides an external outlook. To capture the two parties, this study uses ROA which is an internal operational performance measurement and ROE which is the returns to shareholders and thus information to outsiders (Islam, 2021). Dayana et al. (2020) identify that "ROA is used to measure the firm performance based on the management's perspective taking an internal outlook and the ROE is used to measure the firm performance based on the shareholder's perspective taking an external outlook" (p. 149).

Given the model strength exhibited in the study, results can be relied upon to ably predict the relationship between the quality of <IR> capitals and financial performance. $R^2$ is the best metric to evaluate regression analysis problems given that it is unbiased by factors like increasing numbers of independent variables (Chicco et al., 2021). R squared shows the percentage of variance of the outcome variable which the predictor can explain and is a sign of the fit between predictor and outcome variables. However, this is not a causation relationship but rather the relationships between the predictor and the outcome variables.

The findings of the study show that the quality of <IR> capitals in terms of the six capitals of the IIRC framework significantly influence a firm's financial performance in terms of ROA and ROE. The relationship is not deterred by inclusion of control variables in the equation. The same finding was made in terms of overall <IR> quality relationship with financial performance.

It was found that both the quality of <IR> capitals and overall <IR> quality have an influence on financial performance and the relationships are demonstrated through the following equations:

      a.   $ROE_1 = -0.30 - 0.03NCDI + 0.19HCDI + 0.39SRCDI - 0.01ICDI - 0.04MCDI +$

$$0.00FCDI + \varepsilon_{i1}.$$

b. $ROA_2 = -0.16 + 0.01NCDI + 0.06HCDI + 0.18SRCDI - 0.00CDI - 0.01MCDI + 0.04FCDI + \varepsilon_{i2}.$

c. $ROE_3 = -0.38 + 0.6IRI + \varepsilon_{i3}.$

d. $ROA_4 = -0.18 + 0.3IRI + \varepsilon_{i4}.$

e. $ROE_5 = -0.31 - 0.02NCDI + 0.21HCDI + 0.37SRCDI - 0.02ICDI - 0.03MCDI + 0.01FCDI + 0.07LEV - 0.00FSize + \varepsilon_{i5}.$

f. $ROE_6 = -0.36 + 0.59IRI + 0.08 LEV + 0.00 FSize + \varepsilon_{i6}.$

g. $ROA_7 = -0.14 + 0.29IRI - 0.07 LEV - 0.00 FSize + \varepsilon_{i7}.$

Therefore, based on these findings, the study provides further evidence that there is an impeccable value relevance for adopting the <IR> framework. Results demonstrate that King's Code of Governance is effective in making <IR> practice mandatory in South Africa. The NamCode in Namibia was inspired by the King's Code and thus not surprising that the mandatory <IR> regime has been effective in both countries. The <IR> quality was at 79% in the sampled firms which is higher than a number of countries with voluntary reporting regimes as found in prior studies. Thus, this study reiterates the advantage of mandatory reporting. The findings also show relevance of signaling and agency theories given that increased quality of <IR> results into increased financial performance.

In view of the positive and significant relationship between the quality of <IR> and financial performance of listed firms, the study adds a voice to the advocates of <IR> in Africa and the world at large. Concerning the study's contribution and originality, this research provides evidence on level of quality disclosure in integrated reports, the <IR> capitals and their impact on FP using the most current available data from firms listed in Namibia and South Africa. Results

show that financial capital is the most reported among the six <IR> capitals while natural was the least reported.

Key areas under reported include natural capital especially on energy consumption, amount of waste, and recycled waste. Human capital areas under reported are human resource development and employee diversity. Under the social and relational capital, concerns include in health safety and privacy, human rights, relations with lenders and indigenous rights and customer satisfaction. Other areas under reported are corporate image, market share, infrastructure, operations and information on government grants. If the firms are to get higher integrated reporting quality, these areas require fixing.

## 5.2 RECOMMENDATIONS FOR APPLICATION

Johannesburg Stock Exchange and Namibia Stock Exchange need to provide formats of presentation of integrated reports to listed firms to be used and this will enable comparability of the integrated reports. In line with the recommendation made by Elda et al. (2017) in their study on <IR> in South Africa, where they find that there is need for more comprehensive guidelines for preparation of integrated reports to guide firms to further improve the quality of <IR>, this study recommends that the regulators of integrated reporting should provide a format of reporting to be aligned to the IIRC framework and King IV. In setting the format of presentation of integrated reports, standards setters could borrow from the experiences of IFRS which mandates financial reporting and provides structures and key content required for proper reporting.

Given that investors tend to be influenced by the overall <IR> quality attributes of an integrated report unlike managers of companies who get more influenced by disclosure quality of each <IR> capital; the firms need to engage investors more to understand what comprises the <IR>

capitals. This observation was based on the findings of the study where the beta coefficients of overall <IR> disclosure quality influenced more of return on equity than return on assets. By measure, return on equity relates more to the investors while return on assets is more of an internal efficiency measure. Therefore, it is recommended that firms should put in place an elaborate message on the value relevance of reporting on <IR> capitals.

Financial capital and manufactured capital are the most reported <IR> capitals. A key reason is that items under these <IR> capitals are normally regulated in the way of reporting as observed by Setia et al. (2015). Therefore, the study recommends that more stringent requirements on reporting of other <IR> capitals be instituted by regulators. Given that listing rules are part of the mechanisms used to improve compliance of firms, the rules need to be reviewed with an objective of tightening the loose ends in integrated reporting specifically on the issue of lack of adequate explanation by firms in their integrated reports on reasons for not adequately reporting on some key <IR> capitals like intellectual capital, social and relational capitals.

The study elaborated areas of low reporting like energy consumption, amount of waste, recycled waste, employee diversity, claims and lawsuits, indigenous rights and customer satisfaction, and market share. The study therefore recommends that the listed firms should find out reasons behind less reporting in these areas.

Firms should improve their reporting on natural capital aspects. This is based on the fact that the study findings show that natural capital is the least reported among the other <IR> capitals. Given the low reporting levels of natural capital, it could affect the future performance of the firms since natural capital items are key for long term corporate sustainability. Zhang et al. (2021) note that natural capital relates to environmental or ecological factors and its protection is important. Natural capital has been degrading due to its exploitation by organizations and therefore need to

be given attention while developing non-financial reports (Calu et al., 2015). It is therefore recommended that firms in South Africa and Namibia improve reporting on carbon footprint, air pollution, waste processing plants and safeguarding of environment is low. The current low reporting on natural capital reduces the status of <IR> in the two countries and therefore can affect the decision-making abilities of investors, regulators, management, government and other stakeholders. It can negatively affect the reputation of the firms in terms of their commitments to sustainability ideals. There is need to tighten the weak areas of reporting including natural capital. To improve their reputation in the area of environmental safeguards, the firms should therefore make a deliberate effort to increase natural capital disclosure.

Integrated reports were hardly assured by external auditors. This is also corroborated from the finding by Genevé and Elza (2020) and Tyson and Adams (2020). Therefore, this study recommends that <IR> standard setters should expedite the processes of developing guidelines for assurance of integrated reports as regulating of the assurance of the reports can be valuable to improve the <IR> quality and fitness for purpose. The study validates the view and recommendation made by Elda et al. (2017) on <IR> in South Africa, where they find that there is need for more comprehensive guidelines for preparation of integrated reports and that managers should improve the quality of the integrated reports they provide. Radley (2012) in a study on assurance of reports based on NFI note that majority of investors as well as the analysts rate external audits of non-financial reports as very important and therefore, it would be important for publishers of integrated reports to have them assured externally to increase confidence of their use.

## 5.3 RECOMMENDATIONS FOR FUTURE RESEARCH

Further research is recommended to be undertaken using qualitative research to understand some key qualitative aspects that cannot be identified through secondary data analysis. Use of

qualitative research can result in identifying reasons why some <IR> capitals were not adequately reported. It can also show the views from the firms why regardless of good quality of reporting on various capitals, only social and relational capital is seen as statistically significant for improved financial performance.

The study relied only on the six <IR> capitals found in the IIRC framework. However, to understand the value relevance of <IR> as a whole, complementary aspects of the framework can be analysed too. The use of principles of <IR> as well as the content elements of <IR> as provided by the IIRC framework can provide further evidence on levels of commitment of firms with the <IR> practice.

Further studies could consider other measures of financial performance like firm value as well as market-based performance indicators like earnings per share.

The study was cross-sectional and therefore gave a short-term view of the relationship between <IR> and financial performance. Adegboyegun et al. (2020) find that <IR> does not have significant influence on firm performance in short run but does so in the long run. It could be that the five capitals of the firm that have not individually shown a statistically significant relationship with firm performance may do so if longitudinal approach is adopted. Therefore, further research can be performed on the influence of the IIRC framework's capitals on firm performance in the long run to find what the relationship may be.

The study relied on two countries. By the time of conducting this study, they were the only countries with non-financial reporting rule for listed firms and also require integrated reporting. The study can be expanded to other jurisdictions especially in Africa as more countries adopt <IR> as a rule or even make a comparison with voluntary jurisdictions. A number of studies have been conducted in Nigeria and a few countries in North Africa like Egypt. But when it comes to East

Africa or Central African countries, such studies are hardly seen. A few that have been carried out in East Africa, like Injeni (2021) show that half of surveyed preparers of integrated reports favor mandatory adoption. Therefore, future studies can expand on coverage of jurisdictions. If <IR> is to become a worldwide way of reporting, then it should be as widely adopted as possible. However, conditions of adoption and measures to make it a worldwide practice need to be established so that policymakers, standard setters, firms and other stakeholders would know and appreciate the how side of having the practice established in their jurisdictions.

As the study shows explanation level of quality of <IR> being 79%, other factors that explain financial performance could be ventured into. Other factors that may be looked at include the impact of board membership, duration of existence of firms, skills of the staff in preparing the reports and reliance on information technology.

Of much importance is to understand why natural capital is underreported. This was observed in this study, but other prior studies also established this. Yet, sustainability reporting is based on environmental, social and governance aspects. Environmental aspect is fundamental in the equation. Further research is needed on potential reasons that explain inadequate reporting on natural capital.

A further study can investigate the perceptions of managers in preferring this and ways to increase further reporting on other <IR> capitals since currently the highest reported <IR> capitals are financial and manufactured ones. Aras and Williams (2022) argue that the success of usage of IIRC's six capitals model for <IR>, the six capitals should all be viewed as equally valuable and not inferior to mainly financial ends. Therefore, understanding reasons for preference of the two most reported <IR> capitals can help standard setters, regulators and practitioners of integrated reporting to improve disclosure quality of other <IR> capitals.

While firms are endeavoring in promoting the aspect of <IR>, there is still a challenge in terms of how the integrated reports can be audited (Goicoechea et al., 2019). This is mainly due to lack of internationally recognized <IR> standards which then the auditors can follow. Further research can be done in this area to establish standards that can be used in auditing exercises.

There is need for further research to establish the complementarity of international financial reporting standards and <IR> approaches given IFRS coverage and its statutory nature. A study can look at how to borrow on the experiences of IFRS to inform best practices that can be used in <IR>. International financial reporting standards evolved from the international accounting standards. This was in a bid to broaden the reach of the standards. Therefore, international reporting framework can borrow practices on how the IFRS keep being adopted.

IIRC has recently made a revision of the 2013 IIRC framework. However, it is yet to be seen if the changes will bring further practical and far-reaching implications in practicing of <IR>. Further studies can be initiated in this area to carry out an empirical study on rationale for changes in the framework, the experiences from the updated framework and how it is likely to impact the <IR> landscape in the long run.

The study relied on stratified sampling technique where the strata were JSE and NSX listed firms in their proportions. The study also relied on simple random sampling technique where random numbers were developed in excel based on the sample frame drawn from the list of the listed companies on the two stock exchanges. Therefore, other sampling methods could be used to find out if the results will be maintained or different from the current study.

A replication of the study is recommended in future years to verify the level of <IR> among listed firms in South Africa and Namibia especially since King IV will have been applied for some

years from April 2017, the period in which it came into force. That way, it can be seen if the results on the level of quality of <IR> improved further or otherwise.

## 5.4 CONCLUSIONS

It has been reiterated that "firms may not necessarily consider IR as important if there exists no evidence of a positive contribution to performance" (Adegboyegun et al., 2020, p. 2). Integrated reporting is still seen to be at infancy level of reporting and thus the concern on the quality of integrated reporting (Dilling & Caykoylu, 2019) was worth investigating. Others see <IR> as more of a ceremonial type of reporting (Haji & Anifowose, 2016). So, if companies are to invest in quality integrated reporting, there ought to be an incentive over and above the requirement of reporting. Therefore, it was necessary to determine how the quality levels of disclosures of financial, manufactured, human, social & relationship, natural, and intellectual capitals of firms affect their financial performance and ascertain the relationship between <IR> quality and financial performance of firms. The rationale for <IR> is to improve external information as well as internal decision-making (Barth et al., 2017). The external effect of <IR> was observed through the metric of ROE while the internal aspect was examined through <IR>'s impact on ROA.

The study also sought to establish the impact of leverage and firm size as controlling variables in the relationship between the quality levels of disclosures of the <IR> capitals and financial performance as well as establishing the stability of the models of the study through a check on impact of leverage and firm size as controlling variables. This was the measure used to identify the value relevance of <IR>. Based on the findings of the study, null hypothesis which are H10, H20, H30 and H50 of the study were rejected while there was a failure to reject H40. This resulted in accepting the alternative hypotheses which are H1a, H2a, H3a and H5a while but did not confirm H04. The overall <IR> quality was also statistically significantly related to financial

performance. The inclusion of firm size and leverage as control variables did not deter the influence of quality of <IR> capitals and overall <IR> quality on financial performance. The results of the study also confirmed the applicability of both signaling and the agency theories in explaining the relationship between <IR> quality and financial performance.

It worthy to note too that the models used in this study were significant in view of the F-value. Therefore, the models can be relied upon in estimating the influence of quality disclosure of <IR> capitals on financial performance as well as the overall integrated reporting index towards the financial performance. Given that the model on <IR> capitals and financial performance has a significant F-value, it shows that $R^2$ is adequate to be applied in the study to interpret the model fit. This complements results exhibited by the beta coefficients.

Financial capital is the most reported among the <IR> capitals and this finding agrees with the observations in Anifowose et al. (2020) that "financial capital to have highest disclosure" (p. 575). Dayana et al. (2020) find too that the most reported capitals are financial and manufactured.

The findings of this study agree with observations by Wachira et al. (2020) that IIRC and stock exchanges wishing to demonstrate value relevance of <IR> can look at the example from the mandatory regimes to replicate the models. The same observation is made in Alade and Odugbemi (2022) in their study on <IR> in Nigeria whereby owing to the importance of <IR> in influencing firm profitability, they opine that mandatory regulation is required to strengthen implementation of the IIRC framework.

South Africa and Namibia were respectively the first and second African countries in Africa to make require integrated reporting for listed firms in Africa. The two countries have similarities in terms of <IR> requirements. The requirements for <IR> in South Africa are embedded in the King III corporate governance code and its subsequent version. The NamCode,

in Namibia which governs corporate reporting in the country was founded on the King III governance code (Namibian Stock Exchange and the Institute of Directors in Southern, 2004) and therefore it is not surprising that both countries have resemblance in <IR> practices. The impressive quality reporting on the <IR> capitals could be linked to the fact that South Africa adopted the IIRC framework in 2014 (De Villiers et al., 2014) and therefore not surprising that <IR> practice has been progressing well over the years. While firms in South Africa and Namibia have demonstrated quite an impressive quality of <IR>, gaps have been established where underreported areas under each <IR> capital have been identified. If firms want to do even better in <IR>, it would be important to address areas lagging behind.

The study ultimately establishes value relevance of investing in quality disclosure of <IR> capitals as well as integrated reporting practice as a whole. In line with observations by Anifowose et al. (2020) on importance of a study on quality of <IR>, the results can be a further support to regulators in Africa seeking for further proof of value relevance of <IR> so as to furthermore strengthen the adoption of the <IR> practices in their jurisdictions. The study also established areas of underreporting which firms should care about. Worthy of note is low reporting of natural capital despite the growing importance of environmental concerns of firms. Therefore, there is need to establish the reasons behind low reporting observed in the natural capital aspects. The findings of the study demonstrate that the study's objectives were achieved and thus the nexus of Integrated Reporting and Financial Performance in firms listed on sustainable stock exchanges in Namibia and South Africa established.

