A framework to enhance integrated reporting through the quantification and valuation of non-financial capitals: A study of companies listed on the Johannesburg Stock Exchange

By

FELIX CHIRAIRO

submitted in accordance with the requirements

for the degree of

DOCTOR OF BUSINESS LEADERSHIP

At the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: PROFESSOR MASHUKUDU HARTLEY MOLELE

2022

ABSTRACT

The measurement of the impact of non-financial capitals on company value within the context of integrated reporting (IR) has remained an elusive empirical and practitioner question. The IR framework was designed to provide an improved corporate reporting approach to different stakeholders. However, the framework falls short of providing a tool that practitioners and stakeholders could use to determine how company value has changed over time. The main objective of this research was to produce an enhanced IR framework through an Augmented Integrated Reporting Model (AIRM), which was validated through panel data fixed effects regression models. The model tested the relationship of five capitals (financial, manufactured, intellectual, human, and social and relationship capitals) to company value. Through quantitative research methodology that utilised panel data fixed effects regression analysis in EViews software, the effect of each capital on company value was assessed.

The AIRM demonstrates that social and relationship capital have a positive impact on market share price, EVA and TobinQ, while association to share price at book value is negative. Human capital has a positive relationship to market share price and a negative influence on EVA, TobinQ and share price at book value. Intellectual and manufactured capital have positive associations with the four dependent variables of company value. The findings of the study are in line with the IR concept, which states that capital may add, preserve, or diminish company value over time. Positive relationships mean the capital added value, while negative relationships mean company value was reduced.

This research implies that a contribution has been made in resolving the challenge of quantifying and measuring non-financial capitals and how they impact company value. The study recommends that IR report preparers, report analysts, investors, academics and other relevant stakeholders use the AIRM to measure and manage the various capitals in the process of company value creation.

Keywords: financial capital, integrated reporting, JSE-listed companies, non-financial capitals, stakeholders,

DECLARATION

I, Felix Chirairo, hereby certify that this thesis, which is submitted to the School of Business Leadership of the University of South Africa, is my work, and all sources that I have used or cited have been indicated and acknowledged using complete references.

Signed……………………………………………..Date……………………………

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

ACRONYM/ABBREVIATION	FULL NAME
ACCA	Association of Certified Chartered Accountants
AIRM	Augmented Integrated Reporting Model
AltX	Alternative Exchange
BEE	Black Economic Empowerment
BoD	Board of Directors
BRICS	Brazil, Russia, India, China, and South Africa
BRR	Business Responsibility Report
CBARI	Comissão Brasileira de Acompanhamento do Relato Integrado (in English: Integrated Reporting Network in Brazil)
CEO	Chief Executive Officer
CMA	Competition and Markets Authority
CSR	Corporate Social Responsibility
DFCF	Discounted Free Cash flow
DL	Disclosure Level
DPS	Dividend Per Share
DTI	Department of Trade and Industry
EPS	Earnings Per Share
EU	European Union
EVA	Economic Value Added
EY	Ernst and Young
FC	Financial Capital
FCF	Free Cash Flow
FCFE	Free Cash Flow to Equity

ACRONYM/ABBREVIATION	FULL NAME
FRC	Financial Reporting Council
GAAP	Generally Accepted Accounting Practice
GDP	Gross Domestic Product
GHG	Green House Gas
GRI	Global Reporting Initiative
HC	Human Capital
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IBSA	India, Brazil, and South Africa
IC	Intellectual Capital
IFRS	International Financial Reporting Standard
IIRC	International Integrated Reporting Council
IoDSA	Institute of Directors South Africa
IR	Integrated Reporting
IRSC	Integrated Reporting Steering Committee
ISA	International Standard on Auditing
JSE	Johannesburg Stock Exchange
KPI	Key Performance Indicator
MACPA	Malaysia Association of Certified Public Accountants
MCCG	Malaysia Code on Corporate Governance
MIA	Malaysia Institute of Accountants
MIST	Mexico, India, South Korea, and Turkey
NFRD	Non-Financial Reporting Directive
NGO	Non-Governmental Organisation

ACRONYM/ABBREVIATION	FULL NAME
P/E	Price Earnings
PwC	Price Waterhouse Coopers
SAICA	South Africa Institute of Chartered Accountants
SASB	Sustainability Accountability Standards Board
SARS	South African Revenue Service
SCM	Securities Commission of Malaysia
SEBI	Securities Exchange Board of India
SME	Small to Medium Enterprises
SOE	State-Owned Enterprise
SR	Sustainability Report
UK	United Kingdom
UN	United Nations
USA	United States of America
VRF	Value Reporting Foundation
WACC	Weighted Average Cost of Capital

CHAPTER 1: INTRODUCTION TO THE STUDY

1.1 BACKGROUND TO THE STUDY

The concept of Integrated Reporting (IR) has been developed as a tool to provide key information to companies' shareholders and other important stakeholders through the Integrated Reporting Framework (IIRC, 2021). The Integrated Reporting Framework is anchored on the Six Capitals model consisting of financial, manufactured, intellectual, human, social and relationship and natural capital (de Villiers, Venter & Hsiao, 2017). IR is the brainchild of the International Integrated Reporting Council (IIRC), a worldwide coalition of various organisations, which include regulators, investors, companies, standards setters, the accounting profession and Non-Governmental Organisations (NGOs) (IIRC, 2021). In June 2021, the IIRC merged with the Sustainability Accounting Standards Board (SASB), resulting in the formation of the Value Reporting Foundation (VRF) to continue with the advancement of IR (IIRC, 2022).

King (2018: 1) states that:

> No company has ever operated on a basis that financial capital was in one building, human capital, yet in another, intellectual capital somewhere else, as with social and manufactured capital. …There has always been a symphony of these sources of value creation because of their interconnectedness and interdependency with the relationships between the company and its stakeholders, such as its employees, suppliers, lenders of money, service providers, shareholders and etcetera.

Concerning King's (2018) statement, financial reporting alone is insufficient to address stakeholder expectations for them to know the current and future well-being of the business. An IR framework, therefore, is plausible in today's contemporary business environment plagued with corruption, political instability, and continuous environmental and employee activism (Pillay, 2004; Aisen & Veiga, 2012; Cilliers & Aucoin, 2016; Georgieva, 2017; Solomon, Olabanji & Ogo, 2020).

Due to the need to satisfy legislative requirements in countries and the guidelines of the King reports, IR is emerging as one of the accepted corporate reporting frameworks in the contemporary business world (EY, 2014). In South Africa, JSE

primary listed entities and State-Owned Enterprises (SOE) must prepare integrated reports, while in the United Kingdom (UK), the strategic report legislation is modelled along the same lines as IR (Dube, 2017; Iredele & Moloi, 2020; Moolman, Oberholzer & Steyn, 2019; Moloi & Iredele, 2020). One of the benefits of IR is a single, concise, and comprehensive report that satisfies the plethora of stakeholders who influence the value-creation process of the business (IIRC, 2013). The stakeholders that impact value creation in the IR context and whose influence on company value will be measured are identified as; employees, customers, lenders, shareholders, government and company executive directors (agents) (IIRC, 2021). IR is considered a viable alternative to the standalone reporting frameworks, which include the extant annual financial statements, sustainability reports and governance reports (Haji & Hossain, 2016; Zhou, Simnett & Green, 2017; van Zyl & Mans-Kemp, 2022).

Although IR has emerged as a step towards solving some corporate reporting challenges, a review of practitioner and academic work reveals some inadequacies with IR (Flower, 2015). Contrary to the aspirations of the IR framework, practitioners are using IR as a retrospective reporting tool that avoids reporting on negative and risk issues on non-financial capital (du Toit, 2017). In as much as the IR framework has a forward-looking perspective to help stakeholders to have a view of what value the company may create in the future, reporting in practice is not satisfying that expectation (du Toit, 2017; Kılıç & Kuzey, 2018). The IR framework strongly provides a valuation of the financial capital pillar, yet the five (5) non-financial capitals are, in practice, not measured in the statement of financial position on how they contribute to the value creation process of the enterprise (du Toit, 2017).

Measurement of company value creation by organisations has been a challenge, and various corporate reporting frameworks continued to be developed, with IR being one of the most recent. Company value is generally referred to as the price at which an enterprise may be sold, while value creation in the IR context is the process of combining the six capitals to increase the value of the business (Tarczynski, Tarczynska-Luniewska & Majewski, 2020; IIRC, 2021). IR recognises that organisations create value by combining the six (6) capitals (Gleeson-White, 2014). Financial capital is valued in the statements of financial position, however, the other five (5) capitals are not similarly quantified and valued in the annual IR of

2

organisations. The IR framework states that all capital should be viewed as stocks of value that organisations transform, increase or decrease through various business activities (IIRC, 2021). It is reasonable that non-financial capital should also have the logic of opening balance plus movements to equal closing balance. The current IR framework does not provide a sufficient basis for the quantification and valuation of non-financial capital so that its impact on company value can be ascertained. The IR framework states that the integrated report is not there to quantify or monetise the value of the company, the value it has created, preserved or eroded over some time, or its utilisation of or effects on the capital (IIRC, 2021). This statement by the IIRC creates a conundrum which requires a solution as users of corporate reports and stakeholders are left with no reliable framework that captures, in one model, the participation of the six capitals in value creation, preservation, or reduction.

This study proposes that IR application can be enhanced by developing quantification and valuation techniques for non-financial capital and assessing its impact on company value, thereby giving users of IR more measurable information.

It is against this backdrop that this study sought to formulate techniques that can be used to determine the impact of non-financial capital on company value. This study used the stakeholder, agency, capital, intellectual capital, and capital structure theories as a lens.

The study utilised Market share price, EVA, TobinQ and Share Price at book value as proxies of company value to empirically test the application of an enhanced IR framework through an enhanced Feltham-Ohlson model (Feltham & Ohlson, 1995; Özer & Çam, 2016). Augmented Integrated Reporting Model (AIRM) is this study's outcome from an enhanced IR framework and improved Feltham-Ohlson model. This study indicates the adequacies or otherwise of these proxies as measurement tools of company value.

The suggested enhancement explores the quantification and possible valuation of the non-financial capitals of the IR framework to provide practitioners and users of IR with more holistic reporting. The research covered four (4) non-financial capitals, investigating how they influence, together with financial capital, the company's value.

3

1.2   CONTEXTUAL SETTING

South Africa is arguably the bedrock of the IR phenomenon, with its roots anchored in the King Reports and the Companies Act (2008) (Government Gazette, 2009; IoDSA, 2016; Cliffe Dekker Hofmeyr, 2020). In this study, the focus is on the enhancement of the application of the IR framework to be able to evaluate the impact of non-financial capital on company value. The IR framework decomposed the capital of the company into six (6) capitals, which are natural, human, financial, social and relationship, manufactured and intellectual capital. The study was based on a sample of companies listed on the Johannesburg Stock Exchange (JSE). The focus was on companies that have the JSE as their primary listing. Companies with the JSE as their secondary listing are not obliged to publish IR and are, therefore, excluded from the study (Moolman et al., 2019). The JSE was selected as the appropriate market for this study due to it being the first stock exchange in the world to make IR mandatory for listed companies (IoDSA, 2016; CorporateContent, 2017; Moolman, Oberholzer and Steyn, 2019; Cliffe Dekker Hofmeyr, 2020; IIRC, 2021). The JSE made IR mandatory since the release of the King III report in 2009. Other markets have been on voluntary integrated reporting, with Brazil becoming mandatory in 2020 (Saboya, 2022). The JSE thus arguably presents the most mature stock exchange in the world in terms of IR implementation.

1.2.1   An Overview of the JSE

The JSE was founded in 1887 following the gold rush in South Africa (concentrated in the Witwatersrand area of Johannesburg (Swart & Lawack-Davids, 2010)). The gold boom of that period saw industrial and commercial growth in the form of mining corporates and financial services companies. There was a need for an organised way through which shares of companies could be traded among investors. With maturity over the years, the JSE joined the World Federation of Exchanges in 1963. In 2003, the JSE, recognising the need for small to medium companies to be able to trade their equities without being impacted by the volumes of trade on big corporates, launched the Alternative Exchange (AltX) (Swart & Lawack-Davids, 2010).

The JSE comprises 327 companies (as of August 2021). These companies can be grouped into 10 main sectors of the economy, as shown in Table 1.1.

Table 1-1: Sectors of JSE-listed companies

Sector	Total Population	Total Capitalisation ZAR trillion	Sample Capitalisation USD trillion
Technology	21	3.71	0.25
Telecommunications	8	0.52	0.04
Health Care	10	0.19	0.01
Financials	60	1.70	0.12
Real Estate	55	0.43	0.03
Consumer Discretionary	41	1.34	0.09
Consumer Staples	24	3.67	0.25
Industrials	52	0.41	0.03
Basic Materials	43	4.25	0.29
Energy	13	0.09	0.01
Grand Total	**327**	**16.30**	**1.11**

Source: JSE (2021). Exchange rate R14.66 to USD as of 30 August 2021

As part of the JSE listings requirements, applying King III and King IV Codes of Governance for South Africa has become crucial for listed companies. While King III, released in 2009, required IR from listed companies on a 'apply or explain' basis, King IV of 2016 came stronger by closing the option for 'apply or explain', setting the requirement on a 'apply and explain' basis (Roberts, 2017). The 'apply and explain' approach has effectively made IR mandatory for listed companies (with JSE as the primary listing) from October 2017 (Corporate Content, 2017). The 22 May 2017 publication by the JSE Amendment Letter laid compliance rules for King IV, where all its tenets became compulsory for listed companies (Corporate Content, 2017).

1.3 THE RESEARCH PROBLEM

Value creation has been fostered as the ultimate goal of the company (Porter, 1985; Galvagno & Dalli, 2014; Daraban, 2016; Dilip & Rajeev, 2016). The creation of value results from the employment of the five (5) non-financial capitals, being manufactured, intellectual, human, social and relationship and natural capital, together with financial capital (Gleeson-White, 2014; IIRC, 2021). Other than a company's investors, various stakeholders are interested in the value-creation activities of the company. Stakeholders have been classified to include lenders, special interest groups, suppliers, shareholders, consumer advocates, employees, society, the media,

customers and government (Mendelow, 1981; Freeman, 1994). The demands of stakeholders have created the need for responsibility and accountability. The Board of Directors (BoD) and the executives managing the company are obligated to present accurate and honest reports on the status of the business, covering both current and future periods.

Different frameworks through the eras of corporate reporting have governed preparers and presenters of company performance reports (EY, 2014). The corporate reporting regimes have been on an evolutionary path from classical financial statement reporting to sustainability reporting and IR (EY, 2014). The continuous evolution of corporate reporting appears to be motivated by the seemingly never-ending plea by stakeholders to receive reports that have sufficient and accurate information to make informed decisions about their participation in the company (du Toit, 2017). Despite the many reporting frameworks available, satisfactory information for use by stakeholders has remained elusive, with corporate scandals continuing to negatively affect modern business (Gleeson-White, 2014). While IR is being considered as the framework that has brought together different reports into one concise report that explains how a company creates value over time, the literature available does not adequately show practical evidence of how companies are using IR to transparently report the current and future value of the different capitals (de Villiers, Rinaldi & Unerman, 2014; du Toit, 2017; Dube, 2017; Moloi & Iredele, 2020). The contribution of other stakeholders to company value is not adequately measured or reported in the current IR regime (Flower, 2015; Ruiz-Lozano & Tirado-Valencia, 2016).

It is against this background that this study seeks to formulate techniques that can be used to determine the impact of non-financial capital on company value. The model developed assists in measuring and reporting how companies use capital to create value in the short, medium and long-term periods.

The research problem for this study is: Based on the literature reviewed, there is no standardised framework according to the researcher in the literature that uses IR concepts to measure the impact of non-financial capital on company value creation. Stakeholders, who play roles in the value-creation activities of the company through their influence on the different capitals, do not get adequate and transparent reports on their impact on company value through the IR framework (van Zyl & Mans-Kemp,

2022). IR requires reporting on non-financial capital; however, it is inadequate in guiding the format, quantification, and valuation of non-financial capital. Reviewed literature indicates that legislative and listing requirements are similarly silent on the format, quantification, and valuation of non-financial capital (de Villiers, Rinaldi & Unerman, 2014; Flower, 2015; du Toit, 2017; Dube, 2017; Moloi & Iredele, 2020). This study aimed to close this corporate reporting problem by developing an Augmented Integrated Reporting Model (AIRM).

1.4 RESEARCH QUESTIONS

The following are the research questions (RQs) for the study:

RQ 1(a): To what extent do stakeholders' interests impact company value?

RQ 1(b): How do the stakeholders' (Agents) interests impact company value?

RQ 2: What is the relationship between a company's tangible (manufactured) capital and company value?

RQ 3: To what extent does Intellectual Capital impact company value?

RQ 4: What impact does financial capital have on company value?

1.5 OBJECTIVES OF THE STUDY

The main objective of this research is to develop an Augmented Integrated Reporting Model that reflects the influence of financial and non-financial capital on company value.

The objectives of the study are to:

1. Investigate the effect of stakeholders' interests on the company value of JSE-listed companies.
2. Establish the effects of tangible assets (manufactured capital) on the value of JSE-listed companies.
3. Examine the impact of intellectual capital on the company value of JSE-listed companies.
4. Investigate the impact of financial capital on the company value of JSE-listed companies.

5. Develop an enhanced IR framework that can be used by practitioners, academics, regulators, and corporate reporting standard setters.

The above objectives are summarised in Figure 1.1, indicating that objectives 1 to 4 link in developing the main objective 5.

Figure 1-1: Objectives of this study

Source: *Developed for this study*

1.6   OVERVIEW OF THE RESEARCH METHODOLOGY

The study was carried out using the post-positivist paradigm and the scientific approach to research (Cresswell & Clark, 2014; Saunders et al., 2019). The study utilises the deduction approach to theory development. The quantitative approach is the research methodology of choice. The research strategy follows an archival secondary data approach, using published Audited Financial Statements and IR reports. The time horizon was cross-sectional and longitudinal, covering 91 JSE-listed companies representing all sectors and a period of 11 years (2010 to 2020). The sample was selected using the purposive sampling method. The quantitative data was analysed through inferential statistics in the form of panel regression analysis (modified Feltham-Ohlson model). The research followed the ethical guidelines and values of the University.

1.7   SIGNIFICANCE/JUSTIFICATION OF THE STUDY

The study is a contribution to the existing gaps in the literature and knowledge on IR with a particular focus on the quantification and valuation of non-financial capital to be able to assess their impact on company value. The research analyses the relationships between company value and capital as identified in the IR framework. Relationships are tested for financial capital and non-financial capital and how they influence company value in the IR context, culminating in the development of an AIRM that can be used by practitioners, academics, regulators, and corporate reporting standard setters.

The contribution of this study will influence the IR concept and practice, as explained below:

The researcher considers this research a pioneering study on the quantification and valuation of non-financial capital in the IR context. It is perceived as pioneering as there was no evidence (according to the researcher) in the literature of the use of the Feltham-Ohlson model on IR, looking at the four (4) non-financial capitals in an emerging market (South Africa). In the IR framework, in both the original 2013 version and the revised 2021 version, the quantification and monetisation of non-financial capital are not considered crucial (IIRC, 2021). Some current empirical studies on IR mainly present the quality of IR, its progressive implementation in different jurisdictions and its importance as a tool in corporate governance. This study will be complimentary to some of the studies done on IR on JSE-listed companies, as explained below. Moloi and Iredele (2020) studied the impact of IR quality on company value. Their study concluded that there is a relationship between IR quality and company value. The current study complements this by assessing the impact of the IR capitals on company value. The IR framework posits that the six (6) capitals are stocks of value that an organisation creates, preserves, or erodes over a period. The dilemma leading to the gap that this study seeks to close comes from the contradictory statement the IR framework makes. The IR framework (2021) states that the IR is not there to quantify or monetise the organisation's value at a point in time, nor is it supposed to report on the value created, eroded or preserved on the capital.

If the capitals are stocks of value, stakeholders require accountability and transparency on how they have gained or diminished over time, hence the need to establish quantification approaches for non-financial capitals within the IR context.

The IR framework recognises relationships and influences between capitals and company value. However, these relationships and influences have not been empirically tested within the IR context in their collective, especially on JSE-listed companies. This study tests whether the IR proposition can be supported with empirical evidence. The existing literature discusses relationships between capitals, nonetheless, they lack the integrated capitals approach covering the six (6) capitals as identified by the IR framework (Liebowitz & Wright, 1999; Brazen, 2004; Dakhli & de Clercq, 2004; Bose & Thomas, 2007; Marr, 2008; Axtle Ortiz, 2009; Fatoki, 2011; Ramanauskaitė & Rudžionienė, 2013; Gamerschlag, 2013; Stanko et al., 2014; Yu, Wang & Chang, 2015; de Villiers & Sharma, 2016; Dumay et al., 2016a; Cohen et al., 2019; IIRC, 2021)

This study investigates the IR framework's proposal that capitals influence company value. Available studies have researched the influence of capitals on company value, however, these were done in isolation and lack the integrated approach that IR advocates (Gordon & Shapiro, 1956; Parker, 1968; Marieta, 2009; ACCA, 2012; Ghaeli, 2017; Moliner, 2017; Correia, 2019; Miciuła et al., 2020).

This study is pioneering in interrogating the quantification and valuation of non-financial capitals and how they contribute to the integrated company value. The outcome of this research is invaluable to investors, academics, reporting standard setters, IR and corporate reporting practitioners. Investors will be able to check the value creation history and potential of current and future investment portfolios. Academics will be presented with a model that solves the existing gap in measuring the impact of capitals on company value. The study will present opportunities for further research, especially on IR under the regime of King IV. Reporting standard setters, IR and corporate reporting practitioners will be able to measure the impact of the capital on company value.

1.8　DEMARCATION/DELIMITATION OF THE STUDY

The current study focuses on JSE-listed companies, whereas there are private entities that have similar corporate reporting challenges that this research seeks to address. The study assumes a competitive environment in which companies operate, however, some companies enjoy monopolistic power, which makes generalisation of findings difficult. In South Africa, State-Owned Enterprises (SOEs) tend to enjoy monopolistic power in the electricity and rail transport industries. A separate study is recommended to cover monopolies and SOEs.

A study of JSE-listed companies means the study is limited to South Africa. IR is an international framework that makes it attractive for future studies to cover other countries, especially in emerging markets. This study is being carried out at a particular time phase (collection of balanced panel data). IR is a fast-evolving phenomenon that may have a different outlook in the future, posing a risk to the relevance of this study in the future. To counter this shortfall, the study used the latest IR framework released in 2021, while a longitudinal study is recommended for the future to address changes in the IR environment.

The IR framework identified the five non-financial capitals as manufactured, intellectual, human, social and relationship and natural capital. In this study, natural capital is not included. Natural capital is defined as all renewable and non-renewable environmental resources that companies may use to create value and includes endowments such as air, water, land, minerals and forests (IIRC, 2021). This study used a sample drawn from the 10 sectors per the JSE classification, and the companies involved rely on different types of natural capital. The researcher could not find, in the literature, a suitable measurement proxy for natural capital that was common across all the sectors. A review of IR reports of different entities revealed that natural capital was more prevalent in the basic materials/mining and energy sectors and not so much in the other sectors.

This study uses secondary data. The secondary data approach may give outcomes that publishers of reports want and not necessarily the true situation on the ground that a questionnaire survey approach may achieve. The impact of this is reduced by using audited financial statements as loaded in the IRESS database. The expectation

is that these reports are prepared by professionals and go through quality assurance processes to test their integrity. The secondary data was also collected over 11 years, according to the researcher, this gave the study solid statistical rigour. Lengthening the observation time (11 years) strengthens the validity and reliability of the study as impacts of single events are 'neutralised' (Saunders, Lewis & Thornhill, 2019).

1.9   LAYOUT OF THE THESIS

This study is organised into seven chapters, as indicated below.

Chapter 1: Introduction

This chapter covers the introduction to the study, discussing the background of the study and its contextual setting. The research problem, objectives of the study, the research questions, conceptual framework and a brief overview of the research approach are given in the chapter. The chapter also covers the significance of the study as well as its limitations.

Chapter 2: Theoretical framework/lens of the study

Chapter 2 discusses the theoretical framework or lens that provides the foundational theories for the study. The chapter gives an overview of the theory of integrated reporting and how it is underpinned by integrated thinking principles, stakeholder, agency and value theories.

Chapter 3: Literature review – Integrated Reporting

This chapter reviews the existing body of knowledge on IR. The key issues covered are the evolution of IR and how it has its background in corporate governance and reporting. The implementation of IR in different countries is also reviewed. The current criticism of IR by various authors is also given. After reviewing the existing literature, the gaps in the current body of knowledge are identified, setting the grounds for this research.

Chapter 4: Research methodology

This chapter covers the research methodology. The research methodology encompasses the philosophical approach, the research design, the research instruments, the study's validity and reliability and the research techniques. The

research questions, hypotheses and proposed panel data regression models are covered. Ethical considerations are also discussed.

Chapter 5: Presentation, analysis and discussion of research results

This chapter is used to present the results of the study. Since the study follows the quantitative methodology, the presentation of the results is also structured in that manner. The results are analysed and linked to the theory and empirical results of other studies, reviewing the applicability of the results to the research questions, objectives and hypotheses.

Chapter 6: Final model presentation and discussion

Chapter 6 presents the final model of this study, the AIRM that the researcher has submitted to fulfil the development of a framework to enhance Integrated Reporting through the valuation of non-financial capitals.

Chapter 7: Conclusions

This chapter provides the conclusions of the study, giving an overview of the research results and how they are relevant to theory and practice in the field of IR. Research gaps not closed in the study are also shown with recommendations for future research.

1.10   CHAPTER SUMMARY

This chapter provided introductory insights into the study on establishing the impact of non-financial capitals on company value through enhancing the IR framework. The background to the study, contextual setting, the research problem, objectives of the study and the research questions were discussed. An overview of the research approach was given showing that the study used the quantitative research methodology. This chapter discussed the limitations of the study as well as how the thesis is organised into different chapters. The following chapter will cover the theoretical framework or lens on which this study is based, discussing the different theories that serve as the foundations of IR.

CHAPTER 2: THEORETICAL FRAMEWORK/LENS OF THE STUDY – INTEGRATED REPORTING AND THE CAPITALS

2.1   INTRODUCTION

The theoretical framework of research is there to provide the foundation on which the study is based. It establishes the link between existing theories and the theoretical construct that the researcher wishes to be accepted. The theoretical framework gives the lens through which the study improves existing phenomena or develops new theories (framework).

This study focuses on developing a framework to enhance Integrated Reporting (IR) through the valuation of non-financial capitals and how they impact company value. The research oscillates around the theoretical lens of IR (and integrated thinking) and its predecessor creeds of the stakeholder, the agency, financial capital, intellectual capital and (tangible/manufactured) capital theories.

Valuation models are suggested for each of the capitals, culminating in an ultimate model that integrates the capitals. In this chapter, the theories are discussed, and models are put forward.

2.2   INTEGRATED REPORTING

The concept of Integrated Reporting (IR) has been developed as a tool to provide key information to a company's shareholders and other important stakeholders through the Integrated Reporting Framework (IIRC, 2021). IR is the brainchild of the International Integrated Reporting Council (IIRC), a worldwide coalition of various organisations, which include regulators, investors, companies, standards setters, the accounting profession and Non-Governmental Organisations (NGOs) (IIRC, 2021).

Realising a gap in the prevailing corporate reporting environment, the IIRC, in 2013, released a new reporting framework that would allow organisations to produce a concise report explaining how value would be created, preserved, or eroded over time (IIRC, 2013). In January 2021, the IIRC made available a revised IR framework, which gives a wider approach by including preservation and erosion of value (IIRC, 2021). The 2013 IR framework dwelt mostly on value created without covering much on value preservation or erosion. The revised framework, therefore, gives credence to the

understanding that the processes undertaken by a business may add value, preserve value, or erode value. South Africa is an early adopter of IR, having it as a best practice for JSE-listed companies (Ngorima, 2019).

2.2.1 Objectives and fundamental concepts of IR

Table 2.1 summarises the objectives and fundamental concepts of IR.

Table 2-1: Objectives and fundamental concepts of IR

Objectives	Fundamental concepts
To ensure that providers of capital obtain quality information that assists them in the appropriation of capital.	The employment of the six capitals creates value for the organisation and enables a continuous cycle into the future.
To give a more consistent and effective method to corporate reporting, which brings together the myriad of frameworks into one report.	A company's resources are the six capitals used to create value. The IR does not require organisations to report on all six capitals.
Improve the responsibility of organisations on the six capitals and enhance the principle that these capitals intertwine.	A business' value creation model is anchored on the six capitals and how they are used.
To champion the principle of integrated thinking and encourage decision-making and actions that motivate the creation of value over the short, medium, and long term.	N/A

Source: *iasplus (2020)*

The objectives and fundamental concepts shown in Table 2.1 indicate that IR intends to steer organisations towards value addition to the benefit of stakeholders, and the value addition activities have to be adequately reported through an integrated report.

2.2.2 The IR guiding principles and content elements

The IIRC laid out the expectations of the structure of an Integrated Report, and the key to that is the guiding principles and content elements. Table 2.2 shows these two (2) critical components.

Table 2-2: The IR Guiding principles and Content elements

Guiding Principles	Content Elements
The IR report should cover the strategic aspects of the entity to show future focus.	The IR should clearly show the interaction of the organisation with its external environment, how it copes with the conditions it works in.
The organisation has factors that affect its value-creation capabilities over time.	The IR should indicate how the company's governance structures support value creation.
IR needs to explain the relationships the organisation has with stakeholders and how these are managed.	The company's business model must be clearly explained.
Honesty in reporting material matters that significantly affect the entity's capability to create value over time.	Identifications of risks and opportunities that are likely to impact the organisation's potential in the creation of value.
The IR should demonstrate conciseness with enough information on governance and strategy.	A strategic explanation for the appropriation of resources in a way that guarantees future sustainability of the entity.
The IR should be reliable and complete showing all matters that are considered material, whether positive or negative.	IR should objectively explain the extent to which the entity has achieved its strategic outcomes and whether the capitals we effectively used.
A good IR demonstrates consistency and comparability with other entities over time.	IR should give an outlook of the future of the organisation, showing how value will sustainably be created. Transparency is required in explaining how the organisation decides on issues to be included in the IR, showing the basis of how they are quantified and evaluated.

Source: IIRC (2021)

The guiding principles and content elements given in Table 2.2 are designed to assist IR preparers with best practices to produce IR reports that provide stakeholders with information sufficient to enable them to make quality decisions.

The IR framework, as depicted in Figure 2.1, is premised on the precept that company value creation is achieved by deploying the six (6) capitals into a company's business model. The capitals are treated as inputs, which will go through value-addition processes to result in outcomes (IIRC, 2021).

Figure 2-1: The IR framework

Source: IIRC (2021)

The IR framework shows that at the end of the value creation process, at a point in time, the capitals get redeployed into the value creation cycle, making the exercise a continuous phenomenon.

2.2.3 Explanation of the capitals included in this study

IR has emerged as an accounting revolution and has relegated the traditional categories of industrial and financial capital to history (Gleeson-White, 2014). Apart from financial and manufactured capital, three (3) additional capitals, intellectual, human, social and relationship, must be included in the discourse of wealth and value addition.

2.2.4 Financial Capital

Financial Capital is explained as the cash resource that a company can utilise in the manufacture of goods and delivery of services (IIRC, 2021). This type of capital is derived from financing sources that provide short-term (working capital debt which is funding for current assets such as inventory and operating costs) and long-term (loans, equity and retained income) (IIRC, 2021). Financial capital forms the basis of the funding required to acquire a business's tangible and intangible assets (Fatoki, 2011). Financial Capital is evidenced through cash available to the enterprise and is provided through the above sources (short and long-term loans and equity) (Fatoki, 2011).

2.2.5 Manufactured Capital

Manufactured capital is made up of the physical infrastructure that makes the production of goods and services possible. Such physical infrastructure is manufactured and is different from the environmental physical items the company can use (IIRC, 2021). Examples of manufactured capital include buildings, plants and equipment owned by the organisation. Public infrastructure (roads, ports, bridges, and fibre connections) and other physical assets owned by third parties, which are available for the organisation's value-creation activities, are also considered manufactured capital. The physical products of the company in the form of inventory for trade or own use also form part of manufactured capital (IIRC, 2021).

2.2.6 Intellectual Capital

Intellectual capital emanates from the knowledge base that is in the company's possession. This is represented by intangible assets such as intellectual property (such as copyrights, software, rights and licences) (IIRC, 2021). Other rooted and tacit pieces of knowledge, systems, protocols, stories and legacies are also in the cohort of intellectual capital (IIRC, 2021).

Before IR, Intellectual capital was considered separately in company reports, and the focus was on its impact on a company's value rather than it being part of the organisation's value (Camodeca et al., 2019). Intellectual capital, which is becoming the backbone of the knowledge worker era, has the potential to be a basis for improved productivity in companies (Schultz & Molele, 2019). Some empirical research results

show that including Intellectual Capital in corporate reporting positively impacted a company's market capitalisation (Gamerschlag, 2013).

2.2.7 Human Capital

Human capital is fundamental in the process of value creation for the organisation as it is the dominating driver in mobilising and bringing together the other five (5) capitals of the IR framework. The talent, skills, intrinsic knowledge, experience and specific abilities possessed by an organisation's employees and executives may be referred to as human capital (Schultz & Molele, 2019). People's abilities to innovate, utilise existing capitals and loyalty to the organisation and its strategic goals form the anchor of human capital (IIRC, 2021). Organisational success has migrated from being financial and physical asset-based to being human capital based on the recognition that innovation, loyalty, and competency reside within the company's human resources (Gamerschlag, 2013). Financial and physical assets can no longer be the differentiating factor to gaining competitiveness as they are easy to imitate (Gamerschlag, 2013).

Inputting financial capital into human capital through training and skills retention schemes shows the interaction between the capitals in creating value. A trained and skilled human resource base is expected to yield more quality performance and increase company value (IIRC, 2021).

2.2.8 Social and Relationship Capital

Social and relationship capital captures the network of relations between the organisation and its key stakeholders (IIRC, 2021). At the centre of this capital is the availability of information and how the stakeholders can share it for the common well-being of individuals (IIRC, 2021). Social and Relationship Capital contributes to the value-creation process if it is guided by mutual trust and collaboration (Dakhli & de Clercq, 2004).

One may consider the complex modern-day supply chain and the growing influence of stakeholders such as environmentalists, trade unions and activists as pointers to the importance of Social and Relationship Capital. The expanding power of the media (both social and regular networks) has made information flow easy. The accessibility

of information facilitates rapid response by stakeholders, and the impact on company value creation could be great, whether positive or negative.

2.2.8.1 Linkage between IR and other theories

The IR, being a concept still in its growth phase, is dependent on other theories already in use, such as stakeholder and agency theories. Table 2.3 outlines how IR relies on and interlinks with some of the other existing theories. An overview of these theories is covered in the sections below.

Table 2-3: Links between IR and other supporting theories

IR framework item	Supporting source theory
(a) **IR Guiding principle on stakeholder relationships:** An integrated report is designed to give insight into how the organisation interfaces with its key stakeholders. The nature and quality of the relationship with the key stakeholders define how the organisation is responsive to their legitimate needs and interests (IIRC, 2021).	**Stakeholder theory** as expounded by the following authors who anchored their views on the precept that shareholders do not have the ultimate legitimacy on the company: (Berle & Means, 1932; Mendelow, 1981; Freeman & Cavusgil, 1984; Clarkson, 1995; Freeman & McVea, 2001; Ryan & Schneider, 2003; Driscoll & Starik, 2004; Bourne & Walker, 2005; Schwartz, 2006; Laplume et al., 2008; Parmar et al., 2010; Freeman, 2016; McGrath & Whitty, 2017).
(b) **Content element of governance:** How do the company's governance structures support its ability to create and sustain value in the short, medium and long term (IIRC, 2021)?	**Agency theory** has the underpinning principle is that the management of the company is epitomised by a dual connection between the principals (shareholders) and the agents (directors): (Dalton et al., 2007; Palia & Porter, 2007; Snippert et al., 2015; Achim et al., 2016; Bendickson et al., 2016; Bosse & Phillips, 2016; Mitchell et al., 2016; Panda & Leepsa, 2017).
(c) **IR Content element of the business model:** An organisation's business model is its system of transforming inputs through its business activities into outputs and outcomes that aim to fulfil the	**Value theory** prescribes that value is created from the interaction of various activities that transform raw materials to finished goods or services:

20

IR framework item	Supporting source theory
organisation's strategic purposes and create value over the short, medium and long term (IIRC, 2021).	(Aristotle, 1633-1687; Cantillon, 1680-1732; Smith, 1723-1790; Marx, 1818-1883; Ricardo, 1772-1823; Porter, 1985; Stabell & Fjeldstad, 1998; Freeman & McVea, 2001; Galvagno & Dalli, 2014; Daraban, 2016; Dilip & Rajeev, 2016).
(d) **The IR report:** IR should cover both long-term and short-term matters of the business. Long-term matters may be covered in a qualitative view, while short-term matters require quantification and even monetisation (IIRC, 2021).	**Company valuation theory** assumes that company value can be found by analysing present and future cashflows**:** (Gordon & Shapiro, 1956; Parker, 1968; Marieta, 2009; ACCA, 2012; Ghaeli, 2017; Moliner, 2017; Correia, 2019; Miciuła et al., 2020; Feltham & Ohlson, 1995; Ohlson, 1995).

Source: IIRC (2021)

Table 2.3 indicates that the IR concept is a coagulation of other theories that are being integrated to bring a common approach to the understanding of value creation.

2.3   INTEGRATED THINKING

Anchoring the concept of IR is the principle of integrated thinking. The principle of integrated thinking is defined as an active interrogation of the relationships among the various factors impacting the company's value-creation processes (Dumay & Dai, 2017). The concept developed as a wider perspective on the creation of value by instilling an awareness of the interlocking effects of the social, environmental and financial performance of organisations (Porter, 1985; Adams, 2013). Integrated thinking gives executives an opportunity for long-term thinking concerning the efficacy of their business models in creating value. It gives a platform for consideration of material issues, risks, and mitigation of the risks (Adams, 2013).

The development of integrated thinking is divided into three epochs, the shareholder value approach of the 1970s (the Friedman doctrine), shared value and holistic management of the late 1990s, and systems value and integrated reporting of 2010 and beyond (IIRC, 2019). The shareholder approach holds that the purpose of an enterprise is to maximise profits for the shareholder. In the process of maximising profits, corporate executives have to do this within the dictates of the shareholders,

social norms as well as ethical customs (Friedman, 1970). Due to its focus on profit maximisation, Friedman's shareholder approach is referred to as the String Model (mono-capital model) as it only relies on one capital – financial capital. The weaknesses of the String Model of being short-term and reactive led to the proposition of the shared value and holistic management approach in the 1990s (IIRC, 2019). Under this approach, the survival and success of the company were found to be intertwined with the environment and society (IIRC, 2019). During this phase, sustainability and corporate social responsibility took centre stage, therefore, bringing more attention to the importance of nature and society in the survival of the business. The String Model or mono-capital model got replaced with a risk-focused shared value and holistic management model.

The shared value and holistic model provided a platform for the rise of the System value-integrated management model. Under this model, a company functions within a multi-capital environment where financial capital alone may not be sufficient to create value. The other capitals, human, manufactured, social and relationship and intellectual, are all critical in the value-creation activities of the business. The communication of how the multi-capitals are used to create, sustain or erode value is deemed to be achieved through IR (IIRC, 2021).

As depicted in Figure 2.2, integrated thinking evolved from an environment of scattered relationships between business, the environment and society to a 'matured' state of having these as part of one integrated value-adding system.

Figure 2-2: The Evolution of Integrated Thinking

Source: IIRC (2019)

While integrated thinking is considered one of the benefits of the IR framework, research indicates the IIRC's inadequate definition of the concept or the insufficient guidelines on how to apply it (Feng et al., 2017). Integrated thinking faces the risk of non-acceptance by target employee groups as they are already entrenched in their existing organisational cultures (Dumay & Dai, 2017).

The research gap on integrated thinking is that there is no established evidence in organisations to show that organisations that have adopted IR have also successfully implemented integrated thinking culture, the IR guiding principles and content elements. The BoDs seem to be using IR as a public relations tool by approving and publishing reports that have selected positive messages and not objectively reporting to include negatives or failures and how they will be resolved (Kılıç & Kuzey, 2018). From the above, one may mention that directors have a responsibility to show commitment to high corporate governance, and they can have a fundamental role in strengthening IR since they are accountable for the reports and have an ethical duty to present accurate information.

2.4   AGENCY THEORY

In the following sub-sections, the background to agency theory and a review of some of the empirical studies on the theory are given.

2.4.1 Agency theory background

The underpinning principle of the agency theory is that the management of the company is epitomised by a dual connection between the principals (shareholders) and the agents (executive directors) (Panda & Leepsa, 2017). The agency theory is embedded in the assumption that the principal uses reward and delegation power to incentivise the agent to work to satisfy the interests of the shareholders (Bendickson et al., 2016). Figure 2.3 demonstrates the flow and exchange of power and responsibilities between principals and agents.

Figure 2-3: The Agency model

Source: Snippert et al., (2015)

In Figure 2.3, it is noticeable that self-interest surrounds both the principals and the agents. It is the supposed inherent attitude of self-interest, where the agent's behaviour is opportunistic and where he or she may prioritise personal rewards at the expense of the principal leading to the agency problem (Dalton et al., 2007).

2.4.2 The agency problem

The agency problem is rooted in the separation of control of equity from the hands of those who provided it (Panda & Leepsa, 2017). A hint to the agency problem dates back to 1776, when Adam Smith, as quoted by Achim et al. (2016: p. 28), said, "You may not expect those who manage other people's money to be as careful and caring as it would belong to them. Waste and negligence are present, always, more or less, in the management of every business."

Where the agent expects a higher reward, more risk is taken, and on the contrary, where rewards are lower, the agent becomes more risk-averse (Palia & Porter, 2007). To mitigate the agency problem, corporate governance measures are taken, such as an independent board of directors to supervise executive directors, responsibility for encouraging incentive schemes to directors (so that there is sharing of losses and gains), equity participation and executive compensation (Dalton et al., 2007).

The agency problem might seem like a conflict only between the manager and shareholder, however, the costs of this result in losses for society (Bosse & Phillips, 2016). To curb the narrow view of the classical agency theory, an alternative is proposed; the stakeholder-agency and social welfare concept (Mitchell et al., 2016). In this approach, the modern corporation is viewed as a multi-objective entity that seeks to satisfy many stakeholders, not only the principal and the agent. In that perspective, the company's value creation task ceases to be a task for management on behalf of the investors but an effort to address the needs of the coalition of all stakeholders.

The stakeholder-agency theory, being an attempt to converge the stakeholder and the agency theories, poses a challenge to corporate reporting. The overall responsibility of reports, in this case, the executive directors (the agent), need a format that will satisfy the stakeholders that the value created and the value creation potential is transparently exposed. Each stakeholder who has a role in the value creation process will require to see his (her) current and future contribution clearly explained, giving credence to the need for IR.

2.4.3 Empirical evidence on agency theory

Studies have been carried out to test the impact of the agency theory on company value. The studies have focused on agency theory issues such as earnings management, ownership structure and employee management strategy. Earnings management is where executives of a company put in place strategies that will maximise reported profits. The abuse of power by executives over the direction of a company's earnings has been cited as one of the reasons for the scandals that affected corporate history, such as Enron and WorldCom (Jiraporn et al., 2008). Jiraporn et al. (2008) propose that earnings management can be used for harmful

opportunistic purposes by managers and also for beneficial purposes that improve company value. Opportunism is used by managers who want to report higher earnings to get paid high bonuses or are in the final years of their contracts. In a study of USA companies, Jiraporn et al. (2008) tested the relationship between agency costs, earnings management and company value. Their investigation revealed a positive relationship between earnings management and company value. Managers who used earnings management tactics such as releasing internal earnings information to the market managed to increase their companies' share value.

Dawar (2014) conducted a study on Indian companies to test the classical view of a positive relationship between agency discretion on leverage and company value (Modigliani and Miller, 1958, 1963; Miller, 1977). The results from this study indicated that in an emerging economy like India, leverage essentially reduced company value. A similar study in Malaysia gave contrasting results compared with Dawar (2014). Ayaz et al. (2021) studied 528 nonfinancial companies listed on the stock exchange, and empirical evidence suggested that leverage increased company value, confirming the classic belief that managers can exercise their agency power to increase company value.

In the quest to establish the impact of the agency theory of company value, Naik et al. (2020) used directors' remuneration for JSE-listed companies as a proxy to measure the relationship to company value. Revenue, total assets, return on assets, and measures of TobinQ were used as variables. The study showed a negative relationship between directors' remuneration and revenue and assets measurements. A weak positive relationship was established between TobinQ and directors' remuneration. This signalled that South African companies should use other strategies to increase company value rather than varying directors' remuneration. Van Zyl and Mans-Kemp (2022) did a multi-stakeholder perspective investigation on directors' remuneration and found that despite the guidelines provided in King IV, how directors were remunerated left other stakeholders grieved. They recommended that companies look at compensating directors based on value addition on the IR six capitals.

In this current study, agency theory was tested using human capital as a proxy. The rationale is that in the IR logic, executives and managers of an enterprise are part of

the human capital base, as covered in Section 2.2.3. A model was developed where the impact of the agency theory (human capital) on company value was tested. Details of research questions and hypotheses are provided in Chapter 4.

2.5   STAKEHOLDER THEORY

The following sub-sections will explain the background of stakeholder theory, giving insights into several approaches, varying from classical theorists to contemporary scholars. An overview of empirical studies on stakeholder theory is also provided.

2.5.1 Stakeholder theory background

The proponents of stakeholder theory anchored their views on the precept that shareholders do not have the ultimate legitimacy on the company (Parmar *et al.*, 2010). The origins of stakeholder theory can be traced back to 1932 when Berle and Means (1932) challenged the supremacy of shareholders over the other social entities surrounding the company; they state that the corporation is, in fact, a major social institution (Freeman & McVea, 2001). Based on the recognition that the claim on the company is multi-faceted and not limited to shareholders, a stakeholder theory of the modern corporation evolved (Freeman & McVea, 2001). The theory is intended to solve three (3) main problems; the issue of value creation and trade, the challenge of the ethics of capitalism and the dilemma of the managerial mindset regarding organisation loyalty or self-satisfaction by managers (Parmar *et al.*, 2010). Of relevance to this study is the problem of value creation, where the major question requiring an answer is how value is created in the contemporary business world where change is so rapid, underpinned by the fourth industrial revolution (Parmar *et al.*, 2010; Xu, David & Kim, 2018).

2.5.2 Stakeholder definitions

The definition of stakeholder has occupied the minds of scholars for a considerable time (McGrath & Whitty, 2017). Stakeholders are any persons or groupings with a form of interest or a feeling and claim of rights or ownership of an entity (Bourne & Walker, 2005). Mendelow's Stakeholder Model identified stakeholders as lenders, suppliers, shareholders, employees, society, customers and government (Mendelow, 1981). This earlier stakeholder formation was expanded to include consumer activists,

environmental protection enthusiasts, special interest coalitions and media entities (Freeman & Cavusgil, 1984).

As summarised in Table 2.4, there is the recognition that the effectiveness of different stakeholders around the organisation depends on their source of power (Mendelow, 1981).

Table 2-4: Sources of stakeholder power

Sources of Power	Examples
Possession of resources	Employees resort to strike action to demand more inducements for their labour.
Authority	The employer and the industrial bodies use authority to enforce obedience.
Influence	Environmentalists, members of society and representatives in arms of government use their influence for organisations to behave in their desired way.

Source: Mendelow (1981)

To deal with the likely effects of stakeholder power on the organisation, strategies are offered to neutralise the complex agendas from the complex stakeholder mix (Mendelow, 1981). This is done using the Power Dynamism Matrix for Environmental Scanning, as shown in Figure 2.4.

		Dynamic environment	Static environment
POWER	**HIGH**	Continuous scanning	Irregular scanning
	LOW	Periodic scanning	NIL

Figure 2-4: The power dynamism matrix for environmental scanning

Source: Mendelow (1981)

Below are some explanations of the contents of the quadrant.

- **High-power stakeholders and a dynamic environment**

Stakeholders with high power and in a highly dynamic environment pose the most danger to the organisation and are managed through continuous scanning. This is done by continuous monitoring of the behaviour of these stakeholders, understanding their source of power and identifying inducements to pacify them.

- **Low-power stakeholders and a dynamic environment**

The organisation must be cautious of these stakeholders because the dynamic environment is a possible platform for transforming low power to high power. For this, periodic scanning is recommended where the environment is systematically and regularly scanned, and threats of more power by the stakeholders are identified and minimised.

- **High-power stakeholders and a static environment**

In this space are the stakeholders that have more power compared to the organisation. For example, government and regulatory bodies have more power than the company but will not invoke that power in the absence of an infringement to laws. The high power does not have a high impact on the organisation due to the static nature of the environment. The organisation can use irregular scanning as a simple tool not to lose sight of the potential threat of the high power residing in these stakeholders.

- **Low-power stakeholders and a static environment**

In this situation, stakeholders have low power, and the environment changes slowly. The organisation has no obligation to perform any scanning as the environment is stable and the stakeholders pose no serious threat.

A literature review of stakeholder theory shows that stakeholders can be grouped around the following two (2) questions (Mendelow, 1981; Laplume et al., 2008).

Question 1: Which stakeholders should the organisation pay attention to?

- Stakeholders should be classified into internal and external (Freeman, 1984)
- Primary stakeholders have more influence than secondary stakeholders (Clarkson, 1995). Primary stakeholders are those stakeholders that have direct interaction with the organisation, such as investors, suppliers, and customers. Secondary stakeholders comprise parties that have no direct involvement in the business, although they have an interest in the way social transactions are

conducted, for example, government, media, regulators, and political organisations.

- Derivative and normative stakeholders (Phillips et al., 2003). Derivative stakeholders can harm or benefit the company and may include activists, media groups, competitors, and terrorists (Phillips, Freeman & Wicks, 2017). Normative stakeholders are those parties to which the enterprise has a direct moral obligation to their well-being. These comprise banks, customers, employees, customers, and the community (Phillips, Freeman & Wicks, 2017).

- Parties that have a significant interest in the company (Cragg & Greenbaum, 2002)

- The environment (Driscoll & Starik, 2004)

- The investor community (Ryan & Schneider, 2003)

- The creator (superior being) (Schwartz, 2006)

- Activists and enthusiasts.
  Activists and enthusiasts are those parties who are seeking a certain outcome from the way a company is conducting business, and they do this through both persuasive and aggressive engagement with the organisation (Dunham, Freeman & Liedtka, 2006)

- Networked and resourced groups (Pajunen, 2006).

Question 2: Which stakeholders do organisations care about?

- Stakeholders that have power and are viewed as legitimate by observers (Agle et al., 1999)

- Stakeholders that derive relevance from cultural views (Jones et al., 2007)

- The politics of industries (Fineman & Clarke, 1996)

- The life cycle stage of the organisation (Jawahar & Mclaughlin, 2001)

- More stakeholders are identifiable by environmentally proactive managers (Buysse & Verbeke, 2003).

The weakness of the various definitions of stakeholders is that there is no consensus on which stakeholder holds the most influence over the company. The general theme is that all stakeholders influence the company's value-creation process.

2.5.3   Stakeholder role in the value-creation process

In the analysis of value creation, there is the dimension that the different stakeholders in the company have different ways in which they view value creation (Harrison & Wicks, 2013). Stakeholders perform different activities around the company and derive satisfaction from the corporation if their inputs outweigh the outputs. In the Enlightened Stakeholder theory, the option is raised that long-term value maximisation is the business's ultimate goal and resolves the conflict of the multiple short-term objectives of the classic stakeholder theory (Jensen, 2002). Short-termism causes stakeholders to look at narrow, self-centred benefits that may decapitate the corporate's capability to create long-term sustainable value for the future well-being of the various interest groups.

In the Freeman and McVea (2001) stakeholder model of the corporation, as shown in Figure 2.5, various members of the stakeholder community feed into and benefit from the enterprise.

Figure 2-5: The Stakeholder model

Source: *Freeman and McVea (2001)*

From Figure 2.5, one may state that company value is a result of the interface and provision of resources by the different stakeholders. Considering corporate reporting, these different stakeholders must be satisfied that their inputs resulted in the desirable effect, that is, the creation of value. IR, as shall be indicated later, has the objective of

31

providing stakeholders with sufficient information on how the company is creating value in the short, medium, and long term. Stakeholders may be interested in knowing their future value creation potential, and this presents a chance for one to put a proposition for a predictive model with stakeholder resource variables as inputs.

2.5.3.1 Empirical evidence of stakeholder influence on company value

While the above review of theory has exposed the importance of stakeholders to the company and its value-creation activities, this perspective must be checked for practical application. Researchers have used stakeholder theory principles to empirically test its relevance to modern business value creation.

For this empirical evidence review, stakeholder theory is considered the basis of Social and Relationship Capital in the IR framework. One of the challenges affecting the practical measurement and valuation of non-financial capitals, in this case, Social and Relationship Capital, is the identification of relevant parameters. Harrison and Wicks (2013) posit that a company may create value for its stakeholders, and this will positively influence the company's value. They advanced the notion that 'stakeholder happiness' will lead to company value, and proxies were assigned to each stakeholder as a measurement tool. Using a multiple-stakeholder view, Harrison and Wicks (2013) listed employees, customers, suppliers, shareholders and the government as important in value creation. Table 2.5 summarises some of the suggested proxies for each stakeholder.

Table 2-5: Proxies for measuring stakeholder value

Stakeholder	Proxies
Employees	Compensation and benefits, employee productivity measure (turnover per employee), health and safety policies
Customers	Growth in sales, R&D spend, product rankings
Suppliers	Days payable, accounts payable turnover ratio
Shareholders	Shareholder returns, P/E ratio
Government	Legal actions, taxation

Source: Harrison and Wicks (2013)

32

Through a longitudinal study involving 1,614 USA companies, the impact of stakeholder management was assessed using primary and secondary stakeholders' degree of value addition to the company (Mason & Vracheva, 2015). The study found that stakeholder management and company value had complementary effects.

Using a sample of 35 high-liquidity listed companies on the Spanish Stock Exchange, the effect of customers (as stakeholders) on business value was examined (García-Merino et al., 2014). The investigation utilised customer satisfaction and total company value as variables. The study concluded that there is a positive relationship between improved customer satisfaction and company value, albeit not statistically significant. Carrying out a similar study in France, Boukattaya and Omri (2021) found a contradicting result to the above. Their study tested the relationship between Corporate Social Performance (CSP) and financial performance. CSP can be defined as the deliberate policies and actions taken by an enterprise to address the objectives, issues and values of the society in which it operates (Battaglini, 2019). The study's results indicated an opposite relationship between CSP and financial performance (Boukattaya & Omri, 2021). Utilising CSP as a representative of stakeholder management, Weber (2017) found that stakeholder management by Chinese banks did not hinder financial performance but strengthened it. Maqbool et al. (2018) conducted a similar study on Indian banks, and the results were consistent with Weber (2017).

Möller andTörrönen (2003) argue that suppliers can be considered as joint value creation partners through the supply of high-quality raw materials and services, participating in innovation for better products and cost-effective methods of production. They further state that supplier performance can be measured by checking the profit achievement directly traceable to a certain supplier's products, volume function according to quantities supplied and the reliability function where a supplier maintains promised delivery schedules.

Dzomonda (2020) carried out a study on the impact of stakeholder engagement on company value for JSE-listed companies. Using TobinQ and stakeholder engagement as variables for a panel data model, the study concluded that there is an insignificant positive influence of stakeholder engagement on company value. In an earlier study, viewing Black Economic Empowerment (BEE) deals in South Africa as a proxy of

Stakeholder management, Wolmarans and Sartorius (2009) found that there was a positive relationship between announcements of BEE deals and an increase in value for those JSE-listed companies.

The government is an important stakeholder as it contributes to setting conditions that allow companies to operate and create value. These conditions included the provision of education and health services to the population, which in turn became the human capital base for companies to tap skills from. Government receives revenue from companies through taxes paid. For example, for the fiscal year 2017/2018, taxation contributed 25.9% of the GDP (Statistics South Africa, 2018).

Through taxes, the government obtains the ability to fulfil its social and developmental objectives (Starke, 2016). Taxes become a reasonable proxy for government in the IR context as they represent a measurable interaction between companies and the government (Dauchy & Martinez, 2005; Harrison & Wicks, 2013).

The theory and the empirical evidence reviewed on Stakeholder theory indicate a relationship between stakeholder management and company value. In this current study, a model is developed on this premise after testing the appropriate hypothesis to be defined later in Chapter 4, Section 4.7.

2.6   TANGIBLE (MANUFACTURED) CAPITAL THEORY

The following sub-sections explain the background of the tangible capital theory and a review of some of the empirical studies carried out on this theory.

2.6.1 Tangible capital theory background

In the classical approach to tangible capital theory, tangible capital refers to both current and non-current tangible assets and are considered relevant to make production possible, the differentiator being that inventory gets consumed in the period of production while buildings, plants and machinery remain for the future (Eckaus & Lefeber, 1961). For the current production period, a portion of the non-current assets gets depreciated through usage. The primary objective of investing in assets and employing them in production is to add value to the company by selling finished products or services at a positive margin. There is a shift from the classical view that

capital investment refers to capital formation in the form of tangible assets, with more emphasis going on a dual approach to managing both tangible and intangible assets. The competency of management will depend on the success or otherwise of having an optimum mix of tangible and intangible assets (Irungu et al., 2018).

The contemporary topic of tangible capital theory is the sustainability of tangible assets. Modern business is being challenged to ensure that investments in tangible assets are in line with the aspirations of both environmental and company value sustainability (Stern, 1997; Hoyos et al., 2010). The life cycle of tangible assets is becoming shorter due to technological advancements and pressure for companies to adopt environmentally friendly operations (Stern, 1997).

