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# The implication of corporate reporting practices on the quality of integrated reports: a study of companies listed on the Johannesburg Stock Exchange

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# The Implication of Corporate Reporting Practices on the Quality of Integrated Reports: A Study of Companies Listed on the Johannesburg Stock Exchange

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# I. Definitions of Terms

The following terms appear in this paper:

| Term | Definition |
|---|---|
| *IR Quality* | Integrated report quality. |
| *Quality Dimensions* | Identified quality surrogates that together constitute the overall measure of IR quality. |
| *CSR* | Corporate social responsibility. |
| *ESG* | Economic, social and governance. |
| *Obfuscation hypothesis/ theory* | Instances where there is bias towards writing positive information differing to negative information in an attempt to make negative information less noticeable. |
| *Organisational legitimacy* | The generalised perception or assumption that the actions of an entity are desirable, proper or appropriate within a social system. |
| *Isophormism* | A similarity of the processes or structure of one organization to those of another, be it the result of imitation or independent development under similar constraints. |

# II. Abstract

The value relevance of integrated reporting is an ongoing debate. On the one hand, reporting entities may take a value relevant substantive approach to integrated reporting and report on actual organisational reforms and results. While on the other, a symbolic approach to integrated reporting can be adopted where the report is used to create the illusion of corporate responsibility. The objective of this paper is to determine if the adoption of three reporting practices, namely: 1) the use stand-alone CSR reports; 2) reporting framework adoption and 3) CSR assurance, are associated with a substantive or symbolic approach to integrated reporting. The investigation was performed by first measuring IR quality and then performing a Spearman's rho to determine the significance of the relationship between the variables. IR quality was disaggregated into quality surrogates and individually captured. The dimensions of quality identified were: how much information was disclosed (quantity); the relative proportion of CSR information (density); the type of information (measurement); the "spirit" of the information (value relevance) and the user ease of use (acceptability). The results suggest that the only substantive practice is the use of a stand-alone CSR report. There was limited evidence supporting the fact that this practice is associated with a higher quality report. Both the adoption of reporting frameworks and CSR assurance had no significant associations with IR quality and its surrogates. In conclusion, the evidence suggests adopting a framework and CSR assurance are in line with obfuscation and legitimacy theory. Providing a separate CSR report appears to be a substantive practice that is associated with an IR with enhanced quality.

Keywords: *Quality Dimensions; Substantive* Disclosures*; Symbolic Disclosures; Integrated Report Quality; Information Asymmetry; Organisational Legitimacy; Isophormism; Obfuscation theory*

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# Chapter I: Introduction

## 1.1 Introduction and Context

After several notable corporate failures[1], one thing remained clear: the conventional financial reporting model was limited in its ability to provide holistic insights into an organisation's ability to generate sustainable returns (Du Toit, 2017; Heggen, Sridharan, & Subramaniam, 2018; IRCSA, 2011; Lin, 2010). As a result, providers of firm capital demanded disclosure of supplementary non-financial information relating to the reporting entity's business model, risks and value generating activities (Carels, Maroun, & Padia, 2013; Du Rietz, 2018; Hindley, 2012; Rensburg & Botha, 2014). To address this demand for information, regulatory bodies encouraged the preparation of integrated reports (Simnett & Huggins, 2015; Wolniak & Hąbek, 2016).

In South Africa, King III introduced the concept of 'integrated reporting' in 2009 (IDSA, 2009). King sought to have entities provide holistic and integrated representations of their economic positions (IDSA, 2009). These disclosures would be over and above existing unidimensional financial reports (IDSA, 2009). An integrated report "integrates" financial information (IFRS/ GAAP based disclosures) with non-financial information (typically CSR[2] information) (Hoffman, 2016; IDSA, 2009). Traditional CSR reports provide users with information on the reporting entity's policies and procedures set up to generate sustainable shareholder returns, while remaining cognisant of the broader ecosystem in which it operates (IDSA, 2009; IRCSA, 2011). Integrated reports should ideally cover: environmental, social and governance issues (ESG) (Du Toit, 2017; IDSA, 2009; Solomon, 2010). Coverage of these broad issues would allow an entity to reap the well documented benefits of integrated reporting.