**REFERENCES**

Abdulhafedh, A. (2017). How to Detect and Remove Temporal Autocorrelation in Vehicular Crash Data. *Journal of Transportation Technologies*, *7*(2), 133–147. https://doi.org/10.4236/jtts.2017.72010

Abeysekera, I. (2013). A template for integrated reporting. *Journal of Intellectual Capital*, *14*(2), 227–245. https://doi.org/10.1108/14691931311323869

Abeysinghe, C. (2020). Integrated Reporting and Integrated Thinking: A Commentary on the Integrated Reporting Framework (2013). *Colombo Business Journal*, 11(2), 142–170. http://doi.org/10.4038/cbj.v11i2.68

Abeywardana, E., Azam, S. M., & Low, K. (2021). Theoretical Review on Integrated Reporting. *International Journal of Scientific & Technology Research*. *10*(05). 99-111. http://www.ijstr.org/final-print/may2021/Theoretical-Review-On-Integrated-Reporting.pdf

Adams, C. A. (2015). The International Integrated Reporting Council: A call to action. *Critical Perspectives on Accounting*, *27*, 23–28. https://doi.org/10.1016/j.cpa.2014.07.001

Adams, C. A., Potter, B., Singh, P. K., & York, J. (2016). Exploring the implications of integrated reporting for social investment (disclosures). *British Accounting Review*, *48*(3), 283–296. https://doi.org/10.1016/j.bar.2016.05.002

Adams, S., & Simnett, R. (2011). Integrated Reporting: An Opportunity for Australia's Not-for-Profit Sector. *Australian Accounting Review*, *21*(3), 292–301. https://doi.org/10.1111/j.1835-2561.2011.00143.x

Adefolarin, A. O., & Gershim, A. (2022). Content validation of educational materials on maternal depression in Nigeria. *BMC Pregnancy and Childbirth, 22*, 1-17. https://doi.org/10.1186/s12884-022-04575-5

Adegbie, F. F., Akintoye, I. R., & Bello Isiaka. (2019). Evaluation of integrated reporting and the value of listed manufacturing firms in Nigeria. *European Journal of Accounting, Auditing and Finance Research*, 7(7), 31-59. https://www.eajournals.org/wp-content/uploads/Evaluation-of-Integrated-Reporting-and-the-Value-of-Listed-Manufacturing-Firms-in-Nigeria-1.pdf

Adegboyegun, A. E., Alade, M. E., Ben-Caleb, E., Ademola, A. O., Eluyela, D. F., & Oladipo, O. (2020). Integrated reporting and corporate performance in Nigeria: Evidence from the banking industry. *Cogent Business & Management*, 7(1), 1-13. https://doi.org/10.1080/23311975.2020.1736866

Adelowotan, M., & Udofia, I. E. (2021). Do corporate attributes drive integrated reporting amongst listed companies in Nigeria? *Journal of Economic and Financial Sciences*, *14*(1). https://doi.org/10.4102/jef.v14i1.673

Adhariani, D., & Sciulli, N. (2020). The future of integrated reporting in an emerging market: an analysis of the disclosure conformity level. *Asian Review of Accounting*, *28*(4), 619-634. https://doi.org/10.1108/ARA-02-2019-0045

Adhikariparajul, M., Hassan, A., Fletcher, M. A., & Elamer, A. A. (2021). Integrated reporting in higher education: insights from Scotland, Northern Ireland and Wales. *Social Responsibility Journal*, *17*(3), 321–342. https://doi.org/10.1108/srj-01-2019-0031

Adhikariparajuli, M., Hassan, A., & Fletcher, M. A. (2021). Integrated Reporting Implementation and Core Activities Disclosure in UK Higher Education Institutions. *Administrative Sciences*, *11*(3), 1-26. https://doi.org/10.3390/admsci11030086

Affan, M. W. (2019). Integrated Reporting and Corporate Performance: Empirical Evidence of The IIRC Framework Adoption. *Jurnal Ilmiah Bidang Akuntansi dan Manajemen*, *16*(2). 81-86. https://doi.org/10.31106/jema.v16i2.2700

Afolabi, H., Ram, R., & Rimmel, G. (2022). Harmonization of Sustainability Reporting Regulation: Analysis of a Contested Arena. *Sustainability*, *14*(9), 1-26. https://doi.org/10.3390/su14095517

Afshari, V., Javid, D., Soleimani, H., & Afshari, H. (2014). To study the relationship between intellectual capital and financial performance of companies in capital market of Iran. *Kuwait Chapter of the Arabian Journal of Business and Management Review*, *4*(1), 247-266. https://www.proquest.com/scholarly-journals/study-relationship-between-intellectual-capital/docview/1564432049/se-2

Aguinis, H., Hill, N. S., & Bailey, J. (2021). Best Practices in Data Collection and Preparation: Recommendations for Reviewers, Editors, and Authors. *Organizational Research Methods*, *24*(4), 678–693. https://doi.org/10.1177/1094428119836485

Akbaş, A., Coskun, A., Demirkan, S., & Karamustafa, O. (2021). Internal Change Mechanism of Integrated Reporting: A Field Study. *Sustainability*, *13*(23), 1-17. https://doi.org/10.3390/su132313327

Akbaş, H., & Canikli, S. (2018). Determinants of Voluntary Greenhouse Gas Emission Disclosure: An Empirical Investigation on Turkish Firms. *Sustainability*, *11*(1), 1-24. https://doi.org/10.3390/su11010107

Akhter, T., & Ishihara, T. (2018). Assessing the Gap between Integrated Reporting and Current Corporate Reporting: A Study in the UK. *International Review of Business*, *18*, 137-157. https://core.ac.uk/download/pdf/159440692.pdf

Akinleye, G. T., Olarewaju, O. M., & Fajuyagbe, S. B. (2019). Assessing the effects of corporate taxation on the investment policy of manufacturing firms in Nigeria. *Folia Oeconomica Stetinensia*, *19*(2), 7-24. https://doi.org/10.2478/foli-2019-0010

Akinlo, O., & Asaolu, T. (2012). Profitability and Leverage: Evidence from Nigerian Firms. *Global Journal of Business Research*, *6*(1), 17-25 ftp://ftp.repec.org/opt/ReDIF/RePEc/ibf/gjbres/gjbr-v6n1-2012/GJBR-V6N1-2012-3.pdf

Akwenye, N., Chata, T., & Benedict, O. (2016). Establishment of audit committees in government ministries of a developing country. *Risk governance & control: financial markets & institutions, 6(4)*, 282-290. https://doi.org/10.22495/rgcv6i4c2art5

Albetairi, H. T. A., Kukreja, G., & Hamdan, A. (2018). Integrated Reporting and Financial Performance: Empirical Evidences from Bahraini Listed Insurance Companies. Accounting and Finance Research, 7(3), 1-10. https://doi.org/10.5430/afr.v7n3p102

Al-Slehat, Z. A. F. (2020). Impact of Financial Leverage, Size and Assets Structure on Firm Value: Evidence from Industrial Sector. Jordan. *International Business Research*, *13*(1), 109. https://doi.org/10.5539/ibr.v13n1p109

Alabass, H. S. H. H. (2019). Intellectual Capital and Financial Performance: Empirical Evidence from Iraq Stock Exchange (ISE). *Academy of Accounting and Financial Studies Journal*, *23*(1), 1-11. https://search.proquest.com/docview/2239154653?accountid=188730

Alade, M. E., & Odugbemi, O. M. (2022). Corporate Characteristics and Implementation of Integrated Reporting Framework of Listed Oil and Gas Firms in Nigeria. *International Review of Business and Economics*, *6*(1), 91–102. https://doi.org/10.56902/irbe.2022.6.1.8

Albertini, E. (2019). Integrated reporting: an exploratory study of French companies. *Journal of Management & Governance*, *23*(2), 513–535. https://doi.org/10.1007/s10997-018-9428-6

Albertini, E., & Berger-Remy, F. (2019). Intellectual Capital and Financial Performance: A Meta-Analysis and Research Agenda. *M@N@Gement*, *22*(2), 216 - 249. https://doi.org/10.3917/mana.222.0216

Alghusin, N. (2015). Do Financial Leverage, Growth and Size Affect Profitability of Jordanian Industrial Firms Listed? *International Journal of Academic Research in Business & Social Sciences*, *5*(4), 385-398. http://dx.doi.org/10.6007/IJARBSS/v5-i4/1580

Alhaddi, H. (2015). Triple Bottom Line and Sustainability: A Literature Review. *Business and Management Studies*, *1*(2), 6-10. https://doi.org/10.11114/bms.v1i2.752

Ali, J., Tahira, Y., Amir, M., Ullah, F., Tahir, M., Shah, W., Khan, I., & Tariq, S. (2022). Leverage, Ownership Structure and Firm Performance. *Journal of Financial Risk Management*, *11*(01), 41–65. https://doi.org/10.4236/jfrm.2022.111002

Aliyu, A. I., Bello, M. B., Kasim, R., & Martin, D. C. (2014). Positivist and Non-Positivist Paradigm in Social Science Research: Conflicting Paradigms or Perfect Partners? *Journal of Management and Sustainability*, *4*(3), 74-95. https://doi.org/10.5539/jms.v4n3p79

Almășan, A., Circa, C., Dumitru, M., Guse, R., & Mangiuc, D. M. (2019). Effects of Integrated Reporting on Corporate Disclosure Practices regarding the Capitals and Performance. *Amfiteatru Economic*, *21*(52), 572. https://doi.org/10.24818/ea/2019/52/572

Alsartawi, M. A. (2018). Online financial disclosure and firms' performance. *World Journal of Entrepreneurship, Management and Sustainable Development*, *14*(2), 178–190. https://doi.org/10.1108/wjemsd-11-2017-0082

Altarawneh, G. A., & Al-Halalmeh, A. O. (2020). Conformity of Annual Reports to an Integrated Reporting Framework: ASE Listed Companies. *International Journal of Financial Studies*, *8*(3), 1-24. https://doi.org/10.3390/ijfs8030050

Aluchna, M., Hussain, N., & Roszkowska-Menkes, M. (2019). Integrated Reporting Narratives: The Case of an Industry Leader. *Sustainability*, *11*(4), 976. https://doi.org/10.3390/su11040976

Amirrudin, M. S., Abdullah, M., & Saleh, Z. (2020). Sustainability Reporting to Integrated Reporting: The Relationship Between Integrated Reporting Disclosure Quality (IRDQ) and Firm Performance. *International Journal of Recent Technology and Engineering*, *8*(6), 1780–1784. https://doi.org/10.35940/ijrte.e4905.038620

Angermund, N., & Plant, K. (2017). A framework for managing and assessing ethics in Namibia: An internal audit perspective. *African Journal of Business Ethics*, *11*(1). https://doi.org/10.15249/11-1-119

Anifowose, M., Abang, S., & Zakari, M. A. (2020). Integrated capitals reporting and companies' sustainable value: evidence from the Asian continent. *Asian Review of Accounting*, *28*(4), 567–589. https://doi.org/10.1108/ara-10-2019-0184

Anifowose, M., Rashid, H. M. A., & Annuar, H. A. (2017). Intellectual capital disclosure and corporate market value: does board diversity matter? *Journal of Accounting in Emerging Economies*, *7*(3), 369–398. https://doi.org/10.1108/jaee-06-2015-0048

Aouadi, A., & Marsat, S. (2018). Do ESG Controversies Matter for Firm Value? Evidence from International Data. *Journal of Business Ethics*, *151*(4), 1027–1047. https://doi.org/10.1007/s10551-016-3213-8

Appiagyei, K., Djajadikerta, H., & Xiang, E. (2016, December). Integrated Reporting and Firm Performance: A Research Framework. *In ECU Business Doctoral and Emerging Scholars Colloquium 2016* (p. 123). https://www.ecu.edu.au/__data/assets/pdf_file/0011/736697/ECUBDESC16_Proc eedings.pdf

Ara, M., & Harani, D. M. (2020). Integrated Reporting Insight: Why Organisation Voluntarily Reports? International. *International Journal of Scientific and Technology Research*, *9*(1), 3055-3069. http://www.ijstr.org/final-print/jan2020/Integrated-Reporting-Insight-Why-Organisation-Voluntarily-Reports.pdf

Aras, G., & Williams, P. (2022). Integrated Reporting and Integrated Thinking: Proposing a Reporting Model That Induces More Responsible Use of Corporate Power. *Sustainability*, *14*(6), 1-19. https://doi.org/10.3390/su14063277

Arkkelin, D. (2014). Using SPSS to Understand Research and Data Analysis. *Psychology Curricular Materials*. *1*. https://scholar.valpo.edu/psych_oer/1

Asaolu, T., & Akinlo, O. (2012). Profitability and Leverage: Evidence from Nigerian Firms. *Global Journal of Business Research*, *6*(1), 17-25. http://www.theibfr2.com/RePEc/ibf/gjbres/gjbr-v6n1-2012/GJBR-V6N1-2012-3.pdf

Asheela-Shikalepo, N. (2021). Corruption and Corporate Governance in Namibia: An Analysis of the Strategic Approaches in the 4th Industrial Revolution. *Potchefstroom Electronic Law Journal*, *24*, 1–31. https://doi.org/10.17159/1727-3781/2021/v24i0a10738

Association of Chartered Certified Accountants (ACCA). (2013). Understanding Investors: Directions for Corporate Reporting; Association of Chartered Certified Accountants (ACCA): London, UK. https://www.accaglobal.com/content/dam/acca/global/PDF-technical/financial-reporting/pol-afb-ui02.pdf

Association of Chartered Certified Accountants (ACCA). (2017). Insights into Integrated Reporting; Association of Chartered Certified Accountants (ACCA): London, UK. https://www.accaglobal.com/content/dam/ACCA_Global/Technical/integrate/pi-insights-into-ir-.pdf

Atkins, J., & Maroun, W. (2015). Integrated reporting in South Africa in 2012. *Meditari Accountancy Research*, *23*(2), 197–221. https://doi.org/10.1108/medar-07-2014-0047

Atmadja, A. T., & Saputra, K. a. K. (2018). Determinant Factors Influencing the Accountability of Village Financial Management. *Academy of Strategic Management Journal*, *17*(1), 1-9. https://www.abacademies.org/articles/Determinant-factors-influencing-the-accountability1939-6104-17-1-158.pdf

Aureli, S. (2017). A comparison of content analysis usage and text mining in CSR corporate disclosure. *The International Journal of Digital Accounting Research*, *17*, 1–32. https://doi.org/10.4192/1577-8517-v17_1

Babalola, Y. A. (2013). The Effect of Firm Size on Firms Profitability in Nigeria. *Journal of economics and sustainable development*, *4*, 90-94. https://www.iiste.org/Journals/index.php/JEDS/article/view/4857/4935

Baboukardos, D., & Rimmel, G. (2016). Value relevance of accounting information under an integrated reporting approach: A research note. *Journal of Accounting and Public Policy*, *35*(4), 437–452. https://doi.org/10.1016/j.jaccpubpol.2016.04.004

Bal, T. (2018). Integrated reporting: Literature review and its practice in India and abroad. *Srusti Management Review*, *11*(2), 48-52. https://search.proquest.com/docview/2201619624?accountid=188730

Bal, T., & Dhal, S. K. (2019). Integrated reporting: A case study of maruti suzuki India ltd. *Srusti Management Review*, *12*(2), 108-109. https://www.proquest.com/scholarly-journals/integrated-reporting-case-study-maruti-suzuki/docview/2350932249/se-2?accountid=188730

Balasingam, S., Arumugam, D., & Hui, K. A. (2019). The Challenges in Adopting and Implementing Integrated Reporting in Public Listed Companies in Malaysia. *International Journal of Recent Technology and Engineering*, *7*(5S), 127-133. https://www.ijrte.org/wp-content/uploads/papers/v7i5s/ES2136017519.pdf

Balatbat, M. C. A., Lin, C., & Carmichael, D. W. (2010). Comparative performance of publicly listed construction companies: Australian evidence. *Construction Management and Economics*, *28*(9), 919–932. https://doi.org/10.1080/01446193.2010.501805

Bapuji, H., Husted, B. W., Lu, J. W., & Mir, R. (2018). Value Creation, Appropriation, and Distribution: How Firms Contribute to Societal Economic Inequality. *Business & Society*, *57*(6), 983–1009. https://doi.org/10.1177/0007650318758390

Barter, N. (2015). Natural capital: dollars and cents/dollars and sense. *Sustainability Accounting, Management and Policy Journal*, *6*(3), 366–373. https://doi.org/10.1108/sampj-02-2014-0011

Barth, M. E., Cahan, S. F., Chen, L., & Venter, E. R. (2017). The economic consequences associated with integrated report quality: Capital market and real effects. *Accounting Organizations and Society*, *62*, 43–64. https://doi.org/10.1016/j.aos.2017.08.005

Batchimeg, B. (2017). Financial Performance Determinants of Organizations: The Case of Mongolian Companies. *Journal of Competitiveness*, *9*(3), 22–33. https://doi.org/10.7441/joc.2017.03.02

Batool, A., & Sahi, C. A. (2019). Determinants of Financial Performance of Insurance Companies of USA and UK During Global Financial Crisis (2007 – 2016). *International Journal of Economics and Business Administration*, *5*(1), 23-33. https://doi.org/10.35248/2472-114x.19.7.194

Beck, C., Dumay, J., & Frost, G. R. (2017). In Pursuit of a 'Single Source of Truth': from Threatened Legitimacy to Integrated Reporting. *Journal of Business Ethics*, *141*(1), 191–205. https://doi.org/10.1007/s10551-014-2423-1

Becker-Blease, J., Kaen, F., Etebari, A., & Baumann, H. (2010). Employees, firm size and profitability in U.S. manufacturing industries. *Investment Management and Financial Innovations*, *7*(2), 7-23. https://businessperspectives.org/images/pdf/applications/publishing/templates/article/assets/3235/imfi_en_2010_02_Becker.pdf

Bek-Gaik, B., & Surowiec, A. (2022). The quality of business model disclosure in integrated reporting: Evidence from Poland. *European Research Studies*, *25*(1), 3-26. https://www.proquest.com/scholarly-journals/quality-business-model-disclosure-integrated/docview/2639727421/se-2?accountid=188730

Beleneşi, M., & Popa, D. N. (2021). Disclosure Dynamics and Non-Financial Reporting Analysis. The Case of Romanian Listed Companies. *Sustainability*, *13*(9), 1-23. https://doi.org/10.3390/su13094732

Bellera, C. A., & Hanley, J. A. (2007). A method is presented to plan the required sample size when estimating regression-based reference limits. *Journal of Clinical Epidemiology*, *60*(6), 610–615. https://doi.org/10.1016/j.jclinepi.2006.09.004

Benfield, J. A., & Szlemko, W. J. (2006). Internet-based data collection: Promises and realities. *Journal of Research Practice*, *2*(2). http://jrp.icaap.org/index.php/jrp/article/view/30/5

Beske, F., Haustein, E., & Lorson, P. C. (2020). Materiality analysis in sustainability and integrated reports. *Sustainability Accounting, Management and Policy Journal*, *11*(1), 162-186. https://doi.org/10.1108/SAMPJ-12-2018-0343