2.6.2 Tangible capital impact on company value empirical evidence

In the context of IR, tangible capital is referred to as manufactured capital, one of the capitals identified in the IR framework. İltaş and Demirgüneş (2020) investigated the influence of the tangibility of assets on the financial performance of companies in the manufacturing sector in Turkey. The study concluded that tangible assets had a significant impact on company performance compared with intangible assets. Tangible assets were favourably considered collateral by financial institutions, enabling companies with more tangible assets to access external debt to fund growth. Such companies are positioned for better performance and higher growth, resulting in improved company value. Inquiring on the determinants of company performance in insurance companies in Ethiopia, Mehari and Aemiro (2013) confirmed that tangible assets yielded a stronger Return On Assets than other asset classes. Birhan (2017) carried out a similar study on a case-study basis and obtained results consistent with the findings of Mehari and Aemiro (2013). In China, the corporate tax regime favours investment in fixed assets. Hence companies with wider tangible asset bases have higher profitability (Dong, Leung and Cai, 2012). A study on Nigerian banks revealed that fixed assets indicated a strong positive relationship to the net profit (Olatunji et al., 2014).

While the above empirical studies showed a positive impact of tangible assets on company performance and, consequently, company value, few studies yielded contrary results. In a study of 51 listed manufacturing companies in Indonesia, Saleh

(2018) used panel regression to test the impact of tangible assets on company value. The findings were that tangible asset investments harmed company value. This result was attributed to the short-termism behaviour of Indonesian investors. In the short-term, tangible assets tend to reduce earnings through the depreciation charge and finance costs if the acquisition is leveraged. To alleviate this negative impact, Saleh (2018) proposes that companies should structure tangible asset acquisitions through the use of retained earnings as a cheap source of funding.

Studying the determinants of profitability for Indian telecommunication companies, Khan et al. (2018) found that size and growth had more explanatory power than the tangibility of assets. Using panel data regression, Pratheepan and Banda (2016) studied a sample of Sri Lankan companies, and their findings showed that tangible assets had an insignificant influence on company profitability.

With the above empirical evidence, it is worthwhile that a study is carried out in a South African context to determine the impact of tangible (manufactured) capital on company value. The current study used data from JSE-listed companies to construct a model for testing this aspect of the IR framework of capitals.

2.7   INTELLECTUAL CAPITAL THEORY

In the following sub-sections, the background of intellectual capital theory and an overview of some empirical studies will be covered.

2.7.1 Intellectual capital theory background

Intellectual capital is considered a critical resource in the modern knowledge-based economy. As of the 1980s, intellectual capital has emerged as the most important driver of company growth and differentiation (Radjenovic & Krstic, 2017). Although intellectual capital theory seemingly appears to be a recent phenomenon, its background goes back to the pioneering classical works of Taylor (1911), Robinson (1934), Chamberlin (1947), Schumpeter (1934), Moore and Penrose (1960) and Polanyi (1966). These early scholars managed to identify that employee skill, knowledge and experience were vital in the value-creation process of the company. Patents, trademarks and brands became the embodiments of intellectual capital, aiming to internalise it within the company (Robinson, 1934; Chamberlin, 1947). Moore

and Penrose (1960) assigned intellectual capital as a resource like financial and tangible assets the company requires for production.

One of the most recognised modern scholars of intellectual capital theory is Pulic (1998), who propounded the Value-added Intellectual Coefficient (VAIC). Pulic (1998) generated the VAIC model from the observation that world economics was departing from being tangible capital and financial capital-centric to a knowledge-based economy. He envisaged that the knowledge economy was epitomised by Intellectual Capital. Financial statements are ineffective in reporting the impact of intangible capital on company values (Lev, 2002). Lev (2002) studied the financial statements of USA Standard and Poor's 500 companies and concluded that more than 80% of the market value of companies was not adequately reported. Relying on previous studies by Cronje and Moolman (2013) and Schultz and Molele (2019) highlighted the challenge of intangible capitals, that their real value is not clear due to these capitals being not quantified and resultantly not reported.

With the desire to close the gap between company values calculated using financial statements reporting and the market value of companies, Pulic (1998) posited the VAIC model. The purpose of the VAIC model was (is) to assist business managers and policymakers in measuring the efficiency at which intellectual resources are converted into financial wealth.

The VAIC model, as propounded by Pulic (1998), has the following assumptions:

(a) Value addition in a company results from two key resources, capital employed and intellectual capital.

(b) Capital employed consists of the companies' tangible (physical) capital and financial capital.

(c) Intellectual is made up of human capital and structural capital.

(d) Labour costs are not expenses but investments or assets (human capital). Labour costs are thus transferred from the income statement to the statement of financial position.

(e) There is a positive relationship between increasing intellectual capital and increasing company value.

Having identified the assumptions above, Pulic (1998) built the formula for VAIC:

VAIC = CEE + HCE + SCE

Where: **CEE = Capital Employed Efficiency = Value Added/Capital employed**

Value added means the value created by the business in a specific reporting period. Value added (VA) = Output – Input. Output is the total income received through sales of products and services in the year under consideration, while input is the total costs incurred, excluding staff costs (Fayez, Hameed & Ridha, 2011). According to Pulic (1998), staff costs are classified as an investment and not as expenses. Capital employed is the total value of both physical and financial assets.

HCE = Human Capital Efficiency = Value Added/Human Capital

Human capital is the total costs for staff compensation, training, and development. Value added remains as explained above. Human Capital Efficiency (HCE) indicates how much value was added by investing in human capital.

SCE = Structural Capital/Value Added

Structural Capital (SC) is the value obtained from the previous performance of human capital. Examples of structural capital are organization, licenses, patents, images, standards, and client lists (Fayez, Hameed & Ridha, 2011). Structural Capital Efficiency (SCE) explains the extent to which structural capital was used to add company value.

The advantage of VAIC is that it uses published data obtained from companies' annual financial statements (Svanadze & Kowalewska, 2017).

2.7.2 Intellectual capital impact on company value empirical evidence

In a study of Austrian companies, Bornemann (1999), utilising the VAIC model, established a positive relationship between company performance and intellectual capital. Applying the VAIC model in a study of manufacturing companies in Thailand, Phusavat et al. (2011) found that intellectual capital had a significant and positive influence on return on equity, return on assets, revenue growth, and employee productivity. A similar study in China concluded that intellectual capital was a significant determinant of company performance and, subsequently, company value.

Examining 5,500 banks in the USA over the period 2005 to 2012, Meles et al. (2016) concluded that intellectual capital was effective in influencing returns on assets and equity. Through a study on the Athens Stock Exchange, it was confirmed that human capital was ahead of the other components of intellectual capital in having a positive impact on return on assets. No relationship could be established on the share price (Maditinos et al., 2011).

In an investigation of 2,161 Australian listed companies covering the period of 2003 to 2008, it was concluded that intellectual capital efficiency showed a positive relationship with company performance leading to higher company value (Clarke et al., 2011). A similar study on 64 companies listed on Taiwan Stock Exchange, with data from 1992 to 2002, revealed that intellectual capital had a positive influence on the market value of companies (Chen et al., 2005). Gathering data between 2003 and 2011, a study using the VAIC framework of financial institutions in Ghana found that human capital efficiency and capital employed efficiency had positive correlations to productivity (Alhassan & Asare, 2016).

In South Africa, Firer and Stainbank (2003) tested the relationship between intellectual capital and productivity, profitability, and market share price on 75 listed companies on the JSE. The study concluded that there was a small positive correlation between VAIC and the share price. This set the tone for future investigations as these results were based on a short-term review of only one year, that is, 2001. In a later study, Morris (2015) researched a bigger sample of 390 JSE-listed companies and covered a longer period (2001–2011). The study wanted to establish the influence of intellectual capital on company performance. The research revealed there was a positive association between intellectual capital and earnings.

In a detailed study, Schultz and Molele (2019) used VAIC to investigate the influence of intellectual capital efficiency on company performance among 43 companies listed on the JSE. Using data gathered from 2001 to 2017 and employing panel regression analysis, it was found that very few statistically significant correlations exist within the model. The study could not find any preliminary indicative associations between VAIC and Intellectual Capital Efficiency (ICE). The results indicated no statistically significant relationship was established between VAIC and Return on Assets (ROA). The authors

thus concluded that no significant associations resulted from the empirical analysis concerning the role of intellectual capital as envisaged by VAIC.

Intellectual capital has emerged as an important determinant of company value. The contemporary business environment has witnessed the shrinking of the weight of tangible capitals compared with intangible capitals in the market value of companies (Elsten & Hill, 2017; Levdokymov et al., 2020; Buzinskiene & Rudyte, 2021; Cosmulese et al., 2021). As indicated in Figure 2.6, the percentage of intangible capital in the market value of S&P 500 companies has grown from 17% in 1975 to 90% in 2015 in the USA (Ocean Tomo, 2021).

Figure 2-6: The growth of intangible capital in the USA

Source: Ocean Tomo (2021)

For this study, intangible assets, through the VAIC calculation, were used as a proxy for Intellectual Capital as companies do not report it specifically. The reason could be due to the sensitivity of this competitive asset.

Most of the above empirical studies indicate that intellectual capital influences company performance and company value. In this current study, VAIC was used to construct a model that examined the impact of intellectual capital on JSE-listed companies. The difference from prior studies is that intellectual capital is considered in the IR perspective, where human and relational capital are separate capitals.

2.8   FINANCIAL CAPITAL THEORY

The following sub-sections will cover the background of financial capital theory, explaining how it evolved. A review of some empirical studies on the effects of financial capital on company value will be performed.

2.8.1   Financial capital theory background

Financial capital theory may be traced back to the patriarchs of capital structure in the form of Modigliani and Miller (1958). These scholars developed the financial capital theory through three (3) stages. In their first assertion, Modigliani and Miller (1958) found that capital structure did not affect company value, but rather total assets are the determinant of company value. The theory is also referred to as the irrelevance theory. This claim was based on oversimplified assumptions based on a perfect market with no transaction costs, zero taxes, free flow of market information, homogeneous borrowing rates, and risk-free debt (Modigliani & Miller, 1963).

Upon review of the first submission, the authors came up with the second outcome, that capital structure is related positively or negatively to company value (Modigliani & Miller, 1963). The informative factor that caused the change in approach was the reality of taxation. Governments allow the cost of debt to be deducted as an expense. This creates a tax shield in favour of the company. This led to the conclusion that the level of debt in the capital structure of the company will influence company value, that is, companies with higher levels of debt will get higher tax shields and resultantly higher company values (Modigliani & Miller, 1963).

The above proposition remained in place, encouraging companies to finance investments through debt as much as possible. However, Miller (1977) revised this assertion by considering the effect of the tax rate on company value. Through bringing the tax rate effect, Miller (1977) concluded that companies could work out an optimum capital structure, being a mix of debt, equity and retained earnings, thereby dispelling the notion that higher gearing results in higher company value.

Myers and Majluf (1984) refined the financial capital theory by introducing the pecking order theory. This theory posits that companies have a choice of ranking their capital structure preferences, using the cost of each capital as a guide. Companies with high retained earnings are inclined to use this cheap source of funding before engaging in

external debt. Where possible, companies would then use debt and shift to new equity capital. Each option of capital has a cost attached to it and is used to determine its ranking in the capital structure.

The above theory propositions have been empirically tested to establish their practicality in the real business world. Section 2.8.2 reviews some of the empirical studies that have been done.

2.8.2 Empirical evidence on financial capital

Studies have been carried out to test the relationship between financial capital and company performance, and company value. The empirical evidence is presented in the chronology of the three (3) stages of financial capital theory development discussed in Section 2.8.1.

In an analysis of the impact of financial capital on the performance of companies in the hotel industry in the UK, Phillips and Sipahioglu (2004) sampled 43 companies. The study aimed to test the original Modigliani and Miller (1958) theory proposition that capital structure was irrelevant in determining company value. The study revealed that there was no significant relationship between capital structure and company performance, therefore, confirming Modigliani and Miller's (1958) irrelevance theory. Walaa (2007) studied food manufacturing companies in the United Arab Emirates (UAE), intending to establish the relationship between capital structure and company value. Using regression data analysis on five years of data, the study concluded that there was no evidence of a relationship between the debt-to-equity ratio and company value. This outcome was probably due to the absence of a tax shield on gearing in the UAE. Examining the effect of staggered boards on capital structure and company value in the USA, Jiraporn and Liu (2008) confirmed Modigliani and Miller (1958) when evidence showed that excessive leverage did not increase company value.

To study the relationship between financial capital and profitability in listed companies in Ghana, Abor (2005) used regression analysis on five (5) years of data. The research findings showed a significant positive relationship between the debt-to-assets ratio and return on equity. This result was interpreted to mean that highly profitable companies in Ghana used high leverage as their main source of financing. A study by Zeitun and Tian (2007) on 167 listed Jordanian companies showed mixed results. The company's

capital structure had a significantly negative influence on company performance metrics, while the level of short-term debt had a significantly positive impact on company value (using TobinQ and panel data analysis). In a study of non-financial listed companies in Nigeria, Onaolapo and Kajola (2010), using panel data and Ordinary Least Squares estimation, found that debt ratio had a negative relationship with these as surrogates for company performance; Return on Assets (ROA) and Return on Equity (ROE). Wenjuan et al. (2011), in a study of Chinese non-state-owned entities, confirmed that managerial ownership had no impact on capital structure. The analysis further revealed that capital structure in the form of total debts-to-assets ratio negatively influenced company value. A study of Vietnamese fishing companies showed a relationship between debt ratio and company value, indicating that debt structure and company value have a nonlinear relationship (Cuong, 2014).

Abata et al. (2017) studied the impact of the configuration of a company's capital structure and company performance metrics in South Africa. The study was carried out on 136 JSE-listed companies. Using TobinQ and ROA as proxies for company value, the investigation concluded that the total debt to total equity ratio has an inverse relationship to company value. However, the long-term debt to total assets ratio showed a positive relationship to company value (using the same proxies as above). Abata et al. (2017) recommend that companies must strategically decide on their objectives, whether to maximise ROA or ROE; this requires an optimum mix of debt and equity.

For this current study, the influence of financial capital on company value will be tested for JSE-listed companies. Models were developed with market share price return, TobinQ, Economic Value Added (EVA) and share price at book value as proxies of company value. The proxies used for financial capital are the Debt to Equity ratio, Long-term debt to Non-current assets ratio and Total Debt to Total Assets ratio. The debt to Equity ratio measures the weight of debt compared to equity in an entity's financial capital structure. The long-term debt to Non-current assets ratio measures how non-current assets are financed by debt. The total Debt to Total Assets ratio assists in assessing to what extent total assets are financed by debt. Using debt in these ratios and how they relate to company value provides an opportunity to measure

how debt impacts value creation considering the theories discussed earlier, such as (Modigliani and Miller, 1963; Miller, 1977).

2.9   COMPANY VALUE METRICS

Based on the five (5) capitals to be covered in this current study, models will be developed for each capital leading to a penultimate model that will seek to provide an Integrated Company Value approach that addresses the gap in the IR framework. The IR framework currently does not provide a basis for the measurement or valuation of the non-financial capitals and its impact on company value. Company value metrics can be grouped into three broad categories of accounting based, market based and value-based metrics (Erasmus, 2008; Agarwal & Taffler, 2011; Tho, Dung & Huyen, 2021). These categories are discussed below, indicating their advantages and disadvantages, leading to the choice of company value metrics used in the study.

2.9.1 Accounting based metrics

Accounting-based measures are derived from companies' income statements and statements of financial position, and the most common measures include these ratios; return on investment (ROI), return on assets (ROA), return on equity (ROE), return on sales (ROS) and return on capital employed (ROCE) (Tayeh *et al.*, 2015). ROI measures the extent to which the capital invested in the company is covered by the net profit generated in a trading period (Tayeh *et al.*, 2015). The ROI formula is net profit divided by investment. The higher the ratio, the higher the perceived company value.

ROA reflects the efficiency with which assets are utilised to generate operating profit and is calculated using the formula; operating profit divided by total assets. A higher ROA is a signal that a lower asset base is capable of producing high operating profits leading to the intuitive supposition of a high company value. The limitation of ROA is that it ignores the cost of capital that was used to acquire the assets (Wahlen *et al.*, 2011). ROE measures the extent to which owners' equity is covered by operating profit with the formula, operating profit divided by total equity. ROE could be considered at the apex of company performance and firm value ratios. However, it fails to fully capture the value of intangible assets and can be increased only by the company repurchasing its shares (de Wet & du Toit, 2007). The repurchase of own shares is

not real addition to wealth, thus making ROE a flawed metric of company value (de Wet & du Toit, 2007).

ROS is calculated as operating profit divided by sales and is used to demonstrate the strength of operating profit on the sales of a period. While ROS is a good measure of profitability performance, it gives a weak reflection of company value as it does not consider any balance sheet items, such as assets and liabilities, which are critical in value measurements (Warner & Hennell, 2001). ROCE is calculated as operating profit divided by capital employed. Capital employed is determined by total assets minus current liabilities. ROCE indicates the effectiveness with which capital is being utilised by the business to generate operating profit. ROCE becomes an ineffective metric of company value for companies that have high values of unmeasured intangible assets (goodwill and intellectual property) (Tayeh *et al.*, 2015).

The use of accounting-based metrics is considered convenient for analysts and investors since data used in the calculations is available in the financial statements of the company (Tho, Dung & Huyen, 2021). Comparisons between different periods are possible with accounting-based metrics. On the negative, accounting metrics can be manipulated through a deliberate lack of transparency on accruals and deferrals (Tho, Dung & Huyen, 2021). Accounting metrics are ineffective in measuring company risk as they tend to omit the consideration of the cost of the various inputs into the capital structure (Tayeh *et al.*, 2015).

The share price at book value is classified as an accounting metric and is defined as the company's value based on its records as indicated in its statement of financial position (Djalil, Tabrani & Jalaluddin, 2017). The formula for share price at book value is as follows:

$$\frac{Total\ assets - Liabilities - preference\ shares}{number\ of\ outstanding\ ordinary\ equity\ shares}.$$

The importance of the share price at book value lies in that it is the verifiable claim that equity holders have over the company. The share price at book value is a conservative method that measures the company's value in its current status and does not include the value from estimated future cash flows. This metric, however, remains widely used by researchers as a proxy of company value because of its accuracy based on financial statements that are available (Ohlson, 1995; Faghani Makrani & Abdi, 2014;

Djalil, Tabrani & Jalaluddin, 2017). In this study, the share price at book value is used as a company value proxy as part of the proxies supplementary to the main proxy, the market share price. The market share price is covered in the next section under market-based metrics.

2.9.2 Market-based metrics

Due to the susceptibility of accounting data to manipulation by executives running the companies, market-based metrics are gaining prominence as an alternative (Tho, Dung & Huyen, 2021). The market-based metrics use data that is available in the market, and investors have equal access to be able to make informed decisions (Tayeh *et al.*, 2015). Market-based metrics include the Price/Earnings (PE) ratio, Market to Book (MB) ratio, cash flow per share, TobinQ and market price per share.

The PE ratio expresses the confidence of the market in the shares of a company. This measure is calculated using the formula:

$$PE = \frac{Market\ Price\ per\ Share}{Earning\ per\ Share}$$

The market price per share is available from the trade information published by the stock exchange, while earnings per share can be established from the company's financial statements (Wahlen *et al.*, 2011). This makes PE an efficient, practical, and easy-to-use metric. On the negative, this ratio uses historical information (past performance) (Tayeh *et al.*, 2015; Tho, Dung & Huyen, 2021). This creates a challenge for forecasting the present and future value of the company.

The MB also referred to as the Price to Book value, is a ratio that measures the market performance of a company (Tho, Dung & Huyen, 2021). The formula for MB is as follows:

$$MB = \frac{Market\ Price\ Per\ Share}{Net\ Book\ Value\ Per\ Share}$$

With net book value per share as the denominator to the market price per share, MB demonstrates how much the market price covers the book value of the company. An MB of less than one means that the company's market value is lower than its book value (undervalued). If MB is higher than one, the market price is more than the book value, indicating a positive market sentiment about the company's value (overvalued).

46

While the MB ratio is appropriate for measuring market sentiment about the company's value, it does not measure well the values of companies that have intangible assets that are not easily measurable in the balance sheet, such as intellectual capital (Tho, Dung & Huyen, 2021).

The TobinQ ratio also expressed as TobinQ, measures the relationship between a company's market value and the replacement cost of assets. This ratio was initially propounded by Kaldor (1955) and later refined by Tobin (1989).

TobinQ is expressed as follows:

$$\text{Tobin Q} = \frac{Market\ value\ of\ a\ company}{Company\ assets\ replacement\ cost}$$

The underlying assumption of Tobin Q is that the market value of a company is equal to the replacement cost of its assets (Tobin, 1989). Following this proposition, scholars have used Tobin Q as a proxy for company performance and value models (Hejaz et al., 2016).

Tobin Q has been credited as a reliable explainer of the discrepancy between a company's asset book value and its market value – attributing this discrepancy to the goodwill generated by economic booms (Medlen, 2003). This construct is based on the belief that during periods of economic growth, companies will invest in new assets, thus boosting the companies' values. Scholars have used TobinQ to analyse company value and factors that affect it (Wolfe & Aidar Sauaia, 2005; Molele, 2018; Senan et al., 2021). In a study of the impact of IR quality on company value, TobinQ was used as a proxy for company value (Moloi & Iredele, 2020).

In this study, TobinQ is used for measuring how company value is influenced by the different capitals (Human Capital, Manufactured Capital, Social and Relationship Capital and Financial Capital).

Market share price, which is the price at which investors currently purchase the shares of a company, is derived from supply and demand fundamentals that depend on the information that is publicly available. The share price reflects the investors' view on the expected future cash generation of the company and the risks that may arise. While the share price is easily available on the market, the challenge is estimating future cash flows, which are affected by uncertainties, short-term events, and

speculative behaviour by some investors. For this study, the change (returns) of the share price is used as the dependent variable to investigate the impact of the various capitals on company value. This was motivated by the assumption that share price is a close reflection of what investors view as the true value of the company.

2.9.3 Economic Value Added metric

The Economic Value Added (EVA) theory has its origins in classical scholars such as Hamilton (1877) and Marshall (1890) (Daraban, 2017). Contemporary works on EVA include Modigliani and Miller (1963), who used neo-Keynesian economic theory to explain how companies generate value for shareholders. Stern Value Management (2016) created the EVA^{TM} trademark as a tool organisations use to evaluate business performance by maximising value (Daraban, 2017). While TobinQ calculates the weight of a company's assets as a percentage of its market value, EVA relies on how much value the assets have created, thus, EVA encourages the efficient use of assets and not necessarily a high asset base.

The EVA formula is interpreted as a measure of economic profit and considered a more appropriate metric for value created than the accounting profit calculated (Stern Value Management, 2016). The strength of EVA is in its consideration of the opportunity cost of capital as a deduction from Net Operating Profit After Tax (NOPAT).

EVA = NOPAT – CC

Where:

    EVA = Economic Value Added

    NOPAT = Net Operating Profit After Tax

    CC = Cost of Capital = WACC x Invested Capital

    WACC = Weighted Average Cost of Capital

2.9.3.1 Advantages of EVA

The following are the advantages of EVA:

- EVA revolutionised management and employee thinking by emphasising that shareholders needed compensation for their capital commitments through the

cost of capital calculation. This enhanced the value creation concept (Girotra & Yadav, 2001).

- With the inclusion of EVA, a business's true economic profit becomes clear, removing the misconstrued viability of companies based on accounting profit – accounting profit is subject to accrual accounting adjustments which make it unreliable (Vasilescu & Popa, 2011).

2.9.3.2 Disadvantages of EVA

The following are the disadvantages of EVA:

- EVA is suitable for short-term company performance measurement, thus lacking long-term forecasting capability that is important for start-up companies and companies that are in intensive capital expansion projects (Daraban, 2017). However, EVA remains powerful for historical analysis.

- EVA may cause distorted conclusions on value-added during high inflation regimes (Daraban, 2017). Modern tools for measuring EVA can provide inflation-adjusted EVA.

- EVA is a highly financial metric and lacks the explanatory power to comprehensively deal with value creation that includes the contribution of non-financial capital, hence having the modified Feltham-Olhson model as the lead model.

This study will use EVA as a proxy of company value, and financial capital components (Debt, Equity and Retained Income) will be used as independent variables to test their influence on company value.

2.10   THE FELTHAM-OHLSON MODEL OF COMPANY VALUATION

The Feltham-Ohlson model is a predecessor to the earlier model developed by Ohlson (1995). In the earlier model, Ohlson had proposed that the value of a company was the summation of the share price at the book value of its financial and operating assets and the present value of its future abnormal earnings. The original Ohlson model is also referred to as the Residual Income Valuation Model (RIV) and is expressed as:

$$p_t = bv_t + \sum_{T=1}^{\infty} R_f^{-T} E_t[\tilde{X}_{t+T}^a]$$

Where P_t = company stock value at a particular time $_t$

bv$_{t=}$ share price at book value of company assets (financial and operating) at a particular time $_t$

X^a = abnormal earnings (residual income) at a particular time $_t$

R_f = risk-free rate prevailing at a particular time $_t$

Et = earnings at a particular time $_t$

The Ohlson model assumes that company value is a linear function of the share price at the book value of equity and the present value of its abnormal future earnings. This inferred that the difference between market value and accounting value is the present value of the abnormal future earnings.

Although the Ohlson model had indications of strong explanatory power, it lacked a full decomposition of the market value of the company. The market value of a company is calculated as the total number of shares issued multiplied by the share price at the stock exchange. It was apparent that there were additional factors that investors considered, which influenced company value. This query on the Ohlson model gave the impetus to developing the Feltham-Ohlson model (Feltham & Ohlson, 1995). The two (2) scholars introduced an additional variable, other Information, to the original Ohlson model. The purpose of Other Information was to account for the unexplained gap that continued to exist between the market value of the company and the value derived from the Ohlson model. The other information may be interpreted as the extra goodwill investors consider, which valuation models failed to identify. The Other Information was valued using Linear Information Dynamics (LID). The LID is expressed using the following equation:

$$\tilde{v}_{t+1} = \gamma v_+ + \tilde{\varepsilon}_{2,t+1}$$

Where V_t = information other than abnormal earnings at a particular time $_t$.

V = parameter persistence for information other than abnormal earnings to evaluate the sustainability of information other than abnormal earnings.

$\acute{\varepsilon}_2$ = the terms of stochastic errors assumed for having mean zero and normal distribution.

The Feltham-Ohlson model, therefore, becomes a combination of RIV and LID. The combined model is expressed as the following linear function:

$$p_t = bv_t + \alpha_1 X_t^a + \alpha_2 v_t$$

Feltham and Ohlson (1995) concluded that company value is a linear function of the share price at the book value of equity, the present value of abnormal future earnings and Other Information.

2.10.1 Application of the Augmented Feltham-Ohlson model in this study

IR has recognised that apart from financial capital, the other five non-financial capitals are vital in determining company value. Despite this recognition, there is no agreed methodology within the IR framework for measuring and valuing the non-financial capitals. Some of the non-financial capitals are tangible, while others are intangible. Table 2.6 shows the different capitals, the suggested proxies and variables for each capital and the authors who used these proxies in previous studies.

Table 2-6: Summary of the five capitals and possible variables/proxies

Construct to be measured	Proxies	Variable for the proxy	Previous studies authors
Stakeholders (Social and Relationship Capital)	Employees	Staff Costs as a percentage of revenue (Excluding directors' costs) **Data source:** Income statement lines 060 and 345 in published JSE financial statements recorded in the IRESS database.	Harrison and Wicks (2013)
	Customers	Growth in sales (revenue) Change in sales over two periods expressed as a percentage. **Data source:** Income statement revenue line 060 or line 095 for financial services companies as	Harrison and Wicks (2013)

Construct to be measured	Proxies	Variable for the proxy	Previous studies authors
		recorded in the IRESS database.	
	Lenders	Debt to Equity Ratio **Data source:** IRESS database Financial Ratios report.	Harrison and Wicks (2013)
	Shareholders	Return on Equity **Data source:** IRESS database Financial Ratios report.	Harrison and Wicks (2013)
	Government/Community	Effective Tax rate **Data source**: Income statement line 309 in published JSE financial statements recorded in IRESS database.	Harrison and Wicks (2013)
Agency (Human Capital)	Directors	Directors' Remuneration as a percentage of revenue **Data source**: Income statement lines 060 and 090 in published JSE financial statements recorded in the IRESS database. **Debt to Equity** **Data source:** IRESS database Financial Ratios report.	Ayaz et al. (2021)
Tangible assets (Manufactured Capital)	Buildings, Plant and Equipment	Value of Buildings, Plant and Equipment as percentages of total assets	Saleh (2018)

Construct to be measured	Proxies	Variable for the proxy	Previous studies authors
		Tangible Assets to Total Noncurrent Assets	
		Data source: IRESS database Financial Ratios reports	
Intellectual Capital (Intangible assets)	VAIC	Human Capital Efficiency (HCEit) and Structural Capital Efficiency	Schultz and Molele (2019)
		Data source: calculated using values from IRESS income statements and balance sheet reports.	
Financial Capital (Capital Structure)	Capital structure	Debt Capital to Equity Capital	Stern Value Management (2016)
		Long-term Debt to Non-Currents Assets ratio	
		Total Debt to Total Assets ratio	
		Data source: calculated using values from IRESS balance sheet reports.	
Integrated Company Value	Financial and non-financial capitals	Financial capital, Intellectual Capital, - Human Capital, Manufactured Capital, Social and Relationship Capital	(Harrison & Wicks, 2013; Stern Value Management, 2016; Saleh, 2018; Schultz & Molele, 2019; Ayaz et al., 2021)

Source: Developed for this study and ACCA (2011) and IIRC (2013, 2021)

The challenge or gap in IR that this study seeks to close is that no agreed measurement or valuation model within the IR framework is available for non-financial capitals, especially intangible capitals. A model is necessary that may enable the derivation of "company integrated value", where the contribution of the capitals can be measured, valued, and brought together and reported at different time frames in the same fashion that financial capital is reported through annual financial reports.

This study proposes that an AIRM be used to value the non-financial capitals, assigning them to the Other Information variables as propounded by the model. Empirical studies have been conducted on IR and the Ohlson and Feltham-Ohlson models. One may arguably mention that these studies sought to establish relationships or impacts of the non-financial capitals on market value not in an integrated manner, leaving the quantification and valuation dilemma largely open as the studies did not provide a consolidated model that include all the capitals of the IR framework. Table 2.7 summarises some of the studies on IR using the Feltham-Ohlson model showing their focus and findings.

Table 2-7: Summaries of Feltham-Ohlson model usage in IR studies

Study focus	Setting	Summary findings	Authors
To assess, using the Ohlson model, the extent of IR adoption and how IR disclosure levels affect company value in **Malaysia**	Used 213 publicly listed companies on the **Malaysian Stock Exchange** using data from 2010-2016 (7 years)	The study concluded that the more disclosures the IR report provided, the more IR positively impacted the market value of the companies	Kheong Chin, Munir Juma and Nga (2019)
The study investigated the value relevance of IR on the market value of companies in **Sri Lanka**. The level of IR adoption was tested using the Ohlson model.	39 companies listed on the **Colombo Stock Exchange** that prepared integrated reports complying with the IR framework were selected. The study covered the	The adoption of IR did not significantly impact the market value of the companies as a variable on its own. The Earnings Per Share information tended to have a significant influence on the market value of IR-compliant companies, proving that IR was an	Cooray et al. (2020)

Study focus	Setting	Summary findings	Authors
	years 2016 to 2018	important complement to accounting information.	
To investigate the value relevance of non-financial information reported through sustainability reporting (SR) and IR. The study aimed to find which reporting framework between the two (2) had more relevance to market value.	The study utilised 931 SR company year reports and 922 IR company year reports. The sample was based on stock exchanges in **Europe and Africa.**	The study revealed that SR had a higher value relevance on market value than IR. However, IR showed more value relevance towards complementing financial information. IR enhanced financial information.	Permatasari, Permatasari and Narsa (2021)
This study's objective was to establish the impact of IR adoption on the value relevance of Organisational Capital (OC), which is a part of Intellectual Capital as defined in the IR framework.	The sample for the study was 99 companies listed on the **Johannesburg Stock Exchange** that published IR reports consistently from 2011 to 2015.	The study concluded that OC has a positive significant influence on the value of companies that have adopted IR. The authors recommend more investment into OC to enhance company value.	Tlili, Ben Othman and Hussainey (2019)

Source: Developed for this study, and the authors cited

In a study of 932 companies listed on Borsa Istanbul (BIST), Özer and Çam (2016) used the Feltham-Ohlson model to assess the role of human capital in company value. Through panel regression analysis of data covering 2004 to 2014, the study concluded that human capital positively correlated to company value. This study is important as it enhanced the Feltham-Ohlson model, albeit covering one capital which is human capital. This study has relevance to South Africa as it was carried out in an emerging market. The studies summarised above, and the Özer and Çam (2016) study indicate that the Feltham-Ohlson model may be enhanced and used to value non-financial

capital. In this study, four of the five non-financial capitals, together with financial capital, will be considered. This is more detailed than the previous studies that looked at selected capitals.

Figure 2-7: The theoretical framework (lens) overlap

The theories, as depicted in Figure 2.7, are each linked to a related capital as propounded by the IR framework and the discussions above.

2.11   CHAPTER SUMMARY

This chapter gave an overview of the frameworks, concepts and theories that build the IR phenomenon and the prospects of enhancing it through the quantification and valuation of non-financial capitals. The different theories were outlined, giving details of their underlying precepts and reviews of empirical evidence around them. The applicability of the theories to this study was covered, showing that company value can be measured using various theories. Valuation models such as TobinQ, VAIC, EVA and the Augmented Feltham-Ohlson model were explained as to how they will be applied in the IR perspective of a company valuation.

The next chapter will be used to cover the literature review on the subject of IR. The literature review will critically evaluate the existing body of knowledge on IR and identify the research gap that this research study seeks to close.

CHAPTER 3: LITERATURE REVIEW – INTEGRATED REPORTING DEVELOPMENT AND KNOWLEDGE GAP IDENTIFICATION

3.1 INTRODUCTION

The previous chapter covered the theoretical framework, looking at the various theories that form the foundation of the Integrated Reporting (IR) concept. The chapter showed that IR developed from the coagulation of integrated thinking, stakeholder, agency and company valuation theories. This chapter examines the existing body of knowledge on IR, tracing its evolution from earlier management reporting frameworks to its current state (EY, 2014). The influence of corporate governance on IR through statutes and codes such as the Companies Act and the King Reports is explained (Government Gazette, 2009; IoDSA, 2016; Cliffe Dekker Hofmeyr, 2020). The philosophy of sustainability reporting is reviewed as an important precursor to the propagation of IR (Rumyana & Bergkamp, 2018). The adoption of IR in different jurisdictions is exposed by reviewing the extent to which IR is utilised (Eccles et al., 2019). The chapter will end with identifying the research gap in the existing literature and discussing how the gap may be closed.

3.2 THE EVOLUTION OF INTEGRATED REPORTING

IR is envisaged as the modern-day pinnacle of corporate reporting (EY, 2014). The corporate reporting timeline has gone through various stages until the adoption of IR. Figure 3.1 gives a schematic view of the developments in corporate reporting over time.

Figure 3-1: The evolution of IR

Source: EY (2014)

Figure 3.1 shows that IR results from previous reporting frameworks are now consolidated into a single concise framework.

Corporate reporting has gone through different regimes, and each period is reviewed in the following sections.

3.2.1 Corporate Reporting (Financial Reporting) 1960s and 1970s

The financial statements regime is allocated for the years covering the1960s and 1970s. During this period, financial statements were considered a significant source of information for investors and stakeholders to know the financial status of the company (EY, 2014). As shown in Figure 3.1, financial statements have, however, remained to this present day, although with additional other reports included from the 1980s to 2020s. According to IAS 1, financial statements are prepared to provide information that could satisfy the requirements of different users with unique needs (IFRS, 2017). The users are categorised into primary and secondary users. Primary

users include capital providers such as investors, banks, suppliers and other credit organisations, while secondary users include government, employees, trade unions, professional bodies and academics (Cascino et al., 2014).

This phase of corporate reporting was mainly guided by legislation in different jurisdictions. In South Africa, financial statements were (are) a legal requirement per the Companies Act (SAICA, 2018). Company law in South Africa has regulated financial reporting since 1861 (DTI, 2004). The Companies Act (as amended) has remained the legislative tool available to regulate the preparation and reporting of financial statements in South Africa.

The technical guideline for the preparation and presentation of financial statements is steered by the International Financial Reporting Standards (IFRS) Foundation. This foundation is responsible for issuing IFRS and International Accounting Standards (IAS). As laid out in IAS 1, a full set of financial statements includes (IFRS, 2017):

- Statement of Financial Position
- Statement of Profit and Loss and Other Compressive Income
- Statement of Changes in Equity
- Statement of Cash Flows
- Notes explaining significant accounting policies
- Notes and management commentary (regulated only from 2010)

3.2.2 Corporate Reporting 1980s and 2000s

The period of the 1980s to 2000s witnessed an increase in the reports that were made part of a company's annual report. The additional reports are management commentary, governance and remuneration, and environmental reporting (EY, 2014).

3.2.2.1 *Commentary*

The presentation of financial statements without a commentary by management became difficult for investors and stakeholders to fully understand the current and future prospects of the company (IFRS, 2018). A management commentary is a report set to provide explanations for the figures that are presented in the financial statements prepared according to IFRS. The report gives more narrative information to users about the company's financial performance, as depicted in the statement of

financial position, income statement and cash flows. Management also outlines its objectives and strategies in this report (IASB, 2010).

Management commentary became part of annual reports from 2002 onwards (EY, 2014). One may notice that the management commentary came about as a corporate best practice during that period because the IASB only issued an official practice statement in 2010 (IASB, 2010). Table 3.1 shows the timeline for the official IASB development of the management commentary.

Table 3-1: Development of the IFRS management commentary

Date	Activity
2002	A project team was formed comprising Canada, the UK, Germany, and New Zealand tasked with formalising the inclusion of management commentary in annual reports.
27 October 2005	The IASB published the Discussion Paper *Management Commentary.*
December 2007	Graduation of the project from research to active agenda.
23 June 2009	IASB published Exposure Draft *Management Commentary.*
8 December 2010	IASB published Practice Statement *Management Commentary.*

Source: IASB (2010)

As shown in Table 3.1, the Practice Statement on management commentary became operational in 2010 not as a mandatory IFRS but as a 'practice statement'. It is mandatory only when it is a requirement in the jurisdiction in which the reporting entity operates (IASB, 2010).

In 2018, the IFRS Foundation began a process of reviewing the management commentary practice statement that was issued in 2010. The revision was triggered by the need to align the management commentary to information coming from a myriad of sources, and such information is perceived as pertinent to the understanding of the long-term development of financial statements (IFRS, 2018). The revised management commentary is expected to be long-term in focus, requiring the outlining

of management's strategy in shareholder value creation in the future, methods and progress of implementing it and its forecasted impact on company value (IFRS, 2018).

This is a bolder move towards making management more transparent in strategies that are in place or being planned so that investors and stakeholders can make informed decisions. The management commentary seems to provide a qualitative explanation of shareholder value creation nonetheless, it lacks the value measurement mechanisms for non-financial capitals hence one of the objectives of this study is to investigate the effect of stakeholders' interests on the company value of JSE-listed companies.

3.2.2.2 Governance and remuneration reporting

The annual report of a company is expected to disclose the corporate governance principles and mechanisms that are followed by the company. Clarifying corporate governance becomes important due to the need to reconcile the agency problem understanding between management and shareholders (Kondlo, 2016). Management views corporate governance as a means of giving them power and independence to run the company's affairs without interference from the shareholders, while shareholders hold the spec that management is their agent whose role is to protect and promote shareholder interests (Kondlo, 2016).

Governance reporting is taking fort in the modern business environment due to the various scandals affecting the corporates. Examples of serious corporate scandals include Enron, WorldCom, Parmalat and Tyco (da Costa, 2017).

Using different companies' annual reports in the UK, PwC (2008) gives guidelines on how governance reporting may be presented in corporate reports. The report structure may have four main sections covering (i) Responsibilities of the BoD, (ii) Composition of the BoD and conduct in meetings, (iii) The BoD's responsibilities with regards to accountability and audits and (iv) Managing relationships with investors. These guidelines are in line with South African guidelines as mandated by the various regimes of the King Reports, as covered in Table 3.2 (IoDSA, 2016, 2021).

Best corporate governance practices are often guided by governance codes in different jurisdictions. In the USA, following the collapse of mega-corporations such as Enron, Tyco and WorldCom, Congress, in 2002, passed into law the Sarbanes-Oxley

Act (Mintz, 2006). Even after the passing of the Act, Mintz (2006) argues that the USA had several gaps to close in the sphere of corporate governance reporting such as the need for more independent directors, with the Chairperson and CEO roles being separate, reduction of the number of boards on which a director can serve and independence of the audit committee. As of 2016, most USA boards were still led by executive chairpersons (Shroders, 2016). Empirical evidence from research on listed companies in America and Germany revealed that a higher proportion of independent non-executive directors had a direct positive correlation to the reduction of risk-taking behaviours by companies (Younas et al., 2019).

In the UK, boards of directors are guided by the UK Corporate Governance Code (Financial Reporting Council, 2016). This code was initially issued by the Cadbury Committee in 1992 and has undergone successive amendments through the work of the Financial Reporting Council (FRC).

- **Governance Reporting in South Africa**

In South Africa, corporate governance reporting is guided by the Companies Act (71, 2008) and the King Codes of corporate governance (Government Gazette, 2009; IoDSA, 2016). The King Codes have become the prevailing corporate governance reporting guideline, having developed from the King I report of 1994 to the King IV report released in 2016 (IoDSA, 2016). The importance of the King reports in South Africa is reflected by their influence on the legislation of the Companies Act (71, 2008). The Companies Act (71, 2008) includes the corporate governance principles contained in King II (SAICA, 2017).

The inclusion of King II principles in the Companies Act (71, 2008) prompted the King Committee to release the King III report, which aimed to bring more alignment with legislation, as demonstrated in the comparison in Table 3.2 below. The King IV report has condensed, simplified and consolidated to only 17 principles, down from 75 in King III (Harduth & Sampson, 2016). While King III was based on the doctrine of 'apply or explain', King IV is based on the stronger precept of 'apply and explain' (PwC, 2017a). King IV radically changed the corporate governance reporting landscape to create some universality across a wider cross-section of entities, such as not-for-profit organisations and local government bodies (Cliffe Dekker Hofmeyr, 2020).

Cliff Dekker Hofmeyr (2020) compiled an 'Areas of comparison' report where they assessed the similarities and differences between King III, King IV and the Companies Act (2008). Table 3.2 is a summary version based on the 17 principles in King IV. It is important to note that while King II has legal backing with some of its principles included in the Companies Act (71, 2008), King III and IV have no legal backing (SAICA, 2017). King IV is not legally enforceable; the Companies Act is also just for listed companies, while the JSE has regulations that do not bind other non-listed organisations.

Table 3-2: Comparison of the principles of the King III and IV Reports

Principle	King III	King IV	Companies Act (2008)
The makeup of the BoD	More non-executive and independent directors	Not changed	Directors to be appointed by shareholders
Independence of Directors	Financial interests and prior and current relationships define independence	Retained but allowing more criteria as determined by the organisation	No guidelines besides the requirement for an audit committee
Chairperson of the governing body	Independent and non-executive. Chairperson cannot be the CEO	Retained	Not regulated
Senior non-executive director	Required if the Chairperson is an executive director	Required irrespective of the Chairperson's status	Not prescribed

Principle	King III	King IV	Companies Act (2008)
Chairperson's involvement in committees	Cannot chair but can be part of the remuneration and risk committees. Cannot be a part of the audit committee. Possible to be the chairperson of the nomination committee.	Retained, the only change is that the chairperson is allowed to be a chair of the risk committee. Allowed membership to social and ethics committee but cannot chair it	Not regulated
Assignment of responsibilities	Delegation principles are provided	Delegation to a member of the board should be in writing with the period specified	Covered by S76(4) and ss5, however, the method of implementation is not defined
Committees of the governing body- General	Formal terms of reference are required and should have a minimum of 3 members	Not changed. Annual report to include the work done by the various committees	Regulation only covers the Audit Committee
Audit Committee	Should have at least 3 members	Not changed	Prescribed and in line with King III and IV
Nomination Committee	Not specifically prescribed. Should be non-executive, and the majority to be independent	All members to be a non-executive, bulk should be independent	Not regulated
Risk Committee	Should comprise executive and non-executive	As mentioned above, the majority are non-executive	At least 3 directors and with one being non-executive
Social and Ethics Committee	Not prescribed but relies on the Companies Regulations	Use Companies Regulation but ensure it comprises	At least 3 directors and at least one is non-executive

Principle	King III	King IV	Companies Act (2008)
		executives and non-executives	
Disclosures on Chief Executive Officer	Remuneration and wide-ranging disclosures also apply to the CEO	Retained but adds the CEO's contract terms and succession plan	Only remuneration disclosure is required
Company Secretary	Required an independent relationship (arm's length) with the executive	Not changed	Functions and responsibilities are regulated, but arm's length relationship is not stated
Shareholders' vote on remuneration	Should be voted for by shareholders at the AGM (non-binding and advisory vote)	Retained with an addition that measures should be implemented if 25% of the vote was against the policy	Not clear on executive directors but regulates the remuneration of non-executive directors. Approval should be by special resolution every 2 years
Group Companies	Relationship between group companies to be regulated by a governance framework	A corporate governance framework to be more detailed	Government frameworks are not given for group companies
Institutional Investors	Excluded	The creation of value and good governance is the obligation of the governing body	Excluded
Sector Supplements	Excluded	Covers municipalities, non-profit entities, pension funds,	Not addressed

Principle	King III	King IV	Companies Act (2008)
		SMEs, and State companies	

The governance and remuneration insights covered assist organisations in compliance and ethical aspects. However, the measurement of the impact of these on company value is not clarified (van Zyl & Mans-Kemp, 2022). This study seeks to address some of the shortfalls by measuring the impact of agency capital on company value.

3.2.2.3 Environmental and sustainability reporting from the 1980s to 2000s

Environmental and sustainability reporting has its foundations in the acknowledgement that the resources used (exploited) by society and enterprises are finite, and accountability is necessary for measures to safeguard the environment and the future of humanity (Jose & Lee, 2007). This reporting started as a voluntary initiative by major corporations as a way of showing commitment and responsibility to the preservation of the environment and has remained in use (Bednárová et al., 2019). Realising the importance of the environment and sustainability in the world, the United Nations (UN) accepted the Brundtland Commission Report of 1987, whose main goal was establishing a link between economic development issues and environmental sustainability (Emas, 2015). The Brundtland Commission defined sustainable development as the responsible use of resources in such a way that future generations will have access to the same (Hoyos et al., 2010).

Global warming and the climate change crisis are heightening the call for sustainability reporting. These have arguably become the world's most crucial topics, as significant steps are being taken by professional bodies, national governments, and NGOs to have a form of regulated reporting. Launched in 1999, the Global Reporting Initiative (GRI) has become the most recognized global organisation that champions CSR in the last decade (Brown et al., 2009). A 2017 study by KPMG revealed that 63% of 100

mega-corporations in 49 countries use GRI reporting guidelines for CSR and sustainability reporting (Blasco & King, 2017).

The GRI has issued 36 broad standards grouped into two categories, Universal Standards and Topic Specific Standards (Rumyana & Bergkamp, 2018). The Universal Standards are compulsory for organisations that use GRI reporting, while the topic-specific standards differ depending on the organisation's industry or sector.

The GRI standards oscillate around six pillars, as shown in Table 3.3.

Table 3-3: The Six GRI Standards

Standard Pillar	Application	Description	Topics Covered
GRI 101	Universal	Foundation	Apply the reporting principles throughout the reporting process – comply with all the reporting requirements
GRI 102	Universal	General Disclosures	Disclose reporting processes and comply with all the reporting requirements. Contextual information to be clearly reported
GRI 103	Universal	Approach by Management	Provide a report explaining the approach for every material topic identified – comply with all the reporting requirements
GRI 200	Topic-specific	Economic	Report on each material topic identified using the corresponding topic identified
GRI 300	Topic-specific	Environmental	
GRI 400	Topic-specific	Social	

Source: Rumyana and Bergkamp (2018)

Sustainability reporting has been accused of putting prominence on environmental and climatic topics and almost setting aside the sustainability of life for poor communities that depend on certain resources (Hoyos et al., 2010). Large global corporations' reports are showing more sensitivity to the environment than to developing countries

or less to communities in the developed world (Jose & Lee, 2007). There is the assertion that sustainability reporting is insufficient in highlighting ecological issues, exposing the suspicion that sustainability reporting is being used to give more power to businesses to maintain the status quo (Milne & Gray, 2013).

The criticisms above and the general dynamism of the corporate reporting movement prompted the various interest groups to look for a more comprehensive reporting mechanism leading to the concept of IR.

3.2.3 The Era of Integrated Reporting 2010 and beyond

From the foregoing sections, one may mention that corporate reporting has been on an evolving path for decades. The reporting process became entangled in numerous standalone reports, which became burdensome for users to understand the desired disclosures, hence integrated reporting gained prominence (Havlová, 2015). The foundations of integrated reporting in South Africa can be traced to the King reports from King I to King IV (IIRC, 2021). Figure 3.2 shows the development of integrated reporting through the various milestones, from the publication of King I in 1994 to King IV in 2016 (EY, 2022). However, it was through King III in 2009 that JSE-listed companies were mandatorily required to publish integrated reports. The timeline depicted in Figure 3.2 shows other important points other than the King's reports. In 2005, South Africa adopted IFRS for JSE-listed companies, harmonising with global financial reporting regulations. In 2013, the IIRC released the IR framework, which provided principles and guidelines for integrated reporting. Integrated reporting was strengthened with the publication, in 2016, of King IV, which made IR an 'apply and explain' report. This was an improvement from the 'apply or explain' era of King III.

Figure 3-2: Development of integrated reporting

Source: EY (2022)

Globally, IR was spearheaded by the International Integrated Reporting Committee, which later became the International Integrated Reporting Council (IIRC) (IIRC, 2021; Deloitte, 2022b). The IIRC was formed in 2010 with a mandate to develop a framework that would assist organisations in providing holistic corporate reporting after the world had experienced the financial crisis of 2008 to 2009 (IIRC, 2020). The IIRC came as a worldwide coalition of various organisations, which include regulators, investors, companies, standards setters, the accounting profession and Non-Governmental Organisations (NGOs) (IIRC, 2021). The IIRC launched the IR Framework in 2013 as a guide to companies to produce a singular integrated report that covers how an organisation utilised its various forms of capital to create value. The ultimate report became the present-day IR report. In June 2021, the IIRC was revamped through its merger with the Sustainability Accounting Standards Board (SASB), resulting in the formation of the Value Reporting Foundation (VRF) to continue with the work of the IIRC (IIRC, 2022).

South Africa had an early lead with IR as the principles of this reporting concept had been included in the King Reports (IoDSA, 2016; Cliffe Dekker Hofmeyr, 2020). While the series of King Reports I and II advocated for including non-financial information in corporate reports, King III came with a clear recommendation for companies to produce integrated reports (Roberts, van Zijl & Cerbone, 2020). Due to companies being unclear on how to implement the recommendations of King III, the Integrated Reporting Committee of South Africa (IRCSA) was formed in 2010 to provide

guidelines. These guidelines were presented in the IRCSA discussion paper of 2011 which provided vital inputs into the development of the IR Framework released by the IIRC in 2013 (Roberts, 2017; Roberts, van Zijl and Cerbone, 2020).

IR has gained traction in recent years, covering major world markets (du Toit, 2017). Although integrated reporting is voluntary in other markets, in South Africa, it is mandatory through regulations of the JSE (Loprevite et al., 2018). Corporations worldwide are beginning to open up to the importance of integrated reporting, and there is a fundamental shift from concentrating on financial reporting, which focuses on financial capital, that consideration of economic, social and environmental factors is also important (PwC, 2019). IR pulls all these factors into a more holistic view of the value-creation (and erosion) process. Organisations pursuing IR do so to benefit from the opportunity to address issues on sustainability and value creation (Chersan, 2017). In the next section, IR implementation in different geographical regions and countries is examined.

3.2.3.1 *Integrated Reporting in the European Union (EU)*

IR's focus on non-financial capitals got support from the European Union (EU), United Nations (UN Global Compact), Global Reporting Initiative (GRI) and Sustainability Accountability Standards Board (SASB) (Sofian & Dumitru, 2017). In October 2014, the EU passed the non-financial reporting directive (NFRD), intending to regulate non-financial reporting by major corporations (with 500 or more employees) (Bochenek, 2020). Although the EU did not specifically mention IR in the directive, the focus points in the document align with IR. The IR framework mentions that any report addressing the issues listed below will be considered an IR (IIRC, 2021). The directive requires the target organisations to report on the following (Bochenek, 2020):

- The reporting entity should give an overview of its business model.
- An outline of the policies pursued by the business in fulfilling its mandate. These policies are around environmental preservation, corporate governance, societal and worker topics, upholding human rights and avoidance of corruption and bribery.
- A report that shows the successes or otherwise of those policies.

71

- A disclosure of matters concerning the business' operations, showing its interactions with various stakeholders.
- The risks faced by the business and how management mitigates the risks.
- The reporting entity should outline its non-financial key performance indicators.

The reportable items cited above are consistent with the guiding principles and content elements of the IR framework (IIRC, 2021).

- **The extent of Integrated Reporting implementation in the EU**

Countries and organisations in the EU are at varying stages of implementing IR. The companies that published IR reports before the 2013 IR framework used the 'One Report' principle (Eccles and Krzus, 2010). Under this principle, any report combines an organisation's main financial and nonfinancial information into a single document (Eccles and Krzus, 2010). At an organisational level, the first company to issue what is considered the first IR report is Novozymes, the Danish enzymes manufacturer that published its report in 2002 (de Villiers, Venter & Hsiao, 2017). Also, a Danish company, Novo Nordisk, followed in 2004, while The Crown Estate of the UK and SAP of Germany and the Port of Rotterdam Authority in the Netherlands all followed suit (de Villiers, Venter & Hsiao, 2017). These companies started issuing IR reports before the official release of the IR framework in 2013.

At a country level, the lead adopters of IR in the EU are the UK (before Brexit), Germany, Spain, France and the Netherlands (Eccles et al., 2019).

Table 3-4: Number of IR Reports in EU countries (2013 to 2017)

Country	2013	2014	2015	2016	2017
United Kingdom	724	794	770	805	754
Germany	561	595	610	661	614
France	446	462	551	565	549
Spain	475	471	517	499	484
Italy	324	334	351	364	365
Sweden	289	289	308	328	330

Country	2013	2014	2015	2016	2017
The Netherlands	299	320	342	332	304
Denmark	146	157	173	170	184
Belgium	155	156	179	161	152
Austria	141	131	146	143	130
Finland	112	114	110	112	121
Others	90	88	101	100	100
Portugal	111	113	105	113	84
Greece	41	43	41	40	54
Poland	51	45	49	46	48
Luxemburg	22	18	27	25	28
Hungary	28	22	21	21	17
Total	**4,015**	**4,152**	**4,401**	**4,485**	**4,318**

Source: *Bochenek (2020)*

Table 3.4 indicates that the UK was leading regarding the number of IR reports. The level of IR adoption has also been analysed by the date a country joined the EU. Countries that had joined the EU by 1994 showed a greater number of IR reports than countries that joined after 1994, and wealthier countries also showed the same pattern (Bochenek, 2020).

IR in the UK is further strengthened by organisations promoting the usage of IR guiding principles and content elements. The Financial Reporting Council (FRC), responsible for setting accounting, auditing, and actuarial standards in the UK, has released a report on the quality of reporting by insurance companies following the UK Stewardship Code (FRC, 2020). The Stewardship Code's principles, although not mentioning IR, are in line with the IR framework (FRC, 2020). The FRC defined stewardship as the process by which management allocates resources and maintains oversight of the organisation's capital to create long-term value for stakeholders (FRC, 2020). Reference to 'create long-term value' is a critical component in the IR

framework. Progress in the implementation of the Stewardship code may then be construed as an indication of progress in the adoption of IR.

Table 3.5 indicates the similarities between the UK Stewardship Code's principles and the IR guiding principles and content elements.

Table 3-5: Comparison of Stewardship code principles and IR principles

Stewardship principle	Corresponding IR Guiding Principle	IR Content element
Principle 1: Signatories ensure oversight of resources and allocation of capital for society to benefit.	Management should have a strategic focus for the organisation	The organisation should maintain relations with the external environment
Principle 2: Signatories' governance, resources, and incentives support stewardship.	Interlinking of information and connectedness of the company's capitals	The company should have a governance structure that supports value creation
Principle 3: Signatories put preference on the interests of stakeholders ahead of their own.	Key stakeholders' interests are well reported	The business model of the organisation is well presented
Principle 4: Signatories ensure that risks are identified and managed	Material factors affecting the business are disclosed	Risk analysis and opportunities are identified and managed for the benefit of stakeholders
Principle 5: Signatories have processes and procedures which are checked to ensure the smooth running of the business's activities	Reports produced are comparable to other organisations, and policies are consistently applied	Management discloses their outlook on the business, showing risks and uncertainties and how these will be managed
Principle 6: Signatories consider beneficiary needs and ensure that business activities are aimed at achieving that	Reports produced are comparable to other organisations, and policies are consistently applied	Management discloses their outlook on the business, showing risks and uncertainties and how these will be managed

Stewardship principle	Corresponding IR Guiding Principle	IR Content element
Principle 7: Signatories are careful with investments and the environment, including climate change topics	Material factors affecting the business are disclosed	Risk analysis and opportunities are identified and managed for the benefit of stakeholders
Principle 8: Signatories ensure that fund managers are held to account	Reports produced are comparable to other organisations, and policies are consistently applied	Management discloses their outlook on the business, showing risks and uncertainties and how these will be managed
Principle 9: Signatories ensure the protection of the value of clients' funds	Reports produced are comparable to other organisations, and policies are consistently applied	Management discloses their outlook on the business, showing risks and uncertainties and how these will be managed
Principle 10: Signatories collaborate with issuers to enhance value for beneficiaries	Key stakeholders' interests are well reported	The business model of the organisation is well presented
Principle 11: Signatories will actively assist issuers to improve the value	Key stakeholders' interests are well reported	The business model of the organisation is well presented
Principle 12: Signatories carry out their responsibilities and rights legally.	The IR should be reliable and complete showing all matters that are considered material, whether positive or negative	IR should objectively explain the extent to which the entity has achieved its strategic outcomes and whether the capitals we effectively used.

Source: IIRC (2013); FRC (2020)

While IR in the EU has the backing of the NRFD legislation, the application of IR by member states is fragmented and not harmonized (Monciardini et al., 2020). The reasons for the lower-than-expected offtake in IR vary from the diverse economic and historical perspectives to multiple country-specific legislations. For example, France has the Grenelle II Law (2010), which puts more emphasis on environmental protection than on IR (Le Roux, 2010). In the UK, the Modern Slavery Act (2015) where the country is prioritising fair labour practices and combating human trafficking ahead

of IR (Monciardini et al., 2020). In both countries, there is no legislative support for IR as it remains voluntary.