## 1.2 Potential Benefits of Integrated Reporting

Financial reporting has achieved deep rooted institutional legitimacy, this off the back of strong reporting, auditing and regulatory standards (Eccles & Saltzman, 2011; van Zijl & Maroun, 2017). Without similar backing, non-financial information does not enjoy the same levels of institutional legitimacy (Dumay, Bernardi, Guthrie, & La Torre, 2017; Heggen et al., 2018; Maroun, 2018). Nevertheless, users of financial statements have still placed considerable value in non-financial information for decision-making (Baboukardos & Rimmel, 2016; Berthelot, Coulmont, & Serret, 2012; Du Toit, Van Zyl, & Schütte, 2017; Maroun, 2018; Wolniak & Hąbek, 2016). It is not difficult to identify the reason for this. The complexity of financial reporting standards has made it difficult to locate and understand financial information. In addition, financial information is often unidimensional,

[1] Common examples include: ENRON Corporation, Worldcom, Parmalat SpA, American Insurance Group Inc. (AIG); Lehman Brothers Holdings Inc. and more recently Steinhoff International HV.

[2] There is no consensus on the definition of sustainability, it can however be broadly defined as: meeting the needs of the present without compromising the ability for future generations to meet their own needs (Lin, 2010).

backward looking and outdated, limiting its practical use (Eccles & Saltzman, 2011; Maroun & Atkins, 2015). Non-financial information has the potential to place financial information in context, facilitate accountability and allow users to evaluate an entity's long-term value proposition (Du Rietz, 2018; Maroun & Atkins, 2015).

Integrated reporting has numerous other potential benefits including (but not limited to):

- facilitating effective communication with stakeholders, resulting decreased information asymmetry (Heggen et al., 2018; Maroun, 2018; Maroun & Atkins, 2015);
- reducing reputational risks, resulting in legitimisation (Heggen et al., 2018; Lin, 2010);
- alleviating regulatory pressures experienced by entities (Eccles & Saltzman, 2011); and
- formalising internal risk assessment processes, allowing business risks to be identified and addressed (McNally, Cerbone, & Maroun, 2017).

These factors present integrated reporting as a silver bullet to eliminating information asymmetry (Eccles & Saltzman, 2011; Rensburg & Botha, 2014). Notwithstanding these potential benefits, integrated reports have been criticised in practice and in literature.

## 1.3 Limitations of Integrated Reporting

Various limitations to integrated reporting have been identified in prior research, these include (but not limited to):

- limited comparability, both on an intra-entity (over time) and an inter-entity level (Eccles & Krzus, 2010; Lin, 2010; Van Zyl, 2013). This limitation is a direct result of not having an internationally recognised framework for drafting integrated reports (Eccles & Krzus, 2010);
- there are risks relating to the reliability and completeness of integrated reports (Du Toit, 2017; Eccles & Krzus, 2010);
- entities appear to draft integrated reports in varying degrees and information often lacks connectivity (Du Toit, 2017);
- the subjective nature of materiality determination detracts from the usefulness of integrated reports. There is no consensus on just how much to include in an integrated report (McNally et al., 2017; PWC, 2014); and
- arguably, the most debilitating matter with integrated reports is the lack of independent assurance over disclosed non-financial information (Eccles & Krzus, 2010; Husillos, González, & Gil, 2011; Michelon, Pilonato, & Ricceri, 2015). This lack of independent assurance propagated ongoing debates surrounding the relative usefulness of non-financial information provided in integrated reports (Carels et al., 2013; Maroun, 2018; Michelon et al., 2015; Rensburg & Botha, 2014).

Lastly, and most relevant to this research, the adoption of three reporting practices, namely: 1) the provision of a separate sustainability report; 2) the independent assurance of key performance indicators within an IR and 3) compliance with the Global Reporting Initiative (GRI) and the International Integrated Reporting Council (IIRC) when drafting integrated reports, have threatened to further degrade the relative usefulness of integrated reports for decision making (Atkins & Maroun, 2015; Michelon et al., 2015).