Bhuiyan, M., Borhan, U., Roudaki, J., & Clark, M. (2013). Corporate Governance Compliance and Discretionary Accruals: New Zealand Evidence. *Australasian Accounting, Business and Finance Journal*, *7*(2), 101-124. http://dx.doi.org/10.14453/aabfj.v7i2.7

Bijlmakers, L. (2018). *The influence of Integrated Reporting on Firm Value an Application to the European Banking industry*. MSc Accountancy & Control, specialization Accountancy Faculty of Economics and Business, University of Amsterdam. https://dspace.uba.uva.nl/server/api/core/bitstreams/da4362c7-6acf-49e3-85e8-2cdff2b8d5b3/content

Bini, L., Giunta, F., & Dainelli, F. (2010). Signalling Theory and Voluntary Disclosure to the Financial Market - Evidence from the Profitability Indicators Published in the Annual Report. *SSRN Electronic Journal*, 1-29. http://dx.doi.org/10.2139/ssrn.1930177

Bobitan, R., & Stefea, P. (2017). Integrated Reporting for a Good Corporate Governance. *Ovidius University Annals Economic Sciences Series*, *17*(1), 424-428. https://stec.univ-ovidius.ro/html/anale/ENG/2017/Section-V/6.pdf

Bochenek, M. (2020). Analysis of the integrated reporting use in EU countries. *Problems and Perspectives in Management*, *18*(3), 106-117. http://dx.doi.org/10.21511/ppm.18(3).2020.09

Boesso, G., & Kumar, K. (2007). Drivers of corporate voluntary disclosure: A framework and empirical evidence from Italy and the united states. *Accounting, Auditing & Accountability Journal*, *20*(2), 269-296. https://doi.org/10.1108/09513570710741028

Boiral, O. (2013). Sustainability reports as simulacra? A counter-account of A and A+ GRI reports. *Accounting, Auditing & Accountability Journal*, *26*(7), 1036 – 1071. https://doi.org/10.1108/AAAJ-04-2012-00998

Bommel, V. K. (2014). Towards a legitimate compromise? An exploration of Integrated Reporting in the Netherlands. *Accounting, Auditing & Accountability Journal*, *27*(7), 1157-1189. http://dx.doi.org/10.1108/AAAJ-04-2013-130

Boolaky, P. K. (2011). Global Reporting Initiatives (G3), Standard Disclosures for Human Resource Practices: Compliance and Determinants in the Financial Services Sector: Europe, Asia and Others. *Academy of Taiwan Business Management Review*, *7*(3):1-15. https://pdfs.semanticscholar.org/92ab/22b651251dec3c19f0ab0342c0083b06e287.pdf

Boonlua, S., & Phankasem, S. (2016). Engagement in integrated reporting: evidence from the international integrating reporting council adoption framework. *Journal of Business and Retail Management Research*, *10*(3), 126-136. https://pdfs.semanticscholar.org/3283/521059a5cf815ed8a843201702ab33a4fc42.pdf

Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*, *9*(2), 27-40. https://doi.org/10.3316/QRJ0902027

Brammer, S., & Pavelin, S. (2008). Factors influencing the quality of corporate environmental disclosure. *Business Strategy and the Environment*, *17*(8), 120–136. https://doi.org/10.1002/bse.506

Brown, J., & Dillard, J. (2014). Integrated reporting: On the need for broadening out and opening up. *Accounting, Auditing & Accountability Journal*, *27*(7), 1120 – 1156. https://doi.org/10.1108/AAAJ-04-2013-1313

Brunnström, K., & Barkowsky, M. (2018). Statistical quality of experience analysis: on planning the sample size and statistical significance testing. *Journal of Electronic Imaging*, *27*(5). https://doi.org/10.1117/1.JEI.27.5.053013

Bruno, W., & Haar, R. J. (2020). A systematic literature review of the ethics of conducting research in the humanitarian setting. *Conflict and Health*, *14*, 1-17. https://doi.org/10.1186/s13031-020-00282-0

Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done? *Qualitative research*, *6*(1), 97-113. https://people.utm.my/uzairiah/wp-content/blogs.dir/1541/files/2016/11/Qualitative-Research-2006-Bryman-97-113.pdf

Buallay, A., Ammar Abdulla, A. H., & Hamdan, A. (2021). Integrated reporting and performance: A cross-country comparison of GCC Islamic and conventional banks. *Journal of Islamic Marketing*, *12*(8), 1619-1636. https://doi.org/10.1108/JIMA-08-2017-0084

Buhr, N., Gray, R., & Milne, M. J. (2014). Histories, rationales, voluntary standards and future prospects for sustainability reporting: CSR, GRI, IIRC and beyond. *In Sustainability*

*Accounting and Accountability* (2nd ed., pp. 51-71). Routledge. https://doi.org/10.4324/9781315848419-14

Bukvova, H. (2009). Research as a Process: A Comparison between Different Research Approaches. *Sprouts: Working Papers on Information Systems*, *9*(29). All Sprouts Content. 283. http://aisel.aisnet.org/sprouts_all/283

Burke, M. E. (2007). Making choices: research paradigms and information management: Practical applications of philosophy in IM research. *Library Review*, *56*(6), 476-484. https://doi.org/10.1108/00242530710760373

Busco, C. (2014). Integrated reporting from concept to practice. *Accountancy Ireland*, *46*(2), 32-34. https://search.proquest.com/docview/1517920525?accountid=188730

Calu, A., Negrei, C., Calu, D. A., & Avram, V. (2015). Reporting of non-financial performance indicators - A useful tool for a sustainable marketing strategy. *Amfiteatru Economic*, *17*(40), 977-993. https://www.proquest.com/scholarly-journals/reporting-non-financial-performance-indicators/docview/1700708018/se-2

Camilleri, M. A. (2018). Theoretical insights on integrated reporting. *Corporate Communications: An International Journal*, *23*(4), 567–581. https://doi.org/10.1108/ccij-01-2018-0016

Casonato, F., Farneti, F., & Dumay, J. (2018). Social capital and integrated reporting: Losing legitimacy when reporting talk is not supported by actions. *Journal of Intellectual Capital*, *20*(1). https://doi.org/10.1108/JIC-08-2018-0132

Cisi, M., & Centrone, F. A. (2021). The human capital for value creation and social impact: The interpretation of the IR's HC definition. *Sustainability*, *13*(13), 1-19. https://doi.org/10.3390/su13136989

Cerioni, E., D'Andrea, A., Giuliani, M., & Marasca, S. (2021). Non-financial disclosure and intra-industry comparability: A macro, meso and micro analysis. *Sustainability*, *13*(3), 1-23. https://doi.org/10.3390/su13031177

Chadha, S., & Sharma, A. K. (2015). Capital Structure and Firm Performance: Empirical Evidence from India. *Vision: The Journal of Business Perspective*, *19*(4), 295–302. https://doi.org/10.1177/0972262915610852

Chanatup, S., Aujirapongpan, S., & Ritkaew, S. (2020). The influence of corporate governance mechanism on the integrated financial reporting and investment risk of Thai listed companies. *Entrepreneurship and Sustainability Issues*, *7*(4), 2818-2831. https://doi.org/10.9770/jesi.2020.7.4(16)

Chander, G. (2017). Sample size estimation. *The Journal of Indian Prosthodontic Society*, *17*(3), 217-218. https://doi.org/10.4103/jips.jips_169_17

Anis, C., & Indira, J. (2017). Audit Committee Characteristics and Integrated Reporting: Empirical Study of Companies Listed on the Johannesburg Stock Exchange. *European Research Studies Journal*, *22*(4B), 305–318. https://doi.org/10.35808/ersj/892

Chen, S., & Bouvain, P. (2009). Is corporate responsibility converging? A comparison of corporate responsibility reporting in the USA, UK, Australia, and Germany. *Journal of Business Ethics volume*, *87*, 299–317. https://doi.org/10.1007/s10551-008-9794-0

Cheng, H., & Phillips, M. (2014). Secondary analysis of existing data: opportunities and implementation. *Shanghai Archives of Psychiatry*, *26*(6), 371–375. https://doi.org/10.11919/j.issn.1002-0829.214171

Cheng, M., Green, W., Conradie, P., Konishi, N., & Romi, A. (2014). The international integrated reporting framework: key issues and future research opportunities. *Journal of International Financial Management and Accounting*, *25*(1), 90-119. https://doi.org/10.1111/jifm.12015

Chersan, I. C. (2018). Integrated reporting in Europe-from voluntary to mandatory? *Journal of Public Administration, Finance and Law*, *3*, 19-30. http://www.jopafl.com/uploads/special-issue-3-2017/integrated_reporting_in_Europe_from_voluntary_to_mandatory.pdf

Chicco, D., Warrens, M. J., & Jurman, G. (2021). The coefficient of determination R-squared is more informative than SMAPE, MAE, MAPE, MSE and RMSE in regression analysis evaluation. *PeerJ Computer Science*, *7*, 1-24. https://doi.org/10.7717/peerj-cs.623

Ching, H. Y., & Gerab, F. (2017). Sustainability reports in brazil through the lens of signaling, legitimacy and stakeholder theories. *Social Responsibility Journal*, *13*(1), 95-110. http://dx.doi.org/10.1108/SRJ-10-2015-0147

Choiriyah, C., Fatimah, F., Agustina, S., & Ulfa, F. A. (2021). The effect of return on assets, return on equity, net profit margin, earning per share, and operating profit margin on stock prices of banking companies in Indonesia Stock Exchange. *International Journal of Finance Research*, *2*(1), 103-123. https://doi.org/10.47747/ijfr.v1i2.280

Churet, C., & Eccles, R. G. (2014). Integrated reporting, quality of management, and financial performance. *Journal of Applied Corporate Finance*, *26*(1), 56-64. https://doi.org/10.1111/jacf.12054

Ciubotariu, M., Socoliuc, M., Grosu, V., Mihaila, S., & Cosmulese, C. G. (2021). Modeling the relationship between integrated reporting quality and sustainable business development. *Journal of Business Economics and Management*, *22*(6), 1531-1550. http://dx.doi.org/10.3846/jbem.2021.15601

Clark, R. L. (2014). *Leadership trust in virtual teams using communication tools: A quantitative correlational study* [Master's thesis, University of Phoenix]. https://www.proquest.com/docview/1552485354

Coebergh, H. P. T. (2011). Voluntary Disclosure of Corporate Strategy: Determinants and Outcomes - An Empirical Study into the Risks and Payoffs of Communicating Corporate Strategy. *Social Science Research Network*. 1-214. https://doi.org/10.2139/ssrn.1965029

Connelly, B., Certo, S. T., Ireland, R. D. & Reutzel, C.R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management*, *37*(1), 39-67. https://doi.org/10.1177/0149206310388419

Cooray, T., Senaratne, S., Herath, R., & Samudrage, D. (2020). Does integrated reporting enhance the value relevance of information? evidence from Sri Lanka. *Sustainability*, *12*(19), 1-25. https://doi.org/10.3390/su12198183

Corvino, A., Doni, F., & Silvio, B. M. (2020). Corporate governance, integrated reporting and environmental disclosure: Evidence from the south African context. *Sustainability*, *12*(12), 1-19. https://doi.org/10.3390/su12124820

Cosma, S., Maria, G. S., & Andrea, V. (2018). Does the market reward integrated report quality? *African Journal of Business Management*, *12*(4), 78–91. https://doi.org/10.5897/AJBM2017.8469

Cosmin, I., Nagel-Piciorus, C., & Nagel-Piciorus, L. (2015). Integrated Reporting – A Solution for The Sustainable Development of The Corporate Sector. *European Journal of Business and Social Sciences*, 4, 172-180. https://www.researchgate.net/publication/310424664_integrated_reporting_-_a_solution_for_the_sustainable_development_of_the_corporate_sector/citation/download

Cosmulese, C. G., Marian, S., Marius-Sorin, C., Svetlana, M., & Veronica, G. (2019). An empirical analysis of stakeholders' expectations and integrated reporting quality. *Economic Research-Ekonomska Istraživanja*, *32*(1), 3963-3986. https://doi.org/10.1080/1331677X.2019.1680303

Cosmulese, C. G., Socoiiuc, M., Ciubotariu, M., Grosu, V., & Mateş, D. (2021). Empirical study on the impact of evaluation of intangible assets on the market value of the listed

companies. *E+M Ekonomie a Management*, *24*(1), 84-101. https://doi.org/10.15240/tul/001/2021-1-006

Costa, E., & Agostini, M. (2016). Mandatory Disclosure about Environmental and Employee Matters in the Reports of Italian-Listed Corporate Groups. *Social and Environmental Accountability Journal*, *36*(1), 10-33. https://doi.org/10.1080/0969160X.2016.1144519

Cotter, J., Lokman, N., Mohamed, M., & Mohamed, N. (2011). Voluntary disclosure research: Which theory is relevant? *Electronic Journal, 6*(2), 77-95. https://doi.org/10.2139/ssrn.3470466

Coulson, A. B., Adams, C. A., Nugent, M. N., & Haynes, K. (2015). Exploring metaphors of capitals and the framing of multiple capitals: Challenges and opportunities for Sustainability. *Accounting, Management and Policy Journal*, 6(3), 290-314. http://dx.doi.org/10.1108/SAMPJ-05-2015-0032

Creswell, J. (2009). *Research Design: Qualitative, Quantitative, and Mixed-Method Approaches*. (*5*th Ed). SAGE Publications Ltd. http://www.ceil-conicet.gov.ar/wp-content/uploads/2015/10/Creswell-Cap-10.pdf

Dang, H., Vu, V., Ngo, X. M., & Hoang, H. (2019). Study the Impact of Growth, Firm Size, Capital Structure, and Profitability on Enterprise Value: Evidence of Enterprises in Vietnam. *Journal of Corporate Accounting & Finance*, *30*(1), 144–160. https://doi.org/10.1002/jcaf.22371

Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, *22*(1), 20-47. https://pdfs.semanticscholar.org/bdf0/5b25b5584c760798bc0a9605edb1bce31dac.pdf

Dawar, V. (2014). Agency theory, capital structure and firm performance: Some Indian evidence. *Managerial Finance*, *40*(12), 1190-1206. http://dx.doi.org/10.1108/MF-10-2013-0275

Dayana, M. B., Maran, M., & Quah, W. J. (2020). A New Integrated Reporting's 6-Capitals Scoring Index Towards Firm Financial Performance. *European Proceedings of Social and Behavioural Sciences*, 136-151. http://dx.doi.org/10.15405/epsbs.2020.10.12

De Oliveira, M. M., Azevedo, G. M. D. C., & Oliveira, J. (2021). The Relationship between the Company's Value and the Tone of the Risk-Related Narratives: The Case of Portugal. *Economies*, *9*(2), 70. https://doi.org/10.3390/economies9020070

De Villiers, C., & van Staden, C. (2011). Shareholder requirements for compulsory environmental information in annual reports and on websites. *Australian Accounting Review*, *21*(4), 317-326. https://doi.org/10.1111/j.1835-2561.2011.00144.x

De Villiers, C., La Torre, M., & Molinari, M. (2022). The Global Reporting Initiative's (GRI) Past, Present and Future: Critical reflections and a research agenda on sustainability reporting (standard-setting). *Pacific Accounting Review,* *34*(5), 728-747. https://doi.org/10.1108/PAR-02-2022-0034

De Villiers, C., Rinaldi, L., & Unerman, J. (2014). Integrated Reporting: insights, gaps and an agenda for future research. *Accounting, Auditing and Accountability Journal*, *27*(7), 1042-1067. https://doi.org/10.1108/AAAJ-06-2014-1736

De Villiers, C., Venter, E., & Hsiao, P. (2017). Integrated reporting: Background, measurement issues, approaches and an agenda for future research. *Accounting & Finance*, *57*(4), 937-959. https://doi.org/10.1111/acfi.12246

Deegan, C. (2013). The accountant will have a central role in saving the planet ... really? A reflection on 'green accounting and green eyeshades twenty years later.' *Critical Perspectives on Accounting*, *24*(6), 448–458. https://doi.org/10.1016/j.cpa.2013.04.004

Delmas, M. A., Nairn-Birch, N., & Lim, J. (2015). Dynamics of Environmental and Financial Performance: The Case of Greenhouse Gas Emissions. *Organization & Environment*, *28*(4), 374-393. https://doi.org/10.1177/1086026615620238

Deloitte. (2016). NamCode: The Corporate Governance Code for Namibia. Deloitte South Africa. https://www2.deloitte.com/content/dam/Deloitte/na/Documents/risk/za_Deloitte_NamCode_Brochure.pdf

Deloitte. (2014). NamCode: The Corporate Governance Code for Namibia. Deloitte South Africa. https://www2.deloitte.com/za/en/namibia/pages/risk/articles/namcode-overview.html.