3.2.3.2 Integrated Reporting in the United States of America (USA)

The USA's uptake of IR is considered slow because, as of 2017, only 16 companies have submitted IR in the form of the IIRC's framework (Dumay et al., 2017). Apart from the slow uptake of IR, there is an issue with the quality of IR reports published by those USA companies that have adopted IR. In a comparative study of 10 countries, the USA was ranked the lowest in terms of overall IR report quality and disclosure requirements (Eccles et al., 2019). In the study, the researchers analysed integrated reports from 10 countries based on a sample of 50 companies. The IR reports were published for the year ending December 31, 2017, or reporting years ending on 30 September 2018. The researchers then scored IR quality based on how well a country covered the following IR content elements; risks and opportunities, strategy and resource allocation, performance, and outlook (Eccles et al., 2019). As shown in Table 3.6 below, the USA only scored higher than South Korea, Japan, and Brazil on materiality disclosure. On the rest of the comparative scores, the USA had the lowest.

Table 3-6: IR quality comparison of 10 countries

	Overall Report Quality	Materiality Disclosure	Risks and Opportunities Disclosure	Strategy and Resource Allocation Disclosure	Business Performance Disclosure	Outlook Disclosure
South Africa	2.85	2.68	3.00	2.90	2.80	2.88
Netherlands	2.63	2.44	2.84	2.70	2.70	2.68
Germany	2.26	2.16	2.76	2.10	1.80	2.48
France	1.92	2.08	2.00	2.05	1.75	2.36
United Kingdom	1.78	1.96	1.96	1.95	1.70	1.76
Italy	1.76	1.84	1.88	1.80	1.60	1.72
South Korea	1.61	1.64	1.60	1.40	1.50	1.36
Japan	1.38	1.60	1.56	1.25	1.45	0.84
Brazil	1.22	1.60	0.84	1.25	1.45	0.76

	Overall Report Quality	Materiality Disclosure	Risks and Opportunities Disclosure	Strategy and Resource Allocation Disclosure	Business Performance Disclosure	Outlook Disclosure
United States	0.78	0.72	0.48	1.05	1.10	0.20

Source: Eccles, Krzus and Solano (2019)

- **Challenges of IR implementation in the USA**

As the largest economy in the world, the USA is an important country for implementing IR. Smaller markets tend to take clues from the larger markets. However, the implementation of IR in the USA has been negatively affected by the following challenges:

- **Regulated reporting**

In the USA, having experienced some of the world's worst corporate scandals, the reporting environment of the country is highly regulated. While IR is voluntary, organisations tend to comply with the minimum of legal reporting (Eccles et al., 2019). The 10-K report includes a detailed overview of a business's operations, identification of and approach to risks and mitigation, and financial performance (Adams, 2018). The 10-K report is a legal requirement promulgated by the USA Securities Exchange Act (1934) as amended. Looking at the similarities between IR and 10-K reporting requirements, the details contained in the 10-K report could be an offset of the requirements of the IR framework, meaning that organisations may find it easier to adapt to IR. However, there is a risk that companies may consider IR as double reporting and would rather continue with the legally required 10-K report (Eccles, Krzus & Solano, 2019). Table 3.7 shows the correspondence between the content elements of IR and details contained in a 10-K report.

Table 3-7: Comparison of content elements in IR and 10-K

IR Content Elements	10-K Reporting Requirements
The IR should clearly show the interaction of the organisation with its external environment and how it copes with the conditions it works in.	N/A

IR Content Elements	10-K Reporting Requirements
The IR should indicate how the company's governance structures support value creation.	The directorship of the company should be disclosed, explaining their qualifications and roles. The various committees of the board are explained, as well as the directors' commitment to the company's code of ethics.
The company's business model must be clearly explained.	The company should describe its business, mentioning the main products and services that it offers, stakes held in subsidiaries, and which markets it performs its activities
Identifications of risks and opportunities that are likely to impact the organisation's potential in the creation of value.	Disclosure is required of the company's most critical risks, and how they are managed, the explanation covers both systematic and unique risks.
A strategic explanation for the appropriation of resources in a way that guarantees the future sustainability of the entity.	Management Discussion and Analysis of the 10-K report require an explanation of how a manufacturing company manages the resources it uses to ensure sustainability.
IR should objectively explain the extent to which the entity has achieved its strategic outcomes and whether the capitals were effectively used.	The company's capital management must be disclosed, that is, cash and other capital resources. What threats are there to the availability of these capital resources, and how the threats are managed?
IR should give an outlook of the future of the organisation, showing how value will sustainably be created.	N/A
Transparency is required in explaining how the organisation decides on issues to be included in the IR, showing the basis of how they are quantified and evaluated.	Disclosures should be fully given both qualitatively and quantitatively.

Source: US Securities and Exchange Commission (2011); IIRC (2013, 2021)

- **Parallel frameworks**

The USA reporting environment is dominated by other reporting frameworks such as Generally Accepted Accounting Practice (GAAP), Green House Gas (GHG),

Sustainability Accounting Standards Board (SASB), and UN Global Goals. Companies are expected to report on these frameworks, and adding IR as yet another framework may result in reporting fatigue and 'reporting capture' (Flower, 2015).

a)   Addressing challenges of IR implementation in the USA

The challenges of IR implementation in the USA may be addressed through the following:

- **Regulatory appeal**

IR is voluntary in the USA as companies that are using the IR framework are doing so voluntarily, and some, such as ArcelorMittal and Coca-Cola, are global entities that take IR as an international reporting tool (Adams, 2018). To improve IR reporting coverage, regulatory support may be necessary, however, the authorities and businesses, in general, must be convinced that the future of reporting lies with IR (Adams, 2018). This means that there should be a way of ensuring that the single concise IR report covers both regulatory and practice expectations (Eccles, Krzus & Solano, 2019).

- **Rhetorical appeal**

A rhetorical appeal is a strategy to promote one's idea through repeated messages and emotional influence (Dumay et al., 2017). In the current IR environment, the philosophy is considered persuasive but not convincing enough for regulators and practitioners to back it up as a proper replacement for existing reporting and accounting standards. It could be of benefit to demonstrate an improvement in performance by companies that are using the IR framework (Beck, Dumay & Frost, 2017; Dumay & Dai, 2017b).

3.2.3.3 Integrated Reporting in emerging economies

Emerging markets are those markets whose characteristics are in between those of developed economies and developing economies (Techo, 2018). Emerging economies are characterised by sustained Gross Domestic Product (GDP), growing manufacturing and technology sectors and influence on the global economy through trade. Some emerging economies are sorted into blocks such as BRICS, comprising Brazil, Russia, India, China and South Africa, MIST (Mexico, India, South Korea and

Turkey) and IBSA (India, Brazil and South Africa) (Oguz Gok & Gok, 2016). For this section on IR in emerging economies, India, Malaysia, Brazil, and South Africa are considered.

- **IR in India**

IR in India is in its initial stages of gaining prominence over the existing reporting processes (PwC,2017b). A circular issued by the Securities and Exchange Board of India (SEBI) in February 2017 advised the country's top 500 listed companies that in preparing Business Responsibility Reports (BRR), businesses can voluntarily include IR reports. Although Sustainability Reports (SR) have been used in Indian company reports, covering matters such as environmental issues (conservation and pollution) and human rights, IR is expected to profoundly change the face of reporting. IR will broaden reporting to emphasise the link between the capitals of the business, risks and decisions that influence company value over time. Business Responsibility Reports (BRR) have become a crucial part of reporting on issues such as governance, economic, social and environmental matters (Kundu, 2017). Even if some organisations may give different names to non-financial reporting, it is believed that the reports are essentially integrated (Kundu, 2017).

The adoption of IR in India started slowly, with no IR reports in 2010, with about 4% of the country's 135 top companies submitting IR reports in 2016, around five (5) companies (Ghosh, 2019). After the issuance of the SEBI circular of February 2017 that encouraged India's top 500 companies to prepare IR reports, albeit voluntarily, by 2018, the number of companies with IR reports increased to 33 (Mishra, 2020). This is roughly 6.6% of the 500 top companies in India, as listed by the *Economic Times*. One may consider this a low rate of IR adoption (Mishra, 2020).

Of the companies that have adopted IR, a check of their compliance with the framework concerning content analysis and guiding principles revealed a low score level (Mishra, 2020). Out of the 33 companies studied by Mishra (2020), eight showed compliance with the content elements as required by the IR framework. Out of the seven guiding principles, six were examined, and the reporting companies showed a high quality of implementation on reliability and completeness. This is attributed to the high regard given to the external audit of annual reports (Mishra, 2020).

As shown above, there is a slow pace in the uptake of IR in India, and below are some of the reasons for this state of affairs (Abhishek & Divyashree, 2019).

- **Absence of a regulatory framework**

SEBI has encouraged top companies to prepare IR reports voluntarily. Companies consider the preparation of IR as an additional burden to the already existing legal and IFRS reporting requirements. The presence of a myriad grouping of regulators makes it unattractive for reporters to add yet another framework. Without regulatory backing, IR will rely on proven effectiveness to be appreciated as the new tool for corporate reporting. IR implementation can improve if regulators are convinced with IR and issue mandatory instructions for companies to comply (Abhishek & Divyashree, 2019).

- **Reporting complexity with changes in technology**

Major companies in India have accepted technology as an important way to reach the market. This is done through digitising retail channels, artificial intelligence, and big data utilisation. It is difficult for IR to gather transparent and enough reporting capability to cover all these complex aspects (Abhishek & Divyashree, 2019).

- **Different non-financial reporting requirements in the states**

India comprises different federal states, and reporting requirements are not the same. This is mostly concerning non-financial reporting on issues such as emissions and the environment (Abhishek & Divyashree, 2019).

- **IR in Malaysia**

Malaysia is considered part of the outperforming emerging economies in Asia (CNA, 2018). IR has received acceptance in Malaysia through the involvement of key stakeholders in corporate reporting in the country. Organisations that have demonstrated keen enthusiasm for IR include the Malaysian Institute of Accountants (MIA), Securities Commission Malaysia (SCM), and the Malaysia Association of Certified Public Accountants (MACPA) (Mohammed et al., 2020). The MIA, one year after the IIRC released the first IR framework in 2013, formed the Integrated Reporting Steering Committee (IRSC) to actively promote the roll-out of IR in Malaysia. Business in Malaysia has embraced IR as a way of enhancing integrated communication, promoting more holistic accountability and increasing corporate reputation (Amirrudin

et al., 2019). This section reviews the literature on the level of IR awareness in Malaysia, a comparison of voluntary disclosure before and after the introduction of IR, the challenges in adopting IR and suggested solutions to overcome the challenges.

b)   The level of IR awareness in Malaysia

IR is voluntary in Malaysia. In 2017, the SCM issued the Malaysian Code on Corporate Governance (MCCG). The code comprises best practices aimed at improving corporate accountability and transparency. Through the MCCG, listed companies on Bursa Malaysia with a market capitalisation of RM2 billion or more are encouraged to prepare integrated reports as part of their annual reporting. Bursa is Malaysia's stock exchange. Since the issuance of the MCCG, there has been an improvement in the level of IR among Malaysian-listed companies (Hamad *et al*., 2022).

The improvement in IR awareness and implementation is evident in the content elements of the various IR reports issued (PwC, 2018). Table 3.8 below shows the change (improvement) in IR awareness of Bursa Malaysia's Top 50 companies by market capitalisation.

Table 3-8: Content Elements awareness and reporting by Malaysia's Top 50 companies

Content Element	2016	2018
Corporate governance – Board of Directors (BoD) attitude to IR	80%	85%
Corporate governance – Disclosure of the BoD's insights into the companies' corporate governance	18%	48%
Performance – Clear identification of KPIs	42%	40%
Performance – Clear link of KPIs to strategy	30%	33%
Strategy and resource allocation – Disclosure of a strategic vision	86%	94%
Strategy and resource allocation – Include strategic priorities in the report	20%	38%
Organisational overview and external environment – Discussion trends in the market	84%	96%

Content Element	2016	2018
Organisational overview and external environment – Linking of strategic choices to market trend discussion	10%	31%
Business Model – Refer to the company's model	40%	50%
Business Model – Clearly link business model to value creation	20%	19%
Opportunities and risks – describe the risk identification process	76%	90%
Opportunities and risks – key risks are disclosed	16%	83%
Business Outlook – IR has a separate CSR section	64%	100%
Business Outlook – Overall business strategy includes sustainability	32%	63%

Source: PwC (2018)

Table 3.8 shows a clear improvement in the extent of IR content elements awareness and reporting between 2016 and 2018, that is, before and after the SCM issued the MCCG (the code of corporate governance).

a) Voluntary disclosure before and after the introduction of IR

As mentioned in the sections above, IR is on a voluntary disclosure basis in Malaysia. A comparison of voluntary disclosure before and after the release of the 2013 IR framework can be used as a measure to determine if IR has had an impact on Malaysian voluntary disclosure.

In a study by Jaffar et al. (2018), IR showed improvement in voluntary disclosure in three content elements, governance, strategy and resource allocation, and outlook. The rest of the content elements regressed compared to the levels before the release of the 2013 IR framework. The results indicate that there is more work required in the promotion of the adoption of IR in Malaysia, with more collaboration between the reporting regulatory bodies, government and professionals (Jaffar et al., 2018).

b) Challenges in the adoption of IR in Malaysia

Since companies and professionals in Malaysia recognise the benefits of implementing IR, there are challenges affecting the effective adoption of IR

(Balasingam, Arumugam and Hui, 2019). The challenges bedevilling IR are discussed below:

(i)   Cost of implementation

IR is still a growing phenomenon in Malaysia, and for an organisation to implement it, there are investment requirements which ensure adequate resources for information measurement and gathering.

(ii)   Information availability

There is a problem with information availability, especially concerning benchmarking and best practices. Organisations have not been gathering information on IR content elements or guiding principles, and this creates a reporting problem due to a lack of trends and references.

(iii)   Lack of knowledge and expertise

As a developing field, IR is not yet embedded in the training curriculum of those in the corporate reporting environment. The training required comes at a cost to hiring the experts.

c) Suggested solutions to overcome the challenges

To overcome the challenges of IR implementation, there is a need for a paradigm shift in how regulators and practitioners view IR. The following are suggestions for how IR adoption and implementation can be accelerated in Malaysia (PwC, 2018).

(i)   Correct mindset and clear communication throughout the business

Organisations should create awareness throughout their structures if IR is to be successfully implemented. The benefits of IR must be explained, removing the conception that it is yet another reporting burden being brought. Promoting the background principle of integrated thinking will assist members of the organisation to appreciate that it is not only the duty of reporters to uphold IR but also everyone who has a role in value creation.

(ii)   Top management commitment

One of the content elements of IR is corporate governance. This aspect requires a demonstration by the BoD and top management that they are committed to the

requirements of IR. Commitment by the BoD assists in clearing obstacles such as resistance to change.

(iii)   Breaking down of organisational silos

IR can only succeed if all the units of the business are coordinated and synchronised towards a common goal. This is the essence of integrated thinking and IR that the business model of the company should be structured in an integrated manner that guarantees value creation over the short, medium, and long term.

- **IR in Brazil**

Brazil has become one of the jurisdictions that have made IR mandatory. In December 2020, the Brazilian Securities Commission (CVM) published Resolution 14, which made it compulsory for listed companies to publish integrated reports from January 2021 (Saboya, 2022).

The adoption of IR in Brazil is mostly because of companies adhering to the listing guideline of the B3 Stock Exchange (the stock market in Sao Paulo). Over 100 companies have successfully adopted IR (Eccles et al., 2019). Before IR became mandatory in 2021, the guideline encouraged IR through the 'report or explain' principle. The Comissão Brasileira de Acompanhamento do Relato Integrado (in English: Integrated Reporting Network in Brazil) (CBARI) actively promotes IR through the efforts of its constituent members such as the Brazilian Institute of Corporate Governance, the Brazilian Association of Listed Companies, the Brazilian Institute of Investor Relations, the Brazilian Federation of Banks, and the Association of Brazilian Executives (Homero, 2017). The membership of CBARI is around 500 and is closely sponsored by the Brazilian Development Bank.

Trend analysis showed an increase in companies that were preparing IR or were 'explaining' why they did not submit IR. The number of companies with no IR reduced significantly between 2012 and 2013 (Favaretto, 2016). In 2013, the IIRC launched a pilot programme in the quest to encourage IR adoption and implementation in Brazil. An analysis of the disclosure levels on non-financial capitals in the IR of participating organisations showed that companies were adopting IR but were not fulfilling the disclosure requirements as per the IR framework. Table 3.9 below shows the

disclosure levels (DL) on non-financial capitals for the years 2013 to 2017 for the participating companies.

Table 3-9: Non-financial capitals disclosure levels 2013-2017

Year	Human Capital DL	Social and Relationship Capital DL	Intellectual Capital DL	Average DL
2013	0.47	0.60	0.32	0.48
2014	0.48	0.53	0.38	0.45
2015	0.37	0.50	0.31	0.41
2016	0.55	0.60	0.29	0.52
2017	0.49	0.53	0.25	0.47
Average DL	0.47	0.55	0.31	0.46
Comment	Unsatisfactory	Satisfactory	Unsatisfactory	Unsatisfactory

Source: Teixeira (2021)

As depicted in the table above, Brazilian companies participating in the pilot programme showed an overall unsatisfactory disclosure level in non-financial capitals. A study to check the trend after the 2021 mandatory IR in Brazil could be necessary.

- **IR in South Africa**

South Africa has been considered one of the early adopters of IR, with the IoDSA being at the forefront through its issuance of the King Reports (IoDSA, 2016). IR became topical when the King III report was released, and enshrined in it was the requirement for JSE-listed companies to prepare IR reports (Roberts, 2017). Under this reporting requirement was leeway for non-compliance as an 'apply or explain' window was available. The King IV report, released in November 2016 as a successor to King III, came with a stronger approach and enforced compliance through the 'apply and explain' basis, a significant change from the previous 'apply or explain' approach in King III (IoDSA, 2016). This resulted in increased uptake of IR in South Africa, as the review of available literature indicates (Dube, 2017; Moolman, Oberholzer & Steyn, 2019; Moloi & Iredele, 2020). This section covers the extent of IR in South Africa, a

sectoral review of IR implementation, the challenges of IR implementation and the way forward.

(a)   The extent of IR implementation in South Africa

South Africa is considered a pioneer of IR in the world. This notion is supported by the JSE mandatory requirement that listed companies should submit IR reports annually. NGOs, municipalities, SOEs and private equity enterprises have adopted IR as the best corporate governance tool (Roberts, 2017). Of the leading countries that have adopted IR, South Africa has the best quality IR reports (Eccles et al., 2019). Table 3.7 shows South Africa had the best scores across the five categories used to measure IR quality. The World Economic Forum's Global Competitiveness Report for 2016 to 2017 awarded South Africa number one for the seventh consecutive year (Roberts, 2017).

Studies on IR in South Africa have indicated a wider corporate acceptance (de Villiers et al., 2017; Matemane & Wentzel, 2019; Moloi & Iredele, 2020). The success of South Africa in IR is based on corporations' understanding and inclusion of the critical components that identify a quality report. EY conducts an annual Excellence in Integrated Reporting Awards 2022 that assesses the quality of integrated reporting by the JSE's top 100 companies (EY, 2022). The companies' integrated reports are ranked, and awards are given in accordance with how well the reports reflect the objectives and fundamental concepts and the guiding principles and the content elements of IR as covered by Tables 2.1 and Table 2.2 in Chapter 2. Table 3.10 highlights the quality focus areas used by the EY Excellence in Integrated Reporting Awards 2022 indicating the companies that managed to be in the top ten rankings (EY, 2022).

Table 3-10: IR Quality focus areas

Quality Item	Best top ten company	Sector
The report layout is good, making it easy to read and use. The report focuses on the key points of value creation, preservation, and	Nedbank Group Ltd	Financial services

Quality Item	Best top ten company	Sector
erosion. Governance disclosures were excellent.		
The report is easy to follow, linking the content elements to the IR story. Stakeholder interests are clearly identified and defined. Value creation is fully explained.	Redefine Properties Ltd	Real estate
Comprehensive analysis of key stakeholders and how they interlink for the value creation of the company.	Netcare Ltd	Health care
Well-outlined, easy to read and clearly explained strategy on how the company will use previous, current, and future relationships and resources to create sustainable value.	Vodacom Group Ltd	Telecommunications
The report has a clear explanation of future sustainable growth. The materiality lens is adequately covered. Resilience and long-term strategies are well laid out. KPIs and their achievements are clearly measured.	Exxaro Resources Ltd	Resources
Balanced, interconnected, and transparent reporting with a clear business model presentation.	Kumba Iron Ore Ltd	Resources
Value creation strategy is clearly reported. The contribution of each capital to value creation is excellently done. Stakeholders are identified, and their value addition defined and reported.	Transaction Capital Ltd	Financial services
The report is precise, and issues are well synchronised, explaining value creation in the short, medium, and long term.	Truworths	Retail
The data in the report is clearly presented, making it easy to read the report. Value creation processes are clearly explained. Strategic objectives are well presented, as well as KPIs to achieve them.	Aspen Pharmacare Holdings Ltd	Pharmaceuticals

Quality Item	Best top ten company	Sector
Value creation is clearly reported. The company's risk profile is transparently shown with mitigation measures.	Impala Platinum Holdings Ltd	Resources

Source: EY (2022)

Table 3.10 indicates the characteristics of a quality report and the best South African companies excelling in those aspects. Good quality reports are expected to have a positive relationship with the sustainability and financial performance of organisations (Moloi & Iredele, 2020).

Empirical studies indicate that of the top 100 JSE companies that use the IR framework, IR quality is closely linked to better sustainability outlook, higher EPS and DPS (Mans-Kemp & van der Lugt, 2020). Moloi and Iredele (2020) studied the impact of IR quality on company value, using TobinQ as a company value proxy, and found that companies with higher-quality IR had superior company values compared with those with lower-quality IR. While the improved financial performance was noted, some organisations showed an initial reduction in profitability due to implementation costs of the IR framework. This was considered a short-term impact resulting in a higher value creation focus in the medium to long term (Matemane & Wentzel, 2019; Mans-Kemp & van der Lugt, 2020). The challenge remaining in these studies is proof that the improved financial performance was a direct result of IR and not a result of long-term strategies already in motion. This study looks at the impact of the capitals as identified by IR, hence giving a clearer assessment of these capitals on company value.

Apart from the potential benefits of IR cited above, the quality of IR in South Africa is motivated by the factors summarised in Table 3.11.

Table 3-11: Factors and determinants of IR quality in South Africa

IR Quality Factor	Determinants
Company Characteristics	Size, Performance, Industry membership. The larger an organisation is, the more it is expected to produce quality and transparent IR reports.
External pressures	Institutional investors, Stock exchanges, Codes of best practice, Peer pressure.
Attitude	The extent to which the principles and objectives of integrated reporting are internalised by management.
Reporting developments	Application of guidelines over time, Revisions to codes of best practice, Regulatory developments.
Change awareness	The extent to which integrated reporting informs changes to business processes and drives sustainable development.
Accountability	Active leadership by those charged with governance, Internal controls, Internal and external sources of assurance
Proactivity	Management and accounting systems, internal controls and reporting protocols and Integrated thinking.

Source: Atkins (2020)

The achievement of quality IR reports is expected to increase firm values as investors and stakeholders become more confident about future value creation, as disclosed in quality reports (Moloi & Iredele, 2020).

(b)   Challenges of IR implementation in South Africa and possible solutions

Although South Africa has emerged as a leading player in IR implementation globally, the country is still on a journey towards IR excellence, and challenges are still there to be overcome.

Sectoral research was conducted on listed South African companies covering mining, construction, oil and gas and general industries (du Toit et al., 2017). The research aimed to establish whether IR changed the amount of reporting on CSR topics. The study concluded that there was a general reduction in the number of information corporates included in their IR reports. Du Toit et al. (2017) opined that the reduction of information on social, environmental, and ethical topics had both a positive and negative inference. Positively, it could mean that the reporters were improving their

report content and becoming more precise. On the other hand, the reduction in the content may construe that reporters were gradually avoiding the demanding requirements of the given IR guidelines and limiting their reporting to a minimum level just to comply (du Toit et al., 2017).

Taking a similar approach to du Toit et al. (2017), Haji and Hossain (2016) analysed the implication of IR on organisational reporting practices in South Africa. The study covered award-winning reporting entities in the mining, financial, oil and gas and consumer services sectors. Haji et al. (2016) found that IR has not significantly improved organisational reporting practices but rather that company reports show an enriched usage of IR rhetoric and language without tangible, substantive reporting on the six capitals as required in the IR framework.

Some of the challenges harming the quality of IR and potential remedies are discussed below (Atkins, 2020).

(c) Lack of gratifying appeal to reporters

Some reporters view IR as a compliance perspective that they must perform to satisfy the legal and regulatory dictates of the various reporting frameworks. The report preparers arguably do not see the real benefit behind IR, and this notion interrupts the opportunities available to organisations to table high-quality reports.

This challenge may be managed through training and more exposure to report preparers for them to see the underlying value of IR as an effective tool in directing the value creation and preservation of an organisation in the short, medium, and long term.

(d) Continued focus on financial capital

Where IR advocates for reporters to focus on financial and non-financial capital, it appears financial capital continues to take centre stage as financial corporate KPIs dominate the measurement of market success. KPIs of non-financial capitals remain auxiliary topics in the reporting discourse.

Financial capital thrives over other capitals because of its measurability. Non-financial capitals' quantification and valuation are not fully developed, hence KPI reporting on

them is difficult. There is a need to develop models that will assist in measuring non-financial capitals so that reporting on them can be easy to interpret for stakeholders.

(e)   Lack of proven IR influence on institutional investors

The advantages of IR have been expounded, however, there is still a lack of empirical evidence to prove that institutional investors give a balanced focus to financial and non-financial capital in deciding on investment targets.

With more emphasis on sustainability reporting, which comes as one of the benefits of IR, institutional investors should be more forward-looking and focus less on the short-term financial status of investment targets. As already mentioned, studies have shown that clear reporting on social responsibility and environmental management has resulted in higher profitability and long-term sustainability of the organisation.

(f)   Fear of reporting 'capture'

Reporters could be of the view that more reporting requirements open organisations to more scrutiny. Organisations may consider their strengths in non-financial capitals as strategic competitive advantage tools which should not be overly disclosed for fear of being copied by competitors and potential entrants. The requirements for more transparent reporting may result in reporting fatigue by both reporters and assurers.

There is a need to show that IR is not there to inflate reporting requirements but to integrate reporting into a single, more concise report.

(g)   Stakeholder activism not so pronounced

IR is being promoted as a reporting platform that needs to satisfy the reporting needs of multi-stakeholder groupings. There is no evidence currently which shows that IR matters to other stakeholders who are not holders of financial capital. The demand for quality IR by stakeholders is not demonstrated through forms of activism where the delivery of such reports is insisted upon.

Stakeholder awareness of IR is crucial to allow them to play a pivotal oversight role that will push organisations into more transparency on financial and non-financial capitals.

(h)   Lack of IR expertise in organisations

The reliance on consultants in preparing IR reports leads to reporting practitioners in organisations considering IR as an outsider's report and not part of their regular duty. Organisations have not adequately invested in IR training to allow their employees the capabilities to prepare their quality IR reports.

Companies are required to invest in IR training of their reporting practitioners to create 'local' ownership and responsibility for IR and the management of its associated KPIs. When the KPIs are established, this creates the opportunity for comparing and contrasting different organisations, sectors, or countries. These comparisons will enable organisations to benchmark and identify areas of improvement.

3.2.3.4 Comparison summary for integrated reporting implementation in different countries

IR implementation across different countries has been covered in the sections above. Table 3.12 summarises these sections, comparing these main issues: corporate governance, legislation, investor protection and level of economic development.

Table 3-12: Comparison summary of IR and supporting frameworks in different countries

Reporting Jurisdiction	Corporate Governance Codes	Legislation	Investor Protection	Level of Economic Development
EU	UN Global Compact, Global Reporting Initiative, Sustainability Accountability Standards Board	Non-Financial Reporting Directive passed by EU Parliament in 2014, Frances's Grenelle II Law (2010) and Devoir de Vigilance law, UK's Modern	(a) IR framework and Stewardship code (in the UK) (b) European Securities and Markets Authority is empowered by the EU to issue regulations that protect investors.	The more advanced economies in Europe have higher IR implementation. Countries that joined the EU later have lower IR implementation levels (Bochenek, 2020)

Reporting Jurisdiction	Corporate Governance Codes	Legislation	Investor Protection	Level of Economic Development
		Slavery Act (2015)	Companies must disclose enough information on value creation and how investors will earn their returns.	
USA	GAAP, UN Global Goals, Green House Gas, Sustainability Accountability Standards Board	US Securities Exchange Act requires the annual submission of the 10-K report	Sarbanes–Oxley Act (2002) (Public Company Accounting Reform and Investor Protection Act	Although the USA is the world's largest economy, it has the least implementation level out of ten countries studied (Eccles, Krzus and Solano, 2019)
India	(a) Voluntary IR as requested by the SEBI in 2017 for India's top 500 companies. (b) Business Responsibility Reporting	None, IR is voluntary	SEBI provides regulations for the financial and securities market that protect investors.	India is an emerging economy. IR is still in the developing phase
Malaysia	Malaysia Code on Corporate Governance (2017)	None, IR is voluntary	The Capital Markets and Services Act (2007) promulgated to give guidelines to the financial and securities market on	Malaysia is an emerging economy. IR is still in the developing phase

Reporting Jurisdiction	Corporate Governance Codes	Legislation	Investor Protection	Level of Economic Development
			protecting investor interests.	
Brazil	Integrated Reporting Network	None, IR is on a 'report or explain' principle	Brazilian Securities and Exchange Commission (CVM) is empowered to issue regulations to protect investors and punish non-complying companies.	Brazil is an emerging economy. IR is still in the developing phase
South Africa	King IV report	Companies Act (2008), IR is a mandatory listing requirement for JSE companies	Protection of Investment Act (22, 2015) was passed into law to guide foreign investors and state relations.	South Africa has the best IR maturity level (de Villiers, Hsiao and Maroun, 2017; Roberts, 2017; Eccles, Krzus and Solano, 2019)

3.3 INTERNAL AUDIT AND THIRD-PARTY ASSURANCE: THE ROLE OF AUDITING IN INTEGRATED REPORTING

The auditing profession can add more value to assessing whether organisations claiming to be reporting according to IR are following the framework. ISA700, the International Standard on Auditing, which deals with forming opinions and reporting on financial statements, gives auditors a guideline on how to express an opinion on the financial statements of an organisation (IFAC, 2016).

The external audit function is mainly engaged to give a view on whether the annual statements of an organisation are prepared and presented following IFRS and the Companies Act. From this, it is probably noticeable that external auditors are exempt

from expressing opinions on non-financial reports incorporated in an integrated report (the five non-financial capitals). This leaves users of integrated reports without an independent opinion on the integrated reports prepared by the BoD (Briem & Wald, 2018).

With the advent of IR, auditing companies have become involved in various projects in the discipline. Is this a realisation by the auditing profession that the traditional financial report audit is no longer sufficient to satisfy stakeholders? Table 3.13 below summarises the activities the big four auditing companies have undertaken on IR topics.

Table 3-13: IR Projects by auditing companies

Company	Activity	Source
EY	• Awards companies excelling in IR through the annual EY Excellence in Integrated Reporting	(EY, 2022)
PwC	• Publication of PwC South Africa's own annual report in the IR framework format	(PwC, 2022)
	• Offering IR implementation services to companies through PwC's Advisory and Assurance Services	(PwC, 2022)
Deloitte	• Provides training programmes on IR to directives through the Deloitte Africa Centre for Corporate Governance	(Deloitte, 2022a)
	• Carried out an Overview of Integrated Reports for 120 companies	(Deloitte, 2018)
KPMG	• KMPG South Africa publishes its Annual Report in the IR framework	(KPMG, 2023)
	• Published the KPMG Survey of Business Reporting, where 270 companies were surveyed for weaknesses and good practices	(Blasco & King, 2017)

Source: Different sources as contained in the table

The involvement of audit companies in advisory and consulting services has raised the call for separating these activities as independence. The objectivity of the audit function becomes an issue as the client base for audit and consultancy is the same

(White & Miller, 2020). Audit companies do management consultancy, mergers and acquisitions, taxation, business processes, and perform audits. This raises the self-evaluation question as the same audit firms carry independent audits and consultancy work for the same clients.

(a) Separation of auditing and consulting

The question of third-party assurance required for IR has opened pressure for the split of audit and consulting functions. The conflict of interest is that the same companies consulting in the setting of IR framework reporting provide auditing services for them. In the UK, the government requested the Competition and Markets Authority (CMA) to carry out a study on the audit services market (CMA, 2019).

The challenges facing the auditing profession border around public trust, with corporate failures occurring even when the audit has reviewed the financial status of the company. The public and other stakeholders perceive the audit function as an early warning sign that alerts them of existing and impending corporate challenges likely to affect company value. Carillion Plc, Wildcard AG, and BHS failures have strengthened the case for the split of audit and consultancy (CMA, 2019; White & Miller, 2020).

The weaknesses of the continued combination of audit and consultancy are summarised below:

- Lack of quality in audits conducted by the major audit companies (CMA, 2019).
- Inadequate regulation of the conduct of audits (Financial Reporting Council, 2018).
- Audit companies receive a higher portion of their revenue from consulting than from audit, thereby raising a conflict of interest (White & Miller, 2020)

Recommendations for the split of audit and consultancy include the following:

- A clear operational split of audit and consultancy work by the Big Four (PwC, KPMG, Deloitte, and EY). This will help increase the focus on Audit Quality (CMA, 2019).
- Declaration of audit revenues separately from consultancy to avoid cross-subsidy of audit work by other functions (White & Miller, 2020).

- Mandatory joint audits promote choice among clients and improve audit quality (CMA, 2019).

- The regulator to review the progress of the recommendations in five years (CMA, 2019)

- The Financial Reporting Council has given the Big Four up to 2024 to implement the split (White & Miller, 2020).

Potential research points may include an auditing framework for IR and a clearly defined role of independent auditing in the IR environment.

3.4   CRITIQUES OF INTEGRATED REPORTING

IR came intending to produce concise reports that give concrete information on the social, environmental and ethical statuses of the reporting entities (du Toit et al., 2017). Offsetting the earlier gains in IR, the amount of information in IR reports is declining, and there is a general lack of concrete information necessary to satisfy readers and users of the reports (Stone & Lodhia, 2019). The situation is exacerbated by the lack of clear guidelines from the IR framework regarding how much information should be included in an IR report (du Toit et al., 2017).

3.4.1 IR quality issues

IR reporting tends to dwell on generic risks and omit company-specific risks (Kılıç & Kuzey, 2018). One opinion is that IR reporters still lean toward the retrospective mode and focus on positive issues while avoiding negative information affecting the organisation (Kılıç & Kuzey, 2018). Concurring with the previous view, the IR framework lacks a robust method to prevent organisations from covering poor organisational performance by making the reports long and unreadable (Melloni et al., 2017). A review of IR concluded that the reports lacked clarity and readability and were not comprehensive enough (Stone & Lodhia, 2019). Eventually, the reports become non-compliant with the 'concise' principle of IR and thereby depriving stakeholders of the expected value of the reports (Melloni et al., 2017).

3.4.2 IR deficiencies compared to other frameworks

In comparison with other reporting frameworks, IR was found deficient in terms of sustainability reporting (Adams et al., 2016). IR still lacks the entrenched approach to

sustainability reporting compared with the GRI and CSR reporting frameworks (Adams et al., 2016). A similar perspective is that IR has not enhanced the quality of corporate reporting (Haji & Hossain, 2016). In a study of JSE-listed companies, Dube (2017) found no association between IR reporting quality and market share price. His use of only the Top 40 JSE-listed companies and one company value proxy (market share price) may have led to this conclusion which is not reflective of the trends in IR where IR quality was found to have a positive influence on company value (Moloi & Iredele, 2020).

GRI, CSR and IFRS have taken inherent positions in the sphere of corporate reporting, and it will be difficult for IR to dislodge them (de Villiers & Sharma, 2016).

Table 3.14 summarises the differences and similarities between the GRI and the IR reporting frameworks.

Table 3-14: Comparison of GRI and IR

	Global Reporting Initiative	Integrated Reporting
Purpose	Report to stakeholders how the organisation is sustainably creating value for the benefit of society	Report to providers of financial capital how the organisation will create value over time
Application	Specifically, to report on sustainability on economic, environmental, and social sustainability facets of the organisation.	Does not specifically refer to sustainability but leans toward providers of capital
Value-adding philosophy	Organisations create value through sustainable practices, and these, in turn, add value for stakeholders, including shareholders, employees, creditors, and society.	While IR has foundations in the King III report, which highlights sustainability, however, the IR framework emphasises value addition through the employment of six capitals.
Accountability	The organisation is accountable to all stakeholders.	IR recognises the importance of stakeholders, however, more focus is on providers of financial capital.

	Global Reporting Initiative	**Integrated Reporting**
Number of reports	Stand-alone sustainability reports.	One concise report covering the financial and non-financial aspects of the organisation.
Report content	Non-financial information	Report on financial as well as non-financial information
Audience	Stakeholders	Investors and significant audiences
Practice	Mostly voluntary	Mostly voluntary
Institutional support		Mandatory for JSE-listed companies
Mutual recognition	GRI considers IR as the convergence of financial reporting and sustainability reporting, organisations can still present stand-alone reports.	GRI is a stakeholder in IR as a formative member of the IIRC

Sources: *GRI (2013), IIRC (2013), Herbert and Graham (2018), Eccles and Spiesshofer (2016)*

3.4.3 Objectivity of IR

Some IR reports are found to lack factual and objective presentations about actual events happening in the business entities bringing to question the truthfulness of the reports (Flower, 2015). Some companies show their commitment to adopting the IR framework, but the actual reporting demonstrates that the reporting principles are not fully implemented (Ruiz-Lozano & Tirado-Valencia, 2016).

From the foregoing, one may state that IR is still a developing discipline whose benefits remain to be fully realised. The mentioned deficiencies in IR present an opportunity for further research, and support is needed from practitioners, professional bodies, governments, academics, and other interest groups. The following section will look at the gaps in the current body of knowledge and how this provides room for the current study.

3.5 GAPS IN THE CURRENT BODY OF KNOWLEDGE

The literature review shows that the present discourse establishes a consensus that IR has advantages. It is seen as a critical contemporary tool in bringing more

transparency to how businesses create and preserve value. The corporate entity ceases to be an avenue for shareholder enrichment but rather a platform for stakeholder satisfaction. In as much as the importance of IR in the modern business environment is arguably undoubted, the current body of knowledge has some gaps.

Current knowledge concentrates on highlighting the advantages of adopting IR. However, there are no recommendations offered as to how IR can be standardised. Organisations are largely practising IR voluntarily. In South Africa, IR is compulsory only for listed companies. In other markets, IR shows commitment to improved corporate governance (voluntary reporting with public relations benefits). Stock exchanges in different countries seem to take the lead in encouraging IR, while the legislative frameworks are weak in making IR mandatory.

The measurability of the six capitals on which IR is based is still a challenge apart from the financial capital pillar. There are no standardised explicit methods for interpreting the value addition and preservation attributable to the other five capitals. The non-financial capitals currently lack quantification coupled with no generally accepted metrics to measure them.

The literature reviewed showed a qualitative narration of IR focusing on the quality of IR reports, the history of IR, the advantages of IR, and the consequences of IR on historical business values. Although the IR framework specifically refers to it being used as a tool to report how organisations will add value over time, current literature does not show evidence of organisations that have used IR to predict or forecast the future value of the company. IR is reporting on historical performances, whereas stakeholders would want more information on the future value creation of the company through the employment of the six (6) capitals.

The IR framework mentions that its objective is not to quantify or monetise the value created by the capitals over time or the effect of such created value on the capitals at any point in time (IIRC, 2021).

In consideration of the above, one may state that the IR framework could benefit from enhancement to enable reporters to be able to quantify or measure the value of non-financial capitals at the time of reporting or in the future. The current study aims at closing this gap.

3.6   JUSTIFICATION FOR NON-FINANCIAL CAPITALS INCLUSIONS

The preceding section identified the gaps in the current body of knowledge. The current study contributes to the closing of these gaps through the development of AIRM for measuring the impact of intellectual, human, manufactured and social and relationship capitals on company value. Table 3.15 shows a summary of the four non-financial capitals' status in terms of quantification and valuation and justification for their selection.

Table 3-15: Non-financial capitals inclusion and exclusion criteria

Non-financial capital	IR framework definition	Status of quantification or valuation	Relevance for study	Authors
Intellectual Capital	Organisational, knowledge-based intangibles, including: Intellectual property, such as patents, copyrights, software, rights, and licences • "Organisational capital" such as tacit knowledge, systems, procedures and protocols.	Intellectual capital is intangible capital and has been on a continuous growth trend with the increases in technology. Measurability and valuation are not disclosed completely in the company's statements of financial positions.	Intellectual capital is not fully disclosed in the company's calculated value, although it influences the market value of the company. There is an opportunity to explore the quantification and valuation of intellectual capital so that company value may be more accurate. This capital is therefore included in this study.	(Bose and Thomas, 2007; Marr, 2008; Axtle Ortiz, 2009; Giuliani and Marasca, 2011; Ramanauskaitė and Rudžionienė, 2013; Yu, Wang and Chang, 2015; de Villiers and Sharma, 2016; Dumay *et al.*, 2016; Guthrie and Dumay, 2019)
Human Capital	People's competencies, capabilities, and experience, and their motivations to innovate, including their: Alignment with and support for an organisation's governance framework, risk	Human capital is arguably considered the organiser of the other capitals to sync them into value creation. Current accounting practices consider costs	Human capital is an intangible asset whose quantification and valuation in the IR framework needs development, hence it is included in this study.	(Liebowitz and Wright, 1999; Brazen, 2004; Dakhli and De Clercq, 2004; Fatoki, 2011; Gamerschlag, 2013; Stanko, Zeller and Melena, 2014; Cohen, Hepburn and

Non-financial capital	IR framework definition	Status of quantification or valuation	Relevance for study	Authors
	management approach, and ethical values. Ability to understand, develop and implement an organisation's strategy.Loyalties and motivations for improving processes, goods, and services, including their ability to lead, manage and collaborate.	incurred on human capital as expenses and not as preservation or addition to human capital.		Teytelboym, 2019; Redden, 2020)
Manufactured Capital	Manufactured physical objects (as distinct from natural physical objects) that are available to an organisation for use in the production of goods or the provision of services.	This is tangible capital that can be measured through counting, weighing or some form of measuring. Valuation is possible by assigning costs to the objects during and after the manufacturing process. Challenges arise in measuring the portion of value attributed to manufactured capital	Manufactured capital is included in the study to measure its influence on company value.	(ACCA, 2011; Richard Hicks, 2013; Weisz, Suh and Graedel, 2015)

Non-financial capital	IR framework definition	Status of quantification or valuation	Relevance for study	Authors
		that is not in the organisation's control, such as public infrastructure.		
Social and Relationship Capital	The institutions and the relationships within and between communities, groups of stakeholders and other networks, and the ability to share information enhance individual and collective well-being.	Social and relationship capital comprises both internal and external relationships with relevant stakeholders.	Social and relationship capital is evolving into a significant source of competitiveness as stakeholder influence plays a role in the social license for a business to operate.	(Dakhli and De Clercq, 2004; Fatoki, 2011; Badawi and Battor, 2020)

Source: Developed for this study and authors cited

Considering the above, this study covers four non-financial capitals and how they influence company value. In the IR framework, intellectual and human capital are considered separate stocks of value, however, in other literature, human capital is considered part of intellectual capital. Intellectual capital is interpreted as having three parts: human capital, structural capital and relational capital (Liebowitz & Wright, 1999; Firer & Stainbank, 2003; Van der Westhuizen & Kok, 2006; Yu et al., 2015; Mamun & Aktar, 2020; Torre et al., 2020; Xu & Li, 2020; Yarrow, 2020; Olarewaju & Msomi, 2021). For this study, Intellectual Capital and Human Capital are considered separate capitals in line with the IR framework.

While the study covers the influence of the capitals on company value, Covid-19, which affected the economy in 2020, is included as a dummy variable. Marozva and Magwedere (2021) conducted a study and found that Covid-19 significantly negatively impacted company values. Prior to the Covid-19 pandemic, previous studies established that global pandemics impacted company values negatively (Ederington & Lee, 1996; Capponi et al., 2019; Al-Awadhi et al., 2020).

3.7 RESEARCH QUESTIONS AND HYPOTHESES

Based on the sections covered in Chapters 2 and 3 that gave an overview of the various theories, empirical evidence and how these will be applied in the current study, the research questions and hypotheses are outlined below.

To enable the researcher to address the research gap, research questions and hypotheses are used. Research questions provide a platform from which the researcher sets out a goal to identify and collect data for analysis and interpretation such that new knowledge is created (Mattick et al., 2018). Hypotheses are necessary to give the researcher a preconception of what is supposedly believed to be true, and quantitative research methods are used to test their validity or otherwise (Kumar, 2011). Hypotheses are necessary to give the researcher a preconception of what is supposedly believed to be true, and quantitative research methods are used to test their validity or otherwise (Kumar, 2011).

Research questions (RQ), research objectives (RO) and hypothesis (H) provide a platform from which the researcher sets out on a goal to identify and collect data for analysis and interpretation, such that new knowledge is created (Mattick et al., 2018).

(i) Research questions and hypothesis on Stakeholder (Social and Relationship) Capital

Organisations are corporate citizens existing among stakeholders whose pool of interests includes consumers, investors, regulators, suppliers and the community. How a company operates its business and manages stakeholder relations defines Social and Relationship Capital (IIRC, 2021). The response of stakeholders to a company's entrepreneurial behaviours impacts its value-adding capabilities, especially with the rapid way information gets disbursed through several media platforms.

The importance of stakeholders in value creation was propounded by the classical scholars of Stakeholder Theory, who opined that shareholders do not have the ultimate claim on the company. They assert that stakeholders surrounding the company are the ultimate definers of the success or otherwise of the company (Berle & Means, 1932; Freeman & McVea, 2001; Freeman et al., 2010; Bendickson et al., 2016). A company's stakeholders require accountability, high levels of ethics and corporate social responsibility. With the fulfilment of these, the stakeholders become value-adding partners to the company (Parmar *et al.*, 2010a).

Therefore:

RQ1 (a): To what extent do stakeholders' interests impact company value?

RO1 (a): To investigate the effect of stakeholders' interests on the company value of JSE-listed companies.

H1 (a) null: Stakeholders' interests have no association with company value.

H1 (a) alternative: Stakeholders' interests have an association with company value.

(ii) Research questions and hypothesis on Agency costs (Human Capital)

Human Capital (HC) resides in the faculties of individuals in the organisation through their unique skill set that is vital for carrying out its value-addition mandate (Nuryaman, 2015). In this study, agency costs represented by directors' remuneration are used as a proxy for human capital.

Therefore:

RQ1 (b): How do the stakeholders' (Agents) interests impact company value?

RO1 (b): To investigate the effect of stakeholders' (agents) interests on the company value of JSE-listed companies.

H1 (b) Null: Agency costs (remuneration of directors) have no association with company value.

H1 (b) Alternative: Agency costs (remuneration of directors) have an association with company value.

(iii) Research questions and hypothesis on Tangible Assets (Manufactured Capital)

Abbas et al. (2021) posited that human capital tends to be the initiator of converting other resources into manufactured capital through the usage of financial capital and intellectual capital. The beneficiary of value-added on manufactured capital is the myriad of stakeholders epitomized in social and relationship capital. There is a need to assess the impact or influence of manufactured capital on the company's value creation mandate.

Therefore:

RQ2: What is the relationship between a company's tangible (manufactured) capital and company value?

RO2: Establish the effects of tangible assets (manufactured capital) on the value of JSE-listed companies.

H2 Null: A company's tangible (manufactured) capital has no relationship with company value.

H2 Alternative: A company's tangible (manufactured) capital has a relationship with company value.

(iv) Research questions and hypothesis on Intellectual Capital

Intellectual Capital (IC) has continued to grow as a significant component of the company's intangible capital structure, referred to as the anchor of the contemporary information and knowledge economy (Nuryaman, 2015; Ocean Tomo, 2021).

One may arguably mention that the difference between IC and HC is that IC may be recorded in the company's list of intangible assets, such as copyrights and licences,

while HC, on the other hand, is presumed to be more fluid as employees may change jobs at their convenience.

Therefore:

RQ3: To what extent does Intellectual Capital impact company value?

RO3: Examine the impact of intellectual capital on the company value of JSE-listed companies

H3 Null: Intellectual Capital has no link with company value.

H3 Alternative: Intellectual Capital has a link with company value.

(v)   Research questions and hypothesis on Financial Capital

The <IR> framework identifies Debt, Equity and Retained Income as the components of financial capital. The paradigm shift brought by the <IR> framework is that company value is a composite of the six capitals and not only financial capital (IIRC, 2021). This challenges the classical theorists on company value, represented mostly by Modigliani and Miller (1963), who propounded that company value may be managed through varying the mix of debt, equity or reserves (Knoll, 2018). The following research question and hypothesis will assist in establishing the perception of the impact of financial capital on company value.

Therefore:

RQ4: What impact does financial capital have on company value?

RO4: Investigate the impact of financial capital on the company value of JSE-listed companies.

H4 Null: Financial capital does not have an association with company value.

H4 Alternative: Financial capital has an association with company value.

(iv)   Financial and non-financial capitals

The above research questions and hypothesis looked at the diverse capitals. There is a need to consolidate these into a final research question and hypothesis leading to the creation of the proposed enhanced <IR> framework. The consolidation of the diverse capitals leads to a sum of value referred to as integrated company value (Visser, 2017).

Therefore:

RQ5: How should companies measure and manage financial and non-financial capitals to create value?

RO5: Develop an enhanced IR framework that can be used by practitioners, academics, regulators, and corporate reporting standard setters.

H5 Null: The composite of Financial and non-financial capitals does not influence the integrated company value.

H5: The composite of Financial and non-financial capitals influences integrated company value.

Figure 3.3 summarises the constructs of this study and how they link with the hypotheses leading to the final dependent variable of company value.

Figure 3-3: Proposed conceptual mapping

Source: *Developed for this study*

3.8   CHAPTER SUMMARY

This chapter covered the literature review of this study. The review involved the interrogation of existing knowledge and assertions about IR. A study of the existing literature has revealed that IR is a result of an evolutionary journey of corporate reporting, starting from the time of the classical financial statements through to CSR and ESG up to this recent IR phenomenon. The existing literature clarified that the continuous evolution in corporate reporting is mainly pushed by the desire for increased transparency and objectivity in financial and non-financial corporate reporting. The foundational aspects of IR through the work of King III and IV reports developments around corporate governance and changes in legislation have been examined.

A review of IR implementation across different jurisdictions (EU, USA, and emerging markets) was covered, showing the extent of implementation, challenges faced and suggested solutions to improve. The role of third-party assurance (external audit) in strengthening IR quality was discussed, revealing the conflicted role of audit companies, which offer both assurance and advisory services to the same clients. This has created a case for advocating for the separation of assurance and advisory services.

Even with most of the literature showing the benefits to organisations through the implementation of IR, some authorities have criticised IR as a publicity exercise that lacks efficacy due to the absence of adequate specific legislative backing across the different markets.

In this chapter, the research gaps were identified in the current body of knowledge. The currently available literature is concentrated on the history, reporting quality, extent of implementation and criticism of IR. The measurability and valuation of financial capital are well established, while non-financial capitals are lacking. The gap that this study will address is the quantification and valuation of non-financial capitals and how they influence company value. Consequently, research questions and hypotheses were developed.

The following chapter will cover the research methodology to be followed to gather and analyse the data required to address the research gap highlighted above.

CHAPTER 4: RESEARCH METHODOLOGY

4.1   INTRODUCTION

The preceding chapters and the literature review revealed that IR is still a developing discipline. Stakeholders, among them practitioners and researchers, still grapple with the lack of clarity in the IR framework on the valuation of non-financial capitals and their impact on company value. This has been identified as a gap in the application of IR. This study seeks to address the gap by enhancing the application of IR by measuring the extent of the capitals' influence on company value. The current chapter covers the research methodology followed to resolve the gap mentioned. The research method used to answer and test the research questions and hypotheses is covered. The concepts of reliability and validity, as well as ethical considerations, are clarified.

4.2   RESEARCH METHODOLOGY OVERVIEW

The purpose of the research methodology is to determine how the study was conducted in such a way that the research questions are successfully answered. As depicted in Figure 4.1, the diagram presents a multi-layered research methodology approach in the form of a 'research onion'. The sections below discuss the different layers of the onion (the encircled items are the approaches used in this study).

Figure 4-1: The research layers (methods of choice are encircled)

Source: Saunders et al. (2019), Post Positivism inserted for this study

4.2.1 The post-positivism philosophical paradigm for the study

As indicated in Figure 4.1, this study adopted the post-positivism research paradigm. This paradigm emerged in the 1950s and 1960s, based on the belief that reality and truth are there, however, researchers do not have access to either, hence the seeking of reality is a never-ending process (Hanson, 1958; Popper, 2005).

Alternative paradigms not chosen include positivism, critical realism, interpretivism, postmodernism and pragmatism (Saunders et al., 2019). Positivism takes the philosophical position of natural scientists who believe that reality can be measured, observed and concluded as rules and laws (Onwuegbuzie, 2000; Dudovskiy, 2018). Post-positivism admits to the notion of measurement and observation of a phenomenon but rejects that reality can be confirmed as it can be disproved or falsified in future research (Onwuegbuzie, 2000). Critical realism, while accepting that a phenomenon can be measured and observed, posits that reality is dynamic with changes in society and organisations (Fleetwood, 2005; Reed, 2005; Bhaskar, 2010). The difference with post-positivism is that with post-positivism, reality or truth will never be confirmed as there is always room for error in every research (Onwuegbuzie, 2000; Cresswell & Clark, 2014). The interpretivism paradigm brings the subjectivist approach where research on human beings cannot be the same as research on physical phenomena (Crotty, 1998; Cresswell & Clark, 2014; Saunders et al., 2019). This position is shaped by the belief that reality on human behaviour is influenced by individual experiences and culture from which physical objects are exempt (Saunders et al., 2019). Post-positivists respond to this by stating that research has to be based on facts and evidence regardless of what phenomenon is being studied (subjectivism is not scientific) (Onwuegbuzie et al., 2009; Cresswell & Clark, 2014).

The postmodernism philosophy challenges the traditional approaches to research mentioned above, taking a disruptive stance on current views and arguing that there is always an alternative view that should be explored and considered (Chia, 2009; Cunliffe & Scaratti, 2017; Saunders et al., 2019). Post-positivists do not accept this thought as they believe that reality and truth are there, nevertheless, they cannot be simply finalised (Onwuegbuzie et al., 2009; Cresswell & Clark, 2014). The pragmatism paradigm advocates that research strategy will vary according to the nature of the problem being solved, therefore, a researcher cannot belong to a particular paradigm

but should be dynamic in looking at each phenomenon (Kelemen & Rumens, 2008; Elkjaer & Simpson, 2011; Saunders et al., 2019). While post-positivism does not discard this supposition, the emphasis remains that research has to be scientifically based on facts and evidence (Onwuegbuzie, 2000).

The probable advantage of post-positivism over the other philosophies lies in the position that it advocates for a scientific approach to knowledge gathering (measurement and observation) (Cresswell & Clark, 2014). It further posits that no researcher can claim a certain theory is a reality (Onwuegbuzie, 2000). There is room for error and a chance that a current theory will be disproved (falsified) in the future. Post-positivism creates an open field for the continuous seeking of the truth and reality. From the post-positivism perspective, no theory can be free from criticism. The ontological perspective (nature of reality and truth) of post-positivism is that the finality of reality and truth will never be reached but can only be approximated (Onwuegbuzie, 2000). The epistemology (how do we know what we know) of post-positivism is that knowledge is gathered through direct observation or measurement of a phenomenon (Saunders et al., 2019). Although the post-positivist paradigm posits that a researcher cannot be entirely independent and unbiased from the research process, measures to uphold objectivity should be easy to determine (Onwuegbuzie, 2000; Cresswell & Clark, 2014).

This current study uses the post-positivism paradigm as it allows using the scientific approach (quantitative measuring and testing of hypotheses) as well as the opportunity to look at existing theories to bring new perspectives. This was done by testing hypotheses on the chosen capitals from the IR framework. Post-positivism in the current study is aligned through the measurement of the IR framework through panel regression models, as shall be covered in Section 4.12. Objectivity in this study is steered using secondary data, which comes from audited financial statements that the researcher was not involved in.

(a) Axiology

Researchers are guided by certain values and ethics as they work. Research is considered the process of knowledge creation, and that process should consider methods that will not harm the lives of the research subjects or any other individuals

interacted with (Biedenbach & Jacobsson, 2016). This study was guided by the UNISA code of ethics and the researcher's ethical values. The researcher's ethical values include respect for the privacy of persons, no fabrication or falsification of data, avoidance of plagiarism and acknowledgement of other researchers' work through referencing. With secondary data, the risk of harm to others is minimal. The secondary data is from a legitimate database (IRESS), approved, and hosted by the University. Researcher objectivity is enhanced using secondary data that was analysed through the EViews software; this removes the risk of researcher influence on the data.

After identifying the philosophical approach for the study, the research design is decided, as explained in the next section.

4.3   THE RESEARCH DESIGN

The research design provides the researcher with an opportunity to outline a blueprint of how the study is going to be carried out. It is essentially the framework to be used in executing the research, such as population and sampling decisions, collection and analysis of data in such a way that the research questions are answered (Kumar, 2011; Saunders et al., 2019). The research design should have sufficient rigour to ensure that the study will be objective, valid and reliable (Kumar, 2011). In the research design section, the following key issues are covered: research approach, research strategies, research methods, research time horizon, research techniques and procedures (data collection and analysis), ethical considerations and due diligence.

4.3.1 Approach to theory development – the deductive approach

After identification of the research philosophy to follow during the study, the researcher must come up with a relevant approach(es) to developing the theory. The three approaches used in theory development are deduction, induction and abduction (Saunders et al., 2019).