These reporting practices have emerged through the evolution of integrated reporting in South Africa. The big bang of integrated reporting was arguably the release of King I in 1994 (de Villiers, Hsiao, & Maroun, 2017). King II followed in 2002 and established the idea of reporting on economic, social and governance (ESG) issues (de Villiers et al., 2017). To comply, separate CSR reports were drafted. King III required the provision of an IR (de Villiers et al., 2017). Some entities did away with separate CSR reports and opted rather to produce a single reporting document in the form of an integrated report. This option inspired the first identified reporting practice (Jackson, 2005): the provision of a stand-alone sustainability report. King IV has been introduced for financial years starting on or after 1 April 2017 (IDSA, 2016). King IV seeks to improve IR disclosure quality by eliminating the check-box approach to reporting (IDSA, 2016). The fundamental principle of the new code adopts an "apply *and* explain" basis of compliance as opposed to the previous "apply *or* explain basis. In combination to this, the new code is principles based and outcome driven as opposed to being rules based (Dumay et al., 2017; IDSA, 2016).

The second reporting practice stems from the lack of guidance on drafting integrated reports in King III. This weakness was not addressed in King IV. With growing global demand for integrated reports, reporting initiatives (mainly GRI/ IIRC today) were designed to assist drafters in both collecting and disclosing non-financial information (Bebbington, Kirk, & Larrinaga, 2012; Carels et al., 2013). The adoption of these frameworks is however not mandated by regulation, adoption is completely discretionary. This option inspired the second identified reporting practice: compliance with reporting frameworks.

The last reporting practice originates from the current drive for CSR assurance (Maroun, 2018; Romero, Fernandez-Feijoo, & Ruiz, 2014; Simnett & Huggins, 2015). In an isomorphic agenda, some reporting entities have sought independent assurance of CSR information. Once again, CSR assurance is not mandated, meaning this practice is discretionary. This option inspired the last reporting practice: obtaining CSR assurance

These differing practices are all acceptable in a homogeneous South African regulatory environment. These above-mentioned reporting practices have one thing in common: to date, no work has been performed to objectively determine their impact on IR quality.

## 1.4 Research Questions

Using a positivist approach, this paper sets out to determine, empirically, whether the adoption of three integrated reporting practices, namely: 1) the provision of a separate sustainability report; 2) the independent assurance of key performance indicators (KPIs) disclosed in integrated reports and 3) compliance with GRI/ IIRC when drafting integrated reports, is associated to the quality of integrated reports of entities listed on the Johannesburg Stock Exchange (JSE). These three practices form the basis of the following research questions:

- **RQ1: Are integrated reports accompanied by a separately prepared sustainability report associated with a lower measure of integrated report (IR) quality?**

- **RQ2: Are integrated reports with an independent assurance statement included in or accompanying the report associated with a higher measure of IR quality?**

- **RQ3: Are integrated reports with GRI/ IIRC compliance statements associated with a higher measure of IR quality?**

These research questions were addressed using the methodology developed by Michelon et al. (2015), modified and adapted for a South African environment. This adaptation is discussed in more detail in Section 2.2.

## 1.5 Significance of the Study

South Africa is currently recognised as a pioneer of integrated reporting. South Africa's accolades include: issuing the world's earliest codes of good governance (Baboukardos & Rimmel, 2016; IDSA, 2009) and being the first country to mandate the provision of an annual IR[3] (Baboukardos & Rimmel, 2016; Carels et al., 2013; EY, 2014; McNally et al., 2017). In this context, this study makes various notable contributions to the current body of literature on integrated reporting in South Africa.

Firstly, by adapting the methodology of Michelon et al. (2015) and introducing an additional quality surrogate, designed to measure the perspective of the user (the acceptability indicator – Section 2.2.5), this research sheds objective light on the value relevance of integrated reporting in South Africa, a topic of significant debate (Dawkins & Ngunjiri, 2008; Hill & Maroun, 2015; Marcia, Maroun, & Callaghan, 2015; Rensburg & Botha, 2014).