Demirel, B., & Erol, I. (2016). Investigation of integrated reporting as a new approach of corporate reporting. *International Journal of Business and Social Research*, *6*(10), 32-46. https://thejournalofbusiness.org/index.php/site/article/view/1002

Ansar, M., Lukum, A., Arifin., & Dengo, Y. J. (2017). The influence of school culture on the performance of high school English teachers in Gorontalo Province. *International Journal of Education and Research*, *5*(10), 35-48. https://www.ijern.com/journal/2017/October-2017/04.pdf

Deraman, R., Wang, C., Yap, J. T., Li, H., & Mohd-Rahim, F. A. (2019). Developing Internet Online Procurement Frameworks for Construction Firms. *Future Internet*, 11(6), 1-22. https://doi.org/10.3390/fi11060136

Devi, R. U. (2014). Integrated reporting - the future phase of corporate reporting: An analysis. *International journal of research in social sciences*, *4*, 393-409. https://www.academia.edu/31395507/IJMRA-5347.pdf

Dey, P. (2020). Value relevance of integrated reporting: a study of the Bangladesh banking sector. *International Journal of Disclosure and Governance*, *17*(4), 195-207. https://doi.org/10.1057/s41310-020-00084-z

Dhakal, S. P. (2011). The Five Capitals Framework for Exploring the State of Friends' Groups in Perth, Western Australia: Implications for Urban Environmental Stewardship. *The International Journal of Environmental, Cultural, Economic, and Social Sustainability: Annual Review*, *7*(2), 135–148. https://doi.org/10.18848/1832-2077/cgp/v07i02/54902

Dicle, M., & Dicle, B. (2017). Content Analysis: Frequency Distribution of Words. *Stata Journal*, *18*(2), 379-386. http://dx.doi.org/10.2139/ssrn.2997101

Dilling, P. F., & Caykoylu, S. (2019). Determinants of Companies that Disclose High-Quality Integrated Reports. *Sustainability*, *11*(13), 1-31. https://doi.org/10.3390/su11133744

Dilling, P. F., & Harris, P. C. (2018). Reporting on long-term value creation by Canadian companies: A longitudinal assessment. *Journal of Cleaner Production*, *191*, 350–360. https://doi.org/10.1016/j.jclepro.2018.03.286

Doni, F., Gasperini, A., & Pavone, P. (2016). Early adopters of integrated reporting: The case of the mining industry in South Africa. *African Journal of Business Management, 10*(9), 187-208. https://doi.org/10.5897/AJBM2016.8029

Dratwińska-Kania, B., & Ferens, A. (2021). Business model disclosure in the reporting of public Companies—An empirical study. *Sustainability*, *13*(18), 1-27. https://doi.org/10.3390/su131810088

Drempetic, S., Klein, C., & Zwergel, B. (2020). The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review. *Journal of Business Ethics*, *167*(2), 333-360. https://doi.org/10.1007/s10551-019-04164-1

Dube, V. (2018). *The association between integrated reporting and company financial performance: A graphical time-series approach* [Doctoral thesis, University of Pretoria]. https://repository.up.ac.za/bitstream/handle/2263/64840/Dube_Association_2017.pdf?sequence=1

Dumay, J. (2016). A critical reflection on the future of intellectual capital: From reporting to disclosure. *Journal of Intellectual Capital*, *17*(1), 168-184. https://doi.org/10.1108/JIC-08-2015-0072

Dumay, J., & Dai, T. (2017). Integrated thinking as a cultural control? *Meditari Accountancy Research*, *25*(4), 574–604. https://doi.org/10.1108/MEDAR-07- 2016-0067

Dumay, J., & Guthrie, J. (2017). Involuntary disclosure of intellectual capital: Is it relevant? *Journal of Intellectual Capital*, *18*(1), 29-44. https://doi.org/10.1108/JIC-10-2016-0102

Dumay, J., Bernardi, C., Guthrie, J., & Demartini, P. (2016). Integrated reporting: A structured literature review. *Accounting Forum*, *40*(3), 166-185. https://doi.org/10.1016/j.accfor.2016.06.001

Dumay, J., Bernardi, C., Guthrie, J., & La Torre, M. (2017). Barriers to implementing the International Integrated Reporting Framework: A contemporary academic perspective. *Meditari Accountancy Research*, *25*(4), 461-480.  https://doi.org/10.1108/MEDAR-05-2017-0150

Dumay, J., La Torre, M., & Farneti, F. (2019). Developing trust through stewardship: Implications for intellectual capital, integrated reporting, and the EU Directive 2014/95/EU. *Journal of Intellectual Capital*, *20*(1), 11-39.  https://doi.org/10.1108/JIC-06-2018-0097

Dumitru, M., & Dragomir, V. D. (2021). The Factors of Integrated Reporting Quality: A Meta-Analysis. *Social Science Research Network*. https://doi.org/10.2139/ssrn.3940094

Dumitru, M., & Guşe, R. G. (2017). The legitimacy of the international integrated reporting council. *Accounting and Management Information Systems*, *16*(1), 30-58. https://search.proquest.com/docview/1962541635?accountid=188730

Duran, I. J., & Rodrigo, P. (2018). Why do firms in emerging markets report? A stakeholder theory approach to study the determinants of non-financial disclosure in Latin America. *Sustainability*, *10*(9), 1-20. https://doi.org/10.3390/su10093111

Durand, R., & Coeurderoy, R. (2001). Age, Order of Entry, Strategic Orientation, and Organizational Performance. *Journal of Business Venturing*, *16*(5), 471-494. https://doi.org/10.1016/S0883-9026(99)00061-0

Ebimobowei, A., & Onowu, U. (2021). Integrated Reporting Disclosures and Firm Value of Listed Insurance Companies in Nigeria. *African Journal of Accounting and Financial Research*, *4*(2), 55–76. https://doi.org/10.52589/ajafr-wqiakpzy

Eccles, R. G., & Saltzman, D. (2011). Achieving Sustainability Through Integrated Reporting. *Stanford Social Innovation Review*, *9*(3), 56–61. https://doi.org/10.48558/7XS8-MX90

Eccles, R. G., & Serafeim, G. (2011). Accelerating the Adoption of Integrated Reporting (August 16, 2011). CSR INDEX, Francesco de Leo, Matthias Vollbracht, eds., InnoVatio Publishing Ltd. https://ssrn.com/abstract=1910965

Eccles, R. G., Krzus, M. P., & Solano, C. (2019). A Comparative Analysis of Integrated Reporting in Ten Countries. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3345590

Eccles, R., & Serafeim, G. (2015). "Corporate and Integrated Reporting: A Functional Perspective." In Corporate Stewardship: Achieving Sustainable Effectiveness, edited by Susan Albers Mohrman, James O'Toole, and Edward E. Lawler. Sheffield, UK: Greenleaf Publishing. https://www.hbs.edu/faculty/Pages/item.aspx?num=49017

Eisenhardt, K. M. (1989). Agency Theory: An Assessment and Review. *The Academy of Management Review*, *14*(1), 57-74. https://pdfs.semanticscholar.org/8488/a9a8c56dd19be9f4e9e7793ed0ded2cd7782.pdf

El-Deeb, M. S. (2019). The Impact of Integrated Reporting on Firm Value and Performance: Evidence from Egypt. *Alexandria Journal of Accounting Research*, *3*(2), 1-50. https://doi.org/10.21608/ALJALEXU.2019.56831

Elcioglu, E. B. A. (2021). High-Accuracy Thermal Conductivity Model for Water-Based Graphene Nanoplatelet Nanofluids. *Energies*, *14*(16), 1-11. https://doi.org/10.3390/en14165178

Elda, d., Renier, Z., & Gina, S. (2017). Integrated reporting by South African companies: A case study. *Meditari Accountancy Research*, *25*, 654-674. https://doi.org/1108/MEDAR-03-2016-0052

Elving, W., Golob, U., Podnar, K., Nielsen, A. E. B., & Thomson, C. (2015). The bad, the ugly and the good: new challenges for CSR communication. *Corporate Communications: An International Journal*, *20*(2), 118–127. https://doi.org/10.1108/ccij-02-2015-0006

Enderle, G. (2018). How Can Business Ethics Strengthen the Social Cohesion of a Society? *Journal of Business Ethics*, *150*(3), 619–629. https://doi.org/10.1007/s10551-016-3196-5

Eriksson, S., & Helgesson, G. (2005). Potential harms, anonymization, and the right to withdraw consent to biobank research. *European Journal of Human Genetics*, *13*(9), 1071–1076. https://doi.org/10.1038/sj.ejhg.5201458

Ernst & Young. (2017). Is your nonfinancial performance revealing the true value of your business to investors? https://integratedreporting.org/wp-content/uploads/2017/04/ey-nonfinancial-performance-may-influence-investors.pdf

Ernst, A. F., & Albers, C. (2017). Regression assumptions in clinical psychology research practice—a systematic review of common misconceptions. *PeerJ, 5*(3). https://doi.org/10.7717/peerj.3323

Fallan, E., & Fallan, L. (2009). Voluntarism versus regulation Lessons from public disclosure of environmental performance information in Norwegian companies. *Journal of Accounting & Organizational Change*. *5*(4), 472-489. https://doi.org/10.1108/18325910910994685

Farman, S., Afridi, S. A., & Haider, M. (2019). Servant leadership and faculty loyalty nexus, mediating role of faculty trust. *International Journal of Business & Management*, *14*(1), 60-74. https://search.proquest.com/scholarly-journals/servant-leadership-faculty-loyalty-nexus/docview/2410491504/se-2?accountid=188730

Fathi, S., Farahmand, S., & Khorasani, M. (2013). Impact of Intellectual Capital on Financial Performance. *International Journal of Academic Research in Economics and Management Sciences*, *2*(1), https://www.academia.edu/20224233/the_impact_of_intelectual_capital_to_financial_performer?auto=download

Fatihudin, D. J., & Mochklas, M. (2018). How measuring financial performance. *International Journal of Civil Engineering and Technology*, *6*(9), 553-557. https://repository.um-surabaya.ac.id/2842/1/IJCIET_Volume_9%2C_Issue_6%2C_June_2018%2C_pp._553–557.pdf

Favaretto, M., De Clercq, E., Gaab, J., & Elger, B. S. (2020). First do no harm: An exploration of researchers' ethics of conduct in big data behavioral studies. *PLoS One*, *15*(11). https://doi.org/10.1371/journal.pone.0241865

Feng, T., Cummings, L., & Tweedie, D. (2017). Exploring integrated thinking in integrated reporting – an exploratory study in Australia. *Journal of Intellectual Capital*, *18*(2), 330-353. https://doi.org/10.1108/JIC-06-2016-0068

Firer, S., & Mitchell, W. S. (2003). Intellectual capital and traditional measures of corporate performance. *Journal of Intellectual Capital*, *4*(3), 348-360. https://doi.org/10.1108/14691930310487806

Flower, J. (2015). The International Integrated Reporting Council: A story of failure. *Critical Perspectives on Accounting*, *27*, 1-17. https://doi.org/10.1016/j.cpa.2014.07.002

Fortanier, F., Kolk, A., & Pinkse, J. (2011). Harmonization in CSR reporting: MNEs and global CSR standards. *Manag Int Rev*, *51*, 665–696. https://doi.org/10.2307/41411001

Frías-Aceituno, J., Rodríguez-Ariza, L., & Sánchez, I. (2014). Explanatory Factors of Integrated Sustainability and Financial Reporting. *Bus. Strategy Environ*, *23*(1), 56–72. https://doi.org/10.1002/bse.1765

Fried, A., Holtzman, M. P., & Mest, D. (2014). Integrated reporting: the new annual report for the 21st century? *Financial Executive*, *30*(4), 24-32. https://search.proquest.com/docview/1623093624?accountid=188730

Fuhrmann, S. (2019). A multi-theoretical approach on drivers of integrated reporting – uniting firm-level and country-level associations. *Meditari Accountancy Research*, *28*(1), 168-205. https://doi.org/10.1108/MEDAR-12-2018-0412

Fujianti, L., & Satria, I. (2020). Firm Size, Profitability, Leverage as Determinants of Audit Report Lag: Evidence from Indonesia. *International Journal of Financial Research*, *11*(2), 61-67. https://doi.org/10.5430/ijfr.v11n2p61

Futschik, A., Taus, T., & Zehetmayer, S. (2018). An omnibus test for the global null hypothesis. *Statistical Methods in Medical Research*, *28*(8), 2292-2304. https://doi.org/10.1177/0962280218768326

Garoui, N. (2016). Determinants of financial information disclosure: A visualization test by cognitive mapping technique. *Journal of Economics, Finance and Administrative Science,* *21*(40), 8–13. https://doi.org/10.1016/j.jefas.2016.03.002

Garrigos-Simon, F. J., Botella-Carrubi, D., & González-Cruz, T. F. (2018). Social Capital, Human Capital, and Sustainability: A Bibliometric and Visualization Analysis. *Sustainability*, *10*(12), 1-19. https://doi.org/10.3390/su10124751

Rossouw, G. J. (2020). The ethics of governance and governance of ethics in the king reports. *Journal of Global Responsibility*, *11*(2), 187-196. https://doi.org/10.1108/JGR-10-2019-0088

Geerts, M., Dooms, M., & Stas, L. (2021). Determinants of Sustainability Reporting in the Present Institutional Context: The Case of Port Managing Bodies. *Sustainability, 13*(6), 1-23. https://doi.org/10.3390/su13063148

Genevé, R., & Elza, O. (2020). Integrated reporting assurance practices—a study of south african firms. *International Journal of Disclosure and Governance*, *17*(4), 245-266. https://doi.org/10.1057/s41310-020-00093-y

Genevé, R., & Elza, O. (2021). Credibility-enhancing mechanisms, other than external assurance, in integrated reporting. *Journal of Management & Governance*, *25*(1), 61-93. https://doi.org/10.1007/s10997-020-09509-x

Ghofir, A., & Yusuf, Y. A. (2020). Effect of Firm Size and Leverage on Earning Management. *Journal of industrial engineering & management research*, *1*(3), 218-225. https://jiemar.org/index.php/jiemar/article/view/81/59

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: interviews and focus groups. *British dental journal official journal of the British Dental Association*, *204*(6), 291-5. https://doi.org/10.1038/bdj.2008.192

Gleason, K., Mathur, L., & Mathur, I. (2000). The Interrelationship between Culture, Capital Structure, and Performance: Evidence from European Retailers. *Journal of Business Research*, *50*, 185-191. https://doi.org/10.1016/S0148-2963(99)00031-4

Goicoechea, E., Gómez-Bezares, F., & Ugarte, J. (2019). Integrated Reporting Assurance: Perceptions of Auditors and Users in Spain. *Sustainability, 11*, 1-19. https://doi.org/10.3390/su11030713

Goldstein, S. (2015). Six capitals, or can accountants save the planet? rethinking capitalism for the twenty-first century: Certified public accountant. *The CPA Journal*, *85*(10), 15-16. https://search.proquest.com/docview/1777197693?accountid=188730.

Grant, C., & Osanloo, A. (2014). Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your house. *Administrative Issues Journal*, *4*(2), 12-26. https://doi.org/10.5929/2014.4.2.9

Grassmann, M., Fuhrmann, S., & Guenther, T. W. (2019). Drivers of the disclosed connectivity of the capitals: Evidence from integrated reports. *Sustainability Accounting, Management and Policy Journal*, *10*(5), 877-908. https://doi.org/10.1108/SAMPJ-03-2018-0086

Gujarati, D. N. (2003). *Basic Econometrics* (4th ed.). McGraw-Hill, New York. http://zalamsyah.staff.unja.ac.id/wp-content/uploads/sites/286/2019/11/7-Basic-Econometrics-4th-Ed.-Gujarati.pdf

Hahn, R., & Lülfs, R. (2014). Legitimizing negative aspects in GRI-oriented sustainability reporting: a qualitative analysis of corporate disclosure strategies. *Journal of Business Ethics*, *123*(3), 401-420. https://doi.org/10.1007/s10551-013-1801-4

Haji, A. A., & Anifowose, M. (2016). The trend of integrated reporting practice in South Africa: ceremonial or substantive? *Sustainability Accounting, Management and Policy Journal*, *7*(2), 190–224. https://doi.org/10.1108/sampj-11-2015-0106

Haji, A. A., & Anifowose, M. (2017). Initial trends in corporate disclosures following the introduction of integrated reporting practice in South Africa. *Journal of Intellectual Capital*, *18*(2), 373–399. https://doi.org/10.1108/jic-01-2016-0020

Haji, A. A., & Hossain, D. M. (2016). Exploring the implications of integrated reporting on organisational reporting practice: Evidence from highly regarded integrated reporters. *Qualitative Research in Accounting & Management*, *13*(4), 415–444. https://doi.org/10.1108/qram-07-2015-0065

Hamad, S., Draz, M. U., & Lai, F. (2020). The Impact of Corporate Governance and Sustainability Reporting on Integrated Reporting: A Conceptual Framework. *SAGE Open*, *10*(2), 215824402092743. https://doi.org/10.1177/2158244020927431

Hamdan, A. M., Khamis, R., AlDhaen, E., & Masfaka, M. M. (2018). *The moderation role of board interlocking on the relationship between intellectual capital and firm performance*. Kidmore End: Academic Conferences International Limited. https://www.proquest.com/conference-papers-proceedings/moderation-role-board-interlocking-on/docview/2116816999/se-2

Hameed, S. M. A., & Ahmed, N. A. R. R. (2020). Adoption of Integrated Reporting in Emerging Economies: Evidence from Bahrain. *Asian Economic and Financial Review*, *10*(10), 1115–1130. https://doi.org/10.18488/journal.aefr.2020.1010.1115.1130

Hamzeh, A. A., & Noorhayati, M. (2021). Disclosure of integrated reporting elements by industrial companies: Evidence from Jordan. *Journal of Management & Governance*, *25*(1), 121-145. https://doi.org/10.1007/s10997-020-09541-x

Hanga, A., & Johargy, A. (2014). Design and determination of the sample size in medical research. *Journal of Dental and Medical Sciences*, *13*(5), 21-31. https://doi.org/10.9790/0853-13562131

Harmadji, D. E., Subroto, B., Saraswati, E., & Prihatiningtias, Y. W. (2020). Strategy, practice and quality of sustainability reports on stock price crash risk. *International Journal of Research in Business and Social Science*, *9*(3), 34-49. https://doi.org/10.20525/ijrbs.v9i3.681

Haruna, M., & Msizi, M. (2020). Integrated reporting practice in a developing country—Ghana: Legitimacy or stakeholder oriented? *International Journal of Disclosure and Governance*, *17*(4), 230-244. https://doi.org/10.1057/s41310-020-00092-z

Hassan, A., Adhikariparajuli, M., Fletcher, M., & Elamer, A. (2019). Integrated reporting in UK higher education institutions. *Sustainability Accounting, Management and Policy Journal*, *10*(5), 844-876. https://doi.org/10.1108/SAMPJ-03-2018-0093