The deductive approach works where the researcher is interested in a theory that is propounded through the work of others. Using knowledge from the literature review, the researcher designs an approach to test the existing theory. The test evaluates whether the assumptions backing the theory are true. If the assumptions are true, it is believed that the conclusions will also be true. Relevant data is collected, and variables are tested to establish if the assumptions in the literature are valid. The deductive tests

involve the practical implementation of the theory (concepts). Care is required in selecting a sample of sufficient size, which allows a balanced generalisation of the result. The phenomenon identified in one organisation should hold for others in the same sector if the theory is to be declared valid.

For this study, the deductive approach is used as hypotheses will be tested using appropriate methods. In this study, the deductive approach, through using quantitative methods, will reveal the correlations between the dependent variable and the independent variables, as demonstrated in Chapters 5 and 6.

4.3.2 Research methodology of choice – scientific research method and the quantitative approach

The study uses the scientific research method, leading to the quantitative research methodology. The scientific research method is an investigation or enquiry where conclusions and recommendations are driven by data and facts (Kuforiji & Kuforiji, 2016). In using the scientific research method, measures have to be taken to minimise bias and imposition of the researcher's opinions. Cresswell and Clark (2014) identified quantitative research as a scientific method using a post-positivist paradigm and empirical data.

The scientific methodology is chosen due to the following advantages (Cresswell & Clark, 2014; Kuforiji & Kuforiji, 2016);

- It helps with determining the legitimacy of prior theories. In this study, theories identified in the theoretical framework (Chapter 2) will be used to formulate hypotheses that are then tested to check the appropriateness of these theories in the IR phenomenon.
- Specific problems are solved through policy recommendations. The current study will seek to solve the specific research problem as outlined in Section 1.3.
- Researchers can formulate trends and predictions to solve or avoid future problems. This study seeks to answer specific research questions, and practitioners, standard setters, policymakers, and academics will be able to use the research results to solve current and future company valuations and corporate reporting challenges.

The above advantages justify why the researcher chose the scientific research methodology. The researcher believes this methodology is appropriate to adequately address the research problem.

Scientific research follows precise steps to reach conclusions and recommendations. (Cresswell & Clark, 2014; Kuforiji & Kuforiji, 2016). For this study, the following steps are used to satisfy this requirement.

Step 1: Identification and recognition of the research problem. For this study, this step is covered in Chapter 1 (Section 1.3).

Step 2: Develop a theoretical framework. In the current study, this was done in Chapter 2 (Section 2.1, Figure 2.1).

Step 3: Formulate research questions, objectives and hypotheses. Chapter 1 and Chapter 4 of this study address this step (Sections 1.4, 1.5 and 4.10).

Step 4: Develop and design a model giving mathematical or statistical expression for each hypothesis. For this study, panel regression models for each model are covered in Chapter 4 (Section 4.12).

Step 5: Data collection. In the current study, data collection methods (secondary numerical data) are discussed in Chapter 4 (Section 4.6.5.1).

Step 6: Data analysis. This step is covered in Chapters 5 and 6.

Step 7: Discussion of the results of the data analysis from Step 6. Chapter 7 of this study will address this step.

From the steps explained and how they are covered in the chapters of this study, the researcher has the view that the current investigation fits into a scientific study.

4.3.2.1 Justification for quantitative research methodology

The quantitative research approach investigates relationships that exist among variables. The relationships are exposed using numerical, statistical, and graphical analytical tools (Saunders et al., 2019). This study analyses how the selected capitals impact the value of the companies under review.

Guided by the post-positivist philosophy and the deductive research approach, this study matches a construction of knowledge using empirical evaluations. Empirical

evaluations and statements are expressed numerically (Sukamolson, 2007). This study relies on numerical data, with the main dependent variable (company value) and the independent variables (proxies of financial and non-financial capitals) being values obtained from published financial statements and integrated reports.

Using Cresswell's (1994) definition of quantitative research, which states that quantitative research explains phenomena through the collection of numerical data that is analysed by utilising statistical methods, this study's characteristics require quantitative methodology:

- The collection of numerical data: the study involves collecting numerical data for the sample companies for 11 years (2010 to 2020).
- The use of statistical methods to analyse data: the collected data was analysed through descriptive statistics and panel data regression modelling.

From the above discussion, one may conclude that the quantitative methodology is the most appropriate for this study.

4.3.3 The research strategy of choice – secondary data

Having identified the research methodology, the researcher selects an appropriate research strategy. The selected research strategy enables the researcher to collect and analyse data to answer the research questions (Denzin & Lincoln, 2011; Saunders et al., 2019). To support the quantitative research methodology, the archival and documentary (secondary data) research strategy will be used.

4.3.3.1 The archival and documentary strategy

The archival and documentary research strategy refers to collecting data from existing documents. Documents include physical copies, online archives, digitised data, and textual, visual and audio repositories (Symon et al., 2017; Saunders et al., 2019).

This study utilises audited financial statements, integrated reports, and other company documents for companies whose data is available in the IRESS database. Due to them being public companies, the target organisations are obliged by law to publish annual reports. With the upsurge in internet-based publication of company reports, the accessibility of this secondary data is easy and practical. Given that IR is a developing

discipline, a survey research strategy has the risk of not getting the sufficient mass necessary to perform meaningful data analysis, hence it is not used in this study.

4.3.4 Time horizon

The time horizon of a study can be separated into two broad categories, cross-sectional and longitudinal. This study utilised both cross-sectional and longitudinal approaches. The study sample includes panel data on listed companies on the JSE, covering various sectors. Longitudinal data were collected covering the period from 2010 to 2020. The choice of 2010 as a starting year is based on the King III report, which recommended the adoption of IR by JSE-listed companies was released in 2009, thus, 2010 is a logical starting year. The data collection period by the researcher was in 2022, when other companies' 2021 IR reports were still not published. This makes 2020 an appropriate cut-off year. In 2020, Covid-19 became a pandemic in South Africa hence the consideration of Covid-19 as a dummy variable in the regression equations discussed in Section 4.9. This approach necessitates the generation of panel data used in the quantitative analysis.

4.3.5 Data collection

Data collection involves the gathering of information necessary for the researcher to be able to answer the research questions (Dudovskiy, 2018). Data collection procedures can be classified into primary and secondary data collection.

Primary data collection includes the collection of information using quantitative and qualitative approaches. In a quantitative approach, the researcher collects data using tools such as questionnaires that have close-ended questions. The research targets are usually selected using random sampling. In the collection of qualitative data, the researcher can use interviews, open-ended questionnaires, focus groups as well as case studies (Dudovskiy, 2018).

Secondary data collection involves collecting information from published documents, online portals, and internet archives. With the prevalence of internet sources, secondary data collection has become popular because of ease of access, the variety of sources available without geographical limitations and the big quantum of references from which to choose. Care is required in ensuring that the chosen sources of secondary data are reputable and from recent publications.

Table 4.1 shows the advantages and disadvantages of secondary data.

Table 4-1: Advantages and disadvantages of secondary data collection

Advantages	Disadvantages
Saves time and money: Requires fewer resources in terms of time and money. In today's environment, secondary data is readily downloadable, saving time for the researcher to utilise on analysis and interpretation of the data.	**Mismatch of purpose:** secondary data already available could have been prepared for a different purpose than what the researcher wants to use it for. This can make the data inappropriate, and research questions do not get answered. This was managed through careful selection of the data metrics to be used in this study. The metrics are well established and from audited and quality-checked reports.
No risk of privacy violations: secondary data is already in the public domain, thereby removing chances of violating privacy, copyrights, or sensitive information.	**Can be costly:** Data from some specialist organisations may be accessed only after paying a fee. This may prove expensive compared with survey data. For this study, data is from published audited financial statements and Integrated Reports. Data is also extracted from the IRESS database, which is available to UNISA students.
Possibility of longitudinal studies: where comparisons of data from different periods are required, secondary data may be a feasible option.	**Data inconsistency:** data may be different from one report to another, making aggregations difficult. To counter this, reliance is placed on the audit and quality assurance processes of the reporting entities. Reporting is governed by statutes and standards.
Provides comparative data: Secondary data may be used to complement survey data. The strength of secondary data is that it is less subjective as it passes through some assurance processes before publication, e.g. Financial statements are audited independently, while IR contains directors' statements of responsibility.	**Data quality issues:** Some forms of secondary data may lack quality if published by less authentic organisations. This was offset through the quality assurance processes expected of the reporting entities, as referred to earlier.
Chance of discoveries: The analysis of secondary data may bring new	**Presentation of data is affected by an initial purpose:** Secondary data was

Advantages	Disadvantages
insights that preparers and users of the data were not aware of. This is apparent when relationships between variables start to emerge upon analysis of data.	intended for a different purpose than the researchers. The data is not presented in the format desired by the researcher. Newspaper articles, for example, are written with certain opinions that may not be completely factual. This was managed using credible sources of secondary data (audited statements).
Easy to verify because secondary data is available and can be accessed, it becomes easy for it to be verified by other interested parties, different to survey data.	N/A

Source: Saunders et al. (2019)

The advantages of secondary data, in the context of IR and according to the researcher's view, outweigh the disadvantages as the concerned data comes from audited financial statements and professionally prepared IR reports expected to comply with the King IV Companies Act (2008) and IFRS requirements.

For this study, secondary data was collected mainly from the IRESS database. This secondary data is considered valid as it is collected from audited financial reports and professionally reviewed IR.

4.3.6 ssSampling method

The following sections give details of the population and sample for this study.

4.3.6.1 Population description of the study

The population for this study comprises companies listed on the JSE as of 30 August 2021. As indicated in Table 4.2, the population is grouped into industry clusters using the Industry Classification Benchmark (ICB).

Table 4-2: Population of JSE-listed companies

Sector	Total Population	Total Capitalisation ZAR trillion	Sample Capitalisation USD trillion
Technology	21	3.71	0.25

Sector	Total Population	Total Capitalisation ZAR trillion	Sample Capitalisation USD trillion
Telecommunications	8	0.52	0.04
Health Care	10	0.19	0.01
Financials	60	1.70	0.12
Real Estate	55	0.43	0.03
Consumer Discretionary	41	1.34	0.09
Consumer Staples	24	3.67	0.25
Industrials	52	0.41	0.03
Basic Materials	43	4.25	0.29
Energy	13	0.09	0.01
Grand Total	**327**	**16.30**	**1.11**

Source: JSE (2021). Exchange rate R14.66 to USD as of 30 August 2021

Table 4.2 shows the total population of 327 companies with a total market capitalisation of R16.3 trillion (USD 1.11 Trillion). The companies are grouped into 10 sectors.

4.3.6.2 Sample description and size for this study

It is deemed impractical for most studies to adopt a census approach due to the time required to reach the entire population. A sampling approach is considered effective and appropriate as it may provide a representative view of the entire population. There are two main approaches to sampling, probability and non-probability sampling (Saunders et al., 2019). Probability sampling is relevant for survey research as it offers the opportunity to generate a representative sample randomly selected. Non-probability sampling, on the other hand, involves the researcher's judgement in choosing the sample.

For this study, a purposive sampling approach (a non-probability method) on JSE-listed companies was adopted, where 327 companies listed on the JSE were grouped

according to their sectors and the companies were selected, as explained in the next section. This method was selected for this study due to the following reasons;

(i)   Companies that have foreign stock exchanges as their primary listings (55 companies) are not mandated to produce IR similarly to those companies primarily listed on the JSE as they are expected to comply with the reporting requirements of their primary stock exchanges (Dube, 2017; Moolman et al., 2019). Therefore, the target population is narrowed down to 272 companies with the JSE as their primary listing. After excluding the organisations with JSE secondary listing, the following purposive sampling filters were implemented as explained in (b) and (c).

(ii)   126 companies that were listed by 2001 were selected for inclusion. The JSE joined the FTSE Global Classification system in 2002, leading to its capability to release the FTSE/JSE Africa Index Series, which produces indices that are comparable to other exchanges in the world markets (City of Johannesburg, 2018). In the researcher's view, these companies are expected to have matured reporting and stable data trends for the study. Therefore, 146 companies listed after 2001 are excluded.

(iii)   King III report was released in 2009, and the JSE made IR mandatory for reporting starting from March 2010 (Hoffman, 2012). To obtain a consistent mass of data on IR, 2010 becomes a logical starting year for data collection.

This purposive sampling approach yields a sample size of 91 companies after filtering 35 companies with missing data (total population 327 minus 55 foreign primary listings minus 146 listed after 2001 minus 35 with missing data = 91 companies in the sample).

This provided the researcher with 1,001 company years and 14 014 possible observations considering the 14 variables in Table 4.7. The 91 companies in the sample represent 28% of the population. The researcher considers this sufficient for a successful study. Some previous successful studies on non-financial capitals that used JSE companies had samples sizes as follows: Firer and Stainbank (2003) had a sample size of 75, Dzomonda (2020) worked with 32 companies, while Schultz and Molele (2019) used a sample size of 43.

The study is based on JSE-listed companies. All sectors are included in the study as the study is expected to address the IR challenges across all the sectors of the listed companies. Table 4.3 details the sectors and capitals included in the study.

Table 4-3: Industry/sector Inclusion analysis

Non-financial capital	Authors
Sector: Basic Materials/Mining and Energy	
Intellectual capital Pressure to reduce costs is pushing companies in this sector to be more innovative through technology-driven initiatives such as digitisation and automation. This creates an environment for trademarks and copyrights. This sector is highly regulated, making the need for licences and health and safety protocols critical.	(April et al, 2003; Mngadi & Rossouw, 2019)
Human capital Investment in human capital may be a tool for companies in this sector to improve productivity and social development and enhance profitability. Skill level may be a source of competitive advantage.	(Makhubedu et al., 2017)
Manufactured capital This sector requires heavy investments in tangible assets in the form of equipment enabling operations to handle and process materials into finished products. These tangibles include infrastructure, transportation systems and processing systems.	(Fessehaie, 2021)
Social and Relationship capital This capital has an influence on the Basic Materials/Mining and Energy sector given its impact on; Contributions to the national fiscus through taxes paid Provision of social amenities to communities through schools and hospitals	(Starke, 2016)

Non-financial capital	Authors
The need to practice sustainable exploitation of resources	
Sector: Telecommunications and Technology	
Intellectual capital The telecommunications and technology sector in South Africa and the world has gained more relevance due to the increasing need for digital communication and remote workspace. Organisational linkages are possible across the globe, creating value without the need for tangible movement of goods and people. Buoyed by the movement restrictions emanating from the Covid-19 pandemic, intellectual capital in the telecommunications and technology sectors has arguably become more critical for world production and commerce.	(Esselaar, Gillwald and Stork, 2006; Ngwenya, 2017)
Human capital With a close relationship with intellectual capital, human capital may be considered an enabler of the advancement of success of other non-financial capitals. High skill levels are necessary for this sector as it is considered fast-growing and dynamic.	(Esselaar, Gillwald and Stork, 2006; Southiseng and Walsh, 2013; Bouten and Hoozée, 2015; Ngwenya, 2017)
Manufactured capital The increasing demand for telecommunications services in the world requires investment in the necessary infrastructure. Noted investments are in fibre cabling, and masts. Capital expenditure is around 25% of revenue in the sector, and this is necessary to remain responsive to changing technologies and market expectations.	(KPMG, 2015a; Ngwenya, 2017)
Social and Relationship capital The telecommunications and technology sector has made the dissemination of information to be rapid, reaching large numbers of users. Previously unreachable people on fixed telephone lines are now reachable	(Bandias, 2009)

Non-financial capital	Authors
with mobile devices. This has empowered society, therefore, important to telecommunications is not only the consumers but also the society at large, hence social and relationship capital is important for this sector.	
Sector: Consumer Services	
Intellectual capital Intellectual capital in the consumer services sector is increasingly becoming a definer of competitive advantage. Reaching consumers through unique online platforms requires investment in knowledge systems that will enhance customer experience. Digitisation of processes has brought benefits to the sector, such as reduction of space and losses on perishables as consumer demand is easier to manage with online ordering.	(Kianto et al., 2010; Herbert & Arendse, 2021)
Human capital Human capital is becoming more crucial in the consumer services sector as improvements in service channels require high levels of skill and cultural diversification in the quest to reach the global market. Human capital efficiency was found to positively influence profitability.	(Morris, 2015; Deloitte, 2017)
Manufactured capital With the increase in digital channels, manufactured capital, being tangible capital, may decline in significance as the physical infrastructure for customers to access goods and services gets reduced. The current study will examine the relationship between manufactured capital and JSE-listed companies' value.	(Kianto et al., 2010; Herbert & Arendse, 2021)
Social and Relationship capital Stakeholders are interested to know how organisations are enhancing social and relationship capital. In the consumer services sector, social and relationship capital may manifest in how organisations facilitate the	(KPMG, 2015b)

Non-financial capital	Authors
availability of basic commodities to communities, especially the vulnerable. Through networking with local governments, access to basic goods may be increased. The effect of social and relationship capital on JSE-listed companies' value will be evaluated in this study.	
Sector: Financials and real estate	
Intellectual capital Empirical research established that there is a positive correlation between intellectual capital and financial performance in the financial services sector. Using a weighted approach, intellectual capital had the highest weight among the non-financial capitals in banks.	(Mamun & Aktar, 2020; Olarewaju & Msomi, 2021; Aras & Mutlu Yıldırım, 2022)
Human capital The financial services and real estate sector is highly competitive, and investment in human capital is important as success will be defined by the high entrepreneurial skills of the business leaders. The digital and knowledge economy requires continuous skill development for employees to remain abreast with the changing business environment.	(Rahman & Akhter, 2021; Aras & Mutlu Yıldırım, 2022)
Manufactured capital With the increase in digitisation of banking processes (virtual banking), manufactured capital weight or influence in the banking sector is reducing. Investments in tangibles are still necessary for equipment that is required to support intellectual and human capital. Such assets include computer equipment (ATMS) and communication hardware.	(Aras & Mutlu Yıldırım, 2022)
Social and Relationship capital The financial services and real estate sector has an impact on the development of the other sectors of the economy. This makes social and relationship capital important, with various stakeholder interests seeking to	(Aras & Mutlu Yıldırım, 2022)

Non-financial capital	Authors
be satisfied. This capital came second to intellectual capital in a weighted approach to the non-financial capitals for banks in Turkey.	
Sector: Manufacturing and Industrials	
Intellectual capital The manufacturing and industrials sector comprises subsectors varying from food processing, and chemicals to heavy metal processing. Intellectual capital in this sector is vital due to the stiff competition that forces organisations to be cost and quality conscious, and one way of differentiation is through unique intellectual capital points kept in trademarks, copyrights, and royalties.	(de Beer & Barnes, 2003; Wagiciengo & Belal, 2012; Tarigan et al., 2019; Xu & Li, 2020)
Human capital With stiff competition in the global market, manufacturing companies have an opportunity for continuous quality and cost improvement through growing a competent and efficient human capital base. The knowledge residing in human capital should be timeously converted to intellectual capital so that it remains in the company to mitigate the risk that comes with human capital fluidity.	(Kleynhans, 2006)
Manufactured capital The manufacturing and industrials sector depend on physical infrastructure and raw materials to enable the production of products. This tangible capital is used, in conjunction with the other capitals, for the production of various goods. A study of its impact on company value will assist stakeholders in investment planning.	(Suttipun, 2017; Folajimi et al., 2019)
Social and Relationship capital Social and relationship capital in the manufacturing and industrials sector is underpinned by the host of interest groups that companies have to network with to successfully create value. The value chain and the regulators play important roles in this network, with consumerism and clean production being recognisable	(Thi Nguyen & Ha, 2020)

Non-financial capital	Authors
forces. Assessing the effect of social and relationship capital in the manufacturing and industrials sector becomes pertinent.	
Sector: Healthcare	
Intellectual capital The intellectual capital capabilities of healthcare organisations were found to be more accommodated in the skill and knowledge of practitioners than documented protocols and procedures. The healthcare sector has research opportunities on how organisations in that sector can harness and document protocols, procedures and processes that become unique for the organisation and not remain dependent on individuals.	(Veltri et al., 2011; Terner & Halilovic, 2017; Torre et al., 2020; Alfiero et al., 2021)
Human capital Human capital is crucial in the healthcare sector as competitiveness is defined by the competency and skill levels of personnel. Executive decision-makers require a deep understanding of the activities of the business, given the sensitivity of health matters.	(Veltri et al., 2011; Terner & Halilovic, 2017; Torre et al., 2020; Alfiero et al., 2021)
Manufactured capital With the need for the physical handling of patients, infrastructure in the form of wards, beds, and other comfort requirements become important. Advances in technology have allowed the availability of computerised diagnostic and therapeutic equipment, increasing the relevance of manufactured capital in the sector.	(World Health Organisation, 2011)
Social and Relationship capital In the healthcare sector, as much as it may be a business for profit, its purview is to save lives. This attracts social and relational relevance with communities, families and governments. The social and relationship capital is cultivated by trust, communication, cooperation and social inclusion.	(Hofmeyer & Marck, 2008)

Source: Developed for this study, and the authors cited

This study uses companies listed on the JSE to investigate the effect of non-financial capitals on company value. In the researcher's view, no study has investigated the effect of the four (4) non-financial capitals on the value of JSE-listed companies all in one study. This is critical in the formulation of a framework that will enhance IR.RESEARCH INSTRUMENTS FOR DATA COLLECTION

This study utilises quantitative data. Data was collected from the IRESS database (McGregor BFA, 2022). This database provides information extracted from published audited financial statements of JSE-listed companies.

4.3.7 Documentary secondary data collection

Secondary data may be classified into three categories, documentary, survey and multiple sources (Saunders et al., 2019). For this study, reliance is placed on documentary secondary data. Examples of relevant documents to be used in secondary data collection include organisations databases, organisations communications and company reports. With the rapid expansion of internet-based data archiving, obtaining data through searching companies and organisational websites has become a viable research method (Johnston, 2014). In South Africa, JSE-listed companies are required to publish annual Audited Financial Statements (AFS) and Integrated Reports (CorporateContent, 2017). Companies load these reports on their websites, allowing easy accessibility.

Data was collected from company AFS from 2010 to 2020 as loaded on the IRESS database, giving data sets for 11 years.

4.4   DATA ANALYSIS

Analysis of data involves the transformation of collected data and information into meaningful findings and conclusions. This study utilises the quantitative research methodology for data analysis.

4.4.1 Descriptive statistics

Descriptive statistics are used to summarise data gathered on a sample. The data analysis will reflect results about the sample and not necessarily about the population from which generalisation is being sought (Vanlalhriati & Singh, 2015). Relevant data for this study concerning the data to be collected from reports such as company sector

and number of employees. Descriptive statistics applicable to this research are measures of central tendency and measures of dispersion. The measures of central tendency to be used in this study are the arithmetic mean, the median and the mode.

The measures of dispersion include the range, the interquartile range, the mean deviation, the variance, and the standard deviation. The measures of dispersion are important to highlight the reliability of the data set obtained for an observation. The less variability between values, the higher the reliability of the data for the measured criteria, and vice versa. For this study, the mean deviation, the variance, and the standard deviation were used as the researcher considers them more robust than the range and interquartile range, which are more general and not amenable to statistical moderation (Manikandan, 2011).

4.4.2 Inferential statistics – Panel regression data analysis

This study utilised inferential statistics in the form of multiple regressions and correlations. Multiple regressions and correlations measure the relationship between a dependent variable and independent variables (Weiers, 2011).

This study used multiple regression equations where the main dependent variable is the market value of the company while the independent variables are the capitals under consideration; financial, intellectual, human, manufactured and social and relationships capital. The independent variables are derived from proxies that are identified and input into the panel regression models.

The equations for this study used generalised regression models where each capital has equations that are analysed one at a time, using ordinary least squares, taking the form of the following stacked model (Greene, 2012):

$$\begin{pmatrix} Y_1 \\ Y_2 \\ . \\ . \\ . \\ Y_M \end{pmatrix} = \begin{pmatrix} X_1 & 0 & . & . & . & 0 \\ 0 & X_2 & . & . & . & 0 \\ & & & . & & . \\ & & & . & & . \\ & & & . & & . \\ 0 & 0 & . & . & . & X_M \end{pmatrix} \begin{pmatrix} B_1 \\ B_2 \\ . \\ . \\ . \\ B_M \end{pmatrix} + \begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \\ . \\ . \\ . \\ \varepsilon_M \end{pmatrix} = X\beta + \varepsilon$$

Where Y1, Y2 up to YM represent the company value dependent variable while X1, X2 up to XM are the independent variables.

4.4.3 Regression models specification

Regression model specification is the process of determining the independent variables to be included in the model (Allen, 2007). Model specification is an important step in regression analysis that ensures that irrelevant variables are not included in the model and that relevant variables are considered.

The strength of variables to be included in a model is based on theoretical foundations and not necessarily on empirical evidence (empirical evidence is part of the study and cannot be used before the study is actually carried out) (Allen, 2007). For this study, the independent variables for each capital are determined from previous studies (theories), as shown in Table 4.5.

The data collected for this study spanned over 11 years and aimed to measure the relationships between company value and capitals. Using the Feltham-Ohlson model, a panel econometric model, required panel regression data analysis using the EViews software (Özer & Çam, 2016; Schultz & Molele, 2019). There are three (3) models of panel data analysis, which are Pooled Ordinary Least Squares (POLS), Fixed Effects (FE) and Random Effects (RE).

POLS is a statistical regression model that utilises a dataset to find the line of best fit to measure the strength of the relationships between the given data points (Singh & Tandon, 2019). POLS uses the pooled data without consideration of the individual characteristics of the entities that build up the data. This could be a shortfall where econometricians are using data from various entities that have different characteristics.

To overcome this seeming weakness of POLS mentioned above, panel data analysts utilise the FE model. With the FE model, relationships between the dependent variable and the independent variables are tested using regression analysis and the characteristics of data across individual entities are considered (Singh & Tandon, 2019). FE modelling assumes that companies have different characteristics that influence the dependent and independent variables.

Random Effects (RE) models assume a variation in the data sets for the individual entities (random intercept).

Table 4.4 summarises the three-panel data analysis models explained above.

Table 4-4: Summary of Panel data models

Model Type	The model equation	Assumptions
Pooled OLS model	$y_{it} = α + x_{it}β + u_{it}$	Constant coefficients, homogenous data characteristics across the entities
Fixed Effects model	$y_{it} = α_i + x_{it}β + u_{it}$	The data characteristics of the entities are heterogeneous and modelled by $α_i$. assumed to be correlated with explanatory variables.
Random Effects model	$δE (y_i \mid x_i, β = f (-x_iβ) β_j$ $δx_{ij}$ Where $ε_{it} = α_i + e_{it}$ var $(ε_{it)}) = σ^2_α + σ^2_e$ and cov $(ε_{it, εis}) = σ^2_α$	The data characteristics of the entities are heterogeneous and modelled by $α_i$ assumed to be uncorrelated with explanatory variables.

Source: Molele (2018)

4.4.4 Panel regression model for this study

The selection of the appropriate model for this study follows the steps outlined in Figure 4.2.

Figure 4-2: Steps for choosing panel data model

Source: Dougherty (2007)

The model of choice for this study is the FE model due to the following:

- The sample of the companies in the study was selected using a purposive sampling approach. According to the choice steps explained by Dougherty (2007) in Figure 4.2, the FE should be used if data was not randomly selected.

- The companies under consideration are from different sectors, and their characteristics are assumed to be heterogeneous. This leads to the FE model having more explanatory power.

- However, confirmation of the FE model also depended on the outcome of the Hausman test. RE might only be utilised if the Hausman test result is insignificant. If the Hausman test statistic is significant, the FE model will be used (Dougherty, 2007). The panel data analysis model chosen is expected to produce results that confirm or dispute the explanatory power of the components of financial, intellectual, and human capitals over the value of companies in the sample.

4.5   RESEARCH VARIABLES

This section will outline the research variables as displayed in Table 4.5.

Table 4-5: Constructs and proxies for the study

Construct to be measured	Proxies	Variable for the proxy	Previous studies authors
Stakeholders (Social and Relationship Capital)	Employees	Staff Costs as a percentage of revenue (Excluding directors' costs) **Data source:** Income statement lines 060 and 345 in published JSE financial statements recorded in the IRESS database.	Harrison and Wicks (2013)
	Customers	Growth in sales (revenue) Change in sales over two periods expressed as a percentage. **Data source:** Income statement revenue line 060 or line 095 for financial services companies as recorded in the IRESS database.	Harrison and Wicks (2013)
	Lenders	Debt to Equity Ratio **Data source:** IRESS database Financial Ratios report.	Harrison and Wicks (2013)

Construct to be measured	Proxies	Variable for the proxy	Previous studies authors
	Shareholders	Return on Equity **Data source:** IRESS database Financial Ratios report.	Harrison and Wicks (2013)
	Government/Community	Effective Tax rate **Data source**: Income statement line 309 in published JSE financial statements recorded in IRESS database.	Harrison and Wicks (2013)
Agency (Human Capital)	Directors	Directors' Remuneration as a percentage of revenue **Data source**: Income statement lines 060 and 090 in published JSE financial statements recorded in the IRESS database. **Debt to Equity** **Data source:** IRESS database Financial Ratios report.	Ayaz et al. (2021)
Tangible assets (Manufactured Capital)	Buildings, Plant and Equipment	Value of Buildings, Plant and Equipment as percentages of total assets Tangible Assets to Total Noncurrent Assets **Data source:** IRESS database Financial Ratios reports	Saleh (2018)

Construct to be measured	Proxies	Variable for the proxy	Previous studies authors
Intellectual Capital (Intangible assets)	VAIC	Human Capital Efficiency (HCEit) and Structural Capital Efficiency **Data source:** calculated using values from IRESS income statements and balance sheet reports.	Schultz and Molele (2019)
Financial Capital (Capital Structure)	Capital structure	Debt Capital to Equity Capital Long-term Debt to Non-Currents Assets ratio Total Debt to Total Assets ratio **Data source:** calculated using values from IRESS balance sheet reports.	Stern Value Management (2016)
Integrated Company Value	Financial and non-financial capitals	Financial capital, Intellectual Capital, -Human Capital, Manufactured Capital, Social and Relationship Capital	(Harrison & Wicks, 2013; Stern Value Management, 2016; Saleh, 2018; Schultz & Molele, 2019; Ayaz et al., 2021)

Source: Developed for this study, and the authors cited

(a) Usage of Debt/Equity on Stakeholders, Agency, and Financial capitals

The debt/Equity ratio has been used as a proxy for three capitals included in the study. Under the Stakeholders, this ratio has been used as a proxy for lenders. To measure the contribution of lenders compared to shareholders, the Debt/Equity ratio will reveal the extent to which lenders add to value creation Harrison & Wicks (2013). Directors, who are agents for the shareholders, have at their disposal the ability to achieve an optimum level between debt and equity so that the company does not run into liquidity challenges. This makes the Debt/Equity ratio an appropriate ratio to measure the value creation by agency capital (Modigliani and Miller, 1963; Miller, 1977; Abor, 2005; Hull, 2005; Ratshikuni, 2009; Abata *et al.*, 2017). In the context of financial capital, the pillars of the statement of financial position are debt and equity, which are used to finance the company's assets. The Debt/Equity ratio becomes crucial in determining the value addition by financial capital (Onaolapo and Kajola, 2010; Lazarides and Pitoska, 2011; Stern Value Management, 2016; Abata *et al.*, 2017).

(a) Usage of Total Debt-Total Assets

The Total Debt to Total Assets ratio (TD/TA) measures the extent to which total assets are covered by total debt. The regression for this ratio to company value will show how company value responds to changes in TD/TA. While LD/NCA looked at long-term aspects of both debt and assets, TD/TA focuses on these financial positions in total (that is, short-term and long-term).

4.6   PANEL REGRESSION MODELS

Below, the proposed panel regression models are laid out for each company value measurement criteria. The background research questions (RQ), research objectives (RO), and hypothesis (H) are given to show the linkage between them and the relevant panel regression model. The below sections will be used as the basis for answering the research questions.

4.6.1 Stakeholder (Social and Relationship) Capital

RQ1 (a): To what extent do stakeholders' interests impact company value?

RO1 (a): To investigate the effect of stakeholders' interests on the company value of JSE-listed companies.

H1 (a) null: Stakeholders' interests have no association with company value.

H1 (a) alternative: Stakeholders' interests have an association with company value.

(a) Panel regression models for Stakeholder (Social and Relationship) Capital

$$\Delta Y_{it} = \beta_0 + \beta_{ij}\Delta \sum_{ij=1}^{n} X1_{ij} + D\,u_t + \varepsilon_{it} \tag{1}$$

Expanded equation

$$\Delta Y1_{it} = \beta_0 + \beta_1 \Delta Em_{it} + \beta_2 \Delta Cu_{it} + \beta_3 \Delta Lu_{it} + \beta_4 \Delta Sh_{it} + \beta_5 \Delta Go_{it} + Du_t + \varepsilon_{it} \tag{2}$$

Where: **Y1**$_{it}$ = Company value = Market share price for the company *i* at time *t*

$\quad\quad$ **β₀** = Constant of the data

$\quad\quad$ **β**$_{ij}$ = Constant of the data for the variable $X1_{ij}$

$X1_{ij}$ represents a vector of Stakeholder (Social Relationship) capital that is:

Em$_{it}$ =		Employee costs variable (staff costs) for the company *i* at time *t*
β₁	=	Constant of the data for the employee variable
Cu$_{it}$	=	Customer variable (sales) for the company *i* at time *t*
B₂	=	Constant of the data for the customer variable
Lu$_{it}$	=	Lenders variable for the company *i* at time *t*
B₃	=	Constant of the data for the supplier variable
Sh$_{it}$	=	Shareholder variable (return on equity) for the company *i* at time *t*
B₄	=	Constant of the data for the shareholder variable
Go$_{it}$	=	Government variable (effective tax) for the company *i* at time *t*
B₅	=	Constant of the data for the government variable
Du$_t$	=	Dummy variable, coronavirus impact in 2020. A value of 1 was assigned to the year 2020 to neutralise the coronavirus effect on the data.
ε$_{it}$	=	Error term

For testing of robustness of TobinQ, EVA and Share price at book value is used:

$$\Delta Y2_{it} = \beta_0 + \beta_1 \Delta Em_{it} + \beta_2 \Delta Cu_{it} + \beta_3 \Delta Lu_{it} + \beta_4 \Delta Sh_{it} + \beta_5 \Delta Go_{it} + Du_t + \varepsilon_{it} \tag{3}$$

Y2$_{it}$ = Company value = **EVA** for the company *i* at time *t*

$$\Delta Y3_{it} = \beta_0 + \beta_1 \Delta Em_{it} + \beta_2 \Delta Cu_{it} + \beta_3 \Delta Lu_{it} + \beta_4 \Delta Sh_{it} + \beta_5 \Delta Go_{it} + Du_t + \varepsilon_{it} \tag{4}$$

Y3$_{it}$ = Company value = TobinQ for the company *i* at time *t*

$$\Delta Y4_{it} = \beta_0 + \beta_1 \Delta Em_{it} + \beta_2 \Delta Cu_{it} + \beta_3 \Delta Lu_{it} + \beta_4 \Delta Sh_{it} + \beta_5 \Delta Go_{it} + Du_t + \varepsilon_{it} \tag{5}$$

Y4$_{it}$ = Company value = Share price at book value at the company *i* at time *t*

4.6.2 Stakeholder (Agency) (Human) Capital

RQ1 (b): How do the stakeholders' (Agents) interests impact company value?

RO1 (b): To investigate the effect of stakeholders' (agents) interests on the company value of JSE-listed companies.

H1 (b) Null: Agency costs (remuneration of directors) have no association with company value

H1 (b) Alternative: Agency costs (remuneration of directors) have an association with company value.

(a) Panel regression models for Stakeholder (Agency) (Human) Capital

$$\Delta Y_{it} = \beta_0 + \beta_{ij} \Delta \sum_{ij=1}^{n} X2_{ij} + D u_t + \varepsilon_{it} \tag{6}$$

Expanded equation

$$\Delta Y1_{it} = \beta_0 + \beta_1 \Delta DR_{it} + \beta_2 \Delta \frac{D}{E}_{it} + Du_t + \varepsilon_{it} \tag{7}$$

Where:

$X2_{ij}$ represents a vector of Agency (Human) capital that is:

DR$_{it}$	=	Directors' remuneration for the company *i* at time *t*
D/E$_{it}$	=	Debt to Equity ratio (as a measure of company size) for company *i* at time *t*
Du$_t$	=	Dummy variable, coronavirus impact in 2020. A value of 1 was assigned to the year 2020 to neutralise the coronavirus effect on the data.
ε$_{it}$	=	Error term

To test the robustness of the agency capital model above, the following equations are used.

$$\Delta Y2_{it} = \beta_0 + \beta_1 \Delta DR_{it} + \beta_2 \Delta \frac{D}{E_{it}} + Du_t + \varepsilon_{it} \tag{8}$$

$$\Delta Y3_{it} = \beta_0 + \beta_1 \Delta DR_{it} + \beta_2 \Delta \frac{D}{E_{it}} + Du_t + \varepsilon_{it} \tag{9}$$

$$\Delta Y4_{it} = \beta_0 + \beta_1 \Delta DR_{it} + \beta_2 \Delta D/E_{it} + Du_t + \varepsilon_{it} \tag{10}$$

4.6.3 Tangible (Manufactured) Capital

RQ2: What is the relationship between a company's tangible (manufactured) capital and company value?

RO2: Establish the effects of tangible assets (manufactured capital) on the value of JSE-listed companies.

H2 Null: A company's tangible (manufactured) capital has no relationship with company value.

H2 Alternative: A company's tangible (manufactured) capital has a relationship with company value.

(a) Panel regression models for Tangible (Manufactured) Capital

$$\Delta Y_{it} = \beta_0 + \beta_{ij} \Delta \sum_{ij=1}^{n} X3_{ij} + D u_t + \varepsilon_{it} \tag{11}$$

Expanded equation

$$\Delta Y1_{it} = \beta_0 + \beta_1 \Delta Bd_{it} + \beta_2 \Delta Eq_{it} + \frac{\beta_3 \Delta TA}{NCA_{it}} + Du_t + \varepsilon_{it} \tag{12}$$

Where:

$X3_{ij}$ represent a vector of tangible capital that is:

Bd_{it}	=	Buildings for the company i at time t
Eq_{it}	=	Machinery and equipment for the company i at time t
TA/NCA_{it}	=	Tangible Assets to Total Noncurrent Assets for the company i at time t
Du_t	=	Dummy variable, coronavirus impact in 2020. A value of 1 was assigned to the year 2020 to neutralise the coronavirus effect on the data.

ε_{it} =   Error term

EVA and the share price at book value will be used for the robustness of the above.

$$\Delta Y2_{it} = \beta_0 + \beta_1 \Delta Bd_{it} + \beta_2 \Delta Eq_{it} + \beta_3 \Delta TA/NCA_{it} + Du_t + \varepsilon_{it} \qquad (13)$$

$$\Delta Y3_{it} = \beta_0 + \beta_1 \Delta Bd_{it} + \beta_2 \Delta Eq_{it} + \beta_3 \Delta TA/NCA_{it} + Du_t + \varepsilon_{it} \qquad (14)$$

$$\Delta Y4_{it} = \beta_0 + \beta_1 \Delta Bd_{it} + \beta_2 \Delta Eq_{it} + \beta_3 \Delta TA/NCA_{it} + Du_t + \varepsilon_{it} \qquad (15)$$

4.6.4 Intellectual Capital

RQ3: To what extent does Intellectual Capital impact company value?

RO3: Examine the impact of intellectual capital on the company value of JSE-listed companies

H3 Null: Intellectual Capital has no link with company value.

H3 Alternative: Intellectual Capital has a link with company value.

(a) Panel regression models for Intellectual Capital

$$\Delta Y_{it} = \beta_0 + \beta_{ij} \Delta \sum_{ij=1}^{n} X4_{ij} + D u_t + \varepsilon_{it} \qquad (16)$$

Expanded equation

$$\Delta Y1_{it} = \beta_0 + \beta_1 VAIC_{it} + Du_{it} + \varepsilon_{it} \qquad (17)$$

Where:

$X4_{ij}$ Represent the vector of intangible assets which are in VAIC $_{it}$ and its components

β_{ij} =   Constant of the data for $X4_{ij}$

VAIC$_{it}$ =   Value Added Intellectual Capital Coefficient for the company *i* at time *t*

β_1 =   Constant of the data for VAIC

Du$_t$ =   Dummy variable, coronavirus impact in 2020

ε_{it} =   Error term

VAIC$_{it}$ =   Human Capital Efficiency$_{it}$ (HCE$_{it}$) + Structural Capital Efficiency$_{it}$ (SCE) $_{it}$ + Capital Employed Efficiency $_{it}$ (CEE) $_{it}$

HCE$_{it}$ = $\dfrac{VA_{it}}{HC_{it}}$

Where:

VA$_{it}$ = Value Added = Output $_{it}$ - Input $_{it}$

Output is defined as Revenue, while Inputs are the operating costs, excluding staff costs. Staff costs are considered human capital for VAIC modelling (Meles *et al.*, 2016).

SCE$_{it}$ = $\frac{SC_{it}}{VA_{it}}$

Where:

SC = Intangible assets such as organisation, licences, patents, image, standards, and brand (Muhammad & Ismail, 2009; Schultz & Molele, 2019)

CEE$_{it}$ = $\frac{VA_{it}}{CE_{it}}$

Where:

CE = Capital Employed = the sum of tangible assets and financial assets of the company (intangible assets are excluded as they are already dealt with in structural capital) (Muhammad & Ismail, 2009; Schultz & Molele, 2019)

For robustness of the above equation, EVA and the share price at book value are used:

$$\Delta Y2_{it} = \beta_0 + \beta_1 VAIC_{it} + Du_{it} + \varepsilon_{it} \tag{18}$$

$$\Delta Y3_{it} = \beta_0 + \beta_1 VAIC_{it} + Du_{it} + \varepsilon_{it} \tag{19}$$

$$\Delta Y4_{it} = \beta_0 + \beta_1 VAIC_{it} + Du_{it} + \varepsilon_{it} \tag{20}$$

4.6.5 Financial Capital

RQ4: What impact does financial capital have on the company value?

RO4: Investigate the impact of financial capital on the company value of JSE-listed companies.

H4 Null: Financial capital does not have an association with company value.

H4 Alternative: Financial capital has an association with company value.

(a) Panel regression models for Financial Capital

$$\Delta Y_{it} = \beta_0 + \beta_{ij}\Delta \sum_{ij=1}^{n} X5_{ij} + D u_t + \varepsilon_{it} \tag{21}$$

Expanded equation

$$\Delta Y1_{it} = \beta_0 + \frac{\beta_1 \Delta D}{E_{it}} + \frac{\beta_2 \Delta LD}{NC_{it}} + \frac{\beta_3 \Delta TD}{TA_{it}} + Du_t + \varepsilon_{it} \tag{22}$$

Where:

$X5_{ij}$ is the vector representing financial capital structure as follows:

D/E$_{it}$	=	Debt Capital to Equity Capital of the company $_i$ at time $_t$
B_1	=	measures the responsiveness of company value to changes in Debt Capital/Equity Capital
LD/NC$_{it}$	=	Long-Term Debt/Non-Current Assets of the company $_i$ at time t
B_2	=	measures the responsiveness of company value to changes in Long-Term Debt/Non-Current Assets
TD/TA$_{it}$	=	$\frac{Total\ Debt}{Total\ Assets}$ ratio
B_3	=	measures the responsiveness of company value to changes in total Debt/Total Assets
Du$_t$	=	Dummy variable, coronavirus impact in 2020. A value of 1 was assigned to the year 2020 to neutralise the coronavirus effect on the data.
ε_{it}	=	Error term

The robustness of the above equation will be tested through EVA and the share price at book value:

$$\Delta Y2_{it} = \beta_0 + \frac{\beta_1 \Delta D}{E_{it}} + \frac{\beta_2 \Delta LD}{NC_{it}} + \frac{\beta_3 \Delta TD}{TA_{it}} + Du_t + \varepsilon_{it} \tag{23}$$

$$\Delta Y3_{it} = \beta_0 + \frac{\beta_1 \Delta D}{E_{it}} + \frac{\beta_2 \Delta LD}{NC_{it}} + \frac{\beta_3 \Delta TD}{TA_{it}} + Du_t + \varepsilon_{it} \tag{24}$$

$$\Delta Y4_{it} = \beta_0 + \frac{\beta_1 \Delta D}{E_{it}} + \frac{\beta_2 \Delta LD}{NC_{it}} + \frac{\beta_3 \Delta TD}{TA_{it}} + Du_t + \varepsilon_{it} \tag{25}$$

4.6.6 Augmented Feltham-Ohlson model (Augmented Integrated Reporting Model)

RQ5: How should companies measure and manage financial and non-financial capitals to create value and reflect integrated company value?

RO5: Develop an enhanced IR framework that can be used by practitioners, academics, regulators, and corporate reporting standard setters.

H5 Null: The composite of Financial and non-financial capitals does not influence the integrated company value.

H5: The composite of Financial and non-financial capitals influences integrated company value.

(a) Panel regression models for the Augmented Feltham-Ohlson model (Integrated Company Value Model)

$$\Delta Y_{it} = \beta_0 + \beta_1 \Delta X1_{it} + \beta_{ij} \sum_{\substack{i=1 \\ t=1 \\ j=4}}^{N} \Delta X2j_{it} + Du_t + \varepsilon_{it} \qquad (26)$$

Where:
Y_{it}	=	Company Value of the company i at time t
i	=	identifier of the companies
β_0	=	Constant of the data
β_i	=	co-efficient for the ith capital
$X1_{it}$	=	Financial Capital of the company i at time t
$X2_{it}$	=	represents the vector of the non-financial capitals, that is; Intellectual (IC), human (HC), Manufactured (MC), Social and Relationship (SRC) of the company i at time t
Du_t	=	0 if no Covid and 1 if there is Covid
ε_{it}	=	Error term

The expanded equation is as follows:

$$\Delta Y1_{it} = \beta_0 + \beta_1 \Delta X1_{it} + \beta_2 X2a_{it} + \beta_3 X2b_{it} + \beta_4 X2c_{it} + \beta_5 X2d_{it} + Du_t + \varepsilon_{it} \qquad (27)$$

Where:

Y_{it}	=	Company Value of the company i at time t
$Y1_{it}$	=	Company value = Market share price for the company i at time t
$X1_{it}$	=	Financial Capital of the company i at time t
$X2a_{it}$	=	Intellectual Capital of the company i at time t
$X2b_{it}$	=	Human Capital of the company i at time t
$X2c_{it}$	=	Manufactured Capital of the company i at time t
$X2d_{it}$	=	Social and Relationship Capital of the company i at time t

Dut = 0 if no Covid and 1 if there is Covid. Dummy variable used to capture the effects of Covid-19 (the year 2020)

To improve the robustness of the company value equation above, the following measures of company value will be employed with the same variables above. These measures are Tobin Q (Y2), Economic Value Added (EVA) (Y3) and share price at book value (BV) (Y4).

$$\Delta Y2_{it} = \beta_0 + \beta_1 \Delta X1_{it} + \beta_2 X2a_{it} + \beta_3 X2b_{it} + \beta_4 X2c_{it} + \beta_5 X2d_{it} + Du_t + \varepsilon_{it} \qquad (28)$$

$$\Delta Y3_{it} = \beta_0 + \beta_1 \Delta X1_{it} + \beta_2 X2a_{it} + \beta_3 X2b_{it} + \beta_4 X2c_{it} + \beta_5 X2d_{it} + Du_t + \varepsilon_{it} \qquad (29)$$

$$\Delta Y4_{it} = \beta_0 + \beta_1 \Delta X1_{it} + \beta_2 X2a_{it} + \beta_3 X2b_{it} + \beta_4 X2c_{it} + \beta_5 X2d_{it} + Du_t + \varepsilon_{it} \qquad (30)$$

4.7 ETHICAL CONSIDERATIONS

The study was guided by the School of Business Leadership (SBL)'s Research and Ethics Committee policies of the University and the country's statutes. The following issues are considered:

- The study was carried out safely, without any harm, physical or otherwise, to persons or nature since secondary data was used.
- The study used secondary data that is available and published by the companies and organisations.
- The study was carried out for academic purposes, and no form of reward or incentive was accepted by participants in the study.

4.8 VALIDITY AND RELIABILITY

Validity refers to the suitability of the research methodology used in delivering accurate results that can be generalised (the research method is valid if its results are accurate and can be generalised) (Saunders et al., 2019). Validity can be split into internal and external validity. Internal validity occurs when the secondary data collected is sufficient and can be analysed such that the research questions are answered, leading to the establishment of a causal relationships between variables.

Risks that could threaten the internal validity of the study were identified. Table 4.6 summarises these risks and the mitigation measures taken.

Table 4-6: Risks on internal validity

Risk	Explanation	Mitigation measures taken
Past or recent events	Secondary data in a report may be affected by once-off effects, which are not consistently happening in the business or general environment. For example, the effects of COVID-19 on organisations and the world economy.	The researcher checked for events that may compromise the validity of the study. This involves lengthening the time of observation to 'neutralise' the impacts of the single event. A dummy variable is introduced in the regression equations to address the effects of Covid-19.
Testing	Preparers of reports may deliberately model the report to satisfy the researcher if they are aware that the data will be used in research.	The researcher ensured that the data used is already existing and is not subject to bias as it is obtained from audited financial statements and prepared according to the Companies Act and IFRS.
Instrumentation	Comparability of results can be affected by changes in the research instruments in the different stages of the study.	The researcher avoided changing the research instrument throughout the study.
Ambiguity about the causal direction	The researcher may be unable to correctly track cause and effect. E.g., Employee motivation results in improvement, company results may be the other way round where employees feel motivated if the company results are achieved.	The variables being tested are distinguishable so that the reverse causality dilemma is minimised.

Source: Saunders et al. (2019)

External validity confirms the generalisability of the study's findings to other sectors or groupings that did not form part of the sample. The outcome of a study should be possible to use in formulating general strategies or policies without the risk of inapplicability.

Validity can be assessed by confirming that the research instrument has measurement, content, criterion-related (predictive) and construct validity (Saunders

et al., 2019). Measurement validity refers to the ability of the research tool to measure what it is intended to measure. The dilemma facing the researcher is how to declare measurement validity before the research tool is used. For this study, this challenge was managed through reference to similar studies that relied on secondary data in the area of company valuations and IR (Phusavat et al., 2011a; Joshi et al., 2013; Nadeem et al., 2017; Kheong et al., 2019; Schultz & Molele, 2019; Tlili et al., 2019; Cooray et al., 2020).

The reliability of the data used in this research is based on the reputation of the IRESS database, built by McGregor BFA, as a source of data gathered from audited financial statements (UCT, 2022). The financial statements are audited according to the Companies Act (2008), IFRS and King IV. IRESS is recognised by universities as a reliable database (UCT, 2022; UNISA, 2022).

4.9   CHAPTER SUMMARY

This chapter covered the research methodology of this study. The research gap was disclosed, indicating the lack of an agreed quantification and valuation model for Integrated Reporting, which this study seeks to close. The study followed a quantitative research methodology. Secondary data collection methods were used, utilising archival and documentary review strategies. Collected data was analysed mainly through Panel Regression Analysis. Suggested models to answer the research questions and test the hypotheses were covered. Ethical considerations and due diligence that guided the study were discussed.

The next chapter will cover the presentation of the quantitative results giving insights into the results of the data gathered using the research instruments discussed in Chapter 4.

CHAPTER 5: PRESENTATION, ANALYSIS AND DISCUSSION OF RESEARCH RESULTS

5.1   INTRODUCTION

This chapter presents the research results obtained from utilising the research methodology that was covered in Chapter 4. The research employed the quantitative research approach underpinned by both descriptive and inferential statistics. The descriptive statistical analysis used the mean as a measure of central tendency, while the standard deviation was used to measure dispersion. The inferential statistics aspect of the study used multiple regressions and correlations to measure the relationship between the dependent variable (market share price) and the independent variables. Panel data regression using EViews software was the data analysis instrument. The study performed empirical analysis on data gathered from 91 JSE-listed companies over 11 years (2010 to 2020). In the following sections, the data analysis results for each individual capital will be presented, analysed and discussed in preparation for submitting an Augmented Integrated Reporting Model (AIRM) in Chapter 6.

5.2   DATA AND DESCRIPTIVE STATISTICS

In this section, the source and nature of data used are discussed, as well as the summary presentation of the descriptive statistics.

5.2.1 Data characteristics

The data used in this study were mostly obtained from the IRESS database. For both the dependent and independent variables, JSE-listed companies' financial statements, financial models, financial ratios, and price data as loaded on IRESS were used. The dependent variable for the study is market share price. EVA, TobinQ and Share Price at Book Value are also used as proxies of company value to test the robustness of the share price variable. 1,001 observations were achieved from 91 companies and 11 years, covering 2010 to 2020. Fourteen regressors (independent variables) were identified to be tested for correlation to the dependent variable. These independent variables are identified in Section 5.2.2. The regression analysis was performed using balanced panel data in EViews for the observation period. Using the residuals function in EViews, residual outliers were detected. Minor outliers were

detected in the years except for 2020, which showed a high shift due to the Covid-19 pandemic effects. The minor residual outliers in the data were cleared through the autodetection, impulse and step shift indicator functions available in EViews. For the Covid-19 effects detected in 2020, a dummy variable was introduced in the data where a value of 1 was assigned to the year 2020 to neutralise the effects.

5.2.2 Descriptive statistics for panel data

This section presents summary statistics on the variables used in this research. Utilising pooled estimations in EViews, 14 independent variables assumed to be correlated to company value were assessed, and their descriptive statistics are provided in Table 5.1.

Table 5-1: Summary statistics for company value and capitals measurement variables

Variables	Variables Description	Observations	Mean	Std. Dev.	Maximum	Minimum
Y1	Share Price as a proxy of company value	1001	0.0540	0.3952	2.9128	-0.9750
Y2	Economic Value Added (EVA) as a proxy of company value	1001	-0.0414	0.2865	2.4642	-0.8877
Y3	TobinQ as a proxy of company value	1001	-0.0118	0.1967	0.8015	-0.8944
Y4	Share price at book value as a proxy of company value	1001	0.0655	0.1803	0.7926	-0.7593
EM	Employees (stakeholder capital)	1001	0.0185	0.2701	1.8618	-1.7077
CU	Customers (stakeholder capital)	1001	-0.2764	0.7409	1.9637	-1.9927
LU	Lenders (stakeholder capital)	1001	-0.0169	0.2678	0.9596	-0.9762
SH	Shareholders (stakeholder capital)	1001	-0.0901	0.3706	1.0636	-2.1048
GO	Government (stakeholder capital)	1001	-0.0371	0.3088	1.0000	-1.0667
DU	Dummy (Covid 19 year 2020 effect	1001	0.0909	0.2876	1.0000	0.0000
DR	Directors' Emoluments (Agency/human capital)	1001	0.0210	1.0193	11.4671	-14.3665
D_E	Debt to Equity (Agency/human capital, Lenders and Financial capital)	1001	-0.0169	0.2678	0.9596	-0.9762
VAIC	Value Added Intellectual Coefficient (Intellectual capital)	1001	0.0096	0.4500	11.0816	-1.2681
BD	Buildings (manufactured capital)	1001	-0.0094	0.2606	1.4735	-0.9996

Variables	Variables Description	Observations	Mean	Std. Dev.	Maximum	Minimum
EQ	Equipment (manufactured capital)	1001	-0.0196	0.4747	8.5048	-1.3305
TA_NCA	Tangible assets/Non-current assets (manufactured capital)	1001	0.0009	0.2123	1.7246	-0.9872
LD_NC	Long-Term Debt/Non-Current Assets (Financial Capital)	1001	-0.0299	0.3302	2.2888	-1.0000
TD_TA	Total Debt/Total Assets (Financial Capital)	1001	0.0423	0.5825	9.2587	-0.9950

Source: *Calculated for this study*

Table 5.1 shows the mean, standard deviation, minimum and maximums for the variables used in the study. The following sections discuss the summary statistics and what they imply (mean).

5.2.2.1 Explanation of the summary statistics

The summary of the descriptive statistics shown in Table 5.1 is explained for the variables.

(a) Company value proxies

Market share price returns have a mean of 0.0540 and the highest SD, indicating that while it registered growth over the study period, it also had periods of volatility. The growth in market share returns may be attributed to the stability of the JSE, probably due to strong corporate governance frameworks in the form of the King codes (IoDSA, 2016). The results on market share price returns are consistent with the assertion by Harvey (1995) and supported by Goetzmann and Jorion (1999), who stated that share returns in emerging markets demonstrate positive returns and higher volatility. A 10-year time series study of JSE shares indicated the same trend as found in this current study (Mpofu, 2011). In a later study, Schultz and Molele (2019) calculated a 4.1% mean on total share returns on JSE companies, aligning with the positive nature of shares in emerging markets.

Share price at book value shows a positive mean of 0.0655, higher than the one for market share price but has the lowest SD, signalling that it was the most stable of the company value proxies. Share price at book value uses historical conventional accounting data, which might be an explainer of its SD stability as it is not affected by the temporary ups and downs of the market share price. Both EVA and TobinQ have negative means implying that these two proxies' negative returns on average are

153

consistent with the decline in the South African economy over the study period. The African Development Bank reports that the South African economy has experienced slow growth since 2011, taking a downward trend with below 2% growth from 2014 (African Development Bank, 2019). The slow growth is attributed to the reduction of non-mineral production going back to the early 1990s (Rodrik, 2008). The SDs of EVA and TobinQ are lower than that of the market share price, supporting the notion that they were less volatile over the study period. In a study on EVA and share returns from 2000 to 2013, Sauro and Tafirei (2016) found a positive EVA mean of 8.9%, albeit only in the financial services sector. A comparison of the positive mean on EVA found by Sauro and Tafirei (2016) and the negative mean in this study could reflect that the profitability of companies worsened after 2013. Compared to market share returns, EVA has a negative mean, indicating that it is a more sensitive short-term, profit-centred measure that will react negatively to unfavourable economic cycle changes (Stern Value Management, 2016).

(b) Stakeholder (social and relationship) capital proxies

Of the five (5) variables representing stakeholder capital, only the employee proxy (staff costs) showed a positive mean. This reflects that, on average, staff costs increased by 1.9% over the sampling period. Customers, Lenders, Shareholders, and the Government as stakeholders have negative means. This signals that, on average, companies on the JSE recorded negative returns on customer revenue (-2.76%), Lenders (debt to equity ratio) (-1.7%), Shareholders' ROE (-9.01%) and Government effective tax (-3.7%).