Secondly, the IR quality measurement instrument developed in this study and applied to South African integrated reports, could prove useful in objectively determining the value relevance of three management reporting practices: the provision of a separate detailed sustainability report; compliance with GRI/ IIRC and the provision of independent CSR assurance.

Lastly, by highlighting common shortfalls and the misconceptions associated with drafting integrated reports, this report has the potential to assist the users and preparers of integrated reports alike. This research may assist the preparers avoid practices that do little to improve IR quality and users to avoid perceiving higher value information as a result of specific management reporting practices. Ultimately resulting in the reduction of information asymmetry and unlocking shareholder wealth[4] (de Klerk & de Villiers, 2012).

[3] for JSE listed companies on an apply or explain basis for financial years ending after 01 March 2010 (Carels et al., 2013).

[4] It has been found that entities that provided more useful CSR information are likely to have statistically higher share prices (Barth, Cahan, Chen, & Venter, 2017; de Klerk & de Villiers, 2012; de Villiers et al., 2017), a lower cost of equity (Zhou, Simnett, & Green, 2017) and an enhanced corporate reputation and legitimacy (Macias & Farfan-Lievano, 2017).

## 1.6 Summary of Results

Empirical evidence from this study found the provision of a separate CSR report to have the most significant association with enhanced IR quality. Suggesting this act is one that increases overall IR quality and could be considered substantive. Providing a separate CSR report appears to be associated with enhanced reporting quality. This is in line with a substantive approach to reporting.

A statistically significant correlation was not observed between having a GRI/ IIRC compliance statement and overall IR quality. Drilling down into the individual quality surrogates revealed having guidelines or discussion points as prescribed by the GRI/ IIRC provides management with the opportunity to disclose boilerplate[5] information, potentially obfuscating existing high quality CSR information. This supports a symbolic approach to reporting.

A significant relationship between a CSR assurance statement and IR quality (or any of its surrogates) was not evident. This strongly suggests reporting entities seek independent assurance in pursuant of a symbolic agenda. It appears that this practice could serve only to further increase the expectation gap[6].

Providing a separate CSR report was found to have a weak, moderately significant, positive relationship with the newly introduced acceptability indicator (AI). Although the evidence is weak, the direction of the relationship suggests that providing detailed CSR information in a separate report allows reporting entities to innovate with the use of infographics in the integrated report.

## 1.7 Format of this Report

The remainder of this paper is set out as follows: Section 2.1 outlines the theoretical framework surrounding the three chosen management practices. Section 2.2 then discusses prior research governing the fundamentals of the IR quality measurement tool. Section 3.1 to 3.4 describe the methodology adopted. Section 4.1 discusses the results followed by a conclusion in Section 4.4. Section 4.5 addresses the limitations of this study and outlines suggestions for future research.

[5] Highly generic disclosures (Haji & Anifowose, 2016)

[6] The expectation gap is the notion that there is a difference between what the users of financial statements expect from an audit and what the auditors actually achieve after an audit (McEnroe & Martens, 2001)

# Chapter II: Literature Review

The objective of this chapter is threefold: 1) to set the theoretical scene for this paper; 2) to outline existing literature pertaining to the identified reporting practices and 3) to define the quality surrogates using existing literature. To that end, the chapter begins by establishing the theoretical framework underpinning this study is established (Section 2.1). Once established, Sections 2.1.1 to 2.1.3 detail existing literature relating to the three identified reporting practices. Section 2.2 discusses the existing literature that supports the measurement tool used in the methodology. The quality surrogates are defined in Section 2.2. The newly introduced acceptability indicator (AI) is defined in Section 2.2.5. The quality surrogates are summarised in Table 2.

## 2.1 Theoretical Framework

There is a large body of research, drawing mainly from agency, stakeholder and signalling theory[7], which argues that the provision of non-financial information is useful for investors and other important stakeholders (Baboukardos & Rimmel, 2016; Gray, 2006; Marcia et al., 2015). By providing additional insights into how an organisation is generating value, non-financial reporting enhances users' understanding of an organisation's business model (IOD, 2009), reduces information asymmetry (King, 2016) and has the potential to lower the cost of capital (de Klerk & de Villiers, 2012). As such, mainstream research on sustainability reporting frequently concludes that the environmental, social and governance (ESG) disclosures are value relevant (Barth et al., 2017; de Klerk & de Villiers, 2012; De Villiers & Marques, 2016; Marcia et al., 2015).