Hayes, A. F., & Krippendorff, K. (2007). Answering the Call for a Standard Reliability Measure for Coding Data. *Communication Methods and Measures*, *1*(1), 77-89. https://doi.org/10.1080/19312450709336664

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, *31*(1–3), 405–440. https://doi.org/10.1016/s0165-4101(01)00018-0

Helfaya, A., & Whittington, M. (2019). Does designing environmental sustainability disclosure quality measures make a difference? *Business Strategy and the Environment*, *28*(4), 525–541. https://doi.org/10.1002/bse.2262

Helmina, M. R. A., Ghozali, I., & Isgiyarta, J. (2018). How integrated reporting affect the company value? *Journal of Economic & Management Perspectives*, *12*(1), 201-211. https://search.proquest.com/docview/2266299576?accountid=188730

Herbert, S., & Graham, M. (2021). Application of principles from the International Framework for including sustainability disclosures within South African integrated reports. *South African Journal of Accounting Research*, *35*(1), 1-27. https://doi.org/10.1080/10291954.2020.1778828

Hetze, K., & Winistörfer, H. (2016). CSR communication on corporate websites compared across continents. *The International Journal of Bank Marketing*, *34*(4), 501-528. https://doi.org/10.1108/IJBM-02-2015-0022

Hieu, P. D., Thuy, L. T. T., Ngoc, H. T. B., & Lam, N. T. H. (2019). Mandatory social and environmental disclosure of listed companies in Vietnam. *Academy of Accounting and Financial Studies Journal*, *23*(5), 1-10. https://search.proquest.com/docview/2331377840?accountid=188730

Higgins, C., Stubbs, W., & Love, T. (2014). Walking the talk(s): Organisational narratives of integrated reporting. *Accounting, Auditing & Accountability Journal*, *27*(7), 1090-1119. https://doi.org/10.1108/AAAJ-04-2013-1303

Hitt, M. A., Ireland, R. D., Sirmon, D. G., & Trahms, C. A. (2012). Strategic Entrepreneurship: Creating Value for Individuals, Organizations, and Society. *Social Science Research Network*. *25*(2). https://doi.org/10.2139/ssrn.1994491

Hoang, L., Tuan, T., Nha, P. V. T., Long, T. P., & Phuong, T. T. (2019). Impact of Agency Costs on Firm Performance: Evidence from Vietnam. *Organizations and Markets in Emerging Economies*, *10*(2), 294–309. https://doi.org/10.15388/omee.2019.10.15

Hoang, T. (2018). The Role of the Integrated Reporting in Raising Awareness of Environmental, Social and Corporate Governance (ESG) Performance. *Stakeholders, Governance and Responsibility*, *14*, 47-69. https://doi.org/10.1108/S2043- 052320180000014003

Hoang, T. G., Trang, K. V., Nguyen, H. T., & Luu, H. N. (2020). Mandatory integrated reporting disclosure and corporate misreporting. *Journal of Applied Accounting Research*, *21*(3), 363-382. https://doi.org/10.1108/JAAR-02-2019-0025

Hoe, J., & Hoare, Z. (2013). Understanding quantitative research: Part 1. *Nursing Standard (through 2013), 27*(15-17), 52-7; quiz 58. https://www.proquest.com/scholarly-journals/understanding-quantitative-research-part-1/docview/1242111533/se-2

Hoekstra, R., Vugteveen, J., Warrens, M. J., & Kruyen, P. M. (2019). An empirical analysis of alleged misunderstandings of coefficient alpha. *International Journal of Social Research Methodology*, *22*(4), 351-364. https://doi.org/10.1080/13645579.2018.1547523

Holgaard, J. E., & Jørgensen, T. H. (2005). A decade of mandatory environmental reporting in Denmark. *European Environment*, *15*(6), 362–373. https://doi.org/10.1002/eet.397

Hongyun, T., Kankam, W. A., Appiah-Twum, F., & Akolgo, I. G. (2019). Effect of social capital on firm performance: the role of entrepreneurial orientation and dynamic capability. *International Review of Management and Marketing*, *9*(4), 63–73. https://doi.org/10.32479/irmm.8108

Hoque, M. E. (2017). Why Company Should Adopt Integrated Reporting? *International Journal of Economics and Financial Issues*, *7*(1), 241-248. https://dergipark.org.tr/en/download/article-file/364169

Hull, C. E., & Rothenberg, S. (2008). Firm performance: the interactions of corporate social performance with innovation and industry differentiation. *Strategic Management Journal*, *29*(7), 781-789. https://doi.org/10.1002/smj.675

Humphrey, C., O'Dwyer, B., & Unerman, J. (2017). Re-theorizing the configuration of organizational fields: the IIRC and the pursuit of Enlightened' corporate reporting. *Accounting and Business Research*, *47*(1), 30-63. https://doi.org/10.1080/00014788.2016.1198683

Hurghiş, R. (2020). Market and company effects of voluntary IR adoption - a questionable topic in the case of European companies. *Annales Universitatis Apulensis, Series Oeconomica*, *22*(2), 70-87. https://doi.org/10.29302/oeconomica.2020.22.2.7

Tiron-Tudor, A., Hurghis, R., Lacurezeanu, R., & Podoaba, L. (2020). The level of european companies' integrated reports alignment to the framework: The role of boards' characteristics. *Sustainability*, *12*(21), 1-16. https://doi.org/10.3390/su12218777

Idika, A. U., & Waribugo, S. (2015). A critique of the adequacy of positivist and interpretivist views of organisational studies for understanding the 21st century organisation(s). *International Journal of Business and Management Review, 3*(8), 44-52. https://www.eajournals.org/wp-content/uploads/A-Critique-of-the-Adequacy-of-Positivist-and-Interpretivist-Views.pdf

Injeni, G. I. (2021). *Are emerging markets prepared to adopt integrated reporting? Evidence from listed companies in Kenya* [Doctoral thesis, Strathmore University]. https://su-plus.strathmore.edu/handle/11071/12670

Institute of Directors South Africa. (2016). King IV report on corporate governance for South

    Africa.             Johannesburg,             South             Africa.

    https://cdn.ymaws.com/www.iodsa.co.za/resource/collection/684B68A7-B768-465C-

    8214-E3A007F15A5A/IoDSA_King_IV_Report_-_WebVersion.pdf

Integrated Reporting Committee of South Africa. (2011). Framework for Integrated reporting and

    the Integrated report: Discussion paper. Johannesburg, South Africa.

    https://www.chartsec.co.za/documents/latestNews/IRCOfSAIntergratedReportingGuideJ

    an11.pdf

International Integrated Reporting Council. (2020). Integrated Report, 'Building Consensus

    Towards a Global System'. London, UK. https://integratedreporting.org/wp-

    content/uploads/2020/05/IIRC_Integrated_Report_2019.pdf

International Integrated Reporting Council. (2011). Towards integrated reporting: communicating

    value in the 21st century. London, UK. http://theiirc.org/wp-content/uploads/2011/09/IR-

    Discussion-Paper-2011_single.pdf

International Integrated Reporting Council. (2013). The international < IR> framework. London,

    UK. https://www.integratedreporting.org/international-framework-downloads/

International Integrated Reporting Council. (2019). IIRC Integrated Report 2018. London, UK.

    https://integratedreporting.org/integratedreport2018/download/pdf/iirc_integrated_report

    _2018.pdf

International Integrated Reporting Council. (2021). International <IR> Framework. London, UK. https://www.integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf

Iofrida, N., De Luca, A. I., Strano, A., & Gulisano, G. (2018). Can social research paradigms justify the diversity of approaches to social life cycle assessment? *The International Journal of Life Cycle Assessment*, *23*(3), 464-480. https://doi.org/10.1007/s11367-016-1206-6

Irawan, F., & Talpia, L. (2021). The effect of leverage, firm size, earnings growth, and earning persistence on earning response coefficient. *Bana Ekonomi: Majalah Ilmiah Fakultas Ekonomi Universitas Katolik Parahyangan*, *25*(1), 41–56. https://doi.org/10.26593/be.v25i1.5124.41-56

Ishaq, M., Islam, Y., & Ghulam, G. (2021). Tobin's Q as an Indicator of Firm Performance: Empirical Evidence from Manufacturing Sector Firms of Pakistan. *International Journal of Economics and Business Administration*, *9*(1), 425-441. https://doi.org/10.35808/ijeba/683

Islam, M. S. (2021). Investigating the relationship between integrated reporting and firm performance in a voluntary disclosure regime: insights from Bangladesh. *Asian Journal of Accounting Research*, *6*(2), 228-245. https://doi.org/10.1108/AJAR-06-2020-0039

Ismail, W. A. W., Saad, S. M., Lode, N. A., & Kustiningsih, N. (2022). Corporate Sustainability Reporting and Firm's Financial Performance in Emerging Markets. *International Journal*

*of Academic Research in Business and Social Sciences*, *12*(1), 396–407. https://doi.org/10.6007/IJARBSS/v12-i1/11364

Ito, K., & Iijima, M. (2018). The Paradigm Shift from Financial Reporting to Integrated Reporting. *Journal of Human Resource Management*, *6*(3), 85-94. https://doi.org/10.11648/j.jhrm.20180603.11

Ivan, O. R. (2018). Integrated reporting in the context of corporate governance. case study on the adoption of integrated reporting of Romanian companies listed on BSE. *Valahian Journal of Economic Studies*, *9*(2), 127-138. https://doi.org/10.2478/vjes-2018-0024

Iyoha, F. O., Ojeka, S. A., & Oyebisi, M. O. (2017). Bankers' perspectives on integrated reporting for value creation: Evidence from Nigeria. *Banks and Bank Systems*, *12*(2), 100-105. https://doi.org/10.21511/bbs.12(2).2017.10

Izzo, M. F., Alberto, D. S., & Granà, F. (2020). Learning from the best: New challenges and trends in IR reporters' disclosure and the role of SDGs. *Sustainability*, *12*(14), 5545. https://doi.org/10.3390/su12145545

Jayasiri, N. K., Kumarasinghe, S., & Pandey, R. (2022). 12 years of integrated reporting: A review of research. *Accounting and Finance*, 1–57. https://doi.org/10.1111/acfi.12958

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, *1*(1), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Jerico, M. I., & Utami, W. (2021). The effect of profitability, capital structure, and forward-looking information on investment risk. *Journal of Life Economics*, *8*(2), 147-156. https://doi.org/10.15637/jlecon.8.2.01

Jian, X., & Binghan, W. (2018). Intellectual Capital, Financial Performance and Companies' Sustainable Growth: Evidence from the Korean Manufacturing Industry. *Sustainability*, *10*, 1-15. https://doi.org/10.3390/su10124651

Johnston, M. (2014). Secondary Data Analysis: A Method of Which the Time Has Come. *Qualitative and Quantitative Methods in Libraries*, *3*, 619-626. http://qqml.net/papers/September_2014_Issue/336QQML_Journal_2014_Johnston_Sept_619-626.pdf

Jorge, M. L., & Giner, B. (2002). The use of the internet for corporate reporting by Spanish companies. *The International Journal of Digital Accounting Research, 2*, 53-82. http://hdl.handle.net/10272/1492

Kamil, M. L. (2004). The current state of quantitative research. *Reading Research Quarterly*, *39*(1), 100-107. https://search.proquest.com/docview/212137415?accountid=188730

Kamran, K., Mohammad, N., Jian-Zhou, T., Imran, K. M., & Ullah, J., A. (2017). Determinants of financial performance of financial sectors (An assessment through economic value added). *European academic research*, *5*(7), 1-32. https://mpra.ub.uni-muenchen.de/81281/1/MPRA_paper_81281.pdf

Kardeş, S. S., & Yeşilçelebi, G. (2018). Integrated reporting of global corporations: a content analysis based on integrated reporting examples database from 2011 to 2016. *The World of Accounting Science*, *20*(2), 316-329. https://doi.org/10.31460/mbdd.375304

Kaura, A. A., Bello, A., & Sokoto, S. S. (2021). Integrated reporting and firms' performance of listed ICT companies in Nigeria. *Journal of Business and Management*, *23*(9), 35-42. https://doi.org/10.21203/rs.3.rs-900392/v1

Keith, T. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education*, *48*, 1-24. https://doi.org/10.1007/s11165-016-9602-2

Kelle, U., & Kühberger, C., & Bernhard, R. (2019). How to Use Mixed-methods and Triangulation Designs: an introduction to history education research. *History Education Research Journal*, *16*, 5-23. https://doi.org/10.18546/HERJ.16.1.02

Khan, M. K., Nouman, M., & Imran, M. (2015). *Determinants of financial performance of financial sectors (An assessment through economic value added*. MPRA Paper 81281, University Library of Munich, Germany. https://mpra.ub.uni-muenchen.de/81659/1/MPRA_paper_81659.pdf

Khatab, H., Masood, M., Zaman, K., Saleem, S., & Saeed, B. (2011). Corporate Governance and Firm Performance: A Case study of Karachi Stock Market. *International Journal Trade, Economics and Finance*, *2*(1), 39–43. https://doi.org/10.7763/ijtef.2011.v2.76

Kim, H. (2015). Statistical notes for clinical researchers: Type I and type II errors in statistical decision. *Restorative dentistry & endodontics*, *40*, 249-52. https://doi.org/10.5395/rde.2015.40.3.249

Kiradoo, G. (2019). Impact of Corporate Governance on the Profitability and the Financial Performance of the Organization. *Journal of Management*, *6*(3), 192-195. http://www.iaeme.com/jom/issues.asp?JType=JOM&VType=6&IType=3

Kiron, D. (2012). Get ready: Mandated integrated reporting is the future of corporate reporting. *MIT Sloan Management Review*, *53*(3), 1-3. https://www.proquest.com/scholarly-journals/get-ready-mandated-integrated-reporting-is-future/docview/963965382/se-2?accountid=188730

Kivunja, C., & Kuyini, A. B. (2017). Understanding and Applying Research Paradigms in Educational Contexts. *International Journal of Higher Education*, *6*(5), 26-41. https://doi.org/10.5430/ijhe.v6n5p26

Kılıç, M., & Kuzey, C. (2018). Determinants of forward-looking disclosures in integrated reporting. *Managerial Auditing Journal*, *33*(1), 115–144. https://doi.org/10.1108/maj-12-2016-1498

Klarmann, M., & Feurer, S. (2018). Control Variables in Marketing Research. *Marketing ZFP*, *40*(2), 26-40. https://rsw.beck.de/docs/librariesprovider54/default-document-library/beitrag-klarmann-feurer-marketing-2-2018-free.pdf?sfvrsn=b5f1eef5_0

Korkmaz, Ö. (2016). The effects of profitability ratios on debt ratio: the sample of the bist manufacturing industry. *Financial Studies*, *20*(2), 35-54. https://www.proquest.com/scholarly-journals/effects-profitability-ratios-on-debt-ratio-sample/docview/1906046809/se-2

KPMG. (2008). KPMG International Survey of Corporate Responsibility Reporting 2008. KPMG International, Amsterdam. https://www.csrwire.com/press_releases/13790-kpmg-international-survey-of-corporate-responsibility-reporting-2008

KPMG. (2020). The time has come: The KPMG Survey of Sustainability Reporting 2020. https://home.kpmg/xx/en/home/insights/2020/11/the-time-has-come-survey-of-sustainability-reporting.html

Krippendorff, K. (1980). Validity in content analysis. In E. Mochmann (Ed.), Computerstrategien fiir die kommunikationsanalyse, 69-112. Frankfurt, Germany: Campus. https://repository.upenn.edu/cgi/viewcontent.cgi?article=1299&context=asc_papers

Krzus, M. P., & Thornton, G. (2011). Integrated reporting: if not now, when? *IRZ–Zeitschrift Für Internationale Rechnungslegung*, *6*, 271–276. https://www.mikekrzus.com/resources/IRZ-Integrated-reporting.pdf

Kundu, B. (2017). Application of integrated reporting in Indian corporate scenario. *Prestige International Journal of Management & IT- Sanchayan*, *6*(1), 99-110. https://search.proquest.com/docview/1951119881?accountid=188730

La Torre, M., Sabelfeld, S., Blomkvist, M., Tarquinio, L., & Dumay, J. (2018). Harmonising non-financial reporting regulation in Europe: Practical forces and projections for future research. *Meditari Accountancy Research*, *26*, 598-621. https://doi.org/10.1108/MEDAR-02-2018-0290

Lac, A. (2016). Content Analysis. In *Springer eBooks* (pp. 1–5). Springer Nature. https://doi.org/10.1007/978-3-319-32132-5_783-1

Lai, A., Melloni, G., & Stacchezzini, R. (2018). Integrated reporting and narrative accountability: the role of preparers. *Accounting, Auditing and Accountability Journal*, *31*(5), 1381-1405. https://doi.org/10.1108/AAAJ-08-2016-2674

Lambe, I., AME, J. O., & Dzugwahi, H. (2022). Intellectual & natural capital and financial performance: evidence from listed multinational companies in Nigeria. *International Journal of Economics, Commerce and Management, 10*(11), 157-192. http://ijecm.co.uk/wp-content/uploads/2022/11/10118.pdf

Lauterbach, B., & Vaninsky, A. (1999). Ownership structure and firm performance: Evidence from Israel. *Journal of Management and Governance*, *3*(2), 189-201. https://doi.org/10.1023/A:1009990008724

Lederman, N. G., & Lederman, J. S. (2015). What Is A Theoretical Framework? A Practical Answer. *J Sci Teacher Educ*, *26*, 593–597. https://doi.org/10.1007/s10972-015-9443-2

Lee, K. W., & Yeo, G. H. (2016). The association between integrated reporting and firm valuation. *Review of Quantitative Finance and Accounting*, *47*(4), 1221-1250. https://doi.org/10.1007/s1156-015-0536-y