A negative mean on lenders (Debt-to-Equity) indicates that companies reduced their borrowings over the period under investigation, probably due to the need to balance debt exposure risks. Shareholders' ROE experienced negative mean returns over the study period signalling that companies had negative profit growth trends as confirmed by the negative mean on revenues (customers). The return on government effective tax has a negative mean which implies that companies' pursued tax reduction strategies over the period. Such tax minimisation strategies are meant to retain more cash flow within the business, however, this deprives the government's potential to add value to the business environment (through infrastructure, education, and health) so that companies' performance may improve. The return on government effective tax

rate has a maximum of 1, indicating that some companies in the sample had a change of 100% in their effective tax rate at some point in the period under investigation showing the extent of the aggressive management of effective tax rates.

The customers' proxy has the highest SD (0.7409), followed by the SD for the proxies for shareholders (0.3706), government (0.3088), employees (0.2708) and lenders (0.2678) consecutively. The high SD on customers indicates that revenues were the most unstable compared with the other stakeholder measures over the period under consideration. The maximums and minimums on these proxies are almost equal for each, except for shareholders, with the lowest minimum of -2.1048. This means that this proxy recorded the lowest returns at some point. The proxy for shareholders is ROE, and its negative mean is a hint that shareholder value seems to be more market share price based than real equity value growth. The market share price has a positive mean while ROE is negative. This may indicate that investors put more emphasis on the market share price than ROE. The market share price is readily available at the stock exchange, while ROE can be calculated after AFS publication. For sustainable company value creation outside of market speculation and temporary spikes, companies should focus on having positive means on ROE. This brings relevance to this study that the effect of ROE on company value be measured so that stakeholders affected can make informed decisions.

The negative returns recorded on the stakeholder proxies above are in line with the trends recorded in the South African economy, as explained above under company value proxies. This highlights the importance of further measurement of the stakeholder capital to assess its effect on company value so that areas of improvement can be identified. For example, the role of the overall economy has implications on stakeholders, which in turn would affect company values.

(c) Agency (human) capital proxies

The Agency capital proxy of directors' emoluments has a positive mean of 2.1%, indicating that rewards to directors increased on average. Debt to Equity as a proxy of Agency capital has a negative mean implying that the directors (Agents) borrowing discretion is reduced by 1.7% on average. The directors' emoluments present the highest SD (1.0193) compared to the other proxies. This indicates that this measure

went through some volatile trends during the period being studied. The same finding also appears on the minimum and maximum for this proxy, where these emerge as the highest (11.47) and lowest (-14.37) compared with the other proxies in the study. The observation that directors' emoluments and share price both have positive means while other stakeholder proxies have negative means poses a challenge to how directors are compensated in South Africa. This status signals that executive directors are probably compensated more based on share price growth – the executives claim that share price growth was a result of their strategies and therefore claim monetary benefits in line with what shareholders gained when share prices gave a positive return (Bebchuk & Weisbach, 2010; IoDSA, 2021).

The negative mean on Debt/Equity of -0.0169 may be interpreted as a conscious act by directors to keep gearing at low levels in the face of reduced economic growth, as mentioned above (Rodrik, 2008; IoDSA, 2021). Growth in borrowing while the economy is stagnant will result in solvency and liquidity challenges prompting the need to keep debt at the optimum capital structure (Miller, 1977; Myers & Majluf, 1984). The impact of debt, through actions of directors, on the JSE-listed companies' value therefore requires investigation through this study.

(d) Tangible (manufactured) capitals proxies

Buildings as a proxy of manufactured capital have a negative mean on returns of 0.9%, indicating a marginal decrease in investment in buildings over the period under consideration. The SD for buildings of 0.2606 is signalling that the returns were volatile over the period under investigation. This could be a result of inconsistent patterns in investments in buildings. The maximum of 1.1435 and minimum of -0.9996 indicate that values were unstable (volatile), fluctuating between positives and negatives. This tends to support the volatility that is showing in the SD.

Equipment shows a similar characteristic to buildings with a negative mean on returns of 1.96%. This is a sign that there was a reduction in investment in equipment over the period. The SD of 0.4747 shows that this variation from the mean was caused by the high incidence of negative returns. Even though there was a maximum of 8.508, there would have been more negatives for the mean returns to be a negative of 1.96%.

156

As a whole, tangible assets as a percentage of total non-current assets give a marginal positive mean on returns of 0.009%. While the mean shows an almost stagnant average, the maximum and the minimum of 1.7246 and -0.9872 show that in between these two extremes were values that led to dispersion, as indicated by the SD of 0.2123. The negative means on buildings and equipment show that tangible assets and total non-current assets did not materially change over the period under consideration, perhaps confirming the trend reported in the literature where companies are investing less in tangibles preferring to invest more in intangible assets (Ocean Tomo, 2021).

(e)   Intellectual capital proxy

VAIC, as a measure of Intellectual capital, has a positive mean on returns of 0.96%. This indicates the increase, on an average basis, in the importance of intellectual capital in the face of a growing knowledge economy (Ocean Tomo, 2021). The SD for VAIC was 0.45, which indicates moderate volatility compared to the other proxies. Its maximum and minimum were 11.0816 and -1.2681. The difference between the maximum and the minimum, and the positive mean shows that VAIC is on a favourable growth trajectory. The positive mean on VAIC is in line with the findings of previous studies that found the same trend (Firer & Williams, 2003; Firer & Stainbank, 2003; Clarke et al., 2011; Phusavat et al., 2011b; Meles et al., 2016).

(f)   Financial capital proxies

The Long-term debt to non-current assets ratio calculates a negative mean on returns of 3%, reflecting that this proxy of financial capital is decreasing on an average basis. The negative EVA of 4.1% explained earlier is an indicator of fewer profits available to fund total assets, hence the reliance on debt. The maximum shows that returns on the long-term debt to non-current assets reached a high of 2.2888. However, the negative minimum of -1.0 and a negative mean of -3% beacons that more values were on the negative side. This could indicate that companies were eager to reduce their reliance on long-term debt to fund capital assets. This is consistent with the result recorded under the agency proxy of debt to equity, where this ratio also had a negative mean. The negative means on the two ratios may be an indication that companies planned to reduce debt as a strategy to manage liquidity and to achieve optimum debt levels.

Contrary to the other measures with debt as an input, the total debt to total assets ratio has a positive mean of 4.2%. This reflects that companies would probably use debt to fund both current and non-current assets as they seek to optimise their capital structures (Miller, 1977; Cheng, Liu & Chien, 2010). A maximum of 9.2587 was reached, showing how aggressively some companies may pursue debt to fund their operations.

The above section reviewed the descriptive statistics for this study. The dependent variable and the independent variables were identified, and their behaviours in terms of the mean, the standard deviation, the maximum and the minimum were discussed. These were linked to theory and empirical studies noting similarities and differences with the current findings. The following section covers the regression method selection procedure.

5.3   DIAGNOSTICS AND CHECKS FOR ROBUSTNESS

This section is used to summarise the diagnostics and checks for robustness. This includes tests for collinearity, variance inflation factor (VIF), the Hausman (1978:1251), specification test for heteroskedasticity, stationarity, and Durbin-Watson statistic autocorrelation.

5.3.1 Correlations

The correlation test measures the collinearity among the dependent variables and independent variables and vice versa (Hair *et al.*, 2013). The correlations tested for this study are indicated in Table 5.2. According to Hair Jr et al. (2010), collinearity is not considerable if the coefficients are less than 0.9. Based on that threshold, the coefficients in Table 5.2 are less than 0.9, therefore, the variables do not have a considerable problem with collinearity.

Table 5-2: Correlations of variables

Variables	Y1	Y2	Y3	Y4	BD	CU	D_E	DR	DU	EM	EQ	GO	LD_NC	LU	SH	TA_NCA	TD_TA	VAIC
Y1	1.0000																	
Y2	0.0350	1.0000																
Y3	-0,0895***	0,1018***	1.0000															
Y4	- 0.0468	0.0176	0,1569***	1.0000														
BD	- 0.0221	- 0.0503	0,0759**	0.0507	1.0000													
CU	0,0572*	0.0435	- 0.0015	0,0802**	- 0.0200	1.0000												
D_E	0,1519***	- 0.0026	- 0.0490	- 0.0075	-0,0902***	-0,0742**	1.0000											
DR	0,2443***	- 0.0087	- 0.0142	- 0.0294	0.0092	- 0.0031	0.0336	1.0000										
DU	-0,1985***	- 0.0313	0,2147***	0,0891***	0,1609***	-0,0600*	-0,1911***	-0,0660**	1.0000									
EM	- 0.0493	0.0473	0.0443	- 0.0069	0,1312***	- 0.0045	-0,1112***	- 0.0068	- 0.0207	1.0000								
EQ	0.0356	0.0073	0.0284	0.0048	0.0413	- 0.0033	0.0314	- 0.0315	- 0.0494	0.0088	1.0000							
GO	0.0010	0.0207	0.0680	0.0515	0.0167	- 0.0186	- 0.0047	0,0521*	-0,0685**	0.0108	0.0365	1.0000						
LD_NC	- 0.0499	- 0.0339	0.0718	- 0.0336	0.0151	- 0.0194	-0,2373***	- 0.0378	0,1073***	- 0.0233	0.0046	0.0192	1.0000					
LU	0,1519***	- 0.0026	- 0.0490	- 0.0075	-0,0902***	-0,0741**	0,1952***	0.0336	-0,1911***	-0,1112***	0.0314	- 0.0047	-0,2373***	1.0000				
SH	0,1305***	0.0409	-0,0855***	0.0034	-0,0812**	0,0874**	- 0.0024	0,0722**	-0,1250***	-0,0776**	0.0309	-0,0525*	- 0.0035	0.0024	1.0000			
TA_NCA	- 0,0072	0.0077	0.0487	0.0479	0,2127***	0.0100	-0,1431***	- 0.0082	0,1531***	0.0196	0,0534*	- 0.0143	0,1474***	-0,1431***	-0.0315	1.0000		
TD_TA	-0,0681**	0.0159	- 0.0143	0.0298	-0,0559*	- 0.0203	-0,1756***	0.0410	0,0772**	0.0292	0,2543***	- 0.0161	0,0973***	-0,1756***	-0.0069	0.0208	1.0000	
VAIC	0.0366	0.0030	0.0030	0.0033	- 0.0264	0.0330	0,0779**	0.0183	-0,0562*	-0,3530***	0.0324	0.0059	0.0290	0,0779**	-0.0271	0.0270	-0.0321	1.0000

*Note: Robust Standard errors in parentheses and * p < 0.05, ** p < 0.01, *** p < 0.001*

Source: Calculated for this study

To further confirm that there is no problem of collinearity, a Variance Inflation Factor (VIF) test was conducted. The test was based on the guideline adopted from García *et al.* (2015), who stated that an acceptable VIF should be at a level of 10 or below, any values higher than that are a signal of a severe presence of multi-collinearity are deemed to be over the threshold.

Table 5-3: VIF for all the variables used in this study are less than 10

Variance Inflation Factors			
Sample: 2010 2020			
Included observations: 1001			
Variable	Coefficient Variance	Uncentred VIF	Centred VIF
C	0.000534	4.146397	NA
EM	0.002107	1.197332	1.191718
CU	0.000241	1.170394	1.027264
LU	0.002109	1.177354	1.172657
SH	0.000989	1.115577	1.053231

Variance Inflation Factors			
Sample: 2010 2020			
Included observations: 1001			
Variable	Coefficient Variance	Uncentred VIF	Centred VIF
GO	0.001374	1.029962	1.015281
DR	0.000127	1.022632	1.022196
VAIC	0.000741	1.163183	1.162658
BD	0.002097	1.105643	1.104211
EQ	0.000627	1.097053	1.095182
TA_NCA	0.003143	1.097924	1.097905
LD_NC	0.001288	1.097832	1.088910
TD_TA	0.000430	1.136388	1.130435
DU	0.002240	1.580414	1.436740

Source: Calculated for this study

The results in Table 5.3 show that the VIF for all the variables used in this study is less than 10, indicating that there is no problem of collinearity among the independent variables.

5.3.2 Other diagnostic statistics

Several tests were conducted on the pooled OLS, fixed effects and random effects models. These included the Hausman (1978: 1251) test for the choice between random and fixed effects, specification test for heteroskedasticity, Durbin Watson statistic was employed to test for autocorrelation, Cross-sectional dependence and stationarity were tested.

(a) Heteroskedasticity

The first test was to test for heteroskedasticity, and some of the models had a problem with heteroskedasticity. Using EViews panel data software, the FE regression models were run with Cross-section weights and White cross-section standard errors and

covariance. To correct for heteroskedasticity and cross-sectional interdependence, the white standard robust errors were used (White, 1980).

(b) Durbin Watson statistic and cross-sectional dependence tests

The second test carried out was the test of serial correlations using the Durbin-Watson statistic, and the results showed that all the models had no problem with serial autocorrelation. The third test carried out was cross-sectional dependence, and most of the models showed some cross-sectional interdependence. Cross-sectional dependence was addressed through the white standard robust errors that were used (White, 1980).

(c) The F Test

The fourth test that was performed was the F Test. The models demonstrated moderate R^2 of between 30% and 41%. Previous studies that used the Feltham-Ohlson model recorded R^2 values of less than 40%, and the results were considered acceptable because of the strength of the p values. Cooray et al. (2020) explained that their R^2 of 36.1% was due to the accounting recognition lag when returns are used. In this current study, returns on accounting data for the variables were used in the regression models. In accounting data, it is observed that factors affecting the current returns may not be the same over consecutive periods due to the application of accounting principles such as reliability, prudence and accruals (Ota, 2005). Other studies also used returns on accounting data and obtained R^2 of less than 40% (Kothari & Zimmerman, 1995; Easton et al., 2000; Sutopo et al., 2018). In this current study, accounting data is used, and the accounting recognition lag argument would be relevant. The R^2 reported in the current study models was complimented by the F statistic, whose p-values were all zero. The F statistic showed the elements which are explained by the model and also the elements that explained the error. This assures that there are associations between the dependent and predictor variables and that the models are adequately strong for use (Greene, 2012; Riffenburgh, 2012).

(d) Hausman test

The fifth test that was applied was the Hausman (1978:1251) test, which was employed to determine whether to select the fixed effects model or the random effects model. The results from the Hausman test are presented but not discussed for brevity

as the study focused on the fixed effects model given that study employed purposive sampling (Dougherty, 2007). The diagnostic statistics are presented at the bottom of the summary results from Tables 5.4 to 5.8.

(e)   Stationarity test

The panel data was tested for stationarity using the Levin, Lin and Chu (2002) unit root test. This test is important to establish if the mean, variance and covariance of the panel data are independent of the time or not. If panel data is non-stationary, there is a risk that the model results will be spurious (Van Greunen *et al.*, 2014). The Levin, Lin and Chu (2002) assumption was used, which states that if $P < 0.05$, then the panel data is stationary. The stationarity test output from Eviews gave p values of zero, meaning that the panel data is stationary at level (as shown in Appendix C).

5.4   PANEL REGRESSION METHOD SELECTION

The preceding section discussed the descriptive statistics of this study, where the dependent variable and the regressors were identified. The descriptive statistics points referred to include the mean, the standard deviation and the maximum and minimum of the data for the various proxies for each variable. In this section, the econometric panel regression method selection process will be covered, explaining the stages involved until the most appropriate method is chosen.

The appropriate regression method was chosen using the steps outlined by Dougherty (2007), as explained in Section 4.9.1 in Chapter 4. Pooled Effects (PE), Random Effects (RE) and Fixed Effects (FE) were tested using the Hausman test to select the model that had sufficient power. In this study, six regression equations are used, five for the capitals and one being the ultimate model combining all the other five. Using EViews panel data software, PE, RE and FE models were run for each equation. Based on the results shown in Appendix A, FE showed more robustness than PE and RE. This confirms the panel regression method selection criteria propounded by Dougherty (2007), who states that FE is used if the sampling method is non-random. This study used non-random purposive sampling so that companies with missing data or delisted from the JSE were excluded. The Seemingly Unrelated Regression (SUR) method was also tested and proved inferior to FE. The results of the SUR model are shown in Appendix B.

5.5   ECONOMETRIC PANEL REGRESSION MODEL RESULTS, DISCUSSION AND ANALYSIS

The previous section explained the different regression methods used in panel data analysis. FE was concluded as the appropriate method for this study. As explained in Section 4.9.1.4, FE models are recommended where purposive sampling is used (Dougherty, 2007).

In the process of building the Augmented Integrated Reporting Model (AIRM), regression models for each of the IR capitals were performed. The regression models were prepared in a manner that would confirm or dispel the hypothesis that was put forward for each capital. In the following sections, regression results for each capital are presented. Each capital has its proxies, and the regression models intend to exhibit the relationship or otherwise of these proxies to the dependent variable. The main dependent variable is market share price (Y1), while EVA (Y2), TobinQ (Y3) and the share price at book value (Y4) are deployed to check the robustness of Y1 using the same regressors.

The basis of the interpretation of the results is that the IR concept is based on the premise that capitals can create, maintain or decrease company value (IIRC, 2021). As such, if a proxy of a capital has a significant positive relationship to a company value variable, it means that value was created. Where the result is insignificant, this may mean that the proxy of the capital under consideration is not relevant or is just sufficient to maintain company value. A negative result may indicate that the proxy of the capital erodes company value.

5.5.1 Regression model for stakeholder capital (social and relationship capital)

The purpose of this regression model was to test the significance of the effect of stakeholder capital on company value. The Research Question (RQ), Research Objective (RO), and Hypothesis (H) are restated below:

RQ1 (a): To what extent do stakeholders' interests impact company value?

RO1 (a): To investigate the effect of stakeholders' interests on the company value of JSE-listed companies.

H1 (a) null: Stakeholders' interests have no association with company value.

H1 (a) alternative: Stakeholders' interests have an association with company value.

The stakeholders' interests in the model are represented by Employee interests (Em), Customer interests (Cu), Lenders' interests (Lu), Shareholders' interests (Sh) and Government interests (Go).

The regression model is restated as follows:

$$\Delta Y_{it} = \beta_0 + \beta_{ij}\Delta \sum_{ij=1}^{n} X1_{ij} + D\, u_t + \varepsilon_{it} \tag{1}$$

Expanded equation

$$\Delta Y1_{it} = \beta_0 + \beta_1\Delta Em_{it} + \beta_2\Delta Cu_{it} + \beta_3\Delta Lu_{it} + \beta_4\Delta Sh_{it} + \beta_5\Delta Go_{it} + Du_t + \varepsilon_{it} \tag{2}$$

$$\Delta Y2_{it} = \beta_0 + \beta_1\Delta Em_{it} + \beta_2\Delta Cu_{it} + \beta_3\Delta Lu_{it} + \beta_4\Delta Sh_{it} + \beta_5\Delta Go_{it} + Du_t + \varepsilon_{it} \tag{3}$$

$$\Delta Y3_{it} = \beta_0 + \beta_1\Delta Em_{it} + \beta_2\Delta Cu_{it} + \beta_3\Delta Lu_{it} + \beta_4\Delta Sh_{it} + \beta_5\Delta Go_{it} + Du_t + \varepsilon_{it} \tag{4}$$

$$\Delta Y4_{it} = \beta_0 + \beta_1\Delta Em_{it} + \beta_2\Delta Cu_{it} + \beta_3\Delta Lu_{it} + \beta_4\Delta Sh_{it} + \beta_5\Delta Go_{it} + Du_t + \varepsilon_{it} \tag{5}$$

Table 5.4 summarises the FE regression results, which will be explained in detail in the next sections.

Table 5-4: Summary of results on the stakeholder capital measures

Variable	Y1 Share price return	Y2 EVA	Y3 Tobin Q	Y4 Share price@BV
C	0.250695***	-0.065992***	-0.074296***	0.014218
	(0.052155)	(0.007937)	(0.007692)	(0.012061)
EM	0.004943	-0.045577**	0.009667	-0.006657
	(0.031002)	(0.017145)	(0.017246)	(0.01256)
CU	0,018807*	0,004421	-0,0000681	0,002932
	(0.009079)	(0.009396)	(0.006786)	(0.003608)
LU	0.119994***	-0.020757	0.029175	0.002788
	(0.03116)	(0.018449)	(0.016244)	(0.009483)
SH	0.057707**	0.01436	-0.008698	-0.00494
	(0.019224)	(0.018891)	(0.010636)	(0.01347)
GO	-0.01556	0.008506	0.032343*	-0.002658
	(0.028612)	(0.021649)	(0.014807)	(0.008326)
DU	-0.072642	-0.083273***	0.056512***	-0.013381
	(0.040118)	(0.016757)	(0.009944)	(0.010219)
Observations	1001	1001	1001	1001
R-squared	0.3644	0.1643	0.2216	0.3046
Adjusted R-squared	0.2961	0.0746	0.1379	0.2299
F-statistic	5.3371	1.8305	2.6496	4.0775
Prob(F-statistic)	0.0000	0.0000	0.0000	0.0000
Mean dependent var	0.06347	(0.04195)	(0.02000)	0.10556
S,D, dependent var	0.4315	0.2944	0.2019	0.1997
Durbin-Watson stat	2.21805	2.159131	1.9297	1.91321
Hausman Stats	11,240776	0000	3,576237	0000
Heteroscedasticity	511,4109***	348.4634***	392.8255***	593.3047***

Note: *Robust Standard errors in parentheses and * p < 0.05, ** p < 0.01, *** p < 0.001*

5.5.1.1 Effect of Employee interests on company value

Employee interests (EM) in the stakeholder regression model are represented by the employee (staff) costs as an independent variable influencing company value. From the summary results in Table 5.4, EM has a statistically insignificant positive relationship with market share price as a proxy of company value. Özer and Çam (2016) used 84 companies over 11 years to study the effect of employee costs on the company value (market value) of Turkish-listed companies and concluded that EM has a significant positive effect on company value. Morris (2015) studied the effect of employee capital on the company performance of 390 JSE-listed organisations over a 10-year period. She concluded that employee capital has a positive impact on total share price returns. Although this study produced an insignificant positive impact of EM on market share price, it is important to note that the direction of the relationship is consistent with the above studies cited and the IR framework, which advocates that

capitals add, sustains or diminishes company value over time (IIRC, 2021). In this case, EM has an insignificant positive impact which shows value sustenance. The economic significance of employees to the value creation activities of the company will remain relevant as employees contribute to business continuity. Based on the model result, practitioners, standard setters, and report preparers of IR are encouraged to use share price as a proxy of company value when assessing EM.

If EVA is used as a proxy for company value, EM returns a significant negative relationship. EVA is a measure of company value based on NOPAT less cost of capital (Stern Value Management, 2016). This profit focus of EVA indicates short-termism, making it an unsuitable proxy for long-term company value measurement. IR is focused on sustainable long-term value creation; hence EVA becomes inappropriate for the EM proxy as future positive cash flows from the involvement of EM are ignored. The depiction of short-termism by EVA may be addressed by adopting the IR concept of long-term value creation by ensuring that organisations pursue strategies that increase the value employees. The value of employees can be increased through talent development, skill retention schemes, and share ownership schemes to foster a sense of employee equity.

EM indicates an insignificant positive relationship to TobinQ. TobinQ is calculated using the weight of a company's assets as a percentage of its market value. The current reporting frameworks do not consider EM as an asset but rather as an expense (Liebowitz & Wright, 1999; Brazen, 2004; Dakhli & De Clercq, 2004; Fatoki, 2011; Gamerschlag, 2013; Stanko et al., 2014; Redden, 2020). Based on the economic significance of employees, the positive relationship (albeit statistically insignificant) may render TobinQ relevant for use as a proxy of company value concerning the effect of EM in an individual model. The situation can be improved if the tenets of Pulic (1998) are adopted that employees should be considered assets and not expenses since they are part of the company's value-creation resources (Pulic, 1998, 2004). This will make employees qualify for the assets category of the TobinQ formula. The Tobin Q formula is Tobin Q = Market value of a company / Company assets' replacement cost. If Pulic (1998)'s concept is taken into consideration that employees are an asset and not an expense, then EM falls into the ''company assets'' category of the formula. The IR

166

philosophy is in line with Pulic (1998), where EM is part of stakeholder capital (IIRC, 2021).

Share price at book value has an insignificant negative relationship with EM. Share price at book value is based on conventional accounting calculation of (Total assets - total liabilities) / number of shares outstanding. Conventional accounting considers EM as an expense, making Share price at book value an inappropriate proxy of company value when considering the effect of EM. Share price at book value is a historical measure which ignores future value-creating cash flows and thus lacks the future value-creating perspective of IR.

5.5.1.2 Effect of Customer interests on company value

Customer interests (CU) are measured through revenue returns in this study. The purpose of having CU as a regressor is to assess if customer interests have a significant relationship with company value. From the summary results in Table 5.4, CU has a statistically significant positive relationship with the share price proxy of company value at a $p < 0.05$ significance level. This means that an increase in CU will increase company value. This can be a signal to companies that relationships with customers are significant and should be maintained through offering quality products and services as well as allowing customers to participate in product or service continuous improvements. CU gives statistically insignificant positive relationships to EVA and share price at book value. These two metrics of company value are profit inclined and will reflect the positive influence of CU, as revenue is a relevant driver of profitability. CU has a negative relationship with Tobin Q. Tobin Q is an asset-based measure, and association with revenue will not be plausible hence this result.

The significant positive relationship between CU and market share price finding is consistent with the results obtained by Chandra and Ro (2008), who studied the effect of CU on company value for US companies using 390 738 observations. Their findings indicated a significant positive effect of revenue on company value with share price returns as a proxy. The observation was that the value relevance of CU lies more in the revenue information than in the quantum of revenue. Companies that published regular revenue results tended to have higher value returns. Hertina et al. 2022) studied the impact of sales growth on the share price at the book value of 92 listed

companies in Indonesia. The result of their study found that sales growth has no influence on the share price at book value. This differs from the outcome of this study and the one by Chandra and Ro (2008). The outcome of the study by Chandra and Ro (2008) could have been affected by the short sampling period of four years, whereas this current study has 11 years. Chandra and Ro (2008), however, admit that their intuitive expectation was that revenue had a positive relationship with company value. The outcome of this study is in line with the IR concept, which considers customers as value-adding stakeholders.

5.5.1.3 Effect of Lenders' interests on company value

Lenders' interests (LU) are measured, in this study, through the Debt-to-Equity ratio. The level of debt signifies the extent to which a company uses borrowings to fund the acquisition of long-term assets and working capital. In this study, the Debt-to-Equity ratio gives a statistically significant positive effect on company value. The significance level is at $p < 0.001$. This reflects that an increase in debt results in an increase in company value. In the context of JSE-listed companies, these results indicate that these companies use debt for long-term assets that are used for the current and future generation of cashflows. The positive behaviour of debt to the market share price shows that investors view optimum debt as value-adding.

The regression model result is in alignment with findings in extant literature. In what is referred to as Proposition II, Modigliani and Miller (1963) advanced the theory that debt had value relevance to companies. They propounded that the cost of debt was allowed for a tax deduction (tax shield) and, therefore, had a direct contribution to the cash flow of a company and, ultimately, a positive effect on value. This proposition concluded that higher debt levels attract more tax shields, resulting in higher company values. Miller (1977) was to later amend this proposition by arguing that the efficacy of the tax shield depends on the tax rate effect. Continuous borrowing will expose the company to liquidity and bankruptcy risks. Miller (1977) then advised that companies require an optimum capital structure of debt, equity and retained earnings.

The providers of debt capital are relevant stakeholders in the IR concept as they are interested in the security of their interest payments and the actual repayment of the principal debt (IIRC, 2021). This makes the findings of this study congruent with the

IR framework. The finding is in line with other empirical studies. Abor (2005) studied listed companies in Ghana and concluded that companies with high profitability had high leverage levels. The relevance of Abor (2005) is based on the assumption that companies with high profitability will have high market share prices as shareholders anticipate improved cash flows and higher dividends. Abata et al. (2017) used a sample of 136 JSE-listed companies and confirmed that the long-term debt to total assets ratio had a positive relationship with company value, with Tobin Q as a proxy. The theoretical assertions and empirical evidence on debt from the studies cannot be discarded based on the contrary results found by some of the studies cited.(Zeitun & Tian, 2007; Onaolapo & Kajola, 2010; Wenjuan et al., 2011).

LU indicates insignificant relationships with the other proxies for company value used in the study, that is, EVA, TobinQ and Share price at book value. LU has an insignificant negative relationship with EVA, signalling that the short-term profit-centredness of EVA cannot be used to measure debt-related capital as debt is usually raised for long-term investments. Therefore, in this case, EVA cannot be used to measure the company value relationship with LU. Although LU has an insignificant positive relationship with TobinQ, the direction of the relationship points to some relevance. Tobin Q is an asset-focused metric, and debt used to fund assets would lead to a positive relationship. Share price at book value has the smallest coefficient indicating a weak positive relationship with LU. This positive relationship, albeit weak, points to the right direction in value creation. The results on Tobin Q and the share price at book value are in line with the value creation philosophy of the IR concept, and they corroborate the market share price result.

5.5.1.4 Effect of Shareholders' interests on company value

Return on Equity (ROE) is used in this study as a proxy of Shareholders' interest (SH) in the measurement of SH effect on company value. SH revealed, at a $p < 0.01$ level, a significant positive relationship with the share price. This means that an increase in SH will increase the share price.

SH is arguably the most critical ratio investors consider when making decisions as it directly indicates the extent of shareholder wealth growth as officially reported in the financial statements (de Wet & du Toit, 2007). This perception is underpinned by the

freedom of SH from the market fluctuations that come from short-term trading speculative activities. ROE, as the proxy used for SH, is calculated based on the net income ÷ shareholder's equity. The inputs into the ROE formula come from the income statement and the statement of financial position and is, therefore, not influenced by stock exchange fluctuations that tend to affect the market share price. SH provides clear measurement value added to the shareholders in a particular period. When the potential cash flow creation capacity of the company is released through high SH, investors tend to express interest in buying the shares, and hence share price goes up (Nurmalitasari et al., 2022). High SH, which points to high net income by a company through the use of low shareholders' equity, makes the company more attractive to investors as this results in more cash flow (dividends) being available for distribution to shareholders.

In a study of 80 Indonesia Stock Exchange-listed companies over a sample period of 4 years, the results indicated a significant positive relationship between SH and share price (Nurmalitasari et al., 2022). Ahsan (2012) investigated the effect of SH on company value for listed companies in the USA using 37 years of data yielding a total of 80370 firm-year observations. The study concluded that SH had a positive impact on the share price returns. Ahsan's (2012) analysis revealed that portfolio managers preferred to use high SH as an indicator of future abnormal share price returns.

In this study, SH, as expected, has a positive relationship with EVA, albeit at a statistically insignificant level but with economic significance. Both SH and EVA are accounting profit-oriented measures, hence the correlation. SH have insignificant negative relationships to TobinQ and share price at book value. Tobin Q is an asset-based metric, while share book price is centred on assets and liabilities. These two measures do not use earnings or profit in their calculation, thus, a positive relationship to SH cannot be established. Thus, Tobin Q and the share price at book value cannot be used to measure company value when measuring its association with company value.

5.5.1.5 Effect of Government interests on company value

The effect of Government interests (GO) in this study is calculated using the company's effective tax rate as a regressor. GO reflects statistically insignificant

negative relationships with Market share price and the share price at book value. Although giving insignificant negative relationships, the regression results mean that an increase in effective tax rate will result in a decrease in company value. A positive relationship with GO emerges with EVA as a proxy of company value, albeit at an insignificant level. GO, on the other hand, provides a statistically significant positive relationship with TobinQ at the $p < 0.05$ level. This means that an increase in GO will increase company value with TobinQ as the proxy.

The results indicated by both market share price and the share price at book value are consistent with the findings of Fedaa and Thamer (2021), who studied Iraqi listed companies and concluded that tax increases have an inverse effect on company value. This principle emanates from tax minimisation as a strategy to increase profitability, earnings and, resultantly, company value (Dauchy & Martinez, 2005). Based on this result, the current study shows that JSE-listed companies in South Africa are probably in the tax minimisation mode, hence the negative relationship. This result and its implications signal that the IR approach of considering the government as a value-adding stakeholder is still immature in South Africa.

The IR philosophy is that the government, as a representative of the community, contributes to company value by creating an enabling environment for businesses to thrive. This is done through providing infrastructural support, education, and health services, as well as trade relations with other countries. For the government to function, it requires funding partly generated from taxation. Companies that practise tax minimisation strategies through aggressive tax planning will be acting contrary to the aspirations of IR as this deprives the government of the means to play its role in promoting its value-adding role for companies. In South Africa, taxes play a pivotal role in national development. For the fiscal year 2017/2018, taxation contributed 25.9% of the GDP (Statistics South Africa, 2018).

5.5.1.6 Effect of Covid-19 on company value

For this study, Covid-19 was considered as the dummy variable (DU) that is expected to affect company value. The Covid-19 pandemic became apparent in South Africa in 2020, leading to the country going into national lockdown to manage its impact on

public health. Since 2020 is part of the time series of the study, it is appropriate that Covid-19 be introduced as a dummy variable.

Consistent with the intuitive expectation, DU has a negative relationship to the company value proxies of market share price, EVA and share price at book value. While market share price and the share price at book value have insignificant negative relationships with DU, EVA shows a statistically significant negative relationship. This is a confirmation of the susceptibility of EVA to short-term disruptions that impact company profitability. These results are in alignment with the findings of Marozva and Magwedere (2021), who concluded that Covid-19 had a significant negative correlation with company values. Their finding concurs with the earlier works, which indicated company value was affected by market negative sensitivity due to global pandemics and disruptions (Ederington & Lee, 1996; Capponi et al., 2019; Al-Awadhi et al., 2020).

Interesting to note that DU returned a statistically significant positive relationship to Tobin Q. One may interpret this as an indication of the resilience of TobinQ, that it is not sensitive to short-term market disturbances but has a long-term outlook ahead of the other proxies. Fu et al. (2017) studied the relationship between TobinQ and the future operating performance of companies in the USA, and they concluded that companies with higher TobinQ ratios had higher operating performance in the long term. Short-term is referred to as a period of four quarters (one year), while long-term means periods of more than one year and beyond (Kaiser & Maravall, 1999).

5.5.1.7 Conclusion on the research question, research objective and hypothesis

The study has demonstrated that stakeholders influence company value, answering the research question. The objective to investigate the effect of stakeholder interests on company value was successfully achieved. The results indicate that the Null hypothesis is not supported.

5.5.2 Regression model for Agency capital (human capital)

The regression model for Agency capital, a part of human capital, was done to test the impact of agency interests on company value. The model will assist in answering the research question and obtaining an opinion on whether the hypothesis can be

accepted or rejected. The research question, research objective and hypothesis, as well as the regression equation, are as follows:

RQ1 (b): How do the stakeholders' (Agents) interests impact company value?

RO1 (b): To investigate the effect of stakeholders' (agents) interests on the company value of JSE-listed companies.

H1 (b) Null: Agency costs (remuneration of directors) have no association with company value

H1 (b) Alternative: Agency costs (remuneration of directors) have an association with company value.

In the Agency model, the predictor variables are represented by Directors' remuneration (DR) and Debt to Equity (D/E)

(a) **Panel regression models are restated below for Agency (Human) Capital**

$$\Delta Y_{it} = \beta_0 + \beta_{ij}\Delta \sum_{ij=1}^{n} X2_{ij} + D\,u_t + \varepsilon_{it} \tag{6}$$

Expanded equations

$$\Delta Y1_{it} = \beta_0 + \beta_1\Delta DR_{it} + \beta_2\Delta D/E_{it} + Du_t + \varepsilon_{it} \tag{7}$$

$$\Delta Y2_{it} = \beta_0 + \beta_1\Delta DR_{it} + \beta_2\Delta D/E_{it} + Du_t + \varepsilon_{it} \tag{8}$$

$$\Delta Y3_{it} = \beta_0 + \beta_1\Delta DR_{it} + \beta_2\Delta D/E_{it} + Du_t + \varepsilon_{it} \tag{9}$$

$$\Delta Y4_{it} = \beta_0 + \beta_1\Delta DR_{it} + \beta_2\Delta D/E_{it} + Du_t + \varepsilon_{it} \tag{10}$$

Table 5.5 summarises the FE results of the regression calculation.

Table 5-5: Summary of results on the Agency stakeholder capital measures

Variable	Y1 Share price return	Y2 EVA	Y3 Tobin Q	Y4 Share price@BV
C	0.223848***	-0.066681***	-0.073697***	0.012258
	(0.046825)	(0.008495)	(0.007351)	(0.012344)
DR	0.085208**	-0.002575	0.000332	0.001207
	(0.027791)	(0.011171)	(0.003559)	(0.001913)
D_E	0,101447***	-0,0201	0,031294	0,002896
	(0.030469)	(0.018021)	(0.017767)	(0.009825)
DU	-0.084105*	-0.083744***	0.050908***	-0.012241
	(0.035352)	(0.016368)	(0.009497)	(0.008772)
Observations	1001	1001	1001	1001
R-squared	0.410979	0.159998	0.209429	0.303064
Adjusted R-squared	0.349866	0.072845	0.127406	0.230755
F-statistic	6.724939	1.835837	2.553275	4.191236
Prob(F-statistic)	-	0.000007	0	0
Mean dependent var	0.063305	-0.042347	-0.019698	0.104482
S,D, dependent var	0.441288	0.294563	0.201187	0.198079
Durbin-Watson stat	2.175759	2.157405	1.928142	1.914422
Hausman Stats	0000	4,255144	0000	0000
Heteroscedasticity	529.2103***	347,2809***	402,2108***	603.0972***

Note: *Robust Standard errors in parentheses and * p < 0.05, ** p < 0.01, *** p < 0.001*

The following sections discuss each variable in more detail.

5.5.2.1 Impact of Directors' Remuneration on company value

The directors of companies are at the centre of the corporate governance pillar of the organisation and are regarded as representing the shareholders' interests in the management of the business. They play the agent role for the shareholders in creating value on their behalf. The directors' reward is in the remuneration that they get paid. This study aims to test the impact of directors' remuneration (DR) on company value.

The results in Table 5.5 show that DR has a statistically significant positive impact on the market share price. This means that an increase in DR will increase the market share price. DR has insignificant impacts on the other proxies of company value, such as EVA, TobinQ and the share price at book value and is, therefore, not considered strong enough proxies to warrant further discussion as insignificant relationships show

that value addition by this proxy is negligible (only maintaining company value at the same level).

The findings using market share price, where DR has a positive significant relationship which company value, are in line with a neo-classical theory where agent remuneration became a method of aligning the shareholders' expectations and the strategies that directors will employ to increase shareholders' wealth (Dalton et al., 2007; Palia & Porter, 2007; Bendickson et al., 2016; Panda & Leepsa, 2017; Wolloch, 2020). The compensation paid to the directors is then assumed to be not only a reward for the business management effort but perhaps a purchase of loyalty to avoid the agency problem (Bebchuk & Weisbach, 2010).

Empirical evidence from previous studies in the developed markets of the USA and the UK confirmed a positive relationship between DR and company performance or share price returns (Coughlan & Schmidt, 1985; Murphy, 1985; Conyon et al., 2000). Studies in South Africa that took samples from the JSE established that DR impacted share price and company performance (Scholtz & Smit, 2012; de Wet, 2013). The studies were, however, not aimed at solving the IR problem of measurement and reporting of capitals which this study is solving. The current study confirms a statistically significant relationship between DR and company value, contributing to solving the IR measurement and reporting for agency influence on company value. Some studies, however, obtained contrary conclusions where a weak or no relationship could be found between DR and company value (Brick et al., 2006; Bussin & Modau, 2015).

5.5.2.2 *Impact of Debt to Equity on company value*

In the regression equation for agency capital, the Debt to Equity (D/E) is used to measure the impact of directors' influence on company value. Directors influence the capital structure of a company through their ability to tilt the capital structure of the company through the use of debt aggravation (Lazarides & Pitoska, 2011). Thriving on the tenets of Modigliani and Miller (1963), which state that debt increases firm value, directors may minimise equity market funding in favour of debt. Where directors' compensation is based on share returns, the preference of debt capital over equity may be predisposed by the reward expectation.

175

The regression results in Table 5.5 indicate that D/E has a statistically significant impact on the market share price at the $p < 0.001$ level. Insignificant relationships are shown if EVA, TobinQ and share price at book value are used as the dependent variables, meaning that, for the Agency capital model, these cannot be used as proxies of company value when D/E is the independent variable. The impact of Covid-19, captured through DU, shows negative results for all the company value proxies except for TobinQ. Aligned with the observation of the stakeholder model in Section 5.5.1, TobinQ demonstrates its long-term outlook by remaining positive in the face of short-term market disruptions.

The results obtained in the Agency regression model are in line with the Modigliani and Miller (1963) theory and the later clarification by Miller (1977) in his work on "Debt and Taxes". Miller (1977) improved Modigliani and Miller's (1963) proposition by stating that debt concentration will increase the company's value but only to a certain optimum level. Debt beyond the optimum level opens the company to bankruptcy and liquidity risks.

The study by Hull (2005) indicated that Australian energy companies used different debt levels to maximise company values. Ratshikuni (2009) studied 97 JSE-listed companies with panel data of 22 years and concluded that companies used D/E to steer company value. These results are consistent with the findings already mentioned in section 5.5.1.3 (Abor, 2005; Abata et al., 2017). These previous studies corroborate the findings of this current study, where a significant positive impact of D/E on company value is recorded. These previous studies were, however, not done to develop a model for Integrated Reporting, and their findings cannot be used for that purpose, hence the need for this current study.

Karani (2009) investigated the impact of D/E on company values for firms listed on the Nairobi Stock Exchange and found no evidence of D/E influencing share price returns. This result coincides with the findings of Zeitun and Tian (2007) and Onaolapo and Kajola (2010), who also concluded that there is no relationship between D/E and company value. These findings may be due to different market profiles where the JSE (formed 1887) is arguably considered more mature than the Jordanian (formed 1978), Kenyan (formed in the 1920s) and Nigerian (formed 1958) markets where the studies were done (Ngugi, 2003; Petri and Saadi-Sedik, 2006; Ifeanyi *et al.*, 2015).

5.5.2.3 *Conclusion on the research question, research objective and hypothesis*

The independent variables of the Agency models, i.e., Directors' Remuneration and Debt to Equity, both have a statistically significant positive impact on company value, using the market share price, thereby assisting in answering the research question and achieving the research objective. The Null hypothesis is therefore rejected.

5.5.3 Regression model for Tangible (Manufactured) Capital

The regression model on manufactured capital intends to measure the relationship between company value and tangible assets.

The Research Question, Research Objective and Hypothesis (H) are captioned below:

RQ2: What is the relationship between a company's tangible (manufactured) capital and company value?

RO2: Establish the effects of tangible assets (manufactured capital) on the value of JSE-listed companies.

H2 Null: A company's tangible (manufactured) capital has no relationship with company value.

H2 Alternative: A company's tangible (manufactured) capital has a relationship with company value.

The manufactured capital proxies used in this study consist of buildings (BD), machinery and equipment (Eq) and Tangible Assets to Non-Current Assets ratio (TA/NCA).

(a) Panel regression models for Tangible (Manufactured) Capital are restated below

$$\Delta Y_{it} = \beta_0 + \beta_{ij}\Delta \sum_{ij=1}^{n} X3_{ij} + D\,u_t + \varepsilon_{it} \tag{11}$$

Expanded equations

$$\Delta Y1_{it} = \beta_0 + \beta_1 \Delta Bd_{it} + \beta_2 \Delta Eq_{it} + \beta_3 \Delta TA/NCA_{it} + Du_t + \varepsilon_{it} \tag{12}$$

$$\Delta Y2_{it} = \beta_0 + \beta_1 \Delta Bd_{it} + \beta_2 \Delta Eq_{it} + \beta_3 \Delta TA/NCA_{it} + Du_t + \varepsilon_{it} \tag{13}$$

$$\Delta Y3_{it} = \beta_0 + \beta_1 \Delta Bd_{it} + \beta_2 \Delta Eq_{it} + \beta_3 \Delta TA/NCA_{it} + Du_t + \varepsilon_{it} \tag{14}$$

$$\Delta Y4_{it} = \beta_0 + \beta_1 \Delta Bd_{it} + \beta_2 \Delta Eq_{it} + \beta_3 \Delta TA/NCA_{it} + Du_t + \varepsilon_{it} \tag{15}$$

The results of the FE regression for manufactured capital are presented in Table 5.6.

Table 5-6: Summary of results on tangible (manufactured) capital measures

Variable	Y1	Y2	Y3	Y4
	Share price return	**EVA**	**Tobin Q**	**Share price@BV**
C	0.246416***	-0.067572***	-0.072509***	0.012764
	(0.049761)	(0.007412)	(0.006478)	(0.012895)
BD	-0.006558	-0.005958	0.000642	0.002838
	(0.029926)	(0.01726)	(0.015682)	(0.005838)
EQ	0.001815	0.003713	0.010695	-0.008352
	(0.016248)	(0.010189)	(0.01152)	(0.007941)
TA_NCA	0.003188	0.011869	0.010147	0.020675
	(0.025678)	(0.02511)	(0.013018)	(0.012193)
DU	-0.105436*	-0.082723***	0.046693***	-0.014112
	(0.041977)	(0.017813)	(0.011193)	(0.009201)
Observations	1001	1001	1001	1001
R-squared	0.348165	0.159734	0.206901	0.304394
Adjusted R-squared	0.279741	0.071529	0.123647	0.231374
F-statistic	5.088302	1.810943	2.485188	4.16867
Prob(F-statistic)	0.00000	0.00001	0.00000	0.00000
Mean dependent var	0.064143	-0.042215	-0.019567	0.104274
S,D, dependent var	0.431369	0.294356	0.200446	0.197473
Durbin-Watson stat	2.175916	2.156476	1.945111	1.90893
Hausman Stats	0000	0000	0000	0000
Heteroscedasticity	515.4593***	343.5321***	397,8827***	595,9996***

Note: *Robust Standard errors in parentheses and * p < 0.05, ** p < 0.01, *** p < 0.001*

Buildings comprise the physical infrastructure (excluding machinery and equipment) that belongs to the company. The IR framework states that buildings are part of manufactured capital that is important in the value creation processes (IIRC, 2021). This assumption implies a positive relationship between buildings and company value. However, the regression results present a contradictory picture. Buildings have insignificant relationships with all the proxies of company value in the model. Buildings have an insignificant but negative correlation to Market share price and EVA, while correlations with TobinQ and share price at book value are insignificant but positive. The insignificant relationship relationships between buildings and company value proxies could be an indicator that buildings have lost value relevance in terms of value creation, although their economic significance remains critical for going concern

purposes. Buildings are fixed installations that cannot respond to changes in business needs, such as the requirement to change location. The insignificant relationships mean that buildings are neither creating nor eroding value but are maintaining company value. Machinery and equipment weakly correlate positively to market share price, EVA and TobinQ. An insignificant negative correlation is shown with the share price at book value. Although giving insignificant positive correlations across all the proxies of company value in this study, the Tangible Assets to Non-Current Assets ratio (TA/NCA) has more explanatory power than buildings, machinery, and equipment. This signifies that if the weight of tangible assets is increased in the pool of non-current assets, a positive effect on company value is registered, albeit at an insignificant level.

The insignificant correlations of manufactured capital to all measures of company value in this study are in line with the findings of previous studies. Saleh (2018) studied the effect of tangible assets on company value for Indonesian entities and found a negative relationship to company value. This was attributed to the cash flow impact of investing in tangible assets and the depreciation charge effect on profits. In another Indonesian study, Khan et al. (2018) found weak explanatory power on tangible assets. Pratheepan and Banda (2016) studied a sample of Sri Lankan companies, and their findings showed that tangible assets had an insignificant influence on company performance.

While the current study and the other empirical evidence cited above point to the insignificance of tangible assets as an explainer of company value, some investigations yielded contrary results. İltaş and Demirgüneş (2020) investigated the effect of tangible assets on manufacturing companies in Turkey and concluded that there was a significant relationship with company value, pointing out that firms with high tangibles had better access to debt due to loan collateral capacities. This works back to Modigliani and Miller (1963) and Miller (1977), who advocate for debt as having the capability to improve company value. Studying the effect of tangibles on Ethiopian insurance companies, Mehari and Aemiro (2013) confirmed that tangible assets had a positive relationship with company value. Due to the taxation regime that is favourable to investments in tangible assets, companies in China indicated a positive relationship between company value and tangible assets (Dong, Leung and Cai,

179

2012). Nigerian banks with higher fixed asset bases indicated more capacity to generate profits (Olatunji et al., 2014).

(b) Conclusion on the research question, research objective and hypothesis

The study has established that tangible (manufactured) capital model variables of Buildings, Machinery and Equipment and Tangible Assets to Non-Current Assets ratio have a positive relationship with company value. Although the relationship is statistically insignificant, the economic significance of tangible assets on value creation remains important as company value must be maintained if businesses are to remain as going concerns. This confirms that the research question has been answered and the objective achieved. In consideration of the economic significance, the Null hypothesis is rejected.

5.5.4 Regression model for Intellectual Capital

The purpose of this regression model is to establish a positive relationship or otherwise between intellectual capital and company value. The equation uses the Value Added Intellectual Coefficient (VAIC) as the independent variable while the market share price is complemented by EVA, TobinQ and share price at book value as dependent variables. The Dummy variable (Du) is the regressor representing the effects of Covid 19 for the year 2020. The model is used to address the Research Question (RQ), Research Objective (RO) and hypothesis (H). They are listed below;

RQ3: To what extent does Intellectual Capital impact company value?

RO3: Examine the impact of intellectual capital on the company value of JSE-listed companies

H3 Null: Intellectual Capital has no link with company value.

H3 Alternative: Intellectual Capital has a link with company value.

(a) Panel regression models for Intellectual Capital are restated below

$$\Delta Y_{it} = \beta_0 + \beta_{ij}\Delta \sum_{ij=1}^{n} X4_{ij} + D\,u_t + \varepsilon_{it} \tag{16}$$

Expanded equation

$$\Delta Y1_{it} = \beta_0 + \beta_1 VAIC_{it} + Du_{it} + \varepsilon_{it} \tag{17}$$

$$\Delta Y2_{it} = \beta_0 + \beta_1 VAIC_{it} + Du_{it} + \varepsilon_{it} \tag{18}$$

$$\Delta Y3_{it} = \beta_0 + \beta_1 VAIC_{it} + Du_{it} + \varepsilon_{it} \tag{19}$$

$$\Delta Y4_{it} = \beta_0 + \beta_1 VAIC_{it} + Du_{it} + \varepsilon_{it} \tag{20}$$

The VAIC regressor was built using the Pulic (1998) approach;

Human Capital Efficiency $_{it}$ (HCE$_{it}$) + Structural Capital Efficiency $_{it}$ (SCE) $_{it}$ + Capital Employed Efficiency $_{it}$ (CEE) $_{it}$.

The results of the regression model are exhibited in Table 5.7.

Table 5-7: Summary of results on the Intellectual capital measures

Variable	Y1 Share price return	Y2 EVA	Y3 TobinQ	Y4 Share price@BV
C	0.245234***	-0.069193***	-0.073153***	0.013406
	(0.049202)	(0.008264)	(0.006276)	(0.012305)
@TREND	-0.036478***	0.007002**	0.011317***	0.010591***
	(0.007725)	(0.002232)	(0.001357)	(0.001973)
VAIC	0.043012*	0.016161***	0.018207***	0.010793
	(0.018669)	(0.003016)	(0.003976)	(0.008531)
DU	-0.101381*	-0.081489***	0.050129***	-0.010763
	(-0.101381)	(-0.081489)	(0.050129)	(-0.010763)
Observations	1001	1001	1001	1001
R-squared	0.351588	0.162425	0.20962	0.301079
Adjusted R-squared	0.285102	0.076544	0.128578	0.229414
S, E, of regression	0.365967	0.285165	0.186946	0.163442
F-statistic	5.288189	1.891276	2.586549	4.201223
Prob(F-statistic)	-	0.000003	-	-
Mean dependent var	0.063401	-0.042422	-0.019618	0.106016
S, D, dependent var	0.432780	0.29468	0.201117	0.199448
Sum squared resid	121.476300	73.75662	31.69852	24.229
Durbin-Watson stat	2.171719	2.15112	1.93654	1.914392

Note: Robust Standard errors in parentheses and $* p < 0.05$, $** p < 0.01$, $*** p < 0.001$

The regression results in Table 5.7 indicate statistically significant positive relationships between VAIC and the company value proxies of market share price, EVA and TobinQ. This means an increase in VAIC is expected to create value in companies. The results imply that intellectual capital has value-creation potential and that the knowledge economy is becoming more relevant to JSE-listed companies. Investments in intellectual capital may therefore be considered prudent. VAIC has an

insignificant positive correlation with share price at book value, signalling that the traditional accounting methods used to derive share price at book value do not sufficiently capture intangible assets such as intellectual capital.

The results obtained in the regression model are congruent with the theory of intellectual capital. Classical scholars of intellectual capital that, include Taylor (1911), Robinson (1934), Chamberlin (1947), Schumpeter (1934), Moore and Penrose (1960) and Polanyi (1966) identified that employee skill, knowledge and experience were vital for a company in the creation of competitive advantage. Patents, trademarks and brands became the symbols of intellectual capital whose value remained in the company even if skilled employees are fluid as they can leave the company (Robinson, 1934; Chamberlin, 1947). Pulic (1998) modernised the classical assertions through the VAIC model, where he demonstrated that intellectual capital is central to the contemporary knowledge-based economy. It is one of the assumptions of VAIC that there is a positive relationship between increasing intellectual capital and increasing company value (Pulic, 1998).

Various empirical studies are in tally with the findings of the current study. Bornemann (1999) concluded that there was a positive relationship between company performance and value with intellectual capital in a study of Austrian firms. VAIC was used to investigate the relationship between intellectual capital and company value in Thailand manufacturing companies, and the result concurred with the VAIC theory (Phusavat *et al.*, 2011). Meles et al. (2016) studied 5 500 banks in the USA using data over eight years and affirmed that intellectual capital and company value had a positive relationship. In an investigation of 390 JSE-listed companies using 12-year panel data, Morris (2015) established a strong positive relationship between intellectual capital and company value. Similar results were achieved in other studies, thus strengthening the VAIC assumption (Chen et al., 2005; Clarke, Seng & Whiting, 2011; Alhassan & Asare, 2016).

While the above empirical pieces of evidence support the current study, other studies, however, came with contrasting findings. Firer and Stainbank (2003) studied 75 JSE-listed companies and concluded that there was a small positive correlation between VAIC and the share price. This was, however, limited to only one year's data (2001). Taking a longer series of data, that is, from 2001 to 2017, Schultz and Molele (2019)

182

used VAIC to investigate the influence of intellectual capital efficiency on company performance among 43 companies listed on the JSE. Their findings indicated no significant associations between intellectual and company value. Intellectual capital recognition in company balance sheets is still a growing phenomenon, with accountants grappling with the valuation of intangibles such as brand value, patents, goodwill and trademarks (Moro Visconti, 2019; Yasyshena, 2019). The current study, using a bigger sample of 91 JSE-listed companies being more recent (2020), found that VAIC has a statistically significant influence on company value.

As reported by Ocean Tomo (2021), intellectual capital has grown in the USA from 17% of total assets in 1975 to 90% in 2015. Based on this trajectory, one may state that by the time Firer and Stainbank (2003) and Schultz and Molele (2019) did their investigations on JSE companies, intellectual capital had not matured to the level it is in South African companies at the time of this study.

(b)   Conclusion on the research question, research objective and hypothesis

In consideration of the above, the Intellectual capital model confirms that there is a linear relationship between Intellectual capital and company value. With this conclusion, one may mention that the research question was answered, and the research objective was achieved. The evidence of the study indicates that there is support for the Alternative hypothesis.

5.5.5 Regression model for Financial Capital

The regression model for financial capital is to measure the impact of this capital on company value. The regression model is based on FE and is designed to answer the Research Question (RQ) and prove or disprove the Hypothesis (H). The RQ, Research Objective (RO) and H are stated below:

RQ4: What impact does financial capital have on company value?

RO4: Investigate the impact of financial capital on the company value of JSE-listed companies.

H4 Null: Financial capital does not have an association with company value.

H4 Alternative: Financial capital has an association with company value.

(a)   Panel regression models for Financial Capital are restated below

The equations use market share price (Y1) as the main dependent variable for market value while EVA (Y2), TobinQ (Y3) and the share price at book value (Y4) are additional dependent variables to check the robustness of Y1. The regressors are Debt to Equity ratio (D/E), Long-term debt to Non-current assets ratio (LD/NC) and Total Debt to Total Assets ratio (TD/TA). The Dummy variable (Du) stands for the effects of Covid-19 in 2020.

$$\Delta Y_{it} = \beta_0 + \beta_{ij}\Delta \sum_{ij=1}^{n} X5_{ij} + D\,u_t + \varepsilon_{it} \tag{21}$$

Expanded equations

$$\Delta Y1_{it} = \beta_0 + \frac{\beta_1 \Delta D}{E_{it}} + \frac{\beta_2 \Delta LD}{NC_{it}} + \frac{\beta_3 \Delta TD}{TA_{it}} + Du_t + \varepsilon_{it} \tag{22}$$

$$\Delta Y2 = \beta_0 + \frac{\beta_1 \Delta D}{E_{it}} + \frac{\beta_2 \Delta LD}{NC_{it}} + \frac{\beta_3 \Delta TD}{TA_{it}} + Du_t + \varepsilon_{it} \tag{23}$$

$$\Delta Y3_{it} = \beta_0 + \frac{\beta_1 \Delta D}{E_{it}} + \frac{\beta_2 \Delta LD}{NC_{it}} + \frac{\beta_3 \Delta TD}{TA_{it}} + Du_t + \varepsilon_{it} \tag{24}$$

$$\Delta Y4_{it} = \beta_0 + \frac{\beta_1 \Delta D}{E_{it}} + \frac{\beta_2 \Delta LD}{NC_{it}} + \frac{\beta_3 \Delta TD}{TA_{it}} + Du_t + \varepsilon_{it} \tag{25}$$

Table 5.8 summarises the results of the FE regression model.