An alternate perspective presents ESG reporting as a symbolic display rather than the result of substantive changes in business practice, which translate into real value for stakeholders (Du Rietz, 2018; Frerich, Reemda, Kerstin, & Karen, 2018; Gray, 2010; Heggen et al., 2018; Marcia et al., 2015). Grounded in institutional theory, this body of research argues that non-financial reporting is driven mainly by the need to legitimise an organisation by managing stakeholder expectations (Haji & Anifowose, 2016; Heggen et al., 2018). This would mitigate the need for substantive reform to business practices and counter the hegemonic challenges of environmental and social activist movements, an act of ceremonial "isophormism" (de Villiers et al., 2017; Haji & Anifowose, 2016; Heggen et al., 2018, p. 479; Lin, 2010; Tregidga, Milne, & Kearins, 2014). Existing in homogeneous societal and regulatory conditions, these two opposing views are the overriding distinction between a high-quality IR (a value relevant substantive approach to integrated reporting) and a low-quality IR (symbolic display for legitimacy) (Heggen et al., 2018).

[7] Stakeholder theory involves the recognition and identification of the relationship between a company's behaviour and the impact on its stakeholders; Signalling theory assumes that people send and explain signals to reduce information asymmetry (Lin, 2010)

In pursuit of organisational legitimacy[8], a reporting entity achieves isophormism by conforming to practices that will make the organisation appear to meet societal norms (Ashforth & Gibbs, 1990; Du Toit, 2017; Heggen et al., 2018). It is argued that legitimacy can be achieved in two ways: through actual organisational reform or through creating a perception of organisational reform (Lin, 2010; Michelon et al., 2015). A substantive approach to integrated reporting may be adopted where CSR information reflects actual changes to organisational activities (Heggen et al., 2018). This approach results in legitimisation through tangible changes to organisational activities. Alternatively, a symbolic approach to integrated reporting may be adopted where irrelevant and boilerplate information is disclosed solely for the purpose of avoiding scrutiny from capital providers (Ashforth & Gibbs, 1990; Lin, 2010; Raemaekers, Maroun, & Padia, 2016; Stubbs & Higgins, 2014). Symbolic disclosures are geared towards actively managing user perceptions in order to align the reporting entity with social expectations (Heggen et al., 2018; Michelon et al., 2015).

Legitimacy is achieved within the substantive approach, by implementing policies and strategies in order to respond to the external environment (Michelon et al., 2015). Adoption of this approach is evidenced by the disclosure of entity specific strategies identified, actions undertaken and results achieved by an entity (Hopwood, 2009; Michelon et al., 2015). Substantive reform could see material core aspects of a business changing (Heggen et al., 2018). The substantive approach is not limited to just the type of disclosures provided, it extends to the manner in which the entity conducts business. This could, in turn, affect the profitability and value of the entity (Berrone, Gelabert, & Fosfuri, 2009; Ioannou & Serafeim, 2017; Stubbs & Higgins, 2014). As a result, a substantive approach to integrated reporting results in a value relevant, high quality integrated reports (Hoffman, 2016).

In contrast, the symbolic approach to integrated reporting is effectively public relations (PR) management (Du Rietz, 2018; Frerich et al., 2018; Heggen et al., 2018; Van Zyl, 2013). The symbolic approach is characterised by entities providing meticulously worded information covering apparent operational reforms (Ashforth & Gibbs, 1990; Du Toit, 2017; Frerich et al., 2018; Van Zyl, 2013). This creates the illusion of the entity's commitment to sustainable reforms (Hoffman, 2016). The symbolic approach manifests itself in obvious reporting tactics used to manage user perceptions. Symbolic integrated reports include: boilerplate information, repetitive disclosures or information included simply to address regulatory pressures (Dowling & Pfeffer, 1975; Hoffman, 2016; Maroun, 2016; McNally et al., 2017). Legitimacy theory, therefore, suggests the evolution of management disclosure practices is based on the need to develop a socially acceptable corporate image, reduce the level of public corporate scrutiny and to retain a level of corporate secrecy (Hopwood, 2009). There is

[8] 'Legitimacy' is the generalised perception or assumption that the actions of an entity are desirable, proper or appropriate within a social system (Suchman, 1995)

significant risk that this symbolic approach to reporting is adopted resulting in lower quality integrated reports that have little to no value to users.