Limbo, C. M. (2019). *An Analysis of the Performance of State-Owned Enterprises in Namibia: Case Studies in the Transport Sector* (Doctoral thesis, Stellenbosch University]. https://scholar.sun.ac.za/bitstream/handle/10019.1/106068/limbo_performance_2019.pdf ?sequence=2&isAllowed=y

Lipunga, A. M. (2015). Integrated Reporting in Developing Countries: Evidence from Malawi. *Journal of Management Research*, *7*(3), 130-156. https://doi.org/10.5296/jmr.v7i3.7195

Maack, M., & Davidsdottir, B. (2015). Five capital impact assessment: Appraisal framework based on theory of sustainable well-being. *Renewable and Sustainable Energy Reviews*, *50*, 1338–1351. https://doi.org/10.1016/j.rser.2015.04.132

Mahboub, R. M. (2019). The determinants of forward-looking information disclosure in annual reports of Lebanese Commercial Banks. *Academy of Accounting and Financial Studies Journal*, *23*(4), 1-18. https://www.proquest.com/scholarly-journals/determinants-forward-looking-information/docview/2314179993/se-2?accountid=188730

Malcolm, M. (2009). Linking intangible assets to shareholder value. *Journal of Digital Asset Management*, *5*, 126–134. https://doi.org/10.1057/dam.2009.6

Maltby, J. (1997). Setting its own standards and meeting those standards: voluntarism versus regulation in environmental reporting. *Business Strategy and The Environment, 6*, 83-92. https://doi.org/10.1002/(SICI)1099-0836(199705)6:2<83::AID-BSE96>3.0.CO;2-U

Manes-Rossi, F., Tiron-Tudor, A., Nicolò, G., & Zanellato, G. (2018). Ensuring More Sustainable Reporting in Europe Using Non-Financial Disclosure—De Facto and De Jure Evidence. *Sustainability*, *10*(4), 1-20. https://doi.org/10.3390/su10041162

Maroun, W. (2017). Assuring the integrated report: Insights and recommendations from auditors and preparers. *The British Accounting Review*, *49*, 329-346. https://doi.org/10.1016/j.bar.2017.03.003

Martinez, C. (2016). Effects of Integrated Reporting on the Firm's Value: Evidence from Voluntary Adopters of the IIRC's Framework. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2876145

Martins, F., Cunha, J., & Serra, F. (2018). Secondary Data in Research – Uses and Opportunities. *PODIUM Sport, Leisure and Tourism Review*, *7*(3), 1-4. https://doi.org/10.5585/podium.v7i3.316

Matar, A., & Eneizan, B. M. (2018). Determinants of Financial Performance in the Industrial Firms: Evidence from Jordan. *Asian Journal of Agricultural Extension, Economics & Sociology*, *22*(1), 1-10. https://doi.org/10.9734/AJAEES/2018/37476

Matemane, R., & Wentzel, R. (2019). Integrated reporting and financial performance of South African listed banks. *Banks and Bank Systems*, *14*(2), 128- 139. https://doi.org/10.21511/bbs.14(2).2019.11

Matore, E. M., & Khairani, A. Z. (2020). The pattern of skewness and kurtosis using mean score and logit in measuring adversity quotient (AQ) for normality testing. *International Journal of Future Generation Communication and Networking*, *13*(1), 688-702. https://arpgweb.com/pdf-files/spi6.12.75.82.pdf

McElroy, M. J., & Thomas, M. P. (2015). The MultiCapital Scorecard. *Sustainability Accounting, Management and Policy Journal*, *6*(3), 425–438. https://doi.org/10.1108/sampj-04-2015-0025

Meek, G. K., Roberts, C. B., & Gray, S. J. (1995). Factors influencing voluntary annual report 42. disclosures by U.S., U.K. and continental multinational corporations. *Journal of International Business Studies*, *26*(3), 555-572. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.931.7681&rep=rep1&type=pdf

Meijden, S. V. (2016). *The value relevance of Integrated Reporting: An agency perspective - The market value of Integrated Reporting* [Master's thesis, Open Universiteit Nederland]. https://core.ac.uk/reader/85227430

Membiela-Pollán, M., & Pena-López, J. (2017). Clarifying the concept of social capital through its three perspectives: individualistic, communitarian and macro-social. *European Journal*

*of Government and Economics* 6(2), 146-170. https://doi.org/10.17979/ejge.2017.6.2.4327

Memon, M. A., Ting, H., Cheah, J., Chuah, R., Thurasamy, F., & Cham, T. H. (2020). Sample Size for Survey Research: Review and Recommendations. *Journal of Applied Structural Equation Modeling*, *4*(2), 1-20. https://jasemjournal.com/wp-content/uploads/2020/08/Memon-et-al_JASEM_-Editorial_V4_Iss2_June2020.pdf

Menicucci, E. (2018). Exploring forward-looking information in integrated reporting: A multi-dimensional analysis. *Journal of Applied Accounting Research*, *19*(1), 102-121. https://doi.org/10.1108/JAAR-01-2016-0007

Menicucci, E., & Paolucci, G. (2018). Forward-looking information in integrated reporting: A theoretical framework. *African Journal of Business Management*, *12*(18), 555-567. https://doi.org/10.5897/AJBM2018.8643

Meutia, I., Yaacob, Z., & Kartasari, S. F. (2021). Sustainability reporting: An overview of the recent development. *Accounting and Financial Control*, *3*(1), 23-39. https://doi.org/10.21511/afc.03(1).2020.03

Milne, M. J., & Gray, R. (2013). W(h)ither Ecology? The Triple Bottom Line, the Global Reporting Initiative, and Corporate Sustainability Reporting. *Journal of Business Ethics*, *118*, 13–29. https://doi.org/10.1007/s10551-012-1543-8

Milne, M., & Adler, R. W. (1999). Exploring the reliability of social and environmental disclosures content analysis. *Accounting Auditing & Accountability Journal*, *12*(2), 237-256. https://doi.org/10.1108/09513579910270138

Mion, G., & Adaui, C. R. L. (2019). Mandatory nonfinancial disclosure and its consequences on the sustainability reporting quality of Italian and German Companies. *Sustainability*, *11*(17), 1-28. https://doi.org/10.3390/su11174612

Mirza, R. S., Muhammad, N., & Zakaria, R. (2019). Construct validation in secondary data: A guideline for medical data mining. *Journal of Physics: Conference Series*, *1366*(1), 1-8. https://doi.org/10.1088/1742-6596/1366/1/012115

Mirza, S. A., & Javed, A. (2013). Determinants of financial performance of a firm: Case of Pakistani stock market. *Journal of Economics and International Finance*, *5*(2), 43-52. https://doi.org/10.5897/JEIF12.043

Mngwengwe, S., & Dlamini, P. (2020). The use of social media tools to support scholarly knowledge among students at the university of Zululand. *Library Philosophy and Practice*, 1-28. https://search.proquest.com/scholarly-journals/use-social-media-tools-support-scholarly/docview/2465479123/se-2?accountid=188730

Modugu, K. P. (2018). Corporate Disclosure: A Synthesis of Literature. *International Journal of Accounting and Financial Reporting*, *8*(3), 1-27. https://doi.org/10.5296/ijafr.v8i3.11773

Mohamad, Z. Z., Salleh, H. M., Ismail, N. D., & Chek, I. T. (2014). Does Quality of Non-Financial Information Disclosure Influence Firms' Profitability in Malaysia? *International Journal*

*of Academic Research in Accounting, Finance and Management Sciences*, *4*(4), 297–306. https://doi.org/10.6007/IJARAFMS/v4-i4/1360

Mohsin, A. (2020). Impact of leverage on financial performance (evidence from Pakistan food and fertilizer sector). *Journal of Critical Reviews*, *7*(13), 447 – 456. https://doi.org/10.31838/jcr.07.13.79

Moloi, T., & Iredele, O. (2020). Firm value and integrated reporting quality of South African listed firms. *Academy of Strategic Management Journal*, *19*(1), 1-12. https://www.proquest.com/scholarly-journals/firm-value-integrated-reporting-quality-south/docview/2382044527/se-2?accountid=188730

Mondal, A., & Ghosh, S. (2012). Intellectual capital and financial performance of Indian banks. *Journal of Intellectual Capital*, *13*(4), 515–530. https://doi.org/10.1108/14691931211276115

Montesinos, V., & Brusca, I. (2019). Non-financial reporting in the public sector: Alternatives, trends and opportunities. *Revista De Contabilidad*, *22*(2), 122-128. https://doi.org/10.6018/rcsar.383071

Moratis, L. (2018). Signalling Responsibility? Applying Signalling Theory to the ISO 26000 Standard for Social Responsibility. *Sustainability*, *10*(11), 1-20. https://doi.org/10.3390/su10114172

Mousa, G. A., & Hassan, N. T. (2015). Legitimacy Theory and Environmental Practices: Short Notes. *International Journal of Business and Statistical Analysis*, *2*(1), 41-53. https://pdfs.semanticscholar.org/1895/305329d2fd0c4e26f5a7641ce148a233732c.pdf

Mrigakshi, D. (2015). Integrated Reporting: Some Research Issues. Paper presented in 38th All India Accounting Conference and International Seminar on Accounting Education and Research. https://ssrn.com/abstract=2700517

Myšková, R., & Hájek, P. (2017). Comprehensive assessment of firm financial performance using financial ratios and linguistic analysis of annual reports. *Journal of International Studies*, *10*(4), 96-108. https://doi.org/10.14254/2071-8330.2017/10-4/7

Nakib, M., & Dey, P. K. (2018). The Journey towards Integrated Reporting in Bangladesh. *Asian Economic and Financial Review*, *8*(7), 894–913. https://doi.org/10.18488/journal.aefr.2018.87.894.913

Namibian Stock Exchange and the Institute of Directors in Southern. (2004). The NamCode: The corporate governance code for Namibia. http://nsx.com.na/images/reports/Namcode-Inside.pdf

Nanda, S., & Panda, A. K. (2018). The determinants of corporate profitability: an investigation of Indian manufacturing firms. *International Journal of Emerging Markets*, *13*(1), 66–86. https://doi.org/10.1108/ijoem-01-2017-0013

Nassreddine, G. (2016). Determinants of financial information disclosure: A visualization test by cognitive mapping technique. *Journal of Economics, Finance and Administrative Science*, *21*(40), 8–13. https://doi.org/10.1016/j.jefas.2016.03.002

Navarrete-Oyarce, J., Gallegos, J., Moraga-Flores, H., & Gallizo, J. L. (2021). Integrated Reporting as an Academic Research Concept in the Area of Business. *Sustainability*, *13*(14), 1-16. https://doi.org/10.3390/su13147741

Navarrete-Oyarce, J., Moraga-Flores, H., Juan Alejandro, G. M., & Gallizo, J. L. (2022). Why integrated reporting? insights from early adoption in an emerging economy. *Sustainability*, *14*(3), 1-16. https://doi.org/10.3390/su14031695

Nawi, F. A. M., Tambi, A. M. A., Samat, M. F., & Mustapha, W. M. W. (2020). A Review on the internal consistency of a scale: the empirical example of the influence of human capital investment on Malcom Baldridge Quality Principles in TVET Institutions. *Asian People Journal*, *3*(1), 19-29. https://doi.org/10.37231/apj.2020.3.1.121

Nicholson, S. W., & Bennett, T. B. (2009). Transparent Practices: Primary and Secondary Data in Business Ethics Dissertations. *Journal of Business Ethics*, *84*, 417–425. https://doi.org/10.1007/s10551-008-9717-0

Niraula, S. R. (2019). A review of research process, data collection and analysis. *Insights Biol Med*, *3*, 1-6. https://doi.org/10.29328/journal.ibm.1001014

Nixon, K., & Tumwine, S. (2017). Intellectual capital and competitive advantage in Uganda's microfinance industry. *African Journal of Economic and Management Studies*, *8*(4), 498-514. https://doi.org/10.1108/AJEMS-02-2017-0021

Norkett, L. (2013). Quantitative research. *Nursing Standard*, *27*(43), 59. https://www.proquest.com/scholarly-journals/quantitative-research/docview/1399690314/se-2

Nurkholis, N. (2020). The effects of financial health and company characteris- tics on Integrated Reporting. *Jurnal Keuangan dan Perbankan*, *24*(4), 494-505. https://doi.org/10.26905/jkdp.v24i4.4297

Nurkumalasari, I. S., Restuningdiah, N., & Sidharta, E. A. (2019). Integrated reporting disclosure and its impact on firm value: Evidence in Asia. *International Journal of Business, Economics and Law*, *18*(5), 99–108. http://ijbel.com/wp-content/uploads/2019/05/ijbel5-VOL18_264.pdf

Nurul H. M. Z., Siti R. A. A., Moketar, N. A., Ishak, N. H., & Hendrayati, H. (2022). Content validity study: A gamification model to drive behavior change in defeating coronavirus disease 2019 pandemic. *International Journal of Electrical and Computer Engineering, 12*(5), 5375-5382. https://doi.org/10.11591/ijece.v12i5.pp5375-5382

Ogunbiyi, O., Goulding, J. S., & Oladapo, A. (2014). An empirical study of the impact of lean construction techniques on sustainable construction in the UK. *Construction Innovation*, *14*(1), 88-107. https://doi.org/10.1108/CI-08-2012-0045

Olabode, S. O., Olateju, O. I., & Bakare, A. A. (2019). An assessment of the reliability of secondary data in management science research. *International Journal of Business and Management Review*, *7*(3), 27-43. International Journal of Business and Management Review. https://doi.org/10.36108/ljerhrm/8102.01.0102

Olawale, L. S., Ilo, B. M., & Lawal, F. K. (2017). The effect of firm size on performance of firms in Nigeria. *Aestimatio,* (15), 2-21. https://doi.org/10.5605/IEB.15.4

Oll, J., & Rommerskirchen, S. (2018). What's wrong with integrated reporting? A systematic review. *Nachhaltigkeits Management Forum*, *26*, 19–34. https://doi.org/10.1007/s00550-018-0475-x

Oluwamayowa, O. I. (2019). Examining the association between quality of integrated reports and corporate characteristics. *Heliyon*, *5*, 1–8. https://doi.org/10.1016/j.heliyon.2019.e01932

Ongore, V. O., & Kusa, G. B. (2013). Determinants of Financial Performance of Commercial Banks in Kenya. *International Journal of Economics and Financial Issues*, *3*(1), 237–252. https://www.econjournals.com/index.php/ijefi/article/view/334

Oprean-Stan, C., Oncioiu, I., Iuga, I. C., & Sebastian, S. (2020). Impact of sustainability reporting and inadequate management of ESG factors on corporate performance and sustainable growth. *Sustainability, 12*(20), 8536. https://doi.org/10.3390/su12208536

Osang, J. E., Udoimuk, A. B., Etta, E. B., Ushie, P. O., & Offiong, N. E. (2013). Methods of gathering data for research purpose and applications. *Journal of Computer Engineering*, *15*(2) 59-65. https://www.iosrjournals.org/iosr-jce/papers/Vol15-issue2/I01525965.pdf

Osborne, J. W., & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research, and Evaluation*, *8*(2), 1-5. https://doi.org/10.7275/r222-hv23

Oyelade, A. (2019). The impact of firm size on firms performance in Nigeria: A comparative study of selected firms in the building industry in Nigeria. *Asian Development Policy Review*, *7*(1), 1-9. https://doi.org/10.18488/journal.107.2019.71.1.9

Panchenko, L., & Samovilova, N. (2020). Secondary data analysis in educational research: opportunities for PhD students. *SHS Web of Conferences*, *75*, 1-7. https://doi.org/10.1051/shsconf/20207504005

Paradis, E., O'Brien, B., Nimmon, L., Bandiera, G., & Athina, M. M. (2016). Design: Selection of Data Collection Methods. *Journal of Graduate Medical Education*, *8*(2), 263–264. https://doi.org/10.4300/JGME-D-16-00098.1

Parrot, K. W., & Tierney, B. X. (2012). Integrated reporting, stakeholder engagement, and balanced investing at American Electric Power. *Journal of Applied Corporate Finance*, *24*, 27–37. https://doi.org/10.1111/j.1745-6622.2012.00375.x

Pawoko, G., Wibowo., & Hamidah. (2019). The role of work-life balance, achievement motivation on organizational commitment through satisfaction athlete's in Indonesia. *Academy of Strategic Management Journal*, *18*(5), 1-11. https://www.proquest.com/scholarly-journals/role-work-life-balance-achievement-motivation-on/docview/2386339311/se-2

Perego, P., Kennedy, S., & Whiteman, G. (2016). A lot of icing but little cake? Taking integrated reporting forward. *Journal of Cleaner Production*, *136*, 53-64. https://doi.org/10.1016/j.jclepro.2016.01.106

Pistoni, A., Songini, L., & Bavagnoli, F. (2018). Integrated reporting quality: an empirical analysis. *Corporate Social Responsibility and Environmental Management*, *25*(4), 489-507. https://doi.org/10.1002/csr.1474

Pitrakkos, P., & Warren, M. (2020). Evaluating the quality of carbon disclosures. *Sustainability Accounting, Management and Policy Journal*, *11*(3), 553-589. https://doi.org/10.1108/SAMPJ-03-2018-0081

Polit, D. F., & Beck, C. T. (2006). The content validity index: Are you sure you know what's being reported? critique and recommendations. *Research in Nursing & Health, 29*(5), 489. https://doi.org/10.1002/nur.20147

PricewaterhouseCoopers. (2015). Integrated reporting: Where to next? https://www.pwc.co.za/en/assets/pdf/integrated-reporting-survey-2015.pdf

Priyanka, G. (2020). Application of SPSS Programme in the Field of Social Science Research. *International Journal of Recent Technology and Engineering*, *8*(5), 2424-2427. https://doi.org/10.35940/ijrte.D9260.018520