Table 5-8: Summary of results on the Financial capital measures

Variable	Y1 Share price return	Y2 EVA	Y3 TobinQ	Y4 Share price@BV
C	0.243814***	-0.067849***	-0.072609***	0.012704
	(0.049656)	(0.007639)	(0.007241)	(0.012519)
@TREND	-0.035743***	0.006663**	0.011545***	0.010732***
	(0.007965)	(0.002275)	(0.00142)	(0.002006)
D_E	0.107637***	-0.02194	0.031888	0.00592
	(0.028546)	(0.01923)	(0.018039)	(0.008962)
LD_NC	0.005805	-0.009093	0.019187	0.002023
	(0.025384)	(0.015804)	(0.012666)	(0.010031)
TD_TA	-0.023101***	0.003275	-0.006756	0.008713
	(0.006027)	(0.011002)	(0.005478)	(0.006398)
DU	-0.088971*	-0.084503***	0.048867***	-0.011963
	(0.041495)	(0.016722)	(0.009126)	(0.009081)
Observations	1001	1001	1001	1001
R-squared	0.364229	0.160333	0.2121	0.304758
Adjusted R-squared	0.297491	0.072191	0.129392	0.231776

Variable	Y1 Share price return	Y2 EVA	Y3 TobinQ	Y4 Share price@BV
S, E, of regression	0.364411	0.285091	0.186788	0.163118
F-statistic	5.457566	1.819029	2.564451	4.175834
Prob(F-statistic)	0.00000	0.000009	0.00000	0.00000
Mean dependent var	0.063079	-0.042486	-0.019864	0.105022
S, D, dependent var	0.434691	0.293917	0.201135	0.198765
Sum squared resid	120.179600	73.55578	31.57535	24.07975
Durbin-Watson stat	2.187902	2.153582	1.932264	1.92423

*Note: Robust Standard errors in parentheses and * p < 0.05, ** p < 0.01, *** p < 0.001*

5.5.5.1 Debt to Equity ratio

The results in Table 5.8 indicate that D/E has a statistically significant positive relationship to the market share price proxy of company value. This means that an increase in D/E correlates with an increase in market share price. D/E has insignificant relationships with the other proxies of company value, with EVA having a negative relationship, while TobinQ and the share price at book value have weak positive relationships. D/E has a negative relationship with EVA, perhaps because of EVA's short-term outlook, where the remnant effects of the 2007 to 2009 financial crises lingered on, as well as the effects of the Covid-19 pandemic. For fear of liquidity and bankruptcy risks, these events could have ignited some debt reduction actions in the short term.

The significant positive correlation between D/E and market share price can be interpreted to mean that companies listed on the JSE rely on debt to raise financial requirements ahead of equity. This indicates that JSE-listed companies can pursue debt funding strategies to finance projects with positive net present values, however, being cognisant of the liquidity risks that come with over-exposure to borrowings. The result showing a significant positive relationship between D/E and market share price is in line with both theory and some empirical studies. In Section 5.5.1.3, the study results indicated a statistically significant positive relationship between lenders' interests and market share price. The findings discussed in Section 5.5.2.2 are in line with the results above, where D/E as a proxy of directors' influence on company value was also significantly positively related to the market share price. These results further affirm the view that an increase in debt results in an increase in company value up to

a certain optimum level. The theoretical and empirical studies have been covered in the previous sections of 5.5.1.3 and 5.5.2.2 (Modigliani & Miller, 1963; Miller, 1977; Abor, 2005; Hull, 2005; Zeitun & Tian, 2007; Ratshikuni, 2009; Onaolapo & Kajola, 2010; Wenjuan et al., 2011; Abata et al., 2017).

In terms of capital structure dynamics, companies listed on the JSE may choose debt financing because the directors, using their corporate governance mandate and wishing to dilute equity concentration, may resort to debt (Lazarides & Pitoska, 2011). Companies that have thin retained earnings and risk-averse investors that are not willing to put in more equity will use debt to address their capital requirements. Some companies may invoke debt to achieve the desired optimum D/E ratio.

5.5.5.2 *Long-term debt to Non-current assets ratio effect on company value*

The long-term debt to Non-current assets ratio (LD/NCA) measures the weight of the long-term debt (LD) compared to non-current assets (NCA), the underlying assumption being that LD is usually raised to fund NCA. The result of the regression calculation reflects weak associations between LD/NCA and company value across all the proxies used in this study. This means that movement in LD/NCA had no meaningful impact on company value during the period. LD/NCA has positive associations with Market share price, TobinQ and share price at book value, although statistically insignificant. LD/NCA has an insignificant negative correlation to EVA.

The state of the LD/NCA to company value may reflect the difference in the lengths of time allocated to LD and NCA. The number of years allocated for the repayment of LD may not be the same as the amortisation period assigned on NCA. The mismatch of these time frames may weaken the intended meaning of the ratio. The weak correlation between LD/NCA may be an indicator that the two inputs, that is, LD and NCA, are not growing. This is also reflected in the negative mean that was discussed in Section 5.5.2. which one may interpret to mean that companies were eager to reduce debt levels. A relook at the South African GDP growth during the study period reveals negative or stunted growth (Statistics South Africa, 2018). Without strong economic growth, companies may have responded by stagnating or reducing borrowing and reducing investments in NCA.

With financial prudence, which the South African market has become recognised for, companies may have remained with flat LD/NCA to maintain sustainable D/E ratios, therefore, less appetite to borrow (Ezeoha & Botha, 2012). This perhaps led companies to use other funding sources, such as releasing retained income. Companies may be using debt to fund working capital operations and not necessarily NCA, causing the weakening of the LD/NCA impact on company value.

5.5.5.3 Total debt to Total assets ratio effect on company value

The regression model results in Table 5.8 show that TD/TA has a statistically significant negative relationship with the market share price. This means that an increase in TD/TA results in a decrease in market share price. TD is a sum of both current and non-current liabilities, while TA is a combination of current assets and non-current assets.

It is important to note that the LD/NCA discussed in Section 5.5.5.2 showed a statistically positive relation to the market share price. The contrast between the negative relationship results on TD/TA to market share price and the positive relationship of LD/NCA suggests that the introduction of current liabilities and current assets in TD/TA has a negative impact. This means that current liabilities and current assets have a negative impact on market share price because, without them, LD/NCA gives a positive relationship. To bring alignment between LD/NCA and TD/TA, current assets should be funded by cash generated from operations and less from short-term debt. TD/TA has statistically weak associations with the other company value proxies of EVA, TobinQ and the share price at book value, and these proxies are not discussed further as they have weak explanatory power.

5.5.5.4 Conclusion on the research question, research objective and hypothesis

The results show that financial capital influences company value. This can be used to conclude that the research question at hand has been answered and the research objective was achieved. The Alternative hypothesis is supported by the evidence from the study.

5.6 CHAPTER SUMMARY

This chapter covered the presentation, analysis and discussion of the research findings. The descriptive statistics were tabled, and the mean, standard deviation and maximum and minimum for the variables were disclosed. The selection of the panel data regression method was discussed, and Fixed Effects (FE) was chosen due to its appropriateness when the sample used was purposefully determined. Individual econometric models were presented and discussed for each of the capitals in this study. Figure 5.1 shows the outcome of each variable per model with market share price as the dependent variable for company value.

Figure 5-1: Variables results for market share price

Source: Developed for this study

As indicated in Figure 5.1, only three variables gave negative relationships, while the rest were positive, although with different levels of significance. Lenders (LU), Shareholders (Sh), Directors' Remuneration (DR), Equipment and Machinery (Eq), Tangible Assets to Non-current Assets ratio (TA/NCA) and Covid-19 (Du) have a significant positive effect on company value.

The following Chapter will present the final model of this study that the researcher will submit to fulfil the development of A framework to enhance Integrated Reporting through the quantification and valuation of non-financial capitals.

CHAPTER 6: FINAL MODEL PRESENTATION AND DISCUSSION

6.1 INTRODUCTION

The preceding chapter covered the regression models for each of the capitals that are included in this study, viz, stakeholder, agency, manufactured, intellectual and financial. The models were run using FE regressions, and results for each were presented. In this chapter, a combined regression model for all the capitals in the study is presented, and the results are analysed. The combined model uses an augmented Feltham-Ohlson model (AFOM) or Augmented Integrated Reporting Model (AIRM), where the independent variables from the different regression models for the capitals are brought together to obtain an integrated view of the relationship between these regressors and company value. This chapter will indicate whether the research question is answered, the research objective achieved, and the outcome of the hypothesis test will be given.

6.2 THE RESEARCH QUESTION, RESEARCH OBJECTIVE, HYPOTHESES AND REGRESSION MODEL

The Research Question (RQ), Research Objective (RO) and Hypothesis (H) for this model are given below:

RQ5: How should companies measure and manage financial and non-financial capitals to create value and reflect integrated company value?

RO5: Develop an enhanced IR framework that can be used by practitioners, academics, regulators, and corporate reporting standard setters.

H5 Null: The composite of financial and non-financial capitals does not influence the integrated company value.

H5 Alternative: The composite of financial and non-financial capitals influences integrated company value.

(a) Panel regression models for the Augmented Feltham-Ohlson model (Augmented Integrated Reporting Model)

$$\Delta Y_{it} = \beta_0 + \beta_1 \Delta X1_{it} + \beta_{ij} \sum_{\substack{i=1 \\ t=1 \\ j=4}}^{N} \Delta X2j_{it} + Du_t + \varepsilon_{it} \tag{26}$$

$$\Delta Y1_{it} = \beta_0 + \beta_1 \Delta X1_{it} + \beta_2 X2a_{it} + \beta_3 X2b_{it} + \beta_4 X2c_{it} + \beta_5 X2d_{it} + Du_t + \varepsilon_{it} \tag{27}$$

$$\Delta Y2_{it} = \beta_0 + \beta_1 \Delta X1_{it} + \beta_2 X2a_{it} + \beta_3 X2b_{it} + \beta_4 X2c_{it} + \beta_5 X2d_{it} + Du_t + \varepsilon_{it} \qquad (28)$$

$$\Delta Y3_{it} = \beta_0 + \beta_1 \Delta X1_{it} + \beta_2 X2a_{it} + \beta_3 X2b_{it} + \beta_4 X2c_{it} + \beta_5 X2d_{it} + Du_t + \varepsilon_{it} \qquad (29)$$

$$\Delta Y4_{it} = \beta_0 + \beta_1 \Delta X1_{it} + \beta_2 X2a_{it} + \beta_3 X2b_{it} + \beta_4 X2c_{it} + \beta_5 X2d_{it} + Du_t + \varepsilon_{it} \qquad (30)$$

Where:

Y_{it}	=	Company Value of the company i at time t
$X1_{it}$	=	Financial Capital of the company i at time t
$X2a_{it}$	=	Intellectual Capital of the company i at time t
$X2b_{it}$	=	Agency (Human) Capital of the company i at time t
$X2c_{it}$	=	Manufactured Capital of the company i at time t
$X2d_{it}$	=	Stakeholder (Social and Relationship Capital) of the company i at time t
Du_t	=	0 if no Covid and 1 if there is Covid. Dummy variable used to capture the effects of Covid-19 (the year 2020)

Y1 is the company value proxy using market share price, Y2 uses EVA, Y3 is based on Tobin Q, and Y4 represents share price at book value. The AIRM used the individual proxies that were present in each capital, and the regression results are presented in Table 6.1. An exception is on Debt/Equity that was previously used, in Chapter 5, in the individual models for stakeholders, agency and financial capital. For the AIRM, Debt/Equity is used as a proxy for the Lenders under stakeholders' capital. Although Debt/Equity indicated a statistically strong relationship to the market share price in all three instances, Lenders demonstrated the highest explanatory power hence the choice to use it as a proxy for lenders.

Table 6-1: Summary of results on the AIRM measures

Variables	Fixed effects Model Y1 Share Price	Fixed effects Model Y2 EVA	Fixed effects Model Y3 TobinQ	Fixed effects Model Y4 Share Price at Book Value
C	0,081864*	-0.035128	-0,020798**	0,06223***
	(0,03487)	(0.008767)	(0,006764)	(0,007306)
EM	0,028732	-0.031303	0.015096	-0,012345
	(0,028124)	(0.017827)	(0.017307)	(0.014193)
CU	0,006725	0.003486	-0,000369	0,005712
	(0,013787)	(0.011009)	(0,008436)	(0,004342)
LU or D/E	0,131228**	-0.020029	0,009519	0,00268
	(0.045009)	(0.021307)	(0.018353)	(0.012165)
SH	0,061472***	0.012454	-0,015258	-0,014997
	(0,017928)	(0.017985)	(0,01143)	(0,012714)
GO	-0,023939	0.000906	0,018482	-0,01288
	(0,022952)	(0.021981)	(0,014125)	(0,009323)
DR	0,101137***	-0.007696	-0,002383	-0,000885
	(0,028215)	(0.011567)	(0,003789)	(0,002091)
VAIC	0,036609	0.010893	0,016734**	0,011505
	(0,019191)	(0.005318)	(0,00572)	(0,013376)
BD	-0,032479	-0.007722	-0,007025	0,00905
	(0,031175)	(0.019070)	(0,014555)	(0,008767)
EQ	0,032514*	0.002591	0,016262	-0,008543
	(0,015908)	(0.015642)	(0,012059)	(0,006195)
TA_NCA	0,007763**	0.006143**	-0,006658**	0,011609**
	(0,036625)	(0.025800)	(0,009791)	(0,015929)
LD_NC	0,003638	-0.016484	0,011776	0,001582
	(0,028801)	(0.018639)	(0,012098)	(0,011448)
TD_TA	-0,025995	0.001415	-0,015623*	0,006718
	(0,010076)	(0.016840)	(0,007285)	(0,004864)
DU	-0,22626***	-0.049168	0,101317***	0,031457***
	(0,036544)	(0.012559)	(0,008982)	(0,008907)
Observations	1001	1001	1001	1001
R-squared	0.325903	0.167657	0.148184	0.244085
Adjusted R-squared	0.248498	0.072081	0.050372	0.157285
F-statistic	4.210373	1.754182	1.514988	2.812045
Prob(F-statistic)	0	0.000017	0.001267	0
Mean dependent var	0.059901	-0.041147	-0.017773	0.108417
S,D, dependent var	0.4232	0.294056	0.195698	0.201848
Durbin-Watson stat	2.054788	2.144792	1.910927	1.880043
Hausman Stats	22,972394*	11,174917	9,693759	0
Heteroscedasticity	509,8498***	352,6179***	414,1509***	443,1215***

Note: *Robust Standard errors in parentheses and * p < 0.05, ** p < 0.01, *** p < 0.001*

The results displayed in Table 6.1 show that some of the variables have a statistically significant association with company value while others have weak relationships. From the previous models covered, market share price became the dominant company value proxy. Out of the 13 predictor variables in this model, ten variables have a positive influence on market share price, with six of them having statistically strong relationships while the other four have weak associations.

6.2.1 Effect of stakeholder interests (social and relationship capital) on integrated company value

The stakeholders identified in this study consist of employees, customers, lenders, shareholders, and the government. The effects of these individual stakeholders were

reported and discussed under section 5.5.1 in Chapter 5. In this section, a combined view of the effect of stakeholder interests on company value is assessed at the total AIRM level. As reflected in Table 6.1, the regression results on stakeholder capital have varying effects on the proxies of company value. Company value proxies involved are market share price, EVA, TobinQ and share price at book value. Table 6.2 summarises the Stakeholder effects on the different company value proxies.

Table 6-2: Stakeholder capital results for AIRM

Stakeholder	Proxies of company value and the relationship to stakeholder capital			
	Market Share Price	**EVA**	**TobinQ**	**Share Price at Book Value**
Employees	Positive and weak	Negative and weak	Positive and weak	Negative and weak
Customers	Positive and weak	Positive and weak	Negative and weak	Positive and weak
Lenders	Positive and significant	Negative and weak	Positive and weak	Positive and weak
Shareholders	Positive and significant	Positive and weak	Negative and weak	Negative and weak
Government	Negative and weak	Positive and weak	Positive and weak	Negative and weak
No. of positives	**4**	**3**	**3**	**2**
No. of negatives	**1**	**2**	**2**	**3**
Dominating effect	**Positive**	**Positive**	**Positive**	**Negative**

Source: Developed for this study

As indicated in Table 6.2, stakeholders demonstrate a positive relationship with the market share price. This might be an indicator that stakeholders probably depend on the readily available market share price information to make decisions on their value-adding activities with the company. The market share price is determined by both company and market activities. The company's stakeholders can influence its activities, while market activities may be beyond their control. This finding is in line with the IR concept and the empirical studies that used market share price as a company value proxy to measure the effect of stakeholders. Borgers *et al.*, 2013 studied the effect of stakeholder relations on US companies for the period 1992 to 2009 and found that they have a positive association with the market share price. This

result aligns with the findings of this current study showing the applicability of stakeholder influence on company value across different markets. A study conducted in India on the effect of corporate social responsibility (CSR) on company financial performance and, consequently, company value concluded that CSR positively impacted company performance (Maqbool, Rasool & Ahmad, 2018). The findings of this study are applicable to the current study in the context of the effect of stakeholder influence on company value in emerging economies. Mason and Vracheva (2015) utilised market share price as a proxy of company value and found a positive but statistically weak relationship to stakeholder management. Stakeholders' effect of EVA is positive, thus supporting the outcome on the market share price.

Stakeholders also have a positive association with Tobin Q, and this result ties in with both the IR concept and empirical evidence (Mason & Vracheva, 2015; Wang & Sengupta, 2016; Cremers et al., 2019; IIRC, 2021). Dzomonda (2020) used TobinQ to investigate the effect of stakeholders on company value, and the result was that of a positive, statistically insignificant association.

Share price at book value has a negative result on stakeholders' interests probably because it is based on historical metrics, which stakeholders are perhaps not interested in if current data is available, opting for forward-looking value-adding proxies such as market share price, EVA and TobinQ. This result is contrary to Mason and Vracheva (2015), who found a positive relationship between share price at book value and stakeholders.

6.2.2 Impact of agency (human) capital on integrated company value

In this study, for the AIRM, Agency (human) capital is measured through directors' remuneration, as shown in Table 6.3.

Table 6-3: Agency (human) capital results for AIRM

Agency capital proxy	Proxies of company value and the relationship to agency capital			
	Market Share Price	EVA	TobinQ	Share Price at Book Value
Directors remuneration	Positive and significant	Negative and weak	Negative and weak	Negative and weak

Source: Developed for this study

From the first equation, under the Agency model, as discussed in section 5.5.2 in Chapter 5, DR produced a significant positive relationship with company value. DR had a coefficient of 0.09 and a significance level of $p < 0.01$. The explanatory power of DR increases in AIRM where the coefficient increases to 0.10 and a higher significance level of $p < 0.001$. This means that DR is a relevant predictor variable at both the agency capital level and the AIRM level. DR gives negative insignificant relationships to EVA, TobinQ and share price at book value.

The positive statistically significant relationship found between agency capital and market share price in this study agrees with the model expectations as well as literature and empirical evidence. Directors actively pursuing their mandate of increasing shareholder value will need incentives to effectively deliver these expectations (Dalton et al., 2007; Palia & Porter, 2007; Bendickson et al., 2016; Panda & Leepsa, 2017; Wolloch, 2020). Directors can influence company value through higher dividends, ROE or market share price returns by releasing market information that is attractive to investors. The market share price finding aligns with the IR concept, which posits that the capitals of the IR framework should create value. Empirical studies that used agency capital found that it has a positive significant association with market share price as a proxy of company value (Murphy, 1985; Conyon, Peck & Sadler, 2000; Scholtz & Smit, 2012; de Wet, 2013). However, Ozkan (2011) also used share price as a proxy of company value and found a positive but insignificant relationship with agency capital. Kirsten and du Toit (2018) found no direct link between directors' remuneration and company value.

EVA, Tobin Q and the share price in the book all have negative statistically insignificant relationships with agency capital, contrary to the result on the market share price. This shows that under market share price, directors and shareholders probably have a consensus on the directors' earnings. This may be an indication that shareholders are satisfied with the growth in share price and thus allow the reward to the directors, perhaps ignoring the impact of this on the other stakeholders. This indicates that market share price is insufficient to measure agency influence on company value but that TobinQ gives a longer-term approach which addresses the interests of the other stakeholders. South Africa is noted as the most unequal society in the world hence the need for equal treatment of stakeholders becomes pertinent (van Zyl & Mans-Kemp,

2022). For purposes of contracting with directors, TobinQ should possibly be used in addition to the market share price so that other stakeholders are included, which aligns with stakeholder theory.

6.2.3 Relationship between manufactured (tangible) capital and integrated company value

The manufactured capital independent variables used in the AIRM are buildings, equipment and machinery and tangible assets to non-current assets ratio (TA/NCA).

Table 6-4: manufactured (tangible) capital results for AIRM

Manufactured capital proxy	Proxies of company value and the relationship to manufactured capital			
	Market Share Price	EVA	TobinQ	Share Price at Book Value
Buildings	Negative and weak	Negative and weak	Negative and weak	Positive and weak
Equipment and machinery	Positive and significant	Positive and weak	Positive and weak	Negative and weak
Tangible assets/Non-current assets ratio	Positive and significant	Positive and significant	Negative and significant	Positive and significant
No. of positives	2	2	1	2
No. of negatives	1	1	2	1
Dominating effect	**Positive**	**Positive**	**Negative**	**Negative**

Source: Developed for this study

Based on the results from Table 6.1, Table 6.4 summarises the direction of the relationships per each manufactured capital proxy to the proxies of company value and the dominating effect is shown at the bottom of the table.

Manufactured capital has a positive relationship with market share price except for buildings. This may indicate that share price is responsive to the acquisition of new assets, especially equipment and machinery meant for the fulfilment of projects that have a positive net present value. Shareholders and investors will look at this as a potential for higher returns in the future. EVA corroborates with market share price indicating that company assets are necessary in the creation of value. Buildings and

tangible assets/non-current assets have negative relationships to Tobin Q. This could be an indicator that investors who use Tobin Q as a proxy of company value do not consider these two measures as value-adding. Equipment and machinery have a positive but weak relationship with Tobin Q. This may mean that equipment and machinery are considered marginally adding to company value (Tobin Q). Buildings have a positive and weak relationship with the Share price at book value. Being a historical measure, share price at book value may have this positive and weak relationship with buildings due to the recognition of the contribution of buildings to company value emanating from buildings being assets that have a longer life span and therefore, lower depreciation charge impact. A negative and weak relationship is shown between equipment and machinery and the share price at book value, arguably indicating that the depreciation cost of equipment and machinery affects the value adding if future cash flows are not considered (as is the case with the share price at book value) (Saleh, 2018). Tangible assets/non-current assets and the Share price at book value have a positive and significant relationship, perhaps showing that the share price at book value considers tangible assets/non-current assets as critical in value creation. Share price at book value is a historical measure that will assumably consider tangible assets, and non-current assets are part of the metrics that strengthen the statement of financial position. Manufactured capital is losing its importance in company value, as per the findings of Ocean Tomo (2021), who concluded that intellectual capital is overtaking tangible assets in the knowledge economy.

6.2.4 Relationship between intellectual capital and integrated company value

In this study, intellectual capital is measured through the VAIC model as propounded by Pulic (1998). When analysed as a single model, intellectual capital displayed a significantly positive relationship with market share price, as indicated in Section 5.5.4 in Chapter 5.

Table 6-5: Intellectual capital results for AIRM

Intellectual capital proxy	Proxies of company value and the relationship to intellectual capital			
	Market Share Price	EVA	TobinQ	Share Price at Book Value
VAIC	Positive and weak	Positive and weak	Positive and significant	Positive and weak

Source: Developed for this study

As shown in Table 6.5, when VAIC is brought into the total that combines the various capitals in the AIRM, it loses its explanatory power, getting reduced to an insignificant relationship, nonetheless still sustaining the positivity of the association. This means that VAIC if considered separately in the intellectual capital model, has explanatory power on company value. However, other capitals are superior to it if considered in the total AIRM. It is interesting to note that VAIC maintains a significantly positive relationship with TobinQ as a proxy of company value. VAIC also indicates positive relationships to EVA and share price at book value. The demonstration of a significant positive relationship gives credence to the proposition that TobinQ is a long-term focused metric which tends to endure the short-term events that seem to affect the other company value proxies.

The positive association found between VAIC and market share price, although weak, ties to the model expectation, theory, and other studies. The positive association is a signal that intellectual capital has value creation potential, and companies should invest in it to benefit more from the seemingly growing knowledge economy (Ocean Tomo, 2021). Intellectual capital has its foundations in the assertion that product competitiveness lies in the ability to use skill, knowledge and experience to differentiate. This gets consolidated into patents, trademarks, brands and company secrets (Taylor, 1911; Robinson, 1934; Schumpeter, 1934; Chamberlin, 1947; Moore & Penrose, 1960; Polanyi, 1966). Pulic (1998) refined the intellectual capital approach and devised the VAIC model, which showed that intellectual capital is a combination of the efficiencies of human capital, structural capital and capital employed. The VAIC model asserts that intellectual capital is the driver of company value in the modern knowledge-based economy.

Empirical studies have supported that intellectual capital positively associates with company value. Studies that used market share price as a proxy for company value found that intellectual capital has a positive impact on company value (Swartz, Swartz & Firer, 2006; Morris, 2015; Nuryaman, 2015). The results on EVA, TobinQ and share price at book value are all consistent with the result on market share price, thereby supporting its robustness. The finding is in line with the outcomes of previous studies that found intellectual capital to have a positive relationship with company value (Chen, Cheng & Hwang, 2005; Phusavat *et al.*, 2011; Alhassan & Asare, 2016).

The growth of intellectual capital is underpinned by the increase in the knowledge economy, hence the strength of this metric is on a progressive basis, as indicated by its increase over the years in the Ocean Tomo (2021) study summarised in Figure 2.6.

6.2.5 Relationship between financial capital and integrated company value

The financial capital proxies used in AIRM consist of Debt to Equity ratio (D/E), Long-term Debt to Non-current Assets ratio (LD/NC) and Total Debt to Total Assets ratio (TD/TA).

Table 6-6: Financial capital results for AIRM

Financial capital proxy	Proxies of company value and the relationship to financial capital			
	Market Share Price	EVA	TobinQ	Share Price at Book Value
Debt to Equity ratio	Positive and significant	Negative and weak	Positive and weak	Positive and weak
Long-Term Debt/Non-Current Assets ratio	Positive and weak	Negative and weak	Positive and weak	Positive and weak
Total Debt/Total Assets	Negative and weak	Positive and weak	Negative and significant	Positive and weak
Dominating effect	**Positive**	**Negative**	**Positive**	**Positive**

Source: Developed for this study

As shown in Table 6.6, financial capital has a positive association to market share price, TobinQ and share price at book value. The positive result on these proxies may mean that South African companies respond affirmatively to the propositions of Modigliani and Miller (1963) and Miller (1977), who propounded that debt, due to the

tax shield effect, resulted in an increase in company value. The debt-to-equity ratio has a positive and statistically significant relationship with market share price giving credence to the Modigliani and Miller (1963) and Miller (1977) assertions mentioned above, which state that debt results in improved company value. The long-term debt to non-current assets ratio has a positive relationship to market share price, albeit at a weak level. The positive relationship is an important indicator of the economic significance of this metric which shows the extent to which debt is used to fund the acquisition of non-current assets. The weak statistical significance may signal that JSE-listed companies are not strongly relying on debt to acquire non-current assets. This could be a result of companies slowing down on investing in new assets due to liquidity prudence considerations. Total debt to total assets has a negative, weak relationship to the market share price. This may indicate that the inclusion of current assets and current liabilities into this solvency metric further weakens the outcome found on the long-term debt to non-current assets (positive but weak relationship to market share price). The inclusion of the current assets and current liabilities seem to suggest that these two measures are short term and are not expected to have a significant impact on market share price. EVA is an earnings-based measure of company value and would consider interest costs on debt, in the short-term, as value eroding expenses hence the dominating negative correlation.

6.2.6 The effect of the Dummy variable on integrated company value

Covid 19 effect on the year 2020 is the dummy (Du) independent variable in this study. As anticipated for the models, Du provided a negative association with the market share price for all the models of the study. The Du results are in line with theory and empirical evidence. Earlier studies concluded that pandemics cause the loss of value in companies as resources get shifted to address the crises and the market disruption associated with that (Ederington & Lee, 1996; Capponi et al., 2019). In South Africa, the country responded to the threat of Covid 19 through the introduction of tough measures, including a prolonged national lockdown covering the year parts 2020 and 2021. The pandemic created a fundamental disruption to both public and private sectors leading to a loss of market share prices (Al-Awadhi et al., 2020; Marozva & Magwedere, 2021).

6.3 SUMMARY OF VARIABLES TO ADOPT FOR THE FINAL AUGMENTED INTEGRATED REPORTING MODEL

The preceding sections presented and analysed the study's findings on each of the independent variables (the measures of the capitals), measuring their relationship to the proxies of company value (market share price, EVA, TobinQ and share price at book value). The results of the regression model showed various outcomes, ranging from significant relationships to insignificant relationships. This section will discuss these outcomes per each independent variable and the corresponding company value proxies, indicating the strength and direction of the relationship.

Table 6.7 summarises the variables, indicating the strength of their explanatory power and the direction of their relationship to company value.

Table 6-7: Summary of variables relationships strengths

Variables	Variable description	Fixed effects Model Y1 Share Price	Fixed effects Model Y2 EVA	Fixed effects Model Y3 TobinQ	Fixed effects Model Y4 Share Price at Book Value
EM	Employees (stakeholder capital) (X2d)	Positive and weak	Negative and weak	Positive and weak	Negative and weak
CU	Customers (stakeholder capital) (X2d)	Positive and weak	Positive and weak	Negative and weak	Positive and weak
LU or D/E	Lenders (Stakeholder capital), Agency Capital and Financial Capital	Positive and significant	Negative and weak	Positive and weak	Positive and weak
SH	Shareholders (stakeholder capital) (X2d)	Positive and significant	Positive and weak	Negative and weak	Negative and weak
GO	Government (stakeholder capital) (X2d)	Negative and weak	Positive and weak	Positive and weak	Negative and weak
DR	Agency (Directors as stakeholders) (X2b)	Positive and significant	Negative and weak	Negative and weak	Negative and weak
VAIC	Value Added Intellectual Coefficient (Intellectual capital) (X2a)	Positive and weak	Positive and weak	Positive and significant	Positive and weak
BD	Buildings (manufactured capital) (X2c)	Negative and weak	Negative and weak	Negative and weak	Positive and weak

Variables	Variable description	Fixed effects Model Y1 Share Price	Fixed effects Model Y2 EVA	Fixed effects Model Y3 TobinQ	Fixed effects Model Y4 Share Price at Book Value
EQ	Equipment (manufactured capital) (X2c)	Positive and significant	Positive and weak	Positive and weak	Negative and weak
TA/NCA	Tangible assets/Non-current assets (manufactured capital) (X2c)	Positive and significant	Positive and significant	Negative and significant	Positive and significant
LD/NC	Long-Term Debt/Non-Current Assets (Financial Capital) (X1)	Positive and weak	Negative and weak	Positive and weak	Positive and weak
TD/TA	Total Debt/Total Assets (Financial Capital) (X1)	Negative and weak	Positive and weak	Negative and significant	Positive and weak
DU	Dummy (covid 19_year 2020 effect	Negative and significant	Negative and weak	Positive and significant	Positive and significant
No of significant associations		6	1	4	2
No of positive associations		9	7	7	7
No of negative associations		4	6	6	6

Source: *Developed for this study*

From Table 6.7, it is noticed that market share price has the most significant associations (6) with the various regressors. Out of the 13 variables listed in the table, the market share price has the highest positive associations (9). A comparison of the R^2 shows that the market share price has the highest value, thus giving it more strength compared to the other company value proxies. The F-statistic (coefficient) for the market share price is also significantly higher than that of the other measures of company value. In consideration of the above, the researcher recommends that, for this study, the market share price can be used as the company value proxy in AIRM. The other proxies of company value, i.e., EVA, Tobin Q and the share price at book value, have instances where they individually have value relevance, and users of AIRM must continuously reflect on the type of stakeholder being analysed. For example, the results show that Lenders have a favourable relationship with market share price, Tobin Q and Share Price at book value. Lenders are interested in the

business's ability to pay the interest and principal amount. Market share price is an indicator of investor interest in the company hence it is relevant to lenders. TobinQ uses Market value/Total assets. Total assets are funded by debt hence relevant to lenders. Share price at book value represents the historical assets probably financed by debt as it is derived from the assets and liabilities stated in the company's statement of financial position. In the study results, it can be noticed that the independent variables have varying relationship strengths with the company value proxies. This assists previous studies which relied on a single proxy of company value and could not get deeper insights into alternative outcomes. An example is that of Dube (2017), who used market share price only and concluded that there was no association between IR quality and company value.

The above section reviewed the variables and company value proxies to select the most suitable for the AIRM. The review reflected that market share price had the most value in explaining relationships and will be used to form the final AIRM. The following section will present the final AIRM, which is this study's main contribution to the body of knowledge.

6.4   THE FINAL AUGMENTED INTEGRATED REPORTING MODEL

As covered in section 6.3, the market share price and the independent variables listed will be used to build the AIRM. This fulfils the main objective of this research which is to produce an enhanced IR framework that reflects the influence of non-financial capitals on company value.

Figure 6.1 shows how the different capitals can be expanded into components, and a measurement proxy gets attached to each.

Figure 6-1: The Augmented Integrated Reporting Model

Source: Developed for this study and IIRC (2013, 2021)

6.4.1 Main outcomes of AIRM

Figure 6.1 demonstrates that the model starts with an opening integrated company value balance, and the capitals get deployed into the company's value-adding activities during a certain period. Using the different measurement proxies for the components of the capitals, the value created during the period is measured and evaluated. Adding the value created during the period to the opening balance will result in the (closing) integrated company value. It should be noted that there are circumstances where capital will cause a decrease in company value if its activities harm the business. For example, government, which is a component of social and relationship capital and whose measurement proxy is the effective tax rate, gave a negative correlation to company value under market share price as the dependent variable. In the context of this model, a negative relationship between government and market share price is viewed as reducing company value. The model is in line with the IR concept, which states that the capitals should be viewed as stocks of value that organisations transform, increase or decrease through various business activities (IIRC, 2021). The following sections provide more details on the main outcomes or implications of AIRM.

6.4.1.1 Stakeholder reporting requirements addressed

One of the criticisms levelled against the existing IR framework is that the IR reports do not address the information requirements of the various stakeholders (du Toit, 2017). The stakeholders' contribution to value creation is not adequately reported, and the IR reporting principles are not implemented (Flower, 2015; Ruiz-Lozano & Tirado-Valencia, 2016).

The AIRM developed through this study has addressed the issues observed by the above scholars. The model has identified the various stakeholders involved in the value-creation activities of the company and the measurement proxies defined. Through regression equations, the impact of each stakeholder was assessed.

6.4.1.2 Existing reporting improved

The current reporting frameworks still concentrate on measuring the effects of financial capital (Atkins, 2020). The AIRM produced by this study has looked at a total of five capitals, which are; financial, manufactured, intellectual, human and social and relationship capitals. The model provides measurement proxies for each of the capitals, making it possible to measure their impact on company value over some time. This is a potential solution to the problem created by the IR framework where it stated that it was not the intention of IR reporting to quantify or monetise the value of the company, the value it has created, preserved or eroded over some time, or its utilisation of or effects on the capitals (IIRC, 2021).

6.4.1.3 More importance given to other providers of capital

The existing IR framework gives more importance to providers of financial capital to explain how an organisation creates, preserves or erodes value (Eccles & Spiesshofer, 2016; Herbert & Graham, 2018; IIRC, 2021). Companies still require enlightenment on the premise that financial capital is not the only capital that adds value to the company (Adams et al., 2016; de Villiers & Sharma, 2016; du Toit, 2017; King, 2018).

Although scholars have highlighted the shortcomings of the IR framework, they have not provided a holistic solution. The current study has provided a solution by providing a model that brings integrated company value as a summation of various capitals. The

model, therefore, gives relevance to the other providers of capital. Reporting the impact of the other capitals allows the providers of these capitals to know their value addition or otherwise, making it possible to make informed decisions about future company involvement.

6.4.1.4 Model can be used

The main objective of this research was to produce an enhanced IR framework that reflects the influence of non-financial capitals on company value. The AIRM that has been produced by this study fulfils the main objective of this study. The model can be used by practitioners, academics, regulators, and corporate reporting standard setters.

6.5 CHAPTER SUMMARY

In this Chapter, the final model of this study, the Augmented Integrated Reporting Model, AIRM, was presented. The model was built out of the study's findings on the relationships, impacts, effects and influences of the various capitals on company value. In the chapter, it was revealed that out of the four proxies of company value, market share price presented the most robust results, leading the researcher to use it in the AIRM. Although the other proxies of company value have value relevance, they cannot be used in an integrated model but can still be used in individual variable analysis where they have power.

The effect of the independent variables used in AIRM was assessed, and the results indicated that each variable has an association with company value. This makes the Alternative hypotheses of the study obtain support. The chapter showed the main outcomes of the study, indicating that the research problem was resolved, the research questions answered, the study objectives achieved, and the hypothesis conclusion was made.

The following Chapter 7, the final chapter of this research, will provide the summary, conclusions, and recommendations for future studies and the study's limitations.

CHAPTER 7: SUMMARY, CONCLUSIONS, RECOMMENDATIONS FOR FUTURE STUDY AND LIMITATIONS OF THIS STUDY

7.1 INTRODUCTION

The previous chapter presented the final model of this study, the Augmented Integrated Reporting Model (AIRM). In this chapter, which is the final chapter of this study, the main aspects of this research are summarised. The theoretical and empirical basis of the AIRM is revisited, leading to a summary of the model research results. This is followed by a review of this study's contributions to the body of knowledge and the associated policy recommendations. The chapter also gives the study's outcomes, giving an overview of the research problem, the research questions, the research objectives and conclusions on the hypotheses. Limitations of this research and recommendations for future studies are provided.

7.2 SUMMARY OF THE THEORETICAL BASIS OF THE AUGMENTED INTEGRATED REPORTING MODEL

The AIRM has its foundation in Integrated Reporting (IR) theory, which advocates that companies should provide holistic reports that explain how a company creates or diminish value over some time (IIRC, 2021). Whereas, according to this researcher, no agreed framework currently provides an integrated measurement mechanism of how the value of a company was added or diminished over some time, the AIRM is intended to resolve the seeming gap. The IIRC, which recently (in 2022) changed to the Value Reporting Foundation, contradicts itself by stating that the Integrated Report is not there to report on how a company created or reduced value (IIRC, 2021). This statement opened an opportunity to resolve the problem that faces different stakeholders and IR reporters, and users, hence AIRM.

The underpinning IR concept is that value creation is not only limited to the participation of financial capital but that the other non-financial capitals of manufactured, intellectual, human and social and relationship capital also play a critical role (IIRC, 2013, 2021; Adams *et al.*, 2016; Daraban, 2016; Eccles & Spiesshofer, 2016; du Toit, Van Zyl & Schütte, 2017; King, 2018). Each of the capitals has a theoretical basis which was brought into this study.

In the foundation of financial capital is the assertion that for a company to function, it requires a capital structure made up of equity (including retained income) and debt (Modigliani & Miller, 1958, 1963; Miller, 1977; Myers & Majluf, 1984). Manufactured capital represents the physical infrastructure, such as buildings, equipment and machinery (Eckaus & Lefeber, 1961). How management utilises, these is critical in value creation (Irungu et al., 2018). The manufactured capital theory has, in contemporary times starting from the 2000s, been linked to the relevance of tangible assets to value creation in the face of the knowledge economy (Stern, 1997; Hoyos et al., 2010; Ocean Tomo, 2021). The intellectual capital theory has its classical foundation in that value creation begins with knowledge. Knowledge consists of ideas, formulae, secrets, skill and experience (Taylor, 1911; Robinson, 1934; Schumpeter, 1934; Chamberlin, 1947; Moore & Penrose, 1960; Polanyi, 1966; Radjenović & Krstić, 2017). Measurement of intellectual capital was arguably a challenge until Pulic (1998) came up with the Value Addition Intellectual Coefficient (VAIC) model.

The human capital theory is epitomised by how the shareholders of the company engage directors (agents) to manage the value-creation processes of the business (Panda & Leepsa, 2017). The bedrock of human capital, in this case, becomes the agency theory which advocates for the continuous management of the agency problem where conflict of interest between shareholders and directors should be minimised (Dalton et al., 2007; Snippert et al., 2015; Achim et al., 2016; Bendickson et al., 2016). Social and relationship capital is backed up by the stakeholder theory, which maintains that the company does not belong to shareholders alone but that other stakeholders have an interest and a claim in the value creation and outputs of the company (Berle & Means,1932; Mendelow, 1981; Freeman & McVea, 2001; Jensen, 2001; Parmar et al., 2010; Harrison & Wicks, 2013; McGrath & Whitty, 2017).

Based on the above theories, AIRM is a model that integrates them into a single framework that allows the measurement of the capitals and how they contribute to the value of a company.

7.3 SUMMARY OF THE EMPIRICAL BASIS OF THE AUGMENTED INTEGRATED REPORTING MODEL

Various studies have been conducted around the impact of the different capitals on company value. However, according to the literature reviewed by this researcher, the studies did not look at the capitals in an integrated manner but rather as individual capitals or a smaller cluster of the capitals, not covering the number of capitals that this study has done. Some of the studies carried out on the capitals will be given summary reviews to show the insights gained from them.

The empirical studies done on financial capital tested its impact on company value. Studies in different markets showed a significant positive correlation between financial capital and company value (Abor, 2005; Cuong, 2014). Some studies however found contrary results where debt to equity did not influence company value or it gave negative associations (Zeitun & Tian, 2007; Abata et al., 2017). Studies on manufactured capital confirmed that tangible assets had a significant positive correlation to company value (Mehari and Aemiro, 2013; Birhan, 2017; İLTAŞ and DEMİRGÜNEŞ, 2020). Studies by Saleh (2018) and Pratheepan and Banda (2016) concluded that manufactured capital negatively affected company value. Empirical investigations were carried out on intellectual capital, and it was found that this capital had a positive impact on company value (Chen et al., 2005; Clarke et al., 2011; Phusavat et al., 2011a; Morris, 2015; Alhassan & Asare, 2016; Meles et al., 2016). Weak relationships between intellectual capital and company were found in some studies (Firer & Stainbank, 2003; Schultz & Molele, 2019).

Human capital, also referred to as agency capital in this study, has been found to have a significant association with company value (Jiraporn & Liu, 2008; Ayaz, Mohamed Zabri & Ahmad, 2021). Research by Naik et al. (2020). and Dawar (2014) established negative or weak influences of agency capital on company value. For this study, social and relationship capital is also called stakeholder capital. Studies carried out in different jurisdictions confirmed that there is a relationship between stakeholder capital and company value (Wolmarans & Sartorius, 2009; Harrison & Wicks, 2013; García-Merino et al., 2014; Mason & Vracheva, 2015; Weber, 2017; Maqbool et al., 2018; Dzomonda, 2020).

Boukattaya and Omri (2021), however, found a contradicting result and concluded that there was a negative correlation between stakeholder influence and company value.

Considering the empirical studies reviewed and how findings were not always congruent, it was therefore important for this researcher to gather evidence on the effect of these capitals on company value using a sample obtained from JSE-listed companies. In the following section, the findings of this study are summarised.

7.4 RESEARCH CONCLUSIONS ON THE IMPACTS OF NON-FINANCIAL CAPITALS ON COMPANY VALUE

The preceding section dealt with the summary of empirical evidence from previous studies on the different capitals that form company value. In this section, the findings of the AIRM are summarised. The AIRM shows the impact of the different capitals on company value.

In the study, the relationship of non-financial capitals to company value was done, with financial capital being included for completeness of the AIRM. In this section, the nature of the relationships between the non-financial capitals and company value will be discussed. Table 7.1 provides an overview of the capitals and the relationship or impact they have on the different proxies of company value. Where positives outweigh negatives in a particular capital's relationship to company value proxies, then the ''positive'' relationship prevails. The same is applied to negative relationships as well.

Table 7-1: Overall conclusion regarding the impacts of non-financial capital on company value

Capital	Market Share Price	EVA	TobinQ	Share Price @ BV
Stakeholder (Social and Relationship) Capital	Positive	Positive	Positive	Negative
Agency (Human) Capital	Positive	Negative	Negative	Negative
Intellectual Capital	Positive	Positive	Positive	Positive
Tangible (Manufactured) Capital	Positive	Positive	Positive	Positive

Source: *Developed for this study*

7.4.1 Stakeholder (Social and Relationship) Capital: Research Objective 1(a) - Investigate the effect of stakeholders' interests on company value of JSE-listed companies

Using market share price, stakeholders' proxies have positive relationships to company value except for the government, which has a negative but weak association. Based on these results, stakeholder capital largely has a positive relationship with company value. EVA and Tobin Q each have three positive relationships and two negatives thus, the results are more positive on the positive side. Share price at book value, however, has three negative relationships and two positives hence this relationship leans towards negative. Considering that three proxies have positive relationships to stakeholder capital, the researcher is of the view that there is support for the positive relationship conclusion. Share price at book value is historical, and stakeholders may not consider it critical in decision-making, hence this proxy is unsuitable for measuring the relationship between stakeholder capital and company value. The positive relationship outcome aligns with stakeholder and IR concepts which mention that stakeholders influence company value (Berle & Means, 1932; Mendelow, 1981; Freeman & McVea, 2001; Parmar et al., 2010; García-Merino et al., 2014; Mason & Vracheva, 2015; Weber, 2017; Maqbool et al. 2018; Dzomonda, 2020).

7.4.2 Agency (Human) Capital: Research objective 1(b) - Investigate the effect of agency costs on company value of JSE-listed companies

Agency capital, epitomised by the company's directors, indicates a positive and statistically significant relationship with market share price as a proxy of company value. This positive relationship aligns with agency and IR concepts which state that directors have the mandate from the shareholders to increase company value (Coughlan & Schmidt, 1985; Murphy, 1985; Conyon, Peck & Sadler, 2000; Scholtz & Smit, 2012; de Wet, 2013; Kirsten & du Toit, 2018; IIRC, 2021). The other proxies of company value, i.e. agency capital, have negative statistically insignificant relationships to EVA, Tobin Q and share price at book value. The negative relationships demonstrate that directors' remuneration, the agency proxy in this study, is viewed as value-reducing, although at an insignificant level. In the value-based and conventional accounting metrics of EVA and share price at book value, respectively, directors' remuneration is considered an expense hence the negative relationship.

Tobin Q has market value and assets in its calculation. A negative relationship between Agency and Tobin Q might signal that the directors' remuneration increased while company value per Tobin Q reduced. This brings the possibility of an agency problem where directors pursue their interests (higher remuneration) at the expense of investments that will generate future cash flows (Bebchuk & Weisbach, 2010; IoDSA, 2021). The negative result on the relationship between agency capital and EVA, Tobin Q and the share price at book value points to the seemingly favourable treatment directors receive in South African companies to the detriment of other stakeholders (van Zyl & Mans-Kemp, 2022). To counteract this imbalance, van Zyl and Mans-Kemp, (2022) advocate using value addition measurement on the six capitals per the IR framework. The AIRM becomes relevant in providing measurement metrics on non-financial capitals.

7.4.3 Manufactured Capital: Research Objective 2 - Examine the impact of manufactured capital on company value of JSE-listed companies

Manufactured capital, represented by buildings, equipment and machinery and Tangible Assets/Non-current assets (TA/NCA). This capital has a predominantly positive relationship to company value using market share price as a proxy. The predictor variables have positive and statistically significant associations with company value, except for buildings with a negative but weak relationship. The results mean that the negative, weak result of buildings cannot offset the two positives and significant relationships on the other variables, thus, the relationship is mostly positive. It is important to note that the other proxies of company value, EVA, Tobin Q and the share price at book value, each have two variables with positive relationships and one negative weak association. These positives outweigh the negatives hence the relationships are mostly positive. These outcomes are supported by capital theory and IR concept as well as empirical studies (Eckaus & Lefeber, 1961; Stern, 1997; Hoyos et al., 2010; Mehari & Aemiro, 2013; Olatunji, Toyin & Adegbite, 2014; İltaş & Demirgüneş, 2020; Abbas et al., 2021; IIRC, 2021).

7.4.4 Intellectual Capital: Research Objective 3 - Establish the effects of intellectual capital on the value of JSE-listed companies

Intellectual capital, through VAIC as a proxy, has positive relationships, although weak, across all the proxies of company value used in the study. The positive direction of the relationship between intellectual capital and company value is important as it aligns with the model expectations, intellectual capital theory, IR concept and the developments around the knowledge economy (Pulic, 1998; Bornemann, 1999; Chen, Cheng & Hwang, 2005; Firer & Stainbank, 2003; Clarke, Seng & Whiting, 2011; Phusavat et al., 2011b; Morris, 2015; Alhassan & Asare, 2016; Meles et al., 2016; Schultz & Molele, 2019; Ocean Tomo, 2021).

7.5 CONTRIBUTIONS TO THE BODY OF KNOWLEDGE

The previous section covered the summary of findings for the AIRM. In this section, the study's contribution to the body of knowledge will be summarised.

The AIRM shows different levels of relationships between company values and the selected measurement proxies. The positive or negative relationships obtained on the relationships serve to confirm that the model findings are supported by the IR concept, which states that the capitals may add (positive relationship) or erode (negative relationship) or sustain (positive insignificant relationship) company value over some time (IIRC, 2021). The model has demonstrated that financial capital is not capable of creating company value alone but requires to be combined with other capitals. AIRM has contributed to the solving of the dilemma that has faced IR reporters on what metrics to use to measure how the capitals could have created or eroded value over time.

This study's main contribution to the body of knowledge is that the AIRM has been produced, which different stakeholders can use to maximise their participation in value creation. The relationships between company value and the different capitals have been explained, making clear the capitals that require the attention of stakeholders. Positive relationships are interpreted to indicate value adding, while negative relationships show value erosion. The clarifying of these relationships in this study will assist users of AIRM to check and act on the variables that require to be worked on to increase value creation and correct or mitigate value erosion. The AIRM is a tool now

available to IR reporters, remuneration experts, trade unions, investors, lenders, government, directors and executives, academics and policymakers. IR reporters will be able to measure the value creation by the capitals in a particular period. Remuneration experts can assess different scenarios on directors' compensation effects on company value to reach an optimum level. Trade unions can negotiate for their members with a clear view of the value addition of employees to company value. Investors will be able to identify companies that have the value addition profile that is aligned to their investing strategy. Lenders are interested in knowing whether the companies will be able to honour their debt obligations. AIRM gives lenders a tool to assess the extent to which companies are adding value through debt finance provided. The government may use AIRM to assess the extent of its participation in the value creation by companies and thereby extending this to the economy. Directors and executives oversee company strategies for value creation. The AIRM will provide them with a means to assess the different capitals and where interventions are required. Academics and policymakers can use AIRM to measure value addition by the different capitals and perform future research for the betterment of value creation by organisations.

The contribution to knowledge for each of the capitals is given below;

(a) Stakeholder (social and relationship) capital

The contribution to the body of knowledge for stakeholder capital is summarised below;

- Based on market share price, the positive relationships demonstrated by the stakeholders (except for the government with negative) supports the theoretical and empirical base that stakeholders are critical in the value creation processes of companies. This means that companies should pursue stakeholder management strategies to obtain maximum value from them.
- The negative result on government means that perhaps investor perception of taxation is that it is value eroding as it reduces their earnings potential. However, the IR concept posits that government is a value-adding stakeholder through the provision of infrastructure, health, education and facilitation of trade.

- If EVA and Tobin Q are adopted as proxies of company value, the government adds value as indicated by its positive association with company value. This is in line with model expectations and the IR concept. The IR concept postulates that the capitals should be value-adding. EVA is earnings based and is derived after taxation is already considered, while Tobin Q is market share value and assets based hence has a long-term outlook where infrastructure funded by the government becomes important for business continuity. A short-term view of government taxation may consider it as value reduction due to its reduction of profits. However, in the long-term view, the government should be value-adding as companies benefit from government spending on infrastructure such as roads, water reticulation, education and health provision.

- The AIRM model makes it possible to rank the stakeholders according to their value-adding results so that companies can identify improvement potentials.

(b) Agency (human) capital

- Directors' remuneration is a relevant predictor variable at both the stakeholder level and at the AIRM level.

- Directors' remuneration has a positive statistically significant relationship with market share price, indicating that directors' rewards and company value correlate and align with agency theory and Integrated reporting framework (Scholtz & Smit, 2012; de Wet, 2013; Kirsten & du Toit, 2018). This signals that directors' influence is strong and requires to be managed to minimise the agency problem (Bebchuk & Weisbach, 2010; IoDSA, 2021). Directors will put in place measures to increase company performance if their remuneration is based on that. This is in line with the IR concept, which considers directors as value-adding decision-makers. However, directors' remuneration is a focal point of corporate governance in South Africa, with stakeholders arguing that directors are treated favourably compared to others (van Zyl & Mans-Kemp, 2022).

  Directors' remuneration has remained having a positive impact on market share price across different business cycles in South Africa.

(c) Tangible (manufactured) capital

The outcome of AIRM shows that Equipment and machinery, as well as the Tangible Assets to Non-Current Assets ratio, has a positive statistically significant to the market share price. This means that these two proxies of manufactured capital are value-adding, and the result is in line with the IR concept.

(d) Intellectual capital

The outcome of AIRM shows that Equipment and machinery, as well as the Tangible Assets to Non-Current Assets ratio, has a positive statistically significant to the market share price. This means that these two proxies of manufactured capital are value-adding, and the result is in line with the IR concept.

(e) Financial capital

- Looking at the negative relationship between Total Debt to Total Assets ratio and company value if using market share price and TobinQ, one may conclude that Total Debt to Total Assets ratio demonstrates value erosion traits over the study period. A negative relationship shown by Total Debt to Total Assets ratio shows that this ratio was not value-adding, meaning that companies did not rely on total debt to fund total assets in efforts to improve market share price. Companies may be closely monitoring their liquidity positions, hence the negative change in the metric over the study period. The positive relationships displayed by EVA and the share price at book value are weak to explain a significant impact.

- Compared to the long-term debt to non-current assets ratio, which had a positive association with company value, the negative relationship of the Total Debt to Total Assets ratio shows that it is the current portion of both assets and liabilities that have caused the negative result. This strengthens the argument that debt is not a recommended source of funding for current assets such as inventory. Companies are encouraged to rely on cash generated from operations to fund current assets.

7.5.1 Summaries of contribution to knowledge

The above section gave detailed discussions on the variables used and how their results could be used as contributions to the body of knowledge. In this section, a summarized view is given, identifying the main contributions to knowledge.

7.5.1.1 The AIRM

The study sought to develop a model that would contribute to resolving the problem of measurement and valuation of capitals and how they create, erode or maintain company value. As presented in Chapter 6, this study has managed to develop the AIRM, which can be used as a tool by report preparers, analysts, academics and other relevant users of IR.

7.5.1.2 Stakeholder considerations

The study has revealed how different stakeholders influence company value. This is a vital contribution to knowledge as companies can now rank their stakeholders according to their value-creation strengths. Strategies can then be mapped on how each stakeholder can be managed to maximise value creation by each.

7.5.1.3 Agency considerations

The study has shown that agency capital, represented by directors, has an influence on company value. This creates a platform for companies and remuneration committees to identify appropriate key performance indicators that can steer directors' influence towards more value creation and minimize the agency problem.

7.5.1.4 Manufactured capital considerations

The study results have shown that machinery and equipment have value relevance. This informs companies that continuous investment in modern machinery and equipment will create value for the organizations. This may shift the mindset of companies that were probably avoiding capital expenditure on new equipment opting for repair and maintenance.

7.5.1.5 Intellectual capital considerations

The outcome on intellectual capital for JSE-listed companies demonstrated that there is a movement towards the knowledge economy. This result, coupled with the

demonstrable benefits of intellectual capital growth in the other markets as expounded in the extant literature, companies in South Africa can embark on more investments in skills and innovation development.

7.5.1.6 *Financial capital considerations*

The models in the study have shown that financial capital and non-financial capitals both play important roles in value creation by companies. The study results provide a paradigm shift from traditional approaches that perhaps considered financial capital the most important reportable contributor to value creation. Companies may now rank their capitals, both financial and non-financial, to focus on how each of the capitals can be mobilized more effectively for value creation.

7.6 POLICY RECOMMENDATIONS

The findings of the study have revealed insights that are of benefit to listed companies that utilise integrated reporting.

- The recognition of employees as capital will benefit companies as they carry out their value-adding activities. The weak relationship between employees and company value exhibited in the study is a pointer that the current environment does not consider employees as critical in the formation, increase and sustenance of company value. Companies, corporate governance practitioners, the government and trade unions are encouraged to make policy interventions to change the current situation. The repercussions of the exclusion of employees as stakeholders are manifested through strikes and the general mistrust between employees and directors. This is a signal that policies and interventions are required to make employee participation as stakeholders recognised. Employee share schemes, where employees become part of the ownership structure, will improve their value-adding drive as this directly refers to the increase of their wealth. The involvement of employee bodies in company strategy formulation and performance monitoring will create a sense of ownership of the value-adding activities agreed upon. Industrial relations can be improved with increased employee participation, as employees will consider the well-being of the business as a measure of their success.

- Customer interests, represented by revenue in this study, have a positive but statistically weak correlation with company value. This calls for companies, government, and other stakeholders to improve this status. Revenue growth is arguably the foremost driver of cash flow generation and, consequently, company value. Revenue growth can be improved through the production of market-relevant and competitive goods and services that consumers will be prepared to pay for higher values. The beneficiation of raw materials, such as timber and minerals, before export, will enable these products to attract higher prices, hence an increase in revenue. Beneficiation of raw materials will result in the production of higher-value finished products that will fetch higher prices hence increasing company revenues. The government can put in place policies that will increase GDP, as the study has shown that the weak economy resulted in reduced revenues. Government interventions to improve GDP may include deregulation in high-growth sectors and investing in infrastructure to spur company purchases. Solving the energy crises and creation of jobs will assist in improving revenue. Increased revenue directly benefits the government through the collection of taxes.

- The Debt to Equity ratio emerged as the most robust variable as it retained its positive significant relationship with market share price through three individual capital models and in AIRM. These are the stakeholder (Lenders), agency and financial capitals models. Companies, financial institutions, and government agencies responsible for business growth should implement policies that promote debt capital available to businesses. Collateral requirements should be relooked at against the potential growth possibilities of companies.

- Shareholders' interests have shown a positive statistically significant relationship with company value. Through AIRM, it has been seen that shareholders do not have absolute control over the company's value but that other stakeholders have relevance. Shareholders are advised to look at the other value-adding stakeholders and consider how they can partner holistically to increase company value. Stakeholders that have value relevance in AIRM that shareholders may consider include lenders and customers. Lenders participate in value creation by providing debt finance for projects with positive

219

net present values. Customers can participate in value creation by being the consumer base for companies' products and services and providing essential feedback on products and services quality which can result in improved offerings by companies.