Qaderi, S. A., Ghaleb, B. a. A., Abdullah, A. a. H., Chandren, S., & Abdullah, Z. (2022). Board Characteristics and Integrated Reporting Strategy: Does Sustainability Committee Matter? *Sustainability*, *14*(10), 1-24. https://doi.org/10.3390/su14106092

Radley, Y. (2012). The value of extra-financial disclosure: What investors and analysts said. Accounting for Sustainability, Global Reporting Initiative (GRI) and The Prince's Accounting for Sustainability Project (A4S). https://www.accountingforsustainability.org/content/dam/a4s/corporate/home/Knowledg eHub/The%20value%20of%20extra%20financial%20disclosure.pdf.downloadasset.pdf

Rafikullah, D., Chen, W., Jeffrey, B., Hui, Y., Heng, L., & Faizul, A. M. (2019). Developing Internet Online Procurement Frameworks for Construction Firms. *Future Internet*, *11*(6), 1-22. https://doi.org/10.3390/fi11060136

Rafiq, M., Zhang, X., Yuan, J., Naz, S., & Maqbool, S. (2020). Impact of a balanced scorecard as a strategic management system tool to improve sustainable development: Measuring the mediation of organizational performance through PLS-smart. *Sustainability*, *12*(4), 1-19. https://doi.org/10.3390/su12041365

Rahman, M. M., Sobhan, R., & Islam, S. (2020). The Impact of Intellectual Capital Disclosure on Firm Performance: Empirical Evidence from Pharmaceutical and Chemical Industry of Bangladesh. *The Journal of Asian Finance, Economics and Business*, *7*(2), 119–129. https://doi.org/10.13106/jafeb.2020.vol7.no2.119

Rahman, S. (2017). The Advantages and Disadvantages of Using Qualitative and Quantitative Approaches and Methods in Language Testing and Assessment Research: A Literature Review. *Journal of Education and Learning*, *6*(1), 102-112. https://doi.org/10.5539/jel.v6n1p102

Rashid, A. (2015). Revisiting Agency Theory: Evidence of Board Independence and Agency Cost from Bangladesh. *Journal of Business Ethics*, *130*, 181–198. https://doi.org/10.1007/s10551-014-2211-y

Reitmaier, C., & Schultze, W. (2017). Enhanced business reporting: Value relevance and determinants of valuation-related disclosures. *Journal of Intellectual Capital*, *18*(4), 832-867. https://doi.org/10.1108/JIC-12-2016-0136

Renard, Y. J. S., Maria, C. A. B., & David, G. C. (2013). The relationship between sustainability practices and financial performance of construction companies. *Smart and Sustainable Built Environment*, *2*(1), 6-27. https://doi.org/10.1108/20466091311325827

Rensburg, R., & Botha, E. (2014). Is integrated reporting the silver bullet of financial communication? A stakeholder perspective from South Africa. *Public Relations Review*, *40* (2), 44-152. https://repository.up.ac.za/bitstream/handle/2263/41101/Rensburg_Is_%202014.pdf?sequence=1

Reuter, M., & Messner, M. (2015). Lobbying on the integrated reporting framework. *Accounting, Auditing & Accountability Journal*, *28*(3), 365 – 402. https://doi.org/10.1108/AAAJ-03-2013-1289

Rezaee, Z. (2016). Business sustainability research: A theoretical and integrated perspective. *Journal of Accounting Literature*, *36*, 48-64. https://doi.org/10.1016/j.acclit.2016.05.003

Rivera-Arrubla, Y. A., Zorio-Grima, A., & García-Benau, M. A. (2017). Integrated reports: disclosure level and explanatory factors. *Social Responsibility Journal*, *13*(1), 155-176. https://doi.org/10.1108/SRJ-02-2016-0033

Robb, A. M., & Robinson, D. T. (2014). The Capital Structure Decisions of New Firms. *The Review of Financial Studies*, *27*(1), 153–179. https://doi.org/10.1093/rfs/hhs072

Roberts, L. (2014). The new integrated reporting framework. *Accountancy SA*, 28-29. https://www.proquest.com/trade-journals/new-integrated-reporting-framework/docview/1511122276/se-2

Robertson, F. A., & Martin, S. (2020). Rationales for integrated reporting adoption and factors impacting on the extent of adoption: A UK perspective. *Sustainability Accounting, Management and Policy Journal*, *11*(2), 351-382. https://doi.org/10.1108/SAMPJ-02-2019-0042

Robertson, F. A., & Samy, M. (2015). Factors affecting the diffusion of integrated reporting—a UK FTSE 100 perspective. *Sustainability Accounting, Management and Policy Journal*, *6*(2), 190-223. https://doi.org/10.1108/SAMPJ-07-2014-0044

Rodrigues, M. A. M., & Morais, A. I. (2021). How to Challenge University Students to Work on Integrated Reporting and Integrated Reporting Assurance. *Sustainability*, *13*(19), 10761. https://doi.org/10.3390/su131910761

Roman, A., Mocanu, M., & Hoinaru, R. (2019). Disclosure Style and Its Determinants in Integrated Reports. *Sustainability*, *11*(7), 1-19. https://doi.org/10.3390/su11071960

Romolini, A., Fissi, S., & Gori, E. (2017). Exploring Integrated Reporting Research: Results and Perspectives. *International Journal of Accounting and Financial Reporting*, *7*(1), 32-59. https://doi.org/10.5296/ijafr.v7i1.10630

Roth, H. P. (2014). Is integrated reporting in the future? Certified public accountant. *The CPA Journal*, *84*(3), 62-67. https://www.proquest.com/scholarly-journals/is-integrated-reporting-future/docview/1517909145/se-2

Rowbottom, N., & Locke, J. (2016). The Emergence of Integrated Reporting. *Accounting and Business Research*, *46*(1), 83-115. https://doi.org/10.1080/00014788.2015.1029867

Rusdiyanto., & Narsa, I. M. (2020). Effect of Company Size, Leverage and Return on Asset on Earnings Management: Case Study Indonesian. *Espacios*, *41*(17), 25. https://www.revistaespacios.com/a20v41n17/a20v41n17p25.pdf

Russell, C. L. (2005). Evaluating quantitative research reports. *Nephrology Nursing Journal*, *32*(1), 61- 4. https://search.proquest.com/docview/216530874?accountid=188730

Rutherford-Hemming T. (2015). Determining Content Validity and Reporting a Content Validity Index for Simulation Scenarios. *Nursing education perspectives*, *36*(6), 389–393. https://doi.org/10.5480/15-1640

Sadiartha, A. A. N. G., & Apsari, G. A. M. (2019). The role of satisfaction in mediating the effect of services quality on the customers' loyalty in the village credit institution of pekraman, tabanan. *International Journal of Research in Business and Social Science*, *8*(1), 73-89. https://doi.org/10.20525/ijrbs.v8i1.189

Saidi, S. S., & Siew, N. M. (2019). Investigating the validity and reliability of survey attitude towards statistics instrument among rural secondary school students. *International Journal of Educational Methodology*, *5*(4), 651-661. https://pdf.ijem.com/IJEM_5_4_651.pdf

Salah, W., & Elewa, M. (2018). The effect of firm's size and leverage on profitability: A panel data approach. *Journal of Applied Economic Sciences*, *13*(6), 1723-1732. https://buescholar.bue.edu.eg/cgi/viewcontent.cgi?article=1012&context=bus_admin

Saldaña, J. (2013). *The Coding Manual for Qualitative Researchers*, (2nd ed.). Sage. http://emotrab.ufba.br/wp-content/uploads/2020/09/Saldana-2013-TheCodingManualforQualitativeResearchers.pdf

Santis, S., Bianchi, M., Incollingo, A., & Bisogno, M. (2019). Disclosure of Intellectual Capital Components in Integrated Reporting: An Empirical Analysis. *Sustainability*, *11*(1), 1-15. https://doi.org/10.3390/su11010062

Sarioğlu, M., Dalkiliç, A. F., & Durak, M. G. (2019). The future of corporate reporting: integrated reporting. *International Journal of Contemporary Economics and Administrative Sciences*, *9*(2), 327-347. https://doi.org/10.5281/zenodo.3596090

Sarstedt, M., & Mooi, E. (2019). *A Concise Guide to Market Research: The Process, Data, and Methods Using IBM SPSS Statistics* (3rd ed.). Springer-Verlag GmbH. https://doi.org/10.1007/978-3-662-56707-4

Satta, G., Parola, F., Profumo, G., & Penco, L. (2015). Corporate governance and the quality of voluntary disclosure: Evidence from medium-sized listed firms. *International Journal of Disclosure and Governance*, *12*(2), 144-166. https://doi.org/10.1057/jdg.2013.34

Schreuder, H. T., Gregoire, T. G., & Weyer, J. P. (2001). For what applications can probability and non-probability sampling be used? *Environmental Monitoring and Assessment*, *66*(3), 281-91. https://doi.org/10.1023/A:1006316418865

Searcy, C., & Buslovich, R. (2014). Corporate perspectives on the development and use of sustainability reports. *Journal of Business Ethics*, *121*, 149–169. https://doi.org/10.1007/s10551-013-1701-7

Sejati, B. P., & Prastiwi, A. (2014). Pengaruh pengungkapan sustainability report terhadap kinerja dan nilai perusahaan. *Diponegoro Journal of Accounting*, *0*, 195-206. https://ejournal3.undip.ac.id/index.php/accounting/article/view/15848

Setia, N., Abhayawansa, S., Joshi, M., & Huynh, A. V. (2015). Integrated reporting in South Africa: Some initial evidence. *Sustainability Accounting, Management and Policy Journal*, *6*(3), 397-424. https://doi.org/10.1108/SAMPJ-03-2014-0018

Setiawan, A. H., Takaoka, R., Tamrin, A., Roemintoyo, M., Eko, S., & Trianingsih, L. (2021). Contribution of collaborative skill toward construction drawing skill for developing vocational course. *Open Engineering*, *11*(1), 755-771. https://doi.org/10.1515/eng-2021-0073

Seyed, M. M., Bardinet-Evraert, F., & Evraert, S. (2021). To what extent are the underlying concepts of integrated reporting applicable for hi-tech knowledge-based organizations? *Sustainability Accounting, Management and Policy Journal*, *12*(3), 522-547. https://doi.org/10.1108/SAMPJ-11-2019-0391

Shahria, G. (2022). Value creation practice of integrated reporting: A study on non – bank financial institutions in Bangladesh. *Kuwait Chapter of the Arabian Journal of Business and Management Review*, *11*(1), 15-24. https://www.proquest.com/scholarly-journals/value-creation-practice-integrated-reporting/docview/2673385387/se-2?accountid=188730

Sheridan, B. (2017). The rise of integrated reporting. *Accountancy Ireland*, *49*(5), 44-45. https://search.proquest.com/docview/2002002854?accountid=188730

Shifidi, S. K. (2014). *Evaluation of corporate governance in state-owned enterprises in Namibia* [Master's thesis, Stellenbosch University]. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.881.2249&rep=rep1&type=pdf

Shubita, F., & Alsawalhah, M. (2012). The Relationship between Capital Structure and Profitability. *International Journal of Business and Social Science*, *3*(16), 104–112. https://www.academia.edu/8121446/The_Relationship_between_Capital_Structure_and_Profitability

Sim, J., & Waterfield, J. (2019). Focus group methodology: Some ethical challenges. *Quality and Quantity*, *53*(6), 3003-3022. https://doi.org/10.1007/s11135-019-00914-5

Simnett, R., & Huggins, A. L. (2015). Integrated reporting and assurance: where can research add value? *Sustainability Accounting, Management and Policy Journal*, *6*(1), 29-53. https://doi.org/10.1108/SAMPJ-09-2014-0053

Singh, R. D., & Narwal, K. P. (2016). An examination of the relationship between intellectual capital efficiency and financial performance. *South Asian Journal of Management*, *23*(3), 78-101. https://search.proquest.com/docview/1845776390?accountid=188730

Singhal, S., Gupta, S., & Gupta, V. K. (2020). Mirroring a decade-long experience on intellectual capital. *IUP Journal of Accounting Research & Audit Practices*, *19*(4), 38-58. https://www.proquest.com/scholarly-journals/mirroring-decade-long-experience-on-intellectual/docview/2486200514/se-2?accountid=188730

Sofian, I., & Dumitru, M. (2017). The Compliance of the Integrated Reports Issued by European Financial Companies with the International Integrated Reporting Framework. *Sustainability*, *9*(8), 1-16. https://doi.org/10.3390/su9081319

Solomon, J., & Maroun, W. (2012). Integrated reporting: the influence of King III on social, ethical and environmental reporting. Association of Chartered Certified Accountants. https://www.accaglobal.com/content/dam/acca/global/PDF-technical/integrated-reporting/tech-tp-iirsa.pdf

Soriya, S., & Rastogi, P. (2021). A systematic literature review on integrated reporting from 2011 to 2020. *Journal of Financial Reporting and Accounting*, *20*(3/4), 558-579. https://doi.org/10.1108/JFRA-09-2020-0266

Mokabane, M., & Du Toit, E. (2022). The value of integrated reporting in South Africa. *South African Journal of Economic and Management Sciences, 25*(1). https://doi.org/10.4102/sajems.v25i1.4305

Shrotryia, V. K., & Upasana, D. (2019). Content validity of assessment instrument for employee engagement. *Sage Open, 9*(1), https://doi.org/10.1177/2158244018821751

Spector, P., & Brannick, M. (2011). Methodological Urban Legends: The Misuse of Statistical Control Variables. *Organizational Research Methods*, *14*, 287-305. https://doi.org/10.1177/1094428110369842

Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*, *87*(3), 355-374. https://viterbi-web.usc.edu/~shaddin/cs590fa13/papers/jobmarketsignaling.pdf

Spurlock, D. G., Cox, L. R., Lewis, N. A., & Lueck, G. A. (2008). A content analysis of data collection and analysis techniques as reported in the engineering management literature. *Engineering Management Journal*, *20*(2), 46-55. https://www.proquest.com/scholarly-journals/content-analysis-data-collection-techniques-as/docview/208948427/se-2

Sritharan, V. (2018). Firm size influence on profitability of Sri Lankan diversified holdings firms. *International Journal of Advanced Research in Management and Social Sciences 7*(6). 34-44. https://www.researchgate.net/publication/325868711_firm_size_influence_on_profitability_of_Sri_Lankan_diversified_holdings_firms

Stacchezzini, R., Melloni, G., & Lai, A. (2016). Sustainability management and reporting: the role of integrated reporting for communicating corporate sustainability management. *Journal of Cleaner Production*, *136*, 102–110. https://doi.org/10.1016/j.jclepro.2016.01.109

Steyn, M. (2014). Organisational benefits and implementation challenges of mandatory integrated reporting: Perspectives of senior executives at South African listed companies. *Sustainability Accounting, Management and Policy Journal*, *5*(4), 476-503. https://doi.org/10.1108/SAMPJ-11-2013-0052

Stroburg, S. K. (2016). *Customer relationship management and customer loyalty in the casino industry: A quantitative correlational study* [Doctoral thesis, University of Phoenix]. https://search.proquest.com/docview/1793670696?accountid=188730

Stubbs, W., & Higgins, C. (2014). Integrated reporting and internal mechanisms of change. *Accounting, Auditing and Accountability Journal*, *27*(7), 1068-1089. https://doi.org/10.1108/AAAJ-03-2013-1279

Stubbs, W., & Higgins, C. (2018). Stakeholders' Perspectives on the Role of Regulatory Reform in Integrated Reporting. *Journal of Business Ethics*, *147*(3), 489–508. https://doi.org/10.1007/s10551-015-2954-0

Sudha, S. (2020). Corporate environmental performance–financial performance relationship in India using eco-efficiency metrics. *Management of Environmental Quality: An International Journal, 31*(6), 1497-1514. https://doi.org/10.1108/MEQ-01-2020-0011

Sun, Y., Davey, H., Arunachalam, M., & Cao, Y. (2022). Towards a theoretical framework for the innovation in sustainability reporting: An integrated reporting perspective. *Frontiers in Environmental Science*, *10*, 10-21. https://doi.org/10.3389/fenvs.2022.935899

Sureiman, O., & Mangera, C. M. (2020). F-test of overall significance in regression analysis simplified. *Journal of the Practice of Cardiovascular Sciences*, *6*(2), 116. https://doi.org/10.4103/jpcs.jpcs_18_20

Suresh, K., & Chandrashekara, S. (2012). Sample size estimation and power analysis for clinical research studies. *Journal of Human Reproductive Sciences*, *5*(1), 7-13. https://doi.org/10.4103/0974-1208.97779

Suttipun, M. (2017). The effect of integrated reporting on corporate financial performance: Evidence from Thailand. *Corporate Ownership & Control*, *15*(1), 133-142. https://doi.org/10.22495/cocv15i1art13

Suttipun, M., & Bomlai, A. (2019). The relationship between corporate governance and integrated reporting: Thai evidence. *International Journal of Business and Society*, *20*(1), 348-364. http://www.ijbs.unimas.my/images/repository/pdf/Vol20-no1-paper22.pdf

Syahrizal, D., Renaldi, T., Dianti, S. W., Jannah, N., Rachmah, R., Firdausa, S., & Vonna, A. (2020). The Differences in Perceptions of Interprofessional Education Among Health Profession Students: The Indonesian Experience. *Journal of multidisciplinary healthcare*, *13*, 403–410. https://doi.org/10.2147/JMDH.S240195

Tamimi, N., & Sebastianelli, R. (2017). Transparency among S&P 500 companies: An analysis of ESG disclosure scores. *Management Decision*, *55*(8), 1660-1680. https://doi.org/10.1108/MD-01-2017-0018

Tansey, O. (2007). Process Tracing and Elite Interviewing: A Case for Non-probability Sampling. *PS Political Science & Politics*, *40*(4), 765–772. https://doi.org/10.1017/s1049096507071211

Tejada, J. J., & Punzalan, J. R. B. (2012). On the Misuse of Slovin's Formula. *The Philippine Statistician*, *61*(1), 129-136. https://www.psai.ph/docs/publications/tps/tps_2012_61_1_9.pdf

Tseli, E., Sjöberg, V., Björk, M., Äng, B., O., & Vixner, L. (2023). Evaluation of content validity and feasibility of the eVISualisation of physical activity and pain (eVIS) intervention for patients with chronic pain participating in interdisciplinary pain rehabilitation programs. *PLoS One, 18*(3). https://doi.org/10.1371/journal.pone.0282780

Tilt, C. A., Qian, W., Kuruppu, S., & Dissanayake, D. (2021). The state of business sustainability reporting in Sub-Saharan Africa: An agenda for policy and practice. *Sustainability Accounting, Management and Policy Journal*, *12*(2), 267-296. https://doi.org/10.1108/SAMPJ-06-2019-0248

Tjahjadi, B., Harymawan, I., & Warsidi, N. S. (2020). Implementation of integrated reporting: A cross-countries' study. *Entrepreneurship and Sustainability Issues*, *7*(4), 2832-2850. https://doi.org/10.9770/jesi.2020.7.4(17)

Tlili, M., Hakim, B. O., & 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), 642-661. https://doi.org/10.1108/JIC-02-2019-0034

Tschopp, D., & Huefner, R. J. (2015). Comparing the Evolution of CSR Reporting to that of Financial Reporting. *Journal of Business Ethics, 127*(3), 565-577. https://doi.org/10.1007/s10551-014-2054-6

Tschopp, D., & Nastanski, M. (2014). The harmonization and convergence of corporate social responsibility reporting standards. *Journal of Business Ethics*, *125*(1), 147-162. https://doi.org/10.1007/s10551-013-1906-9

Turekulova, D., Mykhambetova, L., Beisengaliyev, B., Anafiyayava, Z., Zhadigerova, O., & Tuzelbayeva, I. (2016). The classification of human capital types and their comparative characteristics. *International Journal of Economic Perspectives*, *10*(4), 256-263. https://search.proquest.com/docview/1964461265?accountid=188730

Tweedie, D., & Martinov-Bennie, N. (2015). Entitlements and time: integrated reporting's double-edged agenda. *Social and Environmental Accountability Journal*, *35*(1), 49-61. https://doi.org/10.1080/0969160X.2015.1007466

Tyson, T., & Adams, C. A. (2022). Increasing the scope of assurance research: new lines of inquiry and novel theoretical perspectives. *Sustainability Accounting, Management and Policy Journal*, *11*(2), 291–316. https://doi.org/10.1108/sampj-03-2018-0067

Tzelepis, D., & Skuras, D. (2004). The effects of regional capital subsidies on firm performance: an empirical study. *Journal of Small Business and Enterprise Development*, 11 (1), 121 – 129.   https://doi.org/10.1108/14626000410519155

Umair, M. (2018). Research Fundamentals: Study Design, Population, and Sample Size. *Undergraduate Research in Natural and Clinical Science and Technology Journal*, *2*(1), 1-7. https://doi.org/10.26685/urncst.16

Unachukwu, L. C., Kalu, A. O. U., & Ibiam, O. (2018). Accessing Secondary Data: A Literature Review. *Singaporean Journal of Business Economics and Management Studies*, *6*(6), 53–63. https://doi.org/10.12816/0048423

Utomo, S. D., Machmuddah, Z., & Hapsari, D. I. (2021). The role of manager compensation and integrated reporting in company value: Indonesia vs. Singapore. *Economies*, *9*(4), 1-12. https://doi.org/10.3390/economies9040142

Van der Lugt, C. T., & Mans-Kemp, N. (2022). Integrated reporting: A cross-cutting theoretical view on its use and value. *Journal of Economic and Financial Sciences*, *15*(1). 1-11. https://doi.org/10.4102/jef.v15i1.703

Van Der Merwe, A. (2020). The evolution of the stakeholder-inclusive approach in the King Reports. *Journal of Global Responsibility*, *11*(2), 139–146. https://doi.org/10.1108/jgr-10-2019-0098

Van Zyl, A. S. (2013). Sustainability and Integrated Reporting in The South African Corporate Sector. *International Business & Economics Research Journal*, *12*(8), 903-926. https://doi.org/10.19030/iber.v12i8.7988

Veazie, P. (2006). When to Combine Hypotheses and Adjust for Multiple Tests. *Health services research*, *41*, 804-18. https://doi.org/10.1111/j.1475-6773.2006.00512.x

Velte, P., & Stawinoga, M. (2017). Integrated reporting: the current state of empirical research, limitations and future research implications. *Journal of Management Control*, *28*(3), 275-320. https://doi.org/10.1007/s00187-016-0235-4

Venkatraman, S., & Nayak, R. R. (2015). Relationships among triple bottom line elements. *Journal of Global Responsibility*, *6*(2), 195-214. https://doi.org/10.1108/JGR-04-2012-0013

Verbeek, M. (2017). Using linear regression to establish empirical relationships. *IZA World of Labor Institute of Labor Economics*, 336-336. https://doi.org/10.15185/izawol.336

Verrecchia, R. E. (2001). Essays on disclosure. *Journal of Accounting & Economics*, *32*(1-3), 97-180. https://search.proquest.com/docview/213130646?accountid=188730

Vitolla, F., & Raimo, N. (2018). Adoption of Integrated Reporting: Reasons and Benefits—A Case Study Analysis. *International Journal of Business and Management*, *13*(12), 244. https://doi.org/10.5539/ijbm.v13n12p244

Vitolla, F., Raimo, N., & Rubino, M. (2019a). Intellectual Capital Disclosure and Firm Performance: An Empirical Analysis Through Integrated Reporting. *7th International*

*OFEL Conference on Governance, Management and Entrepreneurship: Embracing Diversity in Organisations (Dubrovnik, April 2019)*, 245–255. https://www.proquest.com/docview/2389239406?pq-origsite=gscholar&fromopenview=true

Vitolla, F., & Raimo, N., & Rubino, M. (2019b). Appreciations, criticisms, determinants, and effects of integrated reporting: A systematic literature review. *Corporate Social Responsibility and Environmental Management*, *26*(2), 518-528. https://doi.org/10.1002/csr.1734

Vitolla, F., Raimo, N., Rubino, M., & Garzoni, A. (2020). The determinants of integrated reporting quality in financial institutions. *Corporate Governance*, *20*(3), 429–444. https://doi.org/10.1108/cg-07-2019-0202

Vu, T. T. N., Nguyen, V. T., Ho, M., & Vuong, Q. (2019). Determinants of Vietnamese Listed Firm Performance: Competition, Wage, CEO, Firm Size, Age, and International Trade. *Journal of Risk and Financial Management*, *12*(2), 62. https://doi.org/10.3390/jrfm12020062

Wachira, M. M., Berndt, T., & Romero, C. M. (2020). The adoption of international sustainability and integrated reporting guidelines within a mandatory reporting framework: lessons from South Africa. *Social Responsibility Journal*, *16*(5), 613-629. https://doi.org/10.1108/SRJ-12-2018-0322

Walker, W. (2007). Ethical considerations in phenomenological research. *Nurse Researcher*, *14*(3), 36-45. https://search.proquest.com/scholarly-journals/ethical-considerations-phenomenological-research/docview/200781616/se-2?accountid=188730

Wang, M. (2011). Measuring intellectual capital and its effect on financial performance: Evidence from the capital market in Taiwan. *Frontiers of Business Research in China*, *5*(2), 243-265. https://doi.org/10.1007/s11782-011-0130-7

Wen, L., Heong, A., & Hooi, S. (2017). Integrated reporting and financial performance. *Management and Accounting Review*, *16*(2), 101-130, https://doi.org/10.24191/mar.v16i2.647

Weqar, F., & Haque, S. M. I. (2020). Intellectual capital and corporate financial performance in India's central public sector enterprises. *Int. J. Learning and Intellectual Capital*, *17*(1), 77 – 97. https://doi.org/10.1504/IJLIC.2020.10023754

White, M. D., & Marsh, E. (2006). Content analysis: A flexible methodology. *Library Trends*, *55*(1), 22–45. https://doi.org/10.1353/lib.2006.0053

Widhiastuti, R., & Harto, P. (2022). Maximizing Agency Theory in Integrated Reporting of Companies Listed in Kompas100 Index. *Jurnal Pendidikan Ekonomi & Bisnis*, *10*(1), 01-14. https://doi.org/10.21009/JPEB.010.1.1

Wijnhoven, J. (2014). *Determining the value of integrated reporting* [Master's thesis, University of Twente]. https://essay.utwente.nl/66450/1/Wijnhoven_MA_management_governance.pdf

Williams, M. N., Gomez Grajales, C. A., & Kurkiewicz, D. (2019). Assumptions of multiple regression: Correcting two misconceptions. *Practical Assessment, Research & Evaluation*, *18*, 11. https://doi.org/10.7275/55hn-wk47

Wilson, J. P. (2015). The triple bottom line. *International Journal of Retail & Distribution Management*, *43*(4), 432-447. https://doi.org/10.1108/IJRDM-11-2013-0210

Winter, S., & Zülch, H. (2019). Determinants of strategy disclosure quality: Empirical evidence from Germany. *Problems and Perspectives in Management*, *17*(4), 104-120. http://dx.doi.org/10.21511/ppm.17(4).2019.09

World Commission on Environment and Development. (1987). *Our Common Future: From One Earth to One World - A/42/427 Annex, Overview - UN Documents: Gathering a body of global agreements*. http://www.un-documents.net/ocf-ov.htm

Yadav, I. S., Pahi, D., & Gangakhedkar, R. (2022). The nexus between firm size, growth and profitability: new panel data evidence from Asia–Pacific markets. *European Journal of Management and Business Economics*, *31*(1), 115-140. https://doi.org/10.1108/EJMBE-03-2021-0077

Yellapu, V. (2018). Descriptive statistics. *International Journal of Academic Medicine*, *4*(1), 60-63. https://doi.org/10.4103/IJAM.IJAM_7_18

Yow, M., & Heaps, A. (2016). *Measuring Sustainability Disclosure: Ranking the World's Stock Exchanges*. Corporate Knights and Aviva. https://sseinitiative.org/wp-content/uploads/2016/07/SSE2016Final.pdf

Yusoff, M. S. B. (2019). ABC of Content Validation and Content Validity Index Calculation. *Education in Medicine Journal. 11*(2). 49-54. https://doi.org/10.21315/eimj2019.11.2.6

Zanellato, G. (2021a). Compliance evolution toward the IIRF in the case of European financial institution: public vs. private organization. *Review of Economic Studies and Research Virgil Madgearu*, *14*(2), 105-137. https://doi.org/10.24193/RVM.2021.14.82

Zanellato, G. (2021b). Quality of information disclosed in integrated reports, in the extracting sector: insights from Europe. *Studia Universitatis Babes-Bolyai*, *66*(3), 1-20. https://doi.org/10.2478/subboec-2021-0011

Zappettini, F., & Unerman, J. (2016). Mixing and Bending: The recontextualisation of discourses of sustainability in integrated reporting. *Discourse & Communication*, *10*(5), 521–542. https://doi.org/10.1177/1750481316659175

Zhang, X., Duc, T. P., Burgos, M. E., & Tsai, F. (2021). Intellectual Capital and Financial Performance: Comparison with Financial and Pharmaceutical Industries in Vietnam. *Front. Psychol*, *12*, 1-10. https://doi.org/10.3389/fpsyg.2021.595615

Zhou, S., Simnett, R., & Green, W. (2017). Does Integrated Reporting Matter to The Capital Market? *Abacus*, *53*(1), 94-132. https://doi.org/10.1111/abac.12104

# APPENDICES

## Appendix A:  The UREC Final Approval

UNICAF UNIVERSITY

UREC Desision, Version 2.0

| Unicaf University Research Ethics Committee |
| :-: |
| **Decision** |

**Student's Name:** Fred Mugisha

**Student's ID #:**    R1805D5162073

**Supervisor's Name:**  Dr Yusuf Suleiman

**Program of Study:**    UUZ: PhD Doctorate of Philosophy

**Offer ID /Group ID:**    O22080G22173

**Dissertation Stage:**    3

**Research Project Title:** The nexus of integrated reportng and financial performance in firms listed on sustainable stock exchanges in Africa with mandatory disclosure requirements

**Comments:**   No comments.

**Decision*:**  A. Approved without revision or comments

**Date:**  18-Mar-2021

*Provisional approval provided at the Dissertation Stage 1, whereas the final approval is provided at the Dissertation stage 3. The student is allowed to proceed to data collection following the final approval.

**Appendix B: UREC Provisional Approval**

| | UREC USE ONLY:<br>Application No: |
|---|---|
| **UNICAF UNIVERSITY**<br>**RESEARCH ETHICS APPLICATION FORM**<br>**DOCTORAL STUDIES** | Date Received: |

**Student's Name:** Fred Mugisha

**Student's E-mail Address:** fred.mugisha@yahoo.com

**Student's ID #:** R1805D5162073

**Supervisor's Name:** Dr. Yusuf Suleiman

**University Campus:** Unicaf University Zambia (UUZ)

**Program of Study:** UUZ: PhD Doctorate of Philosophy

**Research Project Title:** The nexus of integrated reporting and financial performance in firms listed on sustainable stock exchanges in Africa with mandatory disclosure requirements

1. **Please state the timelines involved in the proposed research project:**

Estimated Start Date: 01-Oct-2019     Estimated End Date: 30-Oct-2021

2. **External Research Funding (if applicable):**

   **2.a. Do you have any external funding for your research?**

   ☐ YES     ☐ NO

   If YES, please answer questions **2b** and **2c**.

   **2.b.** List any external (third party) sources of funding you plan to utilise for your project. You need to include full details on the source of funds (e.g. state, private or individual sponsor), any prior / existing or future relationships between the funding body / sponsor and any of the principal investigator(s) or co-investigator(s) or student researcher(s), status and timeline of the application and any conditions attached.

   **2.c.** If there are any perceived ethical issues or potential conflicts of interest arising from applying or and receiving external funding for the proposed research then these need to be fully disclosed below and also further elaborated on, in the relevant sections on ethical considerations later on in this form.

**Appendix C: Content Validity Index Calculation**

| Item description | Number of Subject Matter Experts that gave an item a relevance rating of 1 or 2 | Number of Subject Matter Experts that gave an item a relevance rating of 3 or 4 | I-CVI |
|---|---|---|---|
| CO2 emissions | - | 6 | 1.00 |
| Energy consumption | - | 6 | 1.00 |
| Amount of waste | - | 6 | 1.00 |
| Environmental accidents | - | 6 | 1.00 |
| Recycled waste | - | 6 | 1.00 |
| Environmental protection investments | - | 6 | 1.00 |
| Employee competence and capabilities | - | 6 | 1.00 |
| Employee experience | - | 6 | 1.00 |
| Employee loyalty and motivation | 1 | 5 | 0.83 |
| Employee diversity | - | 6 | 1.00 |
| Employee morale | - | 6 | 1.00 |
| Human resource management | - | 6 | 1.00 |
| Employee benefits | 1 | 5 | 0.83 |
| Human resource development | - | 6 | 1.00 |

| | | | |
|---|---|---|---|
| Debt, equity or grants; operations; investments | - | 6 | 1.00 |
| Information on equity share capital | - | 6 | 1.00 |
| Information on debt share capital | - | 6 | 1.00 |
| Information on government grants | - | 6 | 1.00 |
| Operations | - | 6 | 1.00 |
| The production of goods or the provision of services | - | 6 | 1.00 |
| Information on buildings | - | 6 | 1.00 |
| Information on equipment | - | 6 | 1.00 |
| Infrastructure (such as roads, ports, bridges, and waste and water treatment plants) | - | 6 | 1.00 |
| Corporate governance | - | 6 | 1.00 |
| Intellectual property | - | 6 | 1.00 |
| Information technology and information systems | - | 6 | 1.00 |
| Research and development | - | 6 | 1.00 |
| Processes, policies and procedures | - | 6 | 1.00 |
| Organisational structure | - | 6 | 1.00 |
| Brands | - | 6 | 1.00 |
| Corporate image | 1 | 5 | 0.83 |

| | | | |
|---|---|---|---|
| Market share | 1 | 5 | 0.83 |
| Customer health safety and privacy | - | 6 | 1.00 |
| Customer satisfaction | 1 | 5 | 0.83 |
| Relations with competitors (e.g., anti-competitive behaviour) | 1 | 5 | 0.83 |
| Relations with suppliers | - | 6 | 1.00 |
| Relations with lenders | - | 6 | 1.00 |
| Relations with shareholders | - | 6 | 1.00 |
| Human rights | - | 6 | 1.00 |
| Indigenous rights | - | 6 | 1.00 |
| Involvement in social action | - | 6 | 1.00 |
| Social investment | - | 6 | 1.00 |
| Donations and charitable work | - | 6 | 1.00 |
| Involvement in cultural projects | 1 | 5 | 0.83 |
| Relations with legislators, regulators and policy makers | 1 | 5 | 0.83 |
| Relations with business partners | - | 6 | 1.00 |
| Corporate culture | 1 | 5 | 0.83 |
| Claims and lawsuits | 1 | 5 | 0.83 |
| Relations with employees | - | 6 | 1.00 |
| Return on Equity | - | 6 | 1.00 |
| Return on Assets | - | 6 | 1.00 |

| Firm size | - | 6 | 1.00 |
| --- | --- | --- | --- |
| Leverage | - | 6 | 1.00 |
| S-CVI/Ave | | | 0.97 |
| Total number of Subject Matter Experts that gave a rating of either 3 or 4 | | | 43 |
| S-CVI/UA | | | 0.81 |

Source: Own compilation.