- The government, with effective tax as a proxy, gave a negative, statistically insignificant relationship to the market share price. This means that in South African listed companies, the government is probably viewed as a value-eroding stakeholder. For IR philosophy to thrive, this assumed perception must be changed so that government becomes a value-adding enabler for companies. The usage of tax revenues to fund public capital projects that make business possible is one way. The government can invest in clean energy solutions, improve communication infrastructure, and facilitate more skills development.

- Directors' remuneration as a proxy for Agency capital emerged with a positive statistically significant relationship to the market share price. This indicates the importance of directors' interests in company value. There is a risk that directors will abuse their influence for personal gain to the detriment of other stakeholders. Corporate governance practitioners should strengthen ethics codes to continue minimising the agency problem.

- Manufactured capital is represented by buildings, equipment and machinery and tangible assets to non-current assets ratio in this study. The positive significant association demonstrated by equipment and machinery and the tangible assets to non-current assets ratio shows the value relevance of manufactured capital in integrated company value. Companies and governments should implement the modernisation of equipment and machinery through localised research and development and funding innovation initiatives. Importation of equipment and machinery is expensive, hence the recommendation for local solutions that match the country's requirements.

- Intellectual capital has shown a positive impact on company value. As disclosed through literature review and empirical evidence from other jurisdictions, the influence of intellectual in company value is on an upward trend. This is facilitated by the growth in the knowledge economy, where innovation is vital.

An example of how intellectual capital opportunities were forfeited is that of Telkom SA, which lagged innovation and is now third in mobile market share, yet it is the oldest telecommunications company in South Africa (Telkom SA SOC Ltd, 2022; ICASA, 2021).

- Companies, government, and other stakeholders should promote intellectual capital by offering incentives for research and development in areas that will result in the improvement of processes, productivity and quality of goods and services. Investment in skills development becomes relevant for the furtherance of intellectual capital development.

- Financial capital has Debt to Equity ratio, Long-term Debt to Non-current Assets ratio and Total Debt to Total Assets ratio as proxies. The Debt to Equity ratio has been covered in the earlier paragraph. Long-term Debt to Non-current Assets indicated a positive statistically weak correlation to the market share price in AIRM. This requires improvement by making debt facilities available for the funding of non-current assets that are associated with positive future cash flows. Total Debt to Total Assets has a negative association with company value, indicating that value is eroded if the debt is used to fund all business operations, including current assets. Debt providers should carefully assess the purpose of debt so that value can be preserved or increased rather than lost because of liquidity or bankruptcy risks.

- The dummy variable for this study was the Covid-19 pandemic effect which affected the year 2020. It is recommended that valuation specialists, CFOs, IR practitioners and academics consider the impact of macroeconomic shocks (including global pandemics) on company performance and, consequently, company value. It is, therefore, advisable to capture such effects in valuation models.

- The study, through the AIRM, has revealed that it is possible to quantify and evaluate the effect of both financial and non-financial capitals on company value. It is recommended that the VRF, standard setter, IR practitioners and accounting firms use AIRM in preparation for IR. The accounting firms, notably EY and PwC, release annual reports that mostly cover IR quality and progress without providing a model of how value addition, erosion or maintenance has

221

changed from one period to another. AIRM provides the measurement solution on how each capital added, eroded or sustained value, giving users an opportunity to make informed decisions on the capitals.

The above section provided a summary of policy recommendations from this study.

7.7 WAS THE RESEARCH PROBLEM SOLVED?

The research problem that led to this study emanated from the inadequacy of the IR framework (2021:12), which states that the integrated report is **not intended** to quantify or monetize the value of the organisation at a point in time, the value it creates preserves or erodes over a period, or its uses of the capitals or effects on all the capitals. This statement from the IR framework leaves a gap where stakeholders are left with no transparent explanation of how a company's value changes over time. The current reporting frameworks tend to concentrate on the reporting of financial capital, whereas the IR framework argues that companies create value through the combination of the six capitals and not financial capital alone (King, 2018; IIRC, 2021).

Legislative and corporate reporting bodies have not come up with a framework or standards which companies can use to measure the impact of non-financial capitals on company value within the context of the IR framework.

The research problem for this study is;

According to the researcher, there are no agreed models/techniques in literature within the IR framework for the quantification and valuation of non-financial capitals to measure their value creation impact.

According to the researcher, this study has managed to resolve the research problem. Through the AIRM, measurement proxies for the capitals have been proposed and tested through the regression models that have been run, leading to the final AIRM that has been presented in Section 6.4 of Chapter 6. The value creation impact or otherwise has been measured as shown by the relationships between the independent variables and company value showing that the research problem has been solved.

7.8 ARE THE RESEARCH QUESTIONS ANSWERED, AND THE RESEARCH OBJECTIVES ACHIEVED?

This study sought to answer the five research questions that were put up as follow-ups to the research problem. Each research question had an associated research objective. The study results and analysis done indicate that relationships between the non-financial capitals and company value are established, measurement metrics suggested, and the AIRM to be used has been presented. This confirms that the research questions were answered and the objectives achieved.

7.9 HYPOTHESES CONCLUSIONS

The study was based on a set of hypotheses that were tested. The findings of the study confirm that there is support for the Alternative hypothesis for each of the capitals.

The following section will cover the limitations of this study and recommendations for future studies.

7.10 STUDY LIMITATIONS AND RECOMMENDATIONS FOR FUTURE STUDIES

This study was limited to JSE-listed companies. This left out privately owned companies and State-Owned Entities (SOEs). The researcher believes that with various sectors included in this study, the impact of this limitation may be minimised. Separate studies are recommended where the effect of the capitals on company values for private companies and SOEs can be assessed. The implementation of IR in private companies can benefit such companies, however, this can be done after empirical evidence supports the viability of IR in such companies. A study, potentially using a survey approach, is recommended where the benefits of the AIRM are tested for companies in the private sector and SOEs.

The IR framework has six capitals which include natural capital. This study looked at five capitals, and natural capital was excluded due to the lack of a suitable proxy for its measurement that would cover all the sectors of the JSE-listed companies. A future study is recommended where the impact of natural capital is included in the AIRM.

Other future studies recommended are listed below:

- A study of the impact of non-financial capitals by sector for JSE-listed companies. This study will be important to gather more insights by sector. Sectors may have different weights on the utilisation of the capitals used in this study, hence, it would be beneficial to study each sector so that sector-specific strategies may be brought forward.

- Intellectual capital concentration by sector so that more understanding can be established. The intensity of intellectual capital may vary across different sectors. Some sectors may be heavily dependent on intangible assets compared to others, which must be empirically tested.

- How intellectual capital has grown in South Africa over the years. Studies in other markets, especially Ocean Tomo (2021) in the USA, have shown how intellectual capital has grown, overtaking tangible assets. Such a study in South Africa may benefit companies and scholars to ascertain the extent of intellectual capital growth in South Africa and how this can be improved in the face of the knowledge economy.

- A perception enquiry into the importance of stakeholders in particular sectors may be a research opportunity. Sectors may have different stakeholder dominances, and as such, stakeholder management strategies must be relevantly determined.

- The impact of macro-economic performance on stakeholder value creation in companies. The success in value creation by some of the stakeholders identified in this study may be dependent on macroeconomic factors. A study to check the impact of value creation by some stakeholders may add to the body of knowledge. For example, the impact of interest rates on the value creation of lenders.

- The stakeholder management strategies that companies may pursue to enhance company value creation by different stakeholders in the IR context.

7.11 CONCLUSION

The study has shown the impact of non-financial capitals on company value. An AIRM was produced and is recommended as a tool that can be used for the measurement and reporting of the influence of the capitals on company value. The research gap has been closed through AIRM, making it possible for various stakeholders to have

relevant information on how each non-financial capital could have added, sustained or eroded company value over a period of time.

7.12   CHAPTER SUMMARY

This chapter served as the final chapter of this study and provided summaries on the theoretical and empirical basis of the AIRM. Summaries of the research findings, contributions to the body of knowledge and conclusions on the research problem, questions, objectives and hypotheses were given. Using the study results, the chapter gave policy recommendations to various stakeholders. The study's limitations were given, as well as recommendations for future studies.

REFERENCES

Abata, M., Akande, JO., Layton, R., Oseko, MS., (2017) 'Does Capital Structure Impact on the Performance of South African Listed Firms?', *Acta Universitatis Danubius*, 13(6), pp. 334–350.

Abbas, M.H.I., Dwiputri, I.N., Rahmawati, F and Sumarsono, H., (2021) 'Towards the Green Economy', in *Proceedings of the Sixth Padang International Conference On Economics Education, Economics, Business and Management, Accounting and Entrepreneurship (PICEEBA 2020)*, pp. 1–52. Available at: https://doi.org/10.2991/aebmr.k.210616.017.

Abhishek, N. and Divyashree, M.S. (2019) 'Integrated Reporting Practices in Indian Companies', *FOCUS : Journal of International Business*, 6(1), pp. 140–151. Available at: https://doi.org/10.17492/focus.v6i1.182825.

Abor, J. (2005) 'The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana', *Journal of Risk Finance*, 6(5), pp. 438–445. Available at: https://doi.org/10.1108/15265940510633505.

ACCA (2011) *Capitals Background Paper For <IR>*. Available at: https://integratedreporting.org/wp-content/uploads/2013/03/IR-Background-Paper-Capitals.pdf.

ACCA (2012) *Business Valuations*. Available at: https://www.accaglobal.com/content/dam/acca/global/PDF-students/2012s/sa_feb12_f9_valuationsv2.pdf

Achim, M.V., Borlea, S.N. and Mare, C. (2016) 'Corporate Governance and Business Performance: Evidence for the Romanian Economy', *Journal of Business Economics and Management*, 17(3), pp. 458–474. Available at: https://doi.org/10.3846/16111699.2013.834841.

Adams, C.A. (2013) *The Sustainable Development Goals, integrated thinking and the integrated report*, IIRC and ICAS.

Adams, C.A., Potter, B., Singh, P.J. and York, J. (2016) 'Exploring the implications of integrated reporting for social investment (disclosures)', *British Accounting Review*, 48(3), pp. 283–296. Available at:

https://doi.org/10.1016/j.bar.2016.05.002.

Adams, M. (2018) 'Emerging Integrated Reporting Practices In The United States', in *The Routledge Companion to Intellectual Capital*. Ist. Routledge, pp. 366–379. Available at: https://doi.org/10.4324/9781315393100-23.

African Development Bank (2019) *Southern Africa Economic Outlook 2019*.

Agarwal, V. and Taffler, R.J. (2011) 'Comparing the Performance of Market-Based and Accounting-Based Bankruptcy Prediction Models', *SSRN Electronic Journal* [Preprint]. Available at: https://doi.org/10.2139/ssrn.968252.

Ahsan, A.M. (2012) 'Can Return on equity be used to predict portfolio performance? CAN ROE BE USED TO PREDICT PORTFOLIO PERFORMANCE?', *Economics, Management, and Financial Markets*, 7(2), pp. 132–148. Available at: https://www.researchgate.net/publication/258341502.

Aisen, A. and Veiga, F.J. (2012) *How Does Political Instability Affect Economic Growth?*, *SSRN Electronic Journal*. Available at: https://doi.org/10.2139/ssrn.1560524.

Al-Awadhi, A.M., Alsaifi, K., Al-Awadhi, A. and Alhammadi, S. (2020) 'Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns', *Journal of Behavioral and Experimental Finance*, 30, pp. 1–8. Available at: https://doi.org/10.1016/j.jbef.2020.100326.

Alfiero, S., Brescia, V. and Bert, F. (2021) 'Intellectual capital-based performance improvement: a study in healthcare sector', *BMC Health Services Research*, 21(1). Available at: https://doi.org/10.1186/s12913-021-06087-y.

Alhassan, A.L. and Asare, N. (2016) 'Intellectual capital and bank productivity in emerging markets: evidence from Ghana', *Management Decision*, 54(3), pp. 589–609. Available at: https://doi.org/10.1108/MD-01-2015-0025.

Allen, M. (2007) 'Model specification in regression analysis', in *Understanding Regression Analysis*, pp. 166–170. Available at: https://doi.org/10.1007/978-0-585-25657-3_35.

Amirrudin, M.S., Abdullah, M., Aris, N.A. and Mohammed, N.F. (2019) 'Are SMEs ready for integrated reporting? The Malaysian experience of accountability',

International Journal of Financial Research, 10(5), pp. 301–312. Available at: https://doi.org/10.5430/ijfr.v10n5p301.

April, K.A., Bosma, P. and Deglon, D.A. (2003) 'IC measurement and reporting: Establishing a practice in SA mining', *Journal of Intellectual Capital*, 4(2), pp. 165–180. Available at: https://doi.org/10.1108/14691930310472794.

Aras, G. and Mutlu Yıldırım, F. (2022) 'Development of capitals in integrated reporting and weighting representative indicators with entropy approach', *Social Responsibility Journal*, 18(3), pp. 551–572. Available at: https://doi.org/10.1108/SRJ-11-2020-0447.

Atkins, J.F. (2020) *Integrated report quality A review of South African-specific research (Integrated Reporting Committee of South Africa)*. Johannesburg. Available at: https://doi.org/10.13140/RG.2.2.21861.22248.

Axtle Ortiz, M.A. (2009) 'Analysis and valuation of intellectual capital according to its context', *Journal of Intellectual Capital*, 10(3), pp. 451–482. Available at: https://doi.org/10.1108/14691930910977833.

Ayaz, M., Mohamed Zabri, S. and Ahmad, K. (2021) 'An empirical investigation on the impact of capital structure on firm performance: evidence from Malaysia', *Managerial Finance*, 47(8), pp. 1107–1127. Available at: https://doi.org/10.1108/MF-11-2019-0586.

Badawi, N.S. and Battor, M. (2020) 'Do social capital and relationship quality matter to the key account management effectiveness?', *Journal of Business and Industrial Marketing*, 35(1), pp. 134–149. Available at: https://doi.org/10.1108/JBIM-01-2019-0003.

Balasingam, S., Arumugam, D. and 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), pp. 127–133.

Bandias, S. (2009) 'The role of telecommunications in facilitating community engagement, social capital and social inclusion', *Telecommunications Journal of Australia*, 59(3). Available at: https://doi.org/10.2104/tja09045.

Battaglini, E. (2019) 'Corporate Social Performance', in *Corporate Social Performance*, pp. 1–10. Available at: https://doi.org/10.1007/978-3-319-71059-4_28-1.

Bebchuk, L.A. and Weisbach, M.S. (2010) 'The state of corporate governance research', *Review of Financial Studies*, 23(3), pp. 939–961. Available at: https://doi.org/10.1093/rfs/hhp121.

Beck, C., Dumay, J. and Frost, G. (2017) 'In Pursuit of a "Single Source of Truth": from Threatened Legitimacy to Integrated Reporting', *Journal of Business Ethics*, 141(1), pp. 191–205. Available at: https://doi.org/10.1007/s10551-014-2423-1.

Bednárová, M., Klimko, R. and Rievajová, E. (2019) 'From environmental reporting to environmental performance', *Sustainability*, 11(9), pp. 1–12. Available at: https://doi.org/10.3390/su11092549.

de Beer, M. and Barnes, N. (2003) 'The Assessment Of Intellectual Capital (Ic) In The South African Context – A Qualitative Approach', *SA Journal of Human Resource Management*, 1(2), pp. 17–24. Available at: https://doi.org/10.4102/sajhrm.v1i1.4.

Bendickson, J., Muldoon, J., Liguori, E.W. and Davis, P.E. (2016) 'Agency theory: background and epistemology', *Journal of Management History*, 22(4), pp. 437–449. Available at: https://doi.org/10.1108/JMH-06-2016-0028.

Bendickson, J., Muldoon, J., Liguori, E., and Davis, P.E. (2016) 'Agency theory: the times, they are a-changin'', *Management Decision*, 54(1), pp. 174–193. Available at: https://doi.org/10.1108/MD-02-2015-0058.

Berle, A.A. and Means, G. (1932) *The Modern Corporation and Private Property*. New York: The Macmillan Company.

Bhaskar, R. (2010) 'Reclaiming reality', in *A Critical Introduction to Contemporary Philosophy*, pp. 1–175. Available at: https://doi.org/10.4324/9780203843314.

Biedenbach, T. and Jacobsson, M. (2016) 'The Open Secret of Values: The Roles of Values and Axiology in Project Research', *Project Management Journal*, 47(3), pp. 139–155. Available at: https://doi.org/10.1177/875697281604700312.

Birhan, M. (2017) 'Determinants of Insurance Company profitability in Ethiopia',

European Journal of Business and Management, 9(16), pp. 17–24. Available at: https://iiste.org/Journals/index.php/EJBM/article/viewFile/37360/38440.

Blasco, J.L. and King, A. (2017) *The Road Ahead - The KMPG Survey of Corporate Responsibility Reporting 2017*, *KPMG*.

Bochenek, M. (2020) 'Analysis of the integrated reporting use in EU countries', *Problems and Perspectives in Management*, 18(3), pp. 106–117. Available at: https://doi.org/10.21511/ppm.18(3).2020.09.

Borgers, A., Derwall, J., Koedijk, K. and Ter Horst, J. (2013) 'Stakeholder relations and stock returns: On errors in investors' expectations and learning', *Journal of Empirical Finance*, 22, pp. 159–175. Available at: https://doi.org/10.1016/j.jempfin.2013.04.003.

Bornemann, M. (1999) 'Empirical analysis of the intellectual potential of value systems in Austria according to the VAIC method', *International Journal of Technology Management*, pp. 1–15. Available at: http://www.measuringip.at/Opapers/Bornemann/Empirical/EmpiricalAnalysisAustria.

Bose, S. and Thomas, K. (2007) 'Valuation of intellectual capital in knowledge-based firms: The need for new methods in a changing economic paradigm', *Management Decision*, 45(9), pp. 1484–1496. Available at: https://doi.org/10.1108/00251740710828726.

Bosse, D.A. and Phillips, R.A. (2016) 'Agency theory and bounded self-interest', *Academy of Management Review*, 41(2), pp. 276–297. Available at: https://doi.org/10.5465/amr.2013.0420.

Boukattaya, S. and Omri, A. (2021) 'Corporate social practices and firm financial performance: empirical evidence from France', *International Journal of Financial Studies*, 9(4), pp. 1–17. Available at: https://doi.org/10.3390/ijfs9040054.

Bourne, L. and Walker, D.H.T. (2005) 'Visualising and mapping stakeholder influence', *Management Decision*, 43(5), pp. 649–660. Available at: https://doi.org/10.1108/00251740510597680.

Bouten, L. and Hoozée, S. (2015) 'Challenges in sustainability and integrated reporting', *Issues in Accounting Education*, 30(4), pp. 83–93. Available at: https://doi.org/10.2308/iace-51093.

Brazen, L. (2004) 'The ROI of Human Capital: Measuring the Economic Value of Employee Performance', *AORN Journal*, 80(6), pp. 1146–1146. Available at: https://doi.org/10.1016/s0001-2092(06)60696-0.

Brick, I.E., Palmon, O. and Wald, J.K. (2006) 'CEO compensation, director compensation, and firm performance: Evidence of cronyism?', *Journal of Corporate Finance*, 12(3), pp. 403–423. Available at: https://doi.org/10.1016/j.jcorpfin.2005.08.005.

Briem, C.R. and Wald, A. (2018) 'Implementing third-party assurance in integrated reporting: Companies' motivation and auditors' role', *Accounting, Auditing and Accountability Journal*, 31(5), pp. 1461–1485. Available at: https://doi.org/10.1108/AAAJ-03-2016-2447.

Brown, H.S., de Jong, M. and Lessidrenska, T. (2009) 'The rise of the Global Reporting Initiative: A case of institutional entrepreneurship', *Environmental Politics*, 17, pp. 571–580. Available at: https://doi.org/10.1080/09644010802682551.

Bussin, M. and Modau, M.F. (2015) 'The relationship between Chief Executive Officer remuneration and financial performance in South Africa between 2006 and 2012', *SA Journal of Human Resource Management*, 13(1), pp. 1–18. Available at: https://doi.org/10.4102/sajhrm.v13i1.668.

Buzinskiene, R. and Rudyte, D. (2021) 'The impact of intangible assets on the company's market value', *Montenegrin Journal of Economics*, 17(2), pp. 59–73. Available at: https://doi.org/10.14254/1800-5845/2021.17-2.5.

Camodeca, R., Almici, A. and Sagliaschi, U. (2019) 'Strategic information disclosure, integrated reporting and the role of intellectual capital', *Journal of Intellectual Capital*, 20(1), pp. 125–143. Available at: https://doi.org/10.1108/JIC-02-2018-0048.

Capponi, F., Cont, R. and Sani, A. (2019) *Trade Duration, Volatility and Market Impact*,

SSRN Electronic Journal. Available at: https://doi.org/10.2139/ssrn.3351736.

Cascino, S., Clatworthy, M., García O.B., Gassen, J., Imam, S. and Jeanjean, T. (2014) 'Who Uses Financial Reports and for What Purpose? Evidence from Capital Providers', *Accounting in Europe*, 11(2), pp. 185–209. Available at: https://doi.org/10.1080/17449480.2014.940355.

Chamberlin, E.H. (1947) 'The Theory of Monopolistic Competition. A Re-orientation of the Theory of Value.', *Economica*, 14(53), p. 77. Available at: https://doi.org/10.2307/2549978.

Chandra, U. and Ro, B.T. (2008) 'The role of revenue in firm valuation', *Accounting Horizons*, 22(2), pp. 199–222. Available at: https://doi.org/10.2308/acch.2008.22.2.199.

Chen, M.C., Cheng, S.J. and Hwang, Y. (2005) 'An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance', *Journal of Intellectual Capital*, 6(2), pp. 159–176. Available at: https://doi.org/10.1108/14691930510592771.

Cheng, Y.-S., Liu, Y.-P. and Chien, C.-Y. (2010) 'Capital structure and firm value in China: A panel threshold regression analysis', *African Journal of Business Management*, 4(12), pp. 2500–2507. Available at: http://www.academicjournals.org/AJBM.

Chersan, I.C. (2017) 'Integrated Reporting in Europe–From Voluntary to Mandatory?', *Journal of Public Administration, Finance and Law*, p. Special issue. Available at: https://www.jopafl.com/uploads/special-issue-3-2017/INTEGRATED_REPORTING_IN_EUROPE_FROM_VOLUNTARY_TO_MANDATORY.pdf.

Chia, R. (2009) 'Organization Theory as a Postmodern Science', in *The Oxford Handbook of Organization Theory*, pp. 1–672. Available at: https://doi.org/10.1093/oxfordhb/9780199275250.003.0005.

Cilliers, J. and Aucoin, C. (2016) *Economics, Governance and Instability in South Africa*, *ISS PAPER 293*. Elsevier BV. Available at: https://doi.org/10.2139/ssrn.2819050.

Clarke, M., Seng, D. and Whiting, R.H. (2011) 'Intellectual capital and firm performance in Australia', *Journal of Intellectual Capital*, 12(4), pp. 505–530. Available at: https://doi.org/10.1108/14691931111181706.

Clarkson, M.E. (1995) 'A stakeholder framework for analyzing and evaluating corporate social performance', *Academy of Management Review*, 20(1), pp. 92–117. Available at: https://doi.org/10.5465/amr.1995.9503271994.

Cliffe Dekker Hofmeyr (2020) *King IV: An Overview*, *Cliffe Dekker Hofmeyr*. Cape Town. Available at: https://www.cliffedekkerhofmeyr.com/export/sites/cdh/en/practice-areas/downloads/King-IV-Information-Brochure.pdf.

CMA (2019) *Statutory audit services market study*. Available at: https://assets.publishing.service.gov.uk/media/5cb74577e5274a7416b64f01/final_summary_report.pdf.

CNA (2018) 'ASEAN countries among world's outperforming emerging economies: Report', *CNA*. Available at: https://www.channelnewsasia.com/news/asia/asean-countries-among-world-s-outperforming-emerging-economies-10718216.

Cohen, F., Hepburn, C.J. and Teytelboym, A. (2019) 'Is Natural Capital Really Substitutable?', *Annual Review of Environment and Resources*, 44, pp. 425–448. Available at: https://doi.org/10.1146/annurev-environ-101718-033055.

Conyon, M.J., Peck, S.I. and Sadler, G. (2000) 'Econometric modelling of UK executive compensation', *Managerial Finance*, 26(9), pp. 3–20. Available at: https://doi.org/10.1108/03074350010766846.

Cooray, T., Gunarathne, A. D.N., Herath, R., Samudrage, D. and Senaratne, S. (2020) 'Does integrated reporting enhance the value relevance of information? Evidence from sri lanka', *Sustainability (Switzerland)*, 12(19), pp. 1–25. Available at: https://doi.org/10.3390/su12198183.

CorporateContent (2017) *What the JSE Listings Requirements say about Integrated Reporting*. Available at: http://www.corporatecontent.co.za/articles/2017/06/26/what-the-jse-listings-

requirements-say-about-integrated-reporting/.

Correia, C. (2019) 'Financial Management', in *Financial Management*. Nineth. Juta. Available at: juta.co.za/pdf/25049/.

Cosmulese, C.G., Ciubotariu, M.S., Grosu, V., Mateş, D. and Socoliuc, M. (2021) 'Empirical study on the impact of evaluation of intangible assets on the market value of the listed companies', *E a M: Ekonomie a Management*, 24(1), pp. 84–101. Available at: https://doi.org/10.15240/TUL/001/2021-1-006.

da Costa, A.P.P. (2017) *Corporate Governance and Fraud: Evolution and Considerations*, *corporate Governance and Strategic Decision-making*. Intech. Available at: https://doi.org/http://dx.doi.org/10.5772/intechopen.68489.

Coughlan, A.T. and Schmidt, R.M. (1985) 'Executive compensation, management turnover, and firm performance. An empirical investigation', *Journal of Accounting and Economics*, 7(1–3), pp. 43–66. Available at: https://doi.org/10.1016/0165-4101(85)90027-8.

Cremers, K.J.M., Guernsey, S.B. and Sepe, S.M. (2019) *Stakeholder Orientation and Firm Value*, *SSRN Electronic Journal*. Available at: https://doi.org/10.2139/ssrn.3299889.

Cresswell, J.W. and Clark, V.L.P. (1994) *Designing and conducting mixed methods research*. Second. Thousand Oaks: Sage.

Cresswell, J.W. and Clark, V.L.P. (2014) *Research design: Qualitative, quantitative and mixed methods approaches*. Fourth. Thousand Oaks: Sage.

Crotty, M., Shakespeare, W. and Henry, V. (2020) *The Foundations Of Social Research: Meaning and perspective in the research process*, *The Foundations Of Social Research: Meaning and perspective in the research process*. Sage. Available at: https://doi.org/10.4324/9781003115700.

Cunliffe, A.L. and Scaratti, G. (2017) 'Embedding Impact in Engaged Research: Developing Socially Useful Knowledge through Dialogical Sensemaking', in *British Journal of Management*, pp. 29–44. Available at: https://doi.org/10.1111/1467-8551.12204.

Cuong, N.T. (2014) 'Threshold Effect of Capital Structure on Firm Value', *International*

Journal of Finance & Banking Studies (2147-4486), 3(3), pp. 14–29. Available at: https://doi.org/10.20525/ijfbs.v3i3.186.

Dakhli, M. and De Clercq, D. (2004) 'Human capital, social capital, and innovation: A multi-country study', *Entrepreneurship and Regional Development*, 16(2), pp. 107–128. Available at: https://doi.org/10.1080/08985620410001677835.

Dalton, D.R., Hitt, M.A., Certo, S. T and Dalton, C.M. (2007) 'The Fundamental Agency Problem and Its Mitigation', *The Academy of Management Annals*, 1(1), pp. 1–64. Available at: https://doi.org/10.1080/078559806.

Daraban, M. (2017) 'Economic Value Added – A General Review of the Concept', *Ovidius University Annals, Economic Sciences Series*, XVII(1), pp. 1–7.

Daraban, M.C. (2016) 'An empirical view on value theory and value-based management', in *CBU International Conference Proceedings*, pp. 26–35. Available at: https://doi.org/10.12955/cbup.v4.740.

Dauchy, E. and Martinez, C.A. (2005) 'Corporate Tax Minimization and the Effectiveness of Investment Tax Incentives', in, pp. 267–276.

Dawar, V. (2014) 'Agency theory, capital structure and firm performance: some Indian evidence', *Managerial Finance*, 40(12), pp. 1190–1206. Available at: https://doi.org/10.1108/MF-10-2013-0275.

Deloitte (2017) *Human Capital Trends A retail perspective*. Available at: https://www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/human-capital-trends-retail.pdf.

Deloitte (2018) *Overview of integrated reports*. Available at: https://integratedreporting.org/wp-content/uploads/2018/10/Deloitte-study-integrated-report-SBF120_0918_vDEF_ENG.pdf.

Deloitte (2022a) *Deloitte Africa Centre for Corporate Governance*. Available at: https://www2.deloitte.com/za/en/services/centre-for-corporate-governance/integrated-reporting.html?icid=nav2_integrated-reporting (Accessed: 30 April 2023).

Deloitte (2022b) 'Integrated Reporting Framework (<IR> Framework)', *IAS Plus* [Preprint]. Available at:

https://www.iasplus.com/en/resources/sustainability/iirc#:~:text=The IIRC was formed in,about value creation over time.

Denzin, N.K. and Lincoln, Y. (2011) 'Disciplining the Practice of Qualitative Research.', in *The SAGE Handbook of Qualitative Research*. Sage, pp. 1–44.

Dilip, K. and Rajeev, P. (2016) 'Value Chain: a Conceptual Framework', *International Journal of Information Engineering and Management Sciences*, 7(1), pp. 74–77.

Djalil, M.A., Tabrani, M. and Jalaluddin, J. (2017) 'the Effect of Earnings Per Share, Book Value and Systematic Risk on Equity Valuation in Manufacturing Company Listed on Indonesian Stock Exchange for the Year 2011-2014', in *25th-international-academic-conference-oecd-paris*. Paris: OECD, pp. 112–128. Available at: https://doi.org/10.20472/iac.2016.025.016.

Dong, Y., Leung, C.K.Y. and Cai, D. (2012) 'What Drives Fixed Asset Holding and Risk-Adjusted Performance of Corporates in China? An Empirical Analysis', *International Real Estate Review*, 15(2), pp. 141–164. Available at: https://doi.org/10.53383/100152.

Dougherty, C. (2007) 'Introducion to Panel Data Models', in *Introduction to Econometrics*. First. London: Oxford University Press, p. 421. Available at: http://investigadores.cide.edu/aparicio/data/Dougherty_PanelData_c14.pdf.

Driscoll, C. and Starik, M. (2004) 'The primordial stakeholder: Advancing the conceptual consideration of stakeholder status for the natural environment', *Journal of Business Ethics*, 49, pp. 55–73. Available at: https://doi.org/10.1023/B:BUSI.0000013852.62017.0e.

DTI (2004) *South African Company Law for the 21st Century*. Pretoria.

Dube, V. (2017) *The association between integrated reporting and company financial performance: A graphical time-series approach. MBA*. University of Pretoria. Available at: https://repository.up.ac.za/handle/2263/64840.

Dudovskiy, J. (2018) *The Ultimate Guide to Writing a Dissertation in Business Studies: A Step-by-Step Assistance*. 2018th edn, *Research Methodology*. 2018th edn. research-methodology.net.

Dumay, J., Bernardi, C., Demartini, P and Guthrie, J. (2016) 'Integrated reporting: A structured literature review', *Accounting Forum*, 40(3), pp. 166–185. Available at: https://doi.org/10.1016/j.accfor.2016.06.001.

Dumay, J., Bernardi, C., Guthrie, J and La Torre, M. (2017) 'Barriers to implementing the International Integrated Reporting Framework A contemporary academic perspective', *Meditari Accountancy Research*, pp. 461–480. Available at: https://doi.org/10.1108/MEDAR-05-2017-0150.

Dumay, J. and Dai, T. (2017) 'Integrated thinking as a cultural control?', *Meditari Accountancy Research*, 25(4), pp. 574–604. Available at: https://doi.org/10.1108/MEDAR-07-2016-0067.

Dunham, L., Freeman, R.E. and Liedtka, J. (2006) 'Enhancing Stakeholder Practice', *Business Ethics Quarterly*, 16(1), pp. 23–42. Available at: http://journals.cambridge.org/abstract_S1052150X00007594.

Dzomonda, O. (2020) 'Stakeholder Engagement and Financial Performance of Firms Listed on the Johannesburg Stock Exchange (JSE)', *Journal of Reviews on Global Economics*, 9, pp. 446–458. Available at: https://doi.org/10.6000/1929-7092.2020.09.42.

Easton, P., Shroff, P. and Taylor, G. (2000) 'Permanent and transitory earnings, accounting recording lag, and the earnings coefficient', *Review of Accounting Studies*, 5(4), pp. 281–300. Available at: https://doi.org/10.1023/A:1026589405910.

Eccles, R.G. and Krzus, M.P. (2010) 'One Report - Integrated Reporting For A Sustainable Strategy', *Financial Executive*, 26(2), pp. 28–32. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=48961959&site=ehost-live&scope=site.

Eccles, R.G., Krzus, M.P. and Solano, C. (2019) *A Comparative Analysis of Integrated Reporting in Ten Countries*.

Eccles, R.G. and Spiesshofer, B. (2016) *Integrated Reporting for a Re-Imagined Capitalism*, *Re-Imagining Capitalism*. Available at: https://doi.org/10.1093/acprof:oso/9780198785453.003.0015.

237

Eckaus, R.S. and Lefeber, L. (1961) *Capital formation: A theoretical and empirical analysis*, *Capital Formation and Economic Development*. Massachusetts. Available at: https://doi.org/10.2307/1928194.

Ederington, L.H. and Lee, J.H. (1996) 'The Creation and Resolution of Market Uncertainty: The Impact of Information Releases on Implied Volatility', *The Journal of Financial and Quantitative Analysis*, 31(4), p. 513. Available at: https://doi.org/10.2307/2331358.

Elkjaer, B. and Simpson, B. (2011) 'Pragmatism: A lived and living philosophy. What can it offer to contemporary organization theory?', *Research in the Sociology of Organizations*, 32, pp. 55–84. Available at: https://doi.org/10.1108/S0733-558X(2011)0000032005.

Elsten, C.M. and Hill, N. (2017) 'Intangible Asset Market Value Study?', *les Nouvelles - Journal of the Licensing Executives Society*, LII(4-September 2017), pp. 245–247.

Emas, R. (2015) *The Concept of Sustainable Development: Definition and Defining Principles.* Available at: https://sustainabledevelopment.un.org/content/documents/5839GSDR 2015_SD_concept_definiton_rev.pdf.

Erasmus, P. (2008) *Evaluating value based financial performance measures. PhD.* University of Stellenbosch. Available at: http://ir1.sun.ac.za/handle/10019.1/1407.

Esselaar, S., Gillwald, A. and Stork, C. (2006) 'South African Telecommunications Sector Performance Review 2006', *LINK Centre Public Policy Research*, (8), pp. 1–66. Available at: http://link.wits.ac.za.

EY (2014) *Integrated reporting Elevating value*, pp. 1-52. Available at: https://pdf4pro.com/docs/ey-integrated-reporting-elevating-value-b0e3e.html

EY (2022) 'Excellence in Integrated Reporting', *Excellence in Integrated Reporting*. EY, pp. 1–36. Available at: https://www.ey.com/en_za/assurance/excellence-in-integrated-reporting.

Ezeoha, A. and Botha, F. (2012) 'Firm age, collateral value, and access to debt

financing in an emerging economy: Evidence from South Africa', *South African Journal of Economic and Management Sciences*, 15(1), pp. 55–71. Available at: https://doi.org/10.4102/sajems.v15i1.138.

Faghani Makrani, K. and Abdi, M.R. (2014) 'The effects of book value, net earnings and cash flow on stock price', *Management Science Letters*, 4(9), pp. 2129–2132. Available at: https://doi.org/10.5267/j.msl.2014.8.005.

Fatoki, O.O. (2011) 'The Impact of Human, Social and Financial Capital on the Performance of Small and Medium-Sized Enterprises (SMEs) in South Africa', *Journal of Social Sciences*, 29(3), pp. 193–204. Available at: https://doi.org/10.1080/09718923.2011.11892970.

Favaretto, S.C. (2016) *Report or Explain for Sustainability or Integrated Reports: A Brazilian Success Story*. Available at: http://www.b3.com.br/data/files/C4/20/C1/74/D65765103CC08565790D8AA8/ Case-Report-or-Explain-by-Sonia-Favaretto.pdf.

Fayez, A., Hameed, A.-Q. and Ridha, A.-K. (2011) 'The Intellectual Capital Performance of Kuwaiti Banks: An Application of VAIC?1 Model', *iBusiness*, 03(01), pp. 88–96.

Fedaa, A.A.S. and Thamer, M.M.S. (2021) 'The impact of taxation on the value of companies', *African Journal of Business Management*, 15(3), pp. 110–121. Available at: https://doi.org/10.5897/ajbm2020.9177.

Feltham, G.A. and Ohlson, J.A. (1995) 'Valuation and Clean Surplus Accounting for Operating and Financial Activities', *Contemporary Accounting Research*, 11(2), pp. 689–731. Available at: https://doi.org/10.1111/j.1911-3846.1995.tb00462.x.

Feng, T., Cummings, L. and Tweedie, D. (2017) 'Exploring integrated thinking in integrated reporting – an exploratory study in Australia', *Journal of Intellectual Capital*, Vol. 18(No.2), pp. 330–353. Available at: https://doi.org/10.1108/JIC-06-2016-0068.

Fessehaie, J. (2021) 'Regional Value Chains and Mining Capital Equipment: Exploring Opportunities for Linkages and Upgrading in Southern Africa', in *Transforming Southern Africa*, pp. 139–165. Available at: https://www.un-

ilibrary.org/content/books/9789210056212c007.

Financial Reporting Council (2016) *Financial Reporting Council; The UK Corporate Governance Code*, *The Financial Reporting Council*. Available at: https://doi.org/Retrieved from Financial Reporting Council.

Financial Reporting Council (2018) *Independent Review of the Financial Reporting Council*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/ attachment_data/file/767387/frc-independent-review-final-report.pdf.

Firer, S. and Mitchell Williams, S. (2003) 'Intellectual capital and traditional measures of corporate performance', *Journal of Intellectual Capital*, 4(3), pp. 348–360. Available at: https://doi.org/10.1108/14691930310487806.

Firer, S. and Stainbank, L. (2003) 'Testing the relationship between intellectual capital and a company's performance: Evidence from South Africa', *Meditari Accountancy Research*, 11(1), pp. 25–44. Available at: https://doi.org/10.1108/10222529200300003.

Fleetwood, S. (2005) 'Ontology in organization and management studies: A critical realist perspective', *Organization*, 12(2), pp. 197–222. Available at: https://doi.org/10.1177/1350508405051188.

Flower, J. (2015) 'The international integrated reporting council: A story of failure', *Critical Perspectives on Accounting*, 27, pp. 1–17. Available at: https://doi.org/10.1016/j.cpa.2014.07.002.

Folajimi, A., Akintoye, F., Isiaka, B., Rufus, I. (2019) 'Evaluation of Integrated Reporting and the Value of Listed Manufacturing Firms in Nigeria', *European Journal of Accounting, Auditing and Finance Research*, 7(7), pp. 31–59. Available at: www.eajournals.org.

FRC (2020) *The UK Stewardship Code review of early reporting*. London. Available at: www.frc.org.uk.

Freeman, R.E. (1994) 'The Politics of Stakeholder Theory: Some Future Directions', *Business Ethics Quarterly*, 4(4), pp. 409–421. Available at: https://doi.org/10.2307/3857340.

Freeman, R.E. (2016) 'A Stakeholder Theory of the Modern Corporation', in *The Corporation and Its Stakeholders*, pp. 38–48. Available at: https://doi.org/10.3138/9781442673496-009.

Freeman, R.E.E. and McVea, J. (2001) 'A Stakeholder Approach to Strategic Management', in *Blackwell Handbook of Strategic Management*, pp. 189–207. Available at: https://doi.org/10.2139/ssrn.263511.

Freeman, S. and Cavusgil, S.T. (1984) *Strategic management. A stakeholder approach, Journal of International Marketing*. Cambridge University Press.

Friedman, M. (1970) 'A Friedman doctrine - The Social Responsibility of Business Is to Increase Its Profits', *New York Times Magazine*. Available at: https://0-go-gale-com.oasis.unisa.ac.za/ps/i.do?p=GBIB&u=usa_itw&id=GALE%7CA635262696&v=2.1&it=r.

Fu, L., Parkash, M. and Singhal, R. (2017) 'Tobin's q Ratio and Firm Performance', *International Research Journal of Appllied Finance*, VII(4), pp. 1–10. Available at: https://doi.org/10.0704/article-2.

Galvagno, M. and Dalli, D. (2014) 'Theory of value co-creation: A systematic literature review', *Managing Service Quality*, 24(6), pp. 643–683. Available at: https://doi.org/10.1108/MSQ-09-2013-0187.

Gamerschlag, R. (2013) 'Value relevance of human capital information', *Journal of Intellectual Capital*, 14(2), pp. 324–345. Available at: https://doi.org/10.1108/14691931311323913.

García-Merino, J.D., García-Zambrano, L. and Rodriguez-Castellanos, A. (2014) 'Impact of relational capital on business value', *Journal of Information and Knowledge Management*, 13(1), pp. 1–10. Available at: https://doi.org/10.1142/S0219649214500026.

García, C.B., García, J., López Martín, M. M. and Salmerón, R. (2015) 'Collinearity: revisiting the variance inflation factor in ridge regression', *Journal of Applied Statistics*, 42(3), pp. 648–661. Available at: https://doi.org/10.1080/02664763.2014.980789.

Georgieva, H. (2017) 'Corruption in South Africa: Genesis and outlook', *Journal of Process Management. New Technologies*, 5(4), pp. 49–54. Available at: https://doi.org/10.5937/jouproman5-15160.

Ghaeli, M.R. (2017) 'Price-to-earnings ratio: A state-of-art review', *Accounting*, 3(2), pp. 131–136. Available at: https://doi.org/10.5267/j.ac.2016.7.002.

Ghosh, S. (2019) 'Integrated Reporting in India: Research Findings and Insights', in *Integrated Reporting, CSR, Sustainability , Ethics and Governance*, pp. 365–386. Available at: https://doi.org/10.1007/978-3-030-01719-4_18.

Girotra, A. and Yadav, S.S. (2001) 'Economic value added (EVA): A new flexible tool for measuring corporate performance', *Global Journal of Flexible Systems Management*, 2(1), pp. 7–18.

Giuliani, M. and Marasca, S. (2011) 'Construction and valuation of intellectual capital: A case study', *Journal of Intellectual Capital*, 12(3), pp. 377–391. Available at: https://doi.org/10.1108/14691931111154698.

Gleeson-White, J. (2014) *The Six Capitals*. Allen & Unwin.

Goetzmann, W.N. and Jorion, P. (1999) 'Re-Emerging Markets', *The Journal of Financial and Quantitative Analysis*, 34(1), p. 1. Available at: https://doi.org/10.2307/2676244.

Gordon, M.J. and Shapiro, E. (1956) 'Capital Equipment Analysis: The Required Rate of Profit', *Management Science*, 4, pp. 102–110. Available at: https://doi.org/10.1287/mnsc.3.1.102.

Government Gazzette (2009) *The Companies Act No. 71 of 2008*, *Government Gazette*. South Africa. Available at: https://doi.org/102GOU/B.

Greene, W.W.H.. (2012) *Econometric analysis 7th Ed New York University*, *Prentice Hall*.

Van Greunen, J., Heymans, A., Van Heerden, C. and Van Vuuren, G. (2014) 'The prominence of stationarity in time series forecasting', *Journal for Studies in Economics and Econometrics*, 38(1), pp. 1–16. Available at: https://doi.org/10.1080/10800379.2014.12097260.

GRI (2013) *G4 Sustainability Reporting Guidelines - Reporting Principles & Standard Disclosures*, *G4 Sustainability Repoting Guideline*.

Guthrie, J. and Dumay, J. (2019) 'Intellectual capital accounting research analysed over the past two decades', in *Proceedings of the European Conference on Intellectual Capital*.

Hair, J.F., Anderson, R.E., Babin, B.J. and Black, W.C. (2013) *Multivariate Data Analysis: Pearson Education Limited*, *Exploratory Data Analysis in Business and Economics*.

Haji, A.A. and Hossain, D.M. (2016) 'Exploring the implications of integrated reporting on organisational reporting practice: Evidence from highly regarded integrated reporters', *Qualitative Research in Accounting and Management*, 13(4), pp. 415–444. Available at: https://doi.org/10.1108/QRAM-07-2015-0065.

Hamad, S., Chofreh, A.G., Goni, F.A., Klemeš, J.J., Konečná, Z., Lai, F.W., and Shad, M.K. (2022) 'Corporate governance code and voluntary disclosure of integrated reporting: Evidence from an emerging economy', *Sustainable Development*, 30(6), pp. 1497–1510. Available at: https://doi.org/10.1002/sd.2323.

Hanson, N.. (1958) *Patterns of Discovery : An Inquiry into the Conceptual Foundations of Science.*, *Archives of Internal Medicine*. Cambridge University Press.

Harduth, N. and Sampson, L. (2016) *A Review Of The King IV Report On Corporate Governance*, *Werksman*. Available at: https://www.werksmans.com/wp-content/uploads/2013/05/061741-WERKSMANS-king-iv-booklet.pdf.

Harrison, J.S. and Wicks, A.C. (2013) 'Stakeholder Theory, Value, and Firm Performance', *Business Ethics Quarterly*, 23(1), pp. 97–125. Available at: https://doi.org/10.5840/beq20132314.

Harvey, C.R. (1995) 'Predictable Risk and Returns in Emerging Markets', *Review of Financial Studies*, 8(3), pp. 773–816. Available at: https://doi.org/10.1093/rfs/8.3.773.

Hausman, J.A. (1978) 'Specification Tests in Econometrics EC ON ME R C A VOLUME 46 NOVEMBER, 1978 NUMBER 6 SPECIFICATION TESTS IN ECONOMETRICS', *Econometrica*, 46(6), pp. 1251–1271. Available at:

http://www.jstor.org/stable/1913827%5Cnhttp://www.jstor.org/%5Cnhttp://www.jstor.org/action/showPublisher?publisherCode=econosoc.%5Cnhttp://www.jstor.org.

Havlová, K. (2015) 'What Integrated Reporting Changed: The Case Study of Early Adopters', *Procedia Economics and Finance*, 34, pp. 231–237. Available at: https://doi.org/10.1016/s2212-5671(15)01624-x.

Hejazi, R., Ghanbari, M. and Alipour, M. (2016) 'Intellectual, Human and Structural Capital Effects on Firm Performance as Measured by Tobin's Q', *Knowledge and Process Management*, 23(4), pp. 259–273. Available at: https://doi.org/10.1002/kpm.1529.

Herbert, S. and Arendse, C. (2021) 'Analysis of sustainability disclosures in integrated reports of consumer service companies', in *Conference Proceedings of the 32nd Annual Conference of the Southern Africa Institute for Management Scientists*, pp. 36–53.

Herbert, S. and Graham, M. (2018) 'The Relationship Between Sustainability Reporting and Integrated Reporting: A Literature Review', in *2018 Southern African Accounting Association (SAAA) National Teaching and Learning and Regional Conference Proceedings*, pp. 125–144. Available at: https://www.researchgate.net/publication/330846534_The_Relationship_Between_Sustainability_Reporting_and_Integrated_Reporting_A_Literature_Review

Hertina, D., Tisnakomara, H. and Sunandar, N. (2022) 'Company Value Impact on Capital Structure, Sales Growth, and Company Size', *International Journal of Finance & Banking Studies (2147-4486)*, 11(1), pp. 190–198. Available at: https://doi.org/10.20525/ijfbs.v11i1.1668.

Hoffman, M. (2012) *Integrated reporting in practice : The South African story*. Available at: https://assets.kpmg/content/dam/kpmg/pdf/2013/04/the-south-african-story.pdf.

Hofmeyer, A. and Marck, P.B. (2008) 'Building social capital in healthcare organizations: Thinking ecologically for safer care', *Nursing Outlook*, 56(4), pp.

145.e1-145.e9. Available at: https://doi.org/10.1016/j.outlook.2008.01.001.

Homero, P.F. (2017) 'Integrated Reporting in Brazil: A Critical Reading', in *Improving the usefulness of accounting research*. Sao Paulo: Universidade de São Paulo, pp. 1–18.

Hoyos, D., Bermejo, R. and Arto, I. (2010) *Sustainable Development in the Brundtland Report and Its Distortion: Implications for Development Economics and International Cooperation*, *ResearchGate*.

Hull, R. (2005) 'Firm Value And The Debt-Equity Choice', *Regional Business Review*, 24(May), pp. 50–75.

IASB (2010) *Summary of IFRS Practice Statement Management Commentary*. London. Available at: https://www.iasplus.com/en/standards/other/management-commentary.

Levdokymov, V., Grytsyshen, D., Lehenchuk, S., Marchuk, G. and Ostapchuk, T. (2020) 'Analysis of the impact of intangible assets on the companies' market value', *Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu*, 2020(3), pp. 164–170. Available at: https://doi.org/10.33271/nvngu/2020-3/164.

IFAC (2016) *International Standard on Auditing (ISA) 700 (Revised)*.

Ifeanyi, N., Oleka, D.C., Nwanne T.F.I. and Sabina, E,A. (2015) 'the Nigerian Stock Exchange: a Bane for Sustainable Economic Development', *European Journal of Business and Social Sciences*, 3(12), pp. 19–27. Available at: http://www.ejbss.com/recent.aspx-.

IFRS (2017) *The Annotated IFRS Standards, Conceptual Framework for Financial Reporting and Requirements*. First. London: IFRS.

IFRS (2018) *Introduction to the Management Commentary*. London. Available at: https://www.ifrs.org/-/media/project/management-commentary/supporting-material/introduction-to-the-management-commentary.pdf.

IIRC (2019) *Integrated Thinking & Strategy State of play report*. Available at: https://integratedreporting.org/wp-content/uploads/2020/01/Integrated-Thinking-and-Strategy-State-of-Play-Report_2020.pdf.

IIRC (2020) '10 Years of the IIRC', *International Integrated Reporting Council* [Preprint]. Available at: https://www.integratedreporting.org/10-years/10-years-summary/.

IIRC (2021) *The International <IR> Framework*. London. Available at: https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf.

IIRC (2022) 'Transition to integrated thinking', (August). Available at: https://www.integratedreporting.org/news/the-transition-to-integrated-thinking-a-guide-to-getting-started-is-now-available/.

İLTAŞ, Y. and DEMİRGÜNEŞ, K. (2020) 'Asset Tangibility and Financial Performance: A Time Series Evidence', *Ahi Evran Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 6(2), pp. 345–364. Available at: https://doi.org/10.31592/aeusbed.731079.

IoDSA (2016) *King IV Report on Corporate Governance of South African 2016*, *King IV Report on Corporate Governance of South African 2016*.

IoDSA (2021) *Guidance for Remuneration Committees-Principal-agent problems and executive remuneration*.

Iredele, O.O. and Moloi, T. (2020) 'Corporate environmental disclosure in the integrated reporting regime: The case of listed mining companies in South Africa', *Journal of Economic and Financial Sciences*, 13(1), p. 11. Available at: https://doi.org/10.4102/jef.v13i1.481.

Irungu, A.M ., Muturi, W., Nasieku, T and Ngumi, P. (2018) 'Effect of firm level factors on financial performance of listed firms in the Nairobi Securities Exchange', *Journal of Finance and Accounting*, 2(3), pp. 55–74. Available at: http://ir.jkuat.ac.ke/handle/123456789/5046%0Ahttp://ir.jkuat.ac.ke/bitstream/handle/123456789/5046/Irungu%2C Anthony Mugetha Phd Finance%2C 2019.pdf?sequence=1&isAllowed=y.

Jaffar, N., Nor, A.S.M. and Selamat, Z. (2018) 'Analysis of Voluntary Disclosure Before and After the Establishment of the Integrated Reporting Framework', *Accounting and Finance Review*, Review 3(4), pp. 105–113.

Jensen, M.C. (2002) 'Value maximisation, stakeholder theory, and the corporate objective function', *Business Ethics Quarterly*, 12(2), pp. 235–256. Available at: https://doi.org/10.1111/1468-036X.00158.

Jiraporn, P., Kim, YS., Miller, A. and Yoon, S.S. (2008) 'Is earnings management opportunistic or beneficial? An agency theory perspective', *International Review of Financial Analysis*, 17(3), pp. 622–634. Available at: https://doi.org/10.1016/j.irfa.2006.10.005.

Jiraporn, P. and Liu, Y. (2008) 'Capital structure, staggered boards, and firm value', *Financial Analysts Journal*, 64(1), pp. 49–60. Available at: https://doi.org/10.2469/faj.v64.n1.7.

Johnston, M.P. (2014) 'Secondary Data Analysis : A Method of which the Time Has Come', *Qualitatve and Quantative Methods in Libraryes (QQML)*, 3, pp. 619–626.

Jose, A. and Lee, S.M. (2007) 'Environmental reporting of global corporations: A content analysis based on Website disclosures', *Journal of Business Ethics*, 72, pp. 307–321. Available at: https://doi.org/10.1007/s10551-006-9172-8.

Joshi, M., Cahill, D., Kansal, M and Sidhu, J. (2013) 'Intellectual capital and financial performance: An evaluation of the Australian financial sector', *Journal of Intellectual Capital*, 14(2), pp. 264–285. Available at: https://doi.org/10.1108/14691931311323887.

Kaiser, R. and Maravall, A. (1999) *Short-term and long-term trends, seasonal adjustment, and the business cycle*. Madrid. Available at: http://www.bde.es.

Kaldor, N. (1955) 'Alternative theories of distribution', *Review of Economic Studies*, 23(2), pp. 83–100. Available at: https://doi.org/10.2307/2296292.

Karani, P.K. (2009) *Debt/Equity Ratio and Expected Common Stock Returns: Empirical Evidence from the Nairobi Stock Exchange*. Nairobi.

Kelemen, M. and Rumens, N. (2011) *An Introduction to Critical Management Research*, *An Introduction to Critical Management Research*. Sage. Available at: https://doi.org/10.4135/9780857024336.

Khan, T., Shamim, M. and Goyal, J. (2018) 'Panel Data Analysis of Profitability

Determinants: Evidence from Indian Telecom Companies', *Theoretical Economics Letters*, 08(15), pp. 3581–3593. Available at: https://doi.org/10.4236/tel.2018.815220.

Kheong Chin, F., Munir Juma, E.M. and Nga, J.C. (2019) *Using the Ohlson model to assess the adoption of Integrated Reporting <IR> practices of Malaysian public listed companies*, City University eJournal of Academic Research (CUeJAR). Available at: https://www.city.edu.my/CUeJAR.

Kianto, A., Hurmelinna-Laukkanen, P. and Ritala, P. (2010) 'Intellectual capital in service- and product-oriented companies', *Journal of Intellectual Capital*, 11(3), pp. 305–325. Available at: https://doi.org/10.1108/14691931011064563.

King, M. (2018) '2018 address by Judge Professor Mervyn King, Chairman of the Council, IIRC', in *IIRC March 2018*. London: International Integrated Reporting Council. Available at: https://integratedreporting.org/news/2018-address-by-judge-professor-mervyn-king-chairman-of-the-council-iirc/.

Kirsten, E. and du Toit, E. (2018) 'The relationship between remuneration and financial performance for companies listed on the Johannesburg stock exchange', *South African Journal of Economic and Management Sciences*, 21(1), pp. 1–10. Available at: https://doi.org/10.4102/sajems.v21i1.2004.

Kılıç, M. and Kuzey, C. (2018) 'Assessing current company reports according to the IIRC integrated reporting framework', *Meditari Accountancy Research*, 26(2), pp. 305–333. Available at: https://doi.org/10.1108/MEDAR-04-2017-0138.

Kleynhans, E.P.J. (2006) 'The Role Of Human Capital In The Competitive Platform Of South African Industries', *SA Journal of Human Resource Management*, 4(3), pp. 55–62. Available at: https://doi.org/10.4102/sajhrm.v4i3.100.

Knoll, M. (2018) 'The Modigliani-Miller Theorem at 60: The Long-Overlooked Legal Applications of Finance's Foundational Theorem', *Faculty Scholarship at Penn Law*, 35(17–43), pp. 1–22. Available at: https://scholarship.law.upenn.edu/faculty_scholarship/1936/.

Kondlo, N. (2016) *The Importance of Corporate Governance in South African Family-Owned Companies: Effects of Ownership and Board Composition on*

Performance. M.Phil. University of the Western Cape. Available at: http://etd.uwc.ac.za/xmlui/bitstream/handle/11394/5517/Kondlo_n_mphil_law_ 2017.pdf?sequence=1.

Kothari, S.P. and Zimmerman, J.L. (1995) 'Price and return models', *Journal of Accounting and Economics*, 20(2), pp. 155–192. Available at: https://doi.org/10.1016/0165-4101(95)00399-4.

KPMG (2015a) *Building Valuable Connections - Capital management in the global telecommunications sector.* Available at: https://assets.kpmg/content/dam/kpmg/pdf/2015/11/building-valuable-connections.pdf.

KPMG (2015b) *Social Capital in Decision-Making How social information drives value creation.*

KPMG (2023) *KPMG South Africa Annual Integrated Report 2022*. Available at: https://assets.kpmg.com/content/dam/kpmg/za/pdf/2023/KPMG IR FY22.pdf.

Kuforiji, J. and Kuforiji, P. (2016) 'Scientific method of research in social and human sciences - the practical steps', *National social science journal*, 49(01), pp. 17–23. Available at: https://www.nssa.us/journals/pdf/NSS_Journal_49_1.pdf#page=20.

Kumar, R. (2011) *Research Methodology: A Step-by-Step Guide for Beginners | Online Resources.* Third. London: SAGE.

Kundu, B. (2017) 'Application of Integrated Reporting in Indian Corporate Scenario', *Prestige International Journal of Management & IT- Sanchayan*, 6(1), pp. 99–110.

Laplume, A.O., Sonpar, K. and Litz, R.A. (2008) 'Stakeholder theory: Reviewing a theory that moves us', *Journal of Management*, 34(6), pp. 1152–1189. Available at: https://doi.org/10.1177/0149206308324322.

Lazarides, T.G. and Pitoska, E. (2011) *Corporate Governance and Debt to Equity Ratio, SSRN Electronic Journal.* Available at: https://doi.org/10.2139/ssrn.1408408.

Levin, A., Lin, C.F. and Chu, C.S.J. (2002) 'Unit root tests in panel data: Asymptotic

and finite-sample properties', *Journal of Econometrics*, 108(1), pp. 1–24. Available at: https://doi.org/10.1016/S0304-4076(01)00098-7.

Liebowitz, J. and Wright, K. (1999) 'Does measuring knowledge make "cents"?', *Expert Systems with Applications*, 17(2), pp. 99–103. Available at: https://doi.org/10.1016/S0957-4174(99)00027-5.

Loprevite, S., Ricca, B. and Rupo, D. (2018) 'Performance sustainability and integrated reporting: Empirical evidence from mandatory and voluntary adoption contexts', *Sustainability (Switzerland)*, 10(5), pp. 1–15. Available at: https://doi.org/10.3390/su10051351.

Maditinos, D., Chatzoudes, D., Theriou, G and Tsairidis, C. (2011) 'The impact of intellectual capital on firms' market value and financial performance', *Journal of Intellectual Capital*, 12(1), pp. 132–151. Available at: https://doi.org/10.1108/14691931111097944.

Makhubedu, T., Nwobodo-Anyadiegwu, E. and Mbohwa, C. (2017) 'The effect of human capital investment and motivation on miners' productivity at a South African platinum mine', in *Global Business and Technology*. Johannesburg, pp. 1–14.

Mamun, S.A. Al and Aktar, A. (2020) 'Intellectual capital disclosure practices of financial institutions in an emerging economy', *PSU Research Review*, 5(1), pp. 33–53. Available at: https://doi.org/10.1108/PRR-08-2020-0024.

Manikandan, S. (2011) 'Measures of Dispersion', *Journal of Pharmacology and Pharmacotherapeutics*, 2(4), pp. 315–316. Available at: https://doi.org/10.4135/9781071881590.

Mans-Kemp, N. and van der Lugt, C.T. (2020) 'Linking integrated reporting quality with sustainability performance and financial performance in South Africa', *South African Journal of Economic and Management Sciences*, 23(1), pp. 1–11. Available at: https://doi.org/10.4102/sajems.v23i1.3572.

Maqbool, S., Rasool, H. and Ahmad, S. (2018) 'Corporate Social Responsibility and Financial Performance: An Empirical Analysis of Indian Banks', *Future Business Journal*, 4, pp. 84–93. Available at:

https://doi.org/10.2139/ssrn.3743755.

Marieta, C.D. (2009) 'Methods designed to determine the value of the firm and their deficiencies', *Annals of the University of Oradea : Economic Science*, 3, pp. 131–136.

Marozva, G. and Magwedere, M.R. (2021) 'COVID-19 and Stock Market Liquidity: An Analysis of Emerging and Developed Markets', *Scientific Annals of Economics and Business*, 68(2), pp. 129–144. Available at: https://doi.org/10.47743/saeb-2021-0010.

Marr, B. (2008) *Impacting Future Value: How to Manage Your Intellectual Capital*. Available at: https://www.cimaglobal.com/Documents/ImportedDocuments/tech_mag_impacting_future_value_may08.pdf.pdf.

Mason, R. and Vracheva, V. (2015) 'Creating Firm Value through Stakeholder Management and Regulation.', *Journal of Managerial Issues*, 27(1–4), pp. 120–140. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=112699301&site=eds-live.

Matemane, R. and Wentzel, R. (2019) 'Integrated reporting and financial performance of South African listed banks', *Banks and Bank Systems*, 14(2), pp. 128–139. Available at: https://doi.org/10.21511/bbs.14(2).2019.11.

Mattick, K., Johnston, J. and de la Croix, A. (2018) 'How to…write a good research question', *Clinical Teacher*, 15(2), pp. 104–108. Available at: https://doi.org/10.1111/tct.12776.

McGrath, S.K. and Whitty, S.J. (2017) 'Stakeholder defined', *International Journal of Managing Projects in Business*, 10(4), pp. 721–748. Available at: https://doi.org/10.1108/IJMPB-12-2016-0097.

McGregor BFA (2022) 'IRESS'. Available at: https://0-researchdomain-iress-co-za.oasis.unisa.ac.za/Default.aspx.

Medlen, C. (2003) 'The trouble with Q', *Journal of Post Keynesian Economics*, pp. 693–698. Available at: https://doi.org/10.1080/01603477.2003.11051377.

Mehari, D. and Aemiro, T. (2013) 'Firm Specific Factors That Determine Insurance Companies' Performance in Ethiopia', *European Scientific Journal*, 9(10), pp. 1857–7881.

Meles, A., Porzio, C., Sampagnaro, G. and Verdoliva, V. (2016) 'The impact of intellectual capital efficiency on commercial bank performance: Evidence from the US', *Journal of Multinational Financial Management*, 36, pp. 64–74. Available at: https://doi.org/10.1016/j.mulfin.2016.04.003.

Melloni, G., Caglio, A. and Perego, P. (2017) 'Saying more with less? Disclosure conciseness, completeness and balance in Integrated Reports', *Journal of Accounting and Public Policy*, 36(3), pp. 220–238. Available at: https://doi.org/10.1016/j.jaccpubpol.2017.03.001.

Mendelow, A.L. (1981) 'Environmental scanning - the impact of the stakeholder concept', in *Proceedings of the International Conference on Information Systems*.

Miciuła, I., Kadłubek, M. and Stepien, P. (2020) 'Modern methods of business valuation-case study and new concepts', *Sustainability (Switzerland)*, 12(7), pp. 1–22. Available at: https://doi.org/10.3390/su12072699.

Miller, M.H. (1977) 'Debt and Taxes', *The Journal of Finance*, 32(2), pp. 261–275. Available at: https://doi.org/10.1111/j.1540-6261.1977.tb03267.x.

Milne, M.J. and Gray, R. (2013) 'W(h)ither Ecology? The Triple Bottom Line, the Global Reporting Initiative, and Corporate Sustainability Reporting', *Journal of Business Ethics*, 118, pp. pages13–29. Available at: https://doi.org/10.1007/s10551-012-1543-8.

Mintz, S.M. (2006) 'A comparison of corporate governance systems in the U.S., UK and Germany', *Corporate Ownership and Control*, 3(4), pp. 24–34. Available at: https://doi.org/10.22495/cocv3i4p12.

Mishra, N. (2020) 'Integrated Reporting: A Structured Analysis of Application and Gaps in India', *Texila International Journal of Management*, Special Ed, pp. 24–30. Available at: https://doi.org/10.21522/tijmg.2015.se.19.02.art004.

Mitchell, R.K., Weaver, G.R., Agle, B.R. and Bailey, A.D. (2016) 'Stakeholder agency

and Social welfare: Pluralism and decision making in the multi-objective corporation', *Academy of Management Review*, 41(2), pp. 1–63. Available at: https://doi.org/10.5465/amr.2013.0486.

Mngadi, L. and Rossouw, A. (2019) *SA Mine 2019: In transition*, *PricewaterhouseCoopers*.

Modigliani, F. and Miller, M. (1958) 'The cost of capital, corporation finance and the theory of investment', *The American Economic Review*, 48(3), pp. 291–297. Available at: https://doi.org/10.4013/base.20082.07.

Modigliani, F. and Miller, M.H. (1963) 'Corporate Income Taxes and the Cost of Capital: A Correction', *American Economic Review*, 53(3), pp. 433–443. Available at: https://doi.org/10.2307/1809167.

Mohammed, N.F., Amirrudin, M.S, Kassim, C.F.C. and Sutainim, N.A. (2020) 'Accountability through integrated reporting: The awareness and challenges in Malaysia', *Humanities and Social Sciences Letters*, 8(1), pp. 123–132. Available at: https://doi.org/10.18488/journal.73.2020.81.123.132.

Molele, M.H. (2018) *Foreign exchange risk exposure, hedging behaviour, and corporate valuations: evidence from South Africa. PhD.* University of Capetown. Available at: https://open.uct.ac.za/handle/11427/28412.

Moliner, J. (2017) *The Logic Value, an improvement of Gordon Shapiro valuation model.* Available at: https://thelogicvalue.com/en/gordon-shapiro-model/.

Möller, K.E.K. and Törrönen, P. (2003) 'Business suppliers' value creation potential a capability-based analysis', *Industrial Marketing Management*, 32(2), pp. 109–118. Available at: https://doi.org/10.1016/S0019-8501(02)00225-0.

Moloi, T. and Iredele, O. (2020) 'Firm value and integrated reporting quality of South African listed firms', *Academy of Strategic Management Journal*, 19(1), pp. 1–12. Available at: https://www.researchgate.net/publication/339747194_FIRM_VALUE_AND_INTEGRATED_REPORTING_QUALITY_OF_SOUTH_AFRICAN_LISTED_FIRMS.

Monciardini, D., Mähönen, J.T. and Tsagas, G. (2020) 'Rethinking Non-Financial

Reporting: A Blueprint for Structural Regulatory Changes', *Accounting, Economics and Law: A Convivium*, 10(2), pp. 1–43. Available at: https://doi.org/10.1515/ael-2020-0092.

Moolman, J., Oberholzer, M. and Steyn, M. (2019) 'The effect of integrated reporting on integrated thinking between risk, opportunity and strategy and the disclosure of risks and opportunities', *Southern African Business Review*, 20(1), pp. 600–627. Available at: https://doi.org/10.25159/1998-8125/6065.

Moore, J.R. and Penrose, E.T. (1960) 'The Theory of the Growth of the Firm', *Southern Economic Journal*, 27(2), p. 151. Available at: https://doi.org/10.2307/1055183.

Moro Visconti, R. (2019) 'The Valuation of Intangible Assets: An Introduction', in *SSRN Electronic Journal*, pp. 9–61. Available at: https://doi.org/10.2139/ssrn.3413524.

Morris, C. (2015) 'An industry analysis of the power of human capital for corporate performance: Evidence from South Africa', *South African Journal of Economic and Management Sciences*, 18(4), pp. 486–499. Available at: https://doi.org/10.4102/sajems.v18i4.1191.

Mpofu, R.T. (2011) 'The relationship between beta and stock returns in the JSE securities exchange in South Africa', *Corporate Ownership and Control*, 9(1 F), pp. 558–566. Available at: https://doi.org/10.22495/cocv9i1c5art5.

Muhammad, N.M.N. and Ismail, M.K.A. (2009) 'Intellectual Capital Efficiency and Firm's Performance: Study on Malaysian Financial Sectors', *International Journal of Economics and Finance*, 1(2), pp. 1–8. Available at: https://doi.org/10.5539/ijef.v1n2p206.

Murphy, K.J. (1985) 'Corporate performance and managerial remuneration. An empirical analysis', *Journal of Accounting and Economics*, 7(1–3), pp. 11–42. Available at: https://doi.org/10.1016/0165-4101(85)90026-6.

Myers, S.C. and Majluf, N.S. (1984) 'Corporate financing and investment decisions when firms have information that investors do not have', *Journal of Financial Economics*, 13(2), pp. 187–221. Available at: https://doi.org/10.1016/0304-405X(84)90023-0.

Nadeem, M., Gan, C. and Nguyen, C. (2017) 'Does intellectual capital efficiency improve firm performance in BRICS economies? A dynamic panel estimation', *Measuring Business Excellence*, 21(1), pp. 65–85. Available at: https://doi.org/10.1108/MBE-12-2015-0055.

Naik, M., Padia, N. and Callaghan, C.W. (2020) 'Variable executive remuneration and company performance: Insights from the Johannesburg Stock Exchange, South Africa', *Acta Commercii*, 20(1), pp. 1–10. Available at: https://doi.org/10.4102/ac.v20i1.790.

Ngorima, G.T. (2019) *Drivers of sustainability reporting quality among JSE listed firms in South Africa : a stakeholder perspective. Doctor of Business Leadership. School of Business Leadership*. University of South Africa. Available at: https://uir.unisa.ac.za/handle/10500/26043.

Ngugi, R.W. (2003) 'Development of the Nairobi Stock Exchange : A Historical Perspective', *KIPPRA Discussion Papers*, (27), pp. 1–56.

Ngwenya, M. (2017) 'Achieving a Sustained Competitive Advantage in the South African Telecommunications Sector', *Universal Journal of Management*, 5(6), pp. 278–290. Available at: https://doi.org/10.13189/ujm.2017.050603.

Nurmalitasari, N., Mertha, N.P. and Durya, A. (2022) 'The Effect of Firm Size, Return On Equity, And Leverage on Firm Value', *International Journal of Economics, Social Science, Entrepreneurship and Technology*, 1(4), pp. 271–278.

Nuryaman (2015) 'The Influence of Intellectual Capital on The Firm's Value with The Financial Performance as Intervening Variable', *Procedia - Social and Behavioral Sciences*, 211, pp. 292–298. Available at: https://doi.org/10.1016/j.sbspro.2015.11.037.

Ocean Tomo (2021) *Intangible Asset Market Value Study Interim Results for 2020*. Chicago. Available at: https://www.prweb.com/releases/ocean_tomo_releases_intangible_asset_market_value_study_interim_results_for_2020/prweb17415530.htm.

Oguz Gok, G. and Gok, M.S. (2016) 'Emerging Economies: Comparative Analysis Of MIST And IBSA Countries', *Eurasian Journal of Social Sciences*, 4(2), pp. 1–

13. Available at: https://doi.org/10.15604/ejss.2016.04.02.001.

Ohlson, J.A. (1995) 'Earnings, Book Values, and Dividends in Equity Valuation', *Contemporary Accounting Research*, 11(2), pp. 661–687. Available at: https://doi.org/10.1111/j.1911-3846.1995.tb00461.x.

Olarewaju, O.M. and Msomi, T.S. (2021) 'Intellectual capital and financial performance of South African development community's general insurance companies', *Heliyon*, 7(4), p. 06712. Available at: https://doi.org/10.1016/j.heliyon.2021.e06712.

Olatunji, Toyin, E. and Adegbite, T.A. (2014) 'Investment in Fixed Assets and Firm Profitability: Empirical Evidence from the Nigerian Banking Sector', *Asian Journal of Social Sciences and Management Studies*, 1(3), pp. 2313–7401. Available at: http://www.asianonlinejournals.com/index.php/AJSSMS.

Onaolapo, A.A. and Kajola, S.O. (2010) 'Capital structure and firm performance: Evidence from Nigeria', *European Journal of Economics, Finance and Administrative Sciences*, (25), pp. 70–82.

Onwuegbuzie, A.J. (2000) 'Positivists, Post-Positivists, Post-Structuralists, and Post-Modernists: Why Can't We All Get Along? Towards a Framework for Unifying Research Paradigms', in *Annual Meeting of the Association for the Advancement of Educational Research*, pp. 1–25.

Onwuegbuzie, A.J., Johnson, R.B. and Collins, K.M.T. (2009) 'Call for mixed analysis: A philosophical framework for combining qualitative and quantitative approaches', *International Journal of Multiple Research Approaches*, 3(2), pp. 114–139. Available at: https://doi.org/10.5172/mra.3.2.114.

Ota, K. (2005) *The Impact of Valuation Models on Value-Relevance Studies in Accounting: A Review of Theory and Evidence*, *SSRN Electronic Journal*. Available at: https://doi.org/10.2139/ssrn.280873.

Özer, G. and Çam, İ. (2016) 'The Role of Human Capital in Firm Valuation: An Application on BIST', *Procedia - Social and Behavioral Sciences*, 235, pp. 168–177. Available at: https://doi.org/10.1016/j.sbspro.2016.11.012.

Ozkan, N. (2011) 'CEO Compensation and Firm Performance: An Empirical

Investigation of UK Panel Data', *European Financial Management*, 17(2), pp. 260–285. Available at: https://doi.org/10.1111/j.1468-036X.2009.00511.x.

Palia, D. and Porter, R. (2007) 'Agency theory in banking: An empirical analysis of moral hazard and the agency costs of equity', *Banks and Bank Systems*, 2(3), pp. 142–156.

Panda, B. and Leepsa, N.M. (2017) 'Agency theory: Review of theory and evidence on problems and perspectives', *Indian Journal of Corporate Governance*, 10(1), pp. 74–95. Available at: https://doi.org/10.1177/0974686217701467.

Parker, R.H. (1968) 'Discounted Cash Flow in Historical Perspective', *Journal of Accounting Research*, 6(1), pp. 58–71. Available at: https://doi.org/10.2307/2490123.

Parmar, B.L., de Colle, S., Freeman, R. E., Harrison, J.S., Purnell, L. and Wicks, A.C. (2010) 'Stakeholder theory: The state of the art', *Academy of Management Annals*, 4(1), pp. 403–445. Available at: https://doi.org/10.1080/19416520.2010.495581.

Permatasari, I. and Narsa, I.M. (2022) 'Sustainability reporting or integrated reporting: which one is valuable for investors?', *Journal of Accounting and Organizational Change*, 18(5), pp. 666–684. Available at: https://doi.org/10.1108/JAOC-12-2020-0204.

Petri, M. and Saadi-Sedik, T. (2006) 'The Jordanian Stock Market: Should You Invest in it for Risk Diversification or Performance?', *IMF Working Papers*, 06(187), p. 1. Available at: https://doi.org/10.5089/9781451864472.001.

Phillips, P.A. and Sipahioglu, M.A. (2004) 'Performance implications of capital structure: Evidence from quoted UK organisations with hotel interests', *Service Industries Journal*, 24(5), pp. 31–51. Available at: https://doi.org/10.1080/0264206042000276829.

Phillips, R., Freeman, R.E. and Wicks, A.C. (2017) 'What stakeholder theory is not', *Corporate Social Responsibility*, 13(4), pp. 401–424. Available at: https://doi.org/10.5840/beq200313434.

Phusavat, K., Comepa, N., Ooi, K.B., and Sitko-Lutek, A. (2011) 'Interrelationships

between intellectual capital and performance: Empirical examination', *Industrial Management & Data Systems*, 111(6), pp. 810–829. Available at: https://doi.org/10.1108/02635571111144928.

Pillay, S. (2004) 'Corruption - The challenge to good governance: A South African perspective', *International Journal of Public Sector Management*, 17(7), pp. 586–605. Available at: https://doi.org/10.1108/09513550410562266.

Polanyi, M. (1966) 'The Tacit dimension', in *Knowledge in Organisations*. Available at: https://doi.org/10.1353/ppp.2002.0018.

Popper, K. (2005) *The logic of scientific discovery, The Logic of Scientific Discovery*. Available at: https://doi.org/10.4324/9780203994627.

Porter, M.E. (1985) *Competitive Advantage Creating and Sustaining Superior Performance, Free Press*. New York: The Free Press.

Pratheepan, T. and Weerakon Banda, Y.K. (2016) 'The Determinants of Capital Structure: Evidence from Selected Listed Companies in Sri Lanka', *International Journal of Economics and Finance*, 8(2), p. 94. Available at: https://doi.org/10.5539/ijef.v8n2p94.

Pulic, A. (1998) 'Measuring the performance of intellectual potential in the knowledge economy', in *The 2nd" World Congress on the Management of Intellectual Capital"*, pp. 1–20.

Pulic, A. (2004) 'Intellectual capital – does it create or destroy value?', *Measuring Business Excellence*, 8(1), pp. 62–68. Available at: https://doi.org/10.1108/13683040410524757.

PwC (2017a) *Governing structures and delegation – A comparison between King IV and King III*. Available at: https://www.pwc.co.za/en/assets/pdf/king-iv-comparison.pdf.

PwC (2017b) *Integrated reporting: Corporate perspective in India*. Available at: https://www.pwc.in/research-insights/2018/integrated-reporting-corporate-perspective-in-india-may-2018.html.

PwC (2018) *Integrated Reporting : Telling the real story, Www.Pwc.Com/My*.

PwC (2019) *Integrated Report 2019*. Available at: https://www.pwc.co.za/en/about-us/integrated-report/summary.html.

PwC (2022a) *PwC Assurance Services*. Available at: https://www.pwc.co.za/en/services/assurance.html (Accessed: 30 April 2023).

PwC (2022b) *PwC South Africa Integrated Report 2021*. Available at: https://www.pwc.co.za/en/about-us/integrated-report-2021.html.

Radjenovic, T. and Krstic, B. (2017) 'Intellectual capital in the theory of the firm', *Ekonomika*, 63(4), pp. 13–27. Available at: https://doi.org/10.5937/ekonomika1704013r.

Radjenović, T. and Krstić, B. (2017) 'Intellectual capital as the source of competitive advantage: The resource-based view', *Facta Universitatis, Series: Economics and Organization*, 14(2), pp. 127–137. Available at: https://doi.org/10.22190/fueo1702127r.

Rahman, M.M. and Akhter, B. (2021) 'The impact of investment in human capital on bank performance: evidence from Bangladesh', *Future Business Journal*, 7(1), pp. 1–20. Available at: https://doi.org/10.1186/s43093-021-00105-5.

Ramanauskaitė, A. and Rudžionienė, K. (2013) 'INTELLECTUAL CAPITAL VALUATION: METHODS AND THEIR CLASSIFICATION', *Ekonomika*, 92(2), pp. 79–92. Available at: https://doi.org/10.15388/ekon.2013.0.1413.

Ratshikuni, M.N. (2009) *Optimal capital structure for JSE listed companies. MBA*. University of Pretoria. Available at: https://repository.up.ac.za/bitstream/handle/2263/24438/dissertation.pdf?sequence=1.

Redden, G. (2022) 'Human capital at work: performance measurement, prospective valuation and labour inequality', *Distinktion*, 23(1), pp. 114–130. Available at: https://doi.org/10.1080/1600910X.2020.1734848.

Reed, M. (2005) 'Reflections on the "realist turn" in organization and management studies', *Journal of Management Studies*, pp. 1621–1644. Available at: https://doi.org/10.1111/j.1467-6486.2005.00559.x.

Richard Hicks, J. (2013) 'The measurement of capital', in *Depreciation and Capital*

Maintenance RLE Accounting, pp. 113–124. Available at: https://doi.org/10.2307/2231720.

Riffenburgh, R.H. (2012) 'Sequential Analysis and Time Series', in *Statistics in Medicine*, pp. 509–533. Available at: https://doi.org/10.1016/b978-0-12-384864-2.00024-x.

Roberts, L., van Zijl, W. and Cerbone, D. (2020) 'The Routledge Handbook of Integrated Reporting', in *The Routledge Handbook of Integrated Reporting*. Available at: https://doi.org/10.4324/9780429279621.

Roberts, L.G. (2017) 'Integrated Reporting: The South African Experience', *Cpa Journal*, (July), pp. 10–13.

Robinson, J. (1934) 'The Economics of Imperfect Competition.', *Journal of the Royal Statistical Society*, 97(4), p. 671. Available at: https://doi.org/10.2307/2342203.

Rodrik, D. (2008) 'Understanding South Africa's economic puzzles', in *Economics of Transition*, pp. 769–797. Available at: https://doi.org/10.1111/j.1468-0351.2008.00343.x.

le Roux, C. (2010) 'The effects of the grenelle II law of the environment', *Cartonnages Emballages Modernes*, n 717, pp. 27–29. Available at: https://www.engineeringvillage.com/share/document.url?mid=cpx_6e3d6012c5072aacbM473a2061377553&database=cpx.

Ruiz-Lozano, M. and Tirado-Valencia, P. (2016) 'Do industrial companies respond to the guiding principles of the Integrated Reporting framework? A preliminary study on the first companies joined to the initiative', *Revista de Contabilidad-Spanish Accounting Review*, 19(2), pp. 252–260. Available at: https://doi.org/10.1016/j.rcsar.2016.02.001.

Rumyana, T. and Bergkamp, T. (2018) *Introduction to the GRI Standards: Webinar 1 of the six-part GRI Standards In Practice Series*, *Corporate & Stakeholder Engagement*. Available at: https://www.globalreporting.org/SiteCollectionDocuments/2018/GSIP Webinar 1 Introduction to the GRI Standards.pdf (Accessed: 25 May 2020).

Ryan, L.V. and Schneider, M. (2003) 'Institutional Investor Power and Heterogeneity',

Business & Society, 42(4), pp. 398–429. Available at: https://doi.org/10.1177/0007650303260450.

Saboya, D.R. (2022) 'ESG reporting in Brazil', *International Accounting Bulletin*, March, p. 631. Available at: https://accounting.nridigital.com/iab_march22/esg_reporting_in_brazil.

SAICA (2017) *The King Report on Corporate Governance*. Available at: https://www.saica.co.za/DesktopModules/EngagePublish/printerfriendly.aspx?itemId=3830&PortalId=0&TabId=2938.

SAICA (2018) *SAICA Student Handbook 2018/2019*. Edited by Statutes Editorial Team. Cape Town: LexisNexis.

Saleh, M. (2018) 'Impacts of Tangible and Intangible Asset Investment on Value of Manufacturing Companies Listed on the Indonesia Stock Exchange', *Archives of Business Research*, 6(10), pp. 402–414. Available at: https://doi.org/10.14738/abr.610.5374.

Saunders, M., Lewis, P. and Thornhill, A. (2019) *Research Methods for Business Students Eight edition*. 8th edn, *Pearson education Harlow*. 8th edn. Pearson Education, Inc.

Sauro, M. and Tafirei, M. (2016) 'EVA and Stock Returns: Are They Correlated?', *Financial Assets and Investing*, 7(2), pp. 34–51. Available at: https://doi.org/10.5817/fai2016-2-3.

Scholtz, H.E. and Smit, A. (2012) 'Executive remuneration and company performance for South African companies listed on the Alternative Exchange (AltX)', *Southern African Business Review*, 16(1), pp. 22–38.

Schultz, K. and Molele, M.H. (2019) 'Intellectual Capital and Firm Performance among JSE-Listed Firms', *International Review of Research in Emerging Markets and the Global Economy*, 5(1), pp. 1414–1434.

Schumpeter, J.A. (1934) *The Theory of Economic Development*, *The Theory of Economic Development*. Available at: https://doi.org/10.4324/9781315135564.

Schwartz, M.S. (2006) 'God as a managerial stakeholder?', *Journal of Business Ethics*, 66, pp. 291–306. Available at: https://doi.org/10.1007/s10551-005-

5599-6.

Senan, N.A.M., Ahmad, A., Al-Homaidi, E.A., Anagreh, S. and Tabash, M.I. (2021) 'An empirical analysis of financial leverage and financial performance: Empirical evidence from Indian listed firms', *Investment Management and Financial Innovations*, pp. 322–334. Available at: https://doi.org/10.21511/imfi.18(2).2021.26.

Shroders (2016) *US Corporate Governance: A changing landscape*. Available at: https://www.schroders.com/en/sysglobalassets/digital/resources/pdfs/2016-09-a-schroders-review-of-us-corporate-governance.pdf.

Singh, N.P. and Tandon, A. (2019) 'The Effect of Dividend Policy on Stock Price: Evidence from the Indian Market', *Asia-Pacific Journal of Management Research and Innovation*, 15(1–2), pp. 7–15. Available at: https://doi.org/10.1177/2319510x19825729.

Snippert, T., Boes, H., Voordijk, H. and Witteveen, W. (2015) 'Barriers to realizing a stewardship relation between client and vendor: The Best Value approach', *Construction Management and Economics*, 33(7), pp. 569–586. Available at: https://doi.org/10.1080/01446193.2015.1078902.

Sofian, I. and Dumitru, M. (2017) 'The compliance of the integrated reports issued by European financial companies with the International Integrated Reporting Framework', *Sustainability (Switzerland)*, 9(1319), pp. 1–16. Available at: https://doi.org/10.3390/su9081319.

Solomon, O., Olabanji, O. and Ogo, N. (2020) 'Effect of political instability on the performance of mobile telecommunication organisations in South Africa', *African Journal of Development Studies (formerly AFFRIKA Journal of Politics, Economics and Society)*, 10(2), pp. 153–174. Available at: https://doi.org/10.31920/2634-3649/2020/10n2a7.

Southiseng, N. and Walsh, J. (2013) 'Human resource management in the telecommunications sector of Laos', *International Journal of Research Studies in Management*, 2(2), pp. 3–20. Available at: https://doi.org/10.5861/ijrsm.2013.235.

Stabell, C.B. and Fjeldstad, Ø.D. (1998) 'Configuring value for competitive advantage: on chains, shops, and networks', *Strategic Management Journal*, 19, pp. 413–437. Available at: https://doi.org/10.1002/(sici)1097-0266(199805)19:5<413::aid-smj946>3.0.co;2-c.

Stanko, B.B., Zeller, T.L. and Melena, M.F. (2014) 'Human Asset Accounting And Measurement: Moving Forward', *Journal of Business & Economics Research (JBER)*, 12(2), p. 93. Available at: https://doi.org/10.19030/jber.v12i2.8522.

Starke, L. (2016) *Breaking new ground: Mining, minerals, and sustainable development*, *Breaking New Ground: Mining, Minerals and Sustainable Development*. Available at: https://doi.org/10.4324/9781315541501.

Statistics South Africa (2018) *A breakdown of the tax pie*, *Online*. Available at: https://www.statssa.gov.za/?p=12238 (Accessed: 15 August 2021).

Stern, D.I. (1997) 'The capital theory approach to sustainability: A critical appraisal', *Journal of Economic Issues*, 31(1), pp. 145–173. Available at: https://doi.org/10.1080/00213624.1997.11505895.

Stern Value Management (2016) 'Economic Value Added'. Available at: https://sternvaluemanagement.com/economic-value-added-eva.

Stone, G.W. and Lodhia, S. (2019) 'Readability of integrated reports: an exploratory global study', *Accounting, Auditing and Accountability Journal*, 32(5), pp. 1532–1557. Available at: https://doi.org/10.1108/AAAJ-10-2015-2275.

Sukamolson, S. (2007) 'Fundamentals of quantitative research Suphat Sukamolson, Ph.D. Language Institute Chulalongkorn University', *Language Institute*, p. 20. Available at: http://www.culi.chula.ac.th/e-Journal/bod/Suphat Sukamolson.pdf%5Cnhttp://isites.harvard.edu/fs/docs/icb.topic1463827.files/2 007_Sukamolson_Fundamentals of Quantitative Research.pdf.

Sutopo, B., Kot, S., Adiati, A.K. and Ardila, L.N. (2018) 'Sustainability Reporting and value relevance of financial statements', *Sustainability (Switzerland)*, 10(3), p. 678. Available at: https://doi.org/10.3390/su10030678.

Suttipun, M. (2017) 'The effect of integrated reporting on corporate financial performance: Evidence from Thailand', *Corporate Ownership and Control*,

15(1), pp. 133–142. Available at: https://doi.org/10.22495/cocv15i1art13.

Swart, L. and Lawack-Davids, V. (2010) 'Understanding the South African financial markets: an overview of the regulators', *Obiter*, 31(3), pp. 619–637. Available at: https://journals.co.za/doi/pdf/10.10520/EJC85380.

Swartz, G.E., Swartz, N. and Firer, S. (2006) 'An empirical examination of the value relevance of intellectual capital using the Ohlson (1995) valuation model', *Meditari Accountancy Research*, 14(2), pp. 67–81. Available at: https://doi.org/10.1108/10222529200600013.

Symon, G., Cassell, C. and Lee, B. (2017) 'Using Documents in Organizational Research', in *Qualitative Organizational Research: Core Methods and Current Challenges*. Available at: https://doi.org/10.4135/9781526435620.n22.

Tarczynski, W., Tarczynska-Luniewska, M. and Majewski, S. (2020) 'The value of the company and its fundamental strength', *Procedia Computer Science*, 176, pp. 2685–2694. Available at: https://doi.org/10.1016/j.procs.2020.09.331.

Tarigan, J., Hatane, S. E., Listijabudhi, S. and Widjaja, D. C. (2019) 'The Impacts of Intellectual Capital on Financial Performance: An Evidence From Indonesian Manufacturing Industry', *Indonesian Journal of Business and Entrepreneurship*, 5(1), pp. 65–76. Available at: https://doi.org/10.17358/ijbe.5.1.65.

Tayeh, M.,Jarrah, I.,Tarhini, A. and Ra'ed M (2015) 'Accounting vs. Market-based Measures of Firm Performance Related to Information Technology Investments', *International Review of Social Sciences and Humanities*, 9(1), pp. 129–145. Available at: www.irssh.com.

Taylor, F.W. (1911) 'The Principles of Scientific Management', in *Modern Economic Classics-Evaluations Through Time*. Available at: https://doi.org/10.4324/9781315270548-22.

Techo, V.P. (2018) *Introduction to Emerging International Markets*. Paris.

Teixeira, A.C. (2021) *Level the disclosure of non-financial information of the Brazilian companies participating in the integrated report pilot project*.

Terner, A. and Halilovic, A. (2017) 'Intellectual Capital and Predefined Headings in Swedish Health Care Sector', in *MATEC Web of Conferences*. Available at:

https://doi.org/10.1051/matecconf/201712504006.

Thi Nguyen, H.T. and Ha, T.M. (2020) 'Social capital and firm performance: A study on manufacturing and services firms in Vietnam', *Management Science Letters*, 10(11), pp. 2571–2582. Available at: https://doi.org/10.5267/j.msl.2020.3.038.

Tho, N.X., Dung, L.T. and Huyen, N.T.T. (2021) 'Firm Financial Performance: A Review on Accounting & Market-Based Approach', *International Journal of Business and Management Invention*, 10(6), pp. 8–11. Available at: www.ijbmi.org.

Tlili, M., Ben Othman, H. and Hussainey, K. (2019) 'Does integrated reporting enhance the value relevance of organizational capital? Evidence from the South African context', *Journal of Intellectual Capital*, 20(5), pp. 642–661. Available at: https://doi.org/10.1108/JIC-02-2019-0034.

Tobin, J. (1989) 'Growth and distribution: A neoclassical Kaldor-Robinson exercise', *Cambridge Journal of Economics*, 13(1), pp. 37–45. Available at: https://doi.org/10.1093/oxfordjournals.cje.a035089.

du Toit, E. (2017) 'The readability of integrated reports', *Meditari Accountancy Research*, pp. 629–653. Available at: https://doi.org/10.1108/MEDAR-07-2017-0165.

du Toit, E., Van Zyl, R. and Schütte, G. (2017) 'Integrated reporting by South African companies: A case study', *Meditari Accountancy Research*, 25(4), pp. 654–674. Available at: https://doi.org/10.1108/MEDAR-03-2016-0052.

Torre, C., Tommasetti, A. and Maione, G. (2020) 'Technology usage, intellectual capital, firm performance and employee satisfaction: the accountants' idea', *TQM Journal*, 33(3), pp. 545–567. Available at: https://doi.org/10.1108/TQM-04-2020-0070.

UCT (2022) *Finance and Tax Library Guide: Databases*, *Guide for library resources for UCT Finance students*. Available at: https://libguides.lib.uct.ac.za/c.php?g=182278&p=1201503 (Accessed: 28 April 2022).

UNISA (2022) *Unisa Libguides*, *A-Z Databases*. Available at:

https://libguides.unisa.ac.za/az.php.

US Securities and Exchange Commission (2011) *Investor Bulletin: How to Read a 10-K*. Available at: https://www.sec.gov/files/reada10k.pdf.

Vanlalhriati, C. and Singh, E.N. (2015) 'Descriptive Statistics in Business Research', *International Journal of Advanced Research (IJAR)*, 3(06), pp. 1409–1415.

Vasilescu, L., Popa, A., Stern, J. and Stewart, S. (2011) 'Economic Value Added : Pros and Cons', *Finance : Challenges of the Future*, 1(13), pp. 60–65.

Veltri, S., Bronzetti, G. and Sicoli, G. (2011) 'Reporting intellectual capital in health care organizations: Specifics, lessons learned, and future research perspectives', *Journal of Health Care Finance*, pp. 79–96.

de Villiers, C., Hsiao, P.C.K. and Maroun, W. (2017) 'Developing a conceptual model of influences around integrated reporting, new insights and directions for future research', *Meditari Accountancy Research*, pp. 450–460. Available at: https://doi.org/10.1108/MEDAR-07-2017-0183.

de Villiers, C., Rinaldi, L. and Unerman, J. (2014) 'Integrated reporting: Insights, gaps and an agenda for future research', *Accounting, Auditing and Accountability Journal*, 27(7), pp. 1042–1067. Available at: https://doi.org/10.1108/AAAJ-06-2014-1736.

de Villiers, C. and Sharma, U. (2016) *A critical reflection on the future of financial, intellectual capital, sustainability and integrated reporting*, *Critical Perspectives on Accounting*. Available at: https://doi.org/10.1016/j.cpa.2017.05.003.

de Villiers, C., Venter, E.R. and Hsiao, P.C.K. (2017) 'Integrated reporting: background, measurement issues, approaches and an agenda for future research', *Accounting and Finance*, 57(4), pp. 937–959. Available at: https://doi.org/10.1111/acfi.12246.

Visser, W. (2017) 'Integrated Value: What It Is, What It's Not and Why It's Important', *Huffpost.Com*. Available at: https://www.huffpost.com/entry/integrated-value-what-it-is-what-its-not-and-why_b_59cffdc3e4b0f58902e5ccbf.

Wagiciengo, M.M. and Belal, A.R. (2012) 'Intellectual capital disclosures by South African companies: A longitudinal investigation', *Advances in Accounting*,

28(1), pp. 111–119. Available at: https://doi.org/10.1016/j.adiac.2012.03.004.

Wahlen, J.M.,Baginski, S.P. and Bradshaw,M.T. (2011) *Financial Reporting, Financial Statement Analysis, and Valuation: A Strategic Perspective*. South-Western College Publications. Available at: http://books.google.ch/books?id=JdsOg4f6ywEC.

Walaa Wahid (2007) 'Financial Structure and Firm Value:empericial evidence from the united Arab Emeriates', *International Journal of Business Research*, 7, pp. 69–76.

Wang, H.M.D. and Sengupta, S. (2016) 'Stakeholder relationships, brand equity, firm performance: A resource-based perspective', *Journal of Business Research*, 69(12), pp. 5561–5568. Available at: https://doi.org/10.1016/j.jbusres.2016.05.009.

Warner, A. and Hennell, A. (2001) *Financial Performance Measurement and Shareholder Value Explained*. 2nd edn. London: Financial Times Management. Available at: http://books.google.com/books?id=dRJCAAAACAAJ&pgis=1.

Weber, O. (2017) 'Corporate sustainability and financial performance of Chinese banks', *Sustainability Accounting, Management and Policy Journal*, 8(3), pp. 358–385. Available at: http://dx.doi.org/10.1108/JOSM-12-2014-0323.

Weiers, R.M. (2011) *Introductory Business Statistics*. 7th edn. South Western: Cengage Learning.

Weisz, H., Suh, S. and Graedel, T.E. (2015) 'Industrial ecology: The role of manufactured capital in sustainability', *Proceedings of the National Academy of Sciences of the United States of America*, pp. 6260–6264. Available at: https://doi.org/10.1073/pnas.1506532112.

Wenjuan, R., Gary, T. and Shiguang, M. (2011) 'Managerial Ownership, Capital Structure and Firm Value: Evidence from China's Civilian-run Firm', *Australasian Accounting Business and Finance journal*, 5, pp. 73–92.

Van der Westhuizen, C. and Kok, J.A. (2006) 'Intellectual capital management in a South African retail company', *SA Journal of Information Management*, 8(4), pp. 1–15. Available at: https://doi.org/10.4102/sajim.v8i4.237.

de Wet, J. (2013) 'Executive compensation and the EVA and MVA performance of South African listed companies', *Sourthern Africa Buisness Review*, 16(3), pp. 57–80.

de Wet, J. and du Toit, E. (2007) 'Return on equity: A popular, but flawed measure of corporate financial performance', *South African Journal of Business Management*, 38(1), pp. 59–69. Available at: https://doi.org/10.4102/sajbm.v38i1.578.

White, A. and Miller, H. (2020) 'Big Four Face Big Split as Watchdog Sets Separation Deadline', *Bloomberg*. Available at: https://www.bloomberg.com/news/articles/2020-07-06/u-k-asks-big-four-firms-to-separate-auditing-units-by-june-2024.

White, H. (1980) 'A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity', *Econometrica*, 48(4), p. 817. Available at: https://doi.org/10.2307/1912934.

Wolfe, J. and Aidar Sauaia, A.C. (2005) 'The Tobin q as a business game performance indicator', *Simulation and Gaming*, 36(2), pp. 238–249. Available at: https://doi.org/10.1177/1046878105275237.

Wolloch, N. (2020) 'Adam Smith and the concept of natural capital', *Ecosystem Services*, 43, pp. 1–5. Available at: https://doi.org/10.1016/j.ecoser.2020.101097.

Wolmarans, H. and Sartorius, K. (2009) 'Corporate social responsibility: The financial impact of black economic empowerment transactions in South Africa', *South African Journal of Economic and Management Sciences*, pp. 180–193. Available at: https://doi.org/10.4102/sajems.v12i2.275.

World Health Organization (2011) 'Capital Formation in Health Systems', in *A System of Health Accounts 2011*. Paris: OECD Publishing, pp. 247–271. Available at: https://doi.org/10.1787/9789264270985-13-en.

Xu, J. and Li, J. (2022) 'The interrelationship between intellectual capital and firm performance: evidence from China's manufacturing sector', *Journal of Intellectual Capital*, 23(2), pp. 313–341. Available at:

https://doi.org/10.1108/JIC-08-2019-0189.

Xu, M., David, J.M. and Kim, S.H. (2018) 'The fourth industrial revolution: Opportunities and challenges', *International Journal of Financial Research*, 9(2), pp. 90–95. Available at: https://doi.org/10.5430/ijfr.v9n2p90.

Yarrow, D. (2022) 'Valuing knowledge: The political economy of human capital accounting', *Review of International Political Economy*, 29(1), pp. 227–254. Available at: https://doi.org/10.1080/09692290.2020.1796751.

Yasyshena, V. (2019) 'Structure and valuation of intangible assets at different levels of standardization', *World of finance*, (1(58)), pp. 145–156. Available at: https://doi.org/10.35774/sf2019.01.145.

Younas, Z.I., Klein, C., Trabert, T. and Zwergel, B. (2019) 'Board composition and corporate risk-taking: a review of listed firms from Germany and the USA', *Journal of Applied Accounting Research*, 20(4), pp. 526–542. Available at: https://doi.org/10.1108/JAAR-01-2018-0014.

Yu, H.C., Wang, W.Y. and Chang, C. (2015) 'The stock market valuation of intellectual capital in the IT industry', *Review of Quantitative Finance and Accounting*, 45(2), pp. 279–304. Available at: https://doi.org/10.1007/s11156-014-0437-5.

Zeitun, R. and Tian, G. (2007) 'Capital structure and corporate performance: evidence from Jordan', *Australasian Accounting, Business and Finance Journal*, 1(4), pp. 40–61. Available at: https://doi.org/10.14453/aabfj.v1i4.3.

Zhou, S., Simnett, R. and Green, W. (2017) 'Does Integrated Reporting Matter to the Capital Market?', *Abacus*, 53(1), pp. 94–132. Available at: https://doi.org/10.1111/abac.12104.

van Zyl, M. and Mans-Kemp, N. (2022) 'A multi-stakeholder view on director remuneration guidance in South Africa', *South African Journal of Accounting Research*, 36(3), pp. 195–212. Available at: https://doi.org/10.1080/10291954.2021.1938882.

APPENDIX A – POOLED EFFECTS, RANDOM EFFECTS AND FIXED EFFECTS OF THE AUGUMENTED INTEGRATED REPORTING MODEL

Models	Fixed effects Model	Pooled Effects Model	Pooled Effects Model	Pooled Effects Model	Pooled Effects Model	Random Effects Model	Random Effects Model	Random Effects Model	Random Effects Model	Fixed effects Model	Fixed effects Model	Fixed effects Model
Variables	Y1 = Share price return	Y1 = Share price return	Y2 = EVA	Y3= Tobin Q	Y4 = Share price @BV	Y1 = Share price return	Y2 = EVA	Y3= Tobin Q	Y4 = Share price @BV	Y2 = EVA	Y3= Tobin Q	Y4 = Share price @BV
C	0,081864*	0,091694***	-0,034378	-0,02312***	0,067192***	0,091694***	-0,034378	-0,02312	0,066492***	-0,035128	-0,020798**	0,06223***
	(0,03487)	(0,013527)	(0,010415)	(0,006946)	(0,006489)	(0,013464)	(0,010422)	(0,007009)	(0,006649)	(0,008767)	(0,006764)	(0,007306)
EM	0,028732	-0,044887	-0,053633	0,039492	-0,004932	-0,044887	-0,053633	0,039492	-0,005996	-0,031303	0,015096	-0,012345
	(0,028124)	(0,047604)	(0,036653)	(0,024444)	(0,022835)	(0,047383)	(0,036677)	(0,024668)	(0,02217)	(0,017827)	(0,017307)	(0,014193)
CU	0,006725	0,025584	0,014043	0,004536	0,021495**	0,025584	0,014043	0,004536	0,020046**	0,003486	-0,000369	0,005712
	(0,013787)	(0,016085)	(0,012385)	(0,008259)	(0,007716)	(0,016011)	(0,012393)	(0,008335)	(0,007487)	(0,011009)	(0,008436)	(0,004342)
LU	0,131228**	0,167658***	-0,023156	0,001715	0,007446	0,167658***	-0,023156	0,001715	0,005551	-0,020029	0,009519	0,00268
	(0,131228)	(0,047519)	(0,036588)	(0,0244)	(0,022795)	(0,047299)	(0,036612)	(0,024624)	(0,022104)	(-0,020029)	(0,009519)	(0,00268)
SH	0,061472***	0,097486***	0,020693	-0,025394	0,007845	0,097486***	0,020693	-0,025394	0,004983	0,012454	-0,015258	-0,014997
	(0,017928)	(0,032558)	(0,025068)	(0,016718)	(0,015618)	(0,032407)	(0,025085)	(0,016871)	(0,015158)	(0,017985)	(0,01143)	(0,012714)
GO	-0,023939	-0,021017	-0,016498	0,048307*	0,036213*	-0,021017	-0,016498	0,048307*	0,032733	0,000906	0,018482	-0,01288
	(0,022952)	(0,03846)	(0,029612)	(0,019748)	(0,018449)	(0,038281)	(0,029632)	(0,019929)	(0,017952)	(0,021981)	(0,014125)	(0,009323)
DR	0,101137***	0,08711***	-0,003368	0,000115	-0,004999	0,08711***	-0,003368	0,000115	-0,005679	-0,007696	-0,002383	-0,000885
	(0,028215)	(0,011652)	(0,008972)	(0,005983)	(0,00559)	(0,011598)	(0,008978)	(0,006038)	(0,005421)	(0,011567)	(0,003789)	(0,002091)
VAIC	0,036609	0,00431	-0,013722	0,013499	0,003543	0,00431	-0,013722	0,013499	0,004534	0,010893	0,016734**	0,011505
	(0,019191)	(0,028241)	(0,021744)	(0,014501)	(0,013547)	(0,02811)	(0,021759)	(0,014634)	(0,013144)	(0,005318)	(0,00572)	(0,013376)
BD	-0,032479	0,019088	-0,045251	0,019234	0,038461	0,019088	-0,045251	0,019234	0,035313	-0,007722	-0,007025	0,00905
	(0,031175)	(0,047516)	(0,036585)	(0,024398)	(0,022793)	(0,047296)	(0,036609)	(0,024622)	(0,022134)	(0,019070)	(0,014555)	(0,008767)
EQ	0,032514*	0,035363	-0,000924	0,018837	0,000173	0,035363	-0,000924	0,018837	-0,000445	0,002591	0,016262	-0,008543
	(0,015908)	(0,02598)	(0,020003)	(0,01334)	(0,012462)	(0,025859)	(0,020016)	(0,013462)	(0,012085)	(0,015642)	(0,012059)	(0,006195)
TA_NCA	0,007763**	0,060228**	0,012137**	-0,000858*	-0,058713**	0,060228**	0,012137**	-0,000858**	-0,056486**	0,006143**	-0,006658**	0,011609**
	(0,036625)	(0,058156)	(0,044777)	(0,029862)	(0,027897)	(0,057886)	(0,044807)	(0,030135)	(0,027065)	(0,025800)	(0,009791)	(0,015929)
LD_NC	0,003638	0,001023	-0,030849	0,031189	-0,020247	0,001023	-0,030849	0,031189	-0,01959	-0,016484	0,011776	0,001582
	(0,028801)	(0,037243)	(0,028675)	(0,019123)	(0,017865)	(0,037071)	(0,028694)	(0,019299)	(0,01735)	(0,018639)	(0,012098)	(0,011448)
TD_TA	-0,025995	-0,024231	-0,007645	-0,015196	0,010525	-0,024231	-0,007645	-0,015196	0,010452	0,001415	-0,015623*	0,006718
	(0,010076)	(0,021509)	(0,016561)	(0,011044)	(0,010318)	(0,021409)	(0,016572)	(0,011145)	(0,010001)	(0,016840)	(0,007285)	(0,004864)
DU	-0,22626***	-0,207964***	-0,023899	0,146627**	0,065354**	-0,207964***	-0,023899	0,146627***	0,064071**	-0,049168	0,101317***	0,031457***
	(0,036544)	(0,043469)	(0,033469)	(0,02232)	(0,020852)	(0,043268)	(0,033491)	(0,022525)	(0,020124)	(0,012559)	(0,008982)	(0,008907)
Observations	1001	1001	1001	1001	1001	1001	1001	1001	1001	1001	1001	1001
R-squared	0,325903	0,12194	0,009874	0,06522	0,028849	0,12194	0,009874	0,06522	0,026903	0.167657	0,148184	0,244085
F-statistic	4,210373***	137,1239***	81,29059***	36,15377	31,55312	10,54377***	0,757127	5,297199***	2,099059*	1.754182	1,514988**	2,812045***
Durbin-Watson stat	2,054788	0,946633	0,423779	-0,38647	-0,522579	1,883944	2,0086	1,623238	1,437888	2.144792	1,910927	1,880043
Hausman Stats	22,972394*	22,972394*	22,972394*	22,972394*	22,972394*	22,972394*	22,972394*	22,972394*	22,972394*	11,174917	9,693759	0
Heteroskedasticity	509,8498***	509,8498***	509,8498***	509,8498***	509,8498***	509,8498***	509,8498***	509,8498***	509,8498***	352,6179***	414,1509***	443,1215***
CSD Test												
Breusch-Pagan LM	6156,437***	6156,437***	6156,437***	6156,437***	6156,437***	6156,437***	6156,437***	6156,437***	6156,437***	4573,213***	4882,488***	5330,994***
Pesaran scaled LM	22,77866***	22,77866***	22,77866***	22,77866***	22,77866***	22,77866***	22,77866***	22,77866***	22,77866***	5,284204***	8,701654***	13,6576***
Pesaran CD	38,16197***	38,16197***	38,16197***	38,16197***	38,16197***	38,16197***	38,16197***	38,16197***	38,16197***	1,608121	10,33698***	24,31011***

APPENDIX B – SEEMINGLY UNRELATED REGRESSION MODEL (SUR)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.057365	0.012411	4.621999	0.0000
C(2)	0.017536	0.015591	1.124793	0.2607
C(3)	0.015668	0.005278	2.968610	0.0030
C(4)	0.009350	0.003823	2.445435	0.0145
C(5)	0.040448	0.014263	2.835902	0.0046
C(6)	-0.003664	0.015620	-0.234548	0.8146
C(7)	0.010612	0.008524	1.244943	0.2132
C(8)	0.024465	0.012619	1.938716	0.0526
C(9)	-0.002877	0.012220	-0.235436	0.8139
C(10)	0.022931	0.015592	1.470678	0.1415
C(11)	0.011548	0.010683	1.080960	0.2798
C(12)	-0.014106	0.019082	-0.739240	0.4598
C(13)	-0.004886	0.007057	-0.692334	0.4888
C(14)	0.004215	0.009266	0.454892	0.6492
C(15)	-0.038109	0.009335	-4.082299	0.0000
C(16)	-0.008512	0.006701	-1.270366	0.2040
C(17)	0.068814	0.006162	11.16686	0.0000

Determinant residual covariance	1.49E-05

Equation: Y1 = C(1) + C(2)*BD + C(3)*CU + C(4)*DR + C(5)*DU + C(6)*EM
    + C(7)*EQ + C(8)*GO + C(9)*LD_NC + C(10)*LU + C(11)*SH + C(12)
    *TA_NCA + C(13)*TD_TA + C(14)*VAIC
Observations: 1001

R-squared	0.010378	Mean dependent var	0.054038
Adjusted R-squared	-0.002657	S.D. dependent var	0.395180
S.E. of regression	0.395704	Sum squared resid	154.5463
Durbin-Watson stat	1.793812		

Equation: Y2 = C(15) + C(2)*BD + C(3)*CU + C(4)*DR + C(5)*DU + C(6)*EM
    + C(7)*EQ + C(8)*GO + C(9)*LD_NC + C(10)*LU + C(11)*SH + C(12)
    *TA_NCA + C(13)*TD_TA + C(14)*VAIC
Observations: 1001

R-squared	-0.006132	Mean dependent var	-0.041436
Adjusted R-squared	-0.019384	S.D. dependent var	0.286533
S.E. of regression	0.289297	Sum squared resid	82.60471
Durbin-Watson stat	1.976658		

Equation: Y3 = C(16) + C(2)*BD + C(3)*CU + C(4)*DR + C(5)*DU + C(6)*EM
    + C(7)*EQ + C(8)*GO + C(9)*LD_NC + C(10)*LU + C(11)*SH + C(12)
    *TA_NCA + C(13)*TD_TA + C(14)*VAIC
Observations: 1001

R-squared	0.013067	Mean dependent var	-0.011839
Adjusted R-squared	0.000068	S.D. dependent var	0.196663
S.E. of regression	0.196656	Sum squared resid	38.17088
Durbin-Watson stat	1.734747		

Equation: Y4 = C(17) + C(2)*BD + C(3)*CU + C(4)*DR + C(5)*DU + C(6)*EM
    + C(7)*EQ + C(8)*GO + C(9)*LD_NC + C(10)*LU + C(11)*SH + C(12)
    *TA_NCA + C(13)*TD_TA + C(14)*VAIC
Observations: 1001

R-squared	0.012327	Mean dependent var	0.065487
Adjusted R-squared	-0.000682	S.D. dependent var	0.180251
S.E. of regression	0.180312	Sum squared resid	32.08991
Durbin-Watson stat	1.479243		

Equation Symbols

C1/C15/C16/C17	C	Constant
C2	BD	Buildings (manufactured capital)
C3	CU	Customers (stakeholder capital)
C4	DR	Agency (Directors as stakeholders)
C5	DU	Dummy (covid 19_year 2020 effect)
C6	EM	Employees (stakeholder capital)
C7	EQ	Equipment (manufactured capital)
C8	GO	Government (stakeholder capital)
C9	LD_NC	Long-Term Debt/Non-Current Assets (Financial Capital)
C10	LU	Lenders (stakeholder capital)
C12	SH	Shareholders (stakeholder capital)
C12	TA_NCA	Tangible assets/Non current assets (manufactured capital)
C13	TD_TA	Total Debt/Total Assets (Financial Capital)
C14	VAIC	Value Added Intellectual Coefficient (Intellectual capital)

APPENDIX C - LEVIN, LIN AND CHU (2002) TESTS OF STATIONARITY

Null Hypothesis : Panel data is non-stationary (has unit root) , Fail to reject Null hypotthesis where P>0.05

Alt Hypothesis: Panel data is stationary (has no unit root)

1. Unit root test for Y1 = Market Share Price and the independent variables

Panel unit root test: Summary
Series: Y1
Date: 11/23/22   Time: 22:39
Sample: 2010 2020
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.42648	0.0003	91	819

2. Unit root test for Y2 = EVA and the independent variables

Panel unit root test: Summary
Series: Y2
Date: 11/23/22   Time: 22:43
Sample: 2010 2020
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.07072	0.0000	91	819

3. Unit root test for Y3 = TobinQ and the independent variables

Panel unit root test: Summary
Series: Y3
Date: 11/23/22   Time: 22:46
Sample: 2010 2020
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.0786	0.0000	91	819

4. Unit root test for Y4 = Share price at book value and the independent variables

Panel unit root test: Summary
Series: Y4
Date: 11/23/22   Time: 22:48
Sample: 2010 2020
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-12.8326	0.0000	91	819

Conclusion

Reject the null hypothesis since P<0.05, signifying that the time series is stationary.

APPENDIX D – CONFIRMATION OF LANGUAGE EDITING

VSE

Van Schalkwyk Editorial Services
(accredited by the University of Pretoria, Stellenbosch University,
University of Johannesburg, and others)

Email: arayofhope1@gmail.com

LinkedIn profile: https://www.linkedin.com/in/ar%C3%A9-van-schalkwyk-0214202a/

31/10/2022

To whom it may concern

I hereby confirm that I edited Felix Chirairo's thesis and that the content thereof will be kept confidential.

Regards

Mr Aré van Schalkwyk

APPENDIX E - ETHICAL CLEARANCE LETTER

SCHOOL OF BUSINESS LEADERSHIP
RESEARCH ETHICS REVIEW COMMITTEE (GSBL CRERC)

02 August 2022

Ref #: 2022_SBL_DBL_019_SD
Name of applicant: Mr F Chirairo
Student #: 69710554

Dear Mr Chirairo

Decision: Ethics Approval

Student: Mr F Chirairo (69710554@mylife.unisa.ac.za , 083 278 0861)

Supervisor: Prof MH Molele, (molelmh@unisa.ac.za , 076 942 1374)

Project Title: A framework to enhance Integrated Reporting through quantification and valuation of non-financial capitals: A study of JSE Listed Companies.

Qualification: Doctor of Business Leadership (DBL)

Expiry Date: June 2024

Thank you for applying for research ethics clearance, SBL Research Ethics Review Committee reviewed your application in compliance with the Unisa Policy on Research Ethics.

Outcome of the SBL Research Committee:
Approval is granted until June 2024.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the SBL Research Ethics Review Committee on the 29/07/2022.

The proposed research may now commence with the proviso that:

1) The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached

2) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

3) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the SBL Research Ethics Review

45 Building leaders who go beyond

SBL
GRADUATE SCHOOL OF
BUSINESS LEADERSHIP
UNISA

Committee.

4) An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.

5) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.

Kind regards,

N BW Mitwa

Prof N Mitwa

Chairperson: SBL Research Ethics Committee

011 - 652 0000/ mitonb@unisa.ac.za

Phumellmeli

Prof P Msweli

Executive Dean: Graduate School of Business Leadership

011- 652 0256/mswelp@unisa.ac.za