While integrated reports have been heralded as a pioneering step towards eliminating information asymmetry (S. Cho, Lee, & Pfeffer, 2013), whether these reports are substantive or symbolic remains unresolved. Despite South Africa taking a leading role in driving integrated approaches to corporate reporting, their notorious incomparability (Doni, Gasperini, & Pavone, 2016), lack of consistency (Eccles & Krzus, 2010; Lin, 2010; Van Zyl, 2013), questionable reliability, inherent difficulties in verifying the completeness of the information and the unresolved issues in independently assuring CSR information, have constrained its success (Husillos et al., 2011; Michelon et al., 2015) (limitations of integrated reporting have been discussed in detail in Section 1.3).

Accounting research often relies on exiting theory to generate sub-theories and hypotheses (Creswell & Creswell, 2017; Gordon & Porter, 2009). This study is no different. Relying on legitimacy theory, the objective of this study is to gauge if there is an association between the adoption of common integrated reporting practices and the quality of integrated reports of JSE listed companies. It is documented that organisational isophormism is generally sought through organisational legitimacy and that in empirical reality, reporting entities have had diverse reactions to a homogeneous regulatory environment (Ashforth & Gibbs, 1990; Du Toit, 2017; Heggen et al., 2018). It is in this context that an organisation may achieve organisation legitimacy substantively or symbolically (Michelon et al., 2015). Grounded on legitimacy theory, this research considers if the use of the following three reporting practices are associated with higher levels of IR quality (or lower in the case of RQ1):

1) the use of stand-alone sustainability reports (Section 2.1.1);
2) the independent assurance of key performance indicators (KPIs) disclosed in integrated reports (Section 2.1.2); and
3) the compliance (evidenced by a compliance statement) with the GRI/ IIRC reporting guidance (Section 2.1.3).

### 2.1.1 Stand-alone CSR reports

As at the end of 2016, more than 90% of entities listed on the JSE produced integrated reports (Hoffman, 2016). Nowhere else in the world are integrated reports more concentrated (Du Toit, 2017; Hoffman, 2016). This is a direct consequence of the JSE's listing requirements. In order to list on the JSE, entities are required, on an "apply and explain basis", to comply with King IV (Dumay et al., 2017; IDSA, 2016). According to the EY Excellence Reports and prior research, the trend has been towards higher quality integrated reports (EY, 2014; Hoffman, 2016; Simnett, 2012). By 2016, it was noted that:

- the "connectedness" (EY, 2014, p.15) of integrated reports was improving (the measurement indicator – Section 2.2.3);
- entities were innovating on the layout of the integrated reports (the use of visual mechanisms – Section 2.2.5);
- entities were improving their articulation of their business models (value relevance indicator – Section 2.2.4); and
- integrated reports were becoming more concise (density indicator – Section 2.2.2) (EY, 2016).

By 2017, improvements in input, output and outcome disclosures were noted along with further improvements of the items above (EY, 2017).

However, integrated reporting has had humble beginnings. After the introduction of integrated reporting in South Africa in 2009 the first reports were released in financial period 2011 (de Villiers et al., 2017; EY, 2017). In 2010, little guidance was provided to assist the drafting of integrated reports. This resulted in reporting entities merely combining CSR information and financial information as opposed to truly integrating disclosures (De Beer, 2015). De Beer (2015) observed that initial integrated reports were not integrated at all and were of a low quality (De Beer, 2015; EY, 2016, 2017; IDSA, 2009).

Entities have to report to increasingly complex CSR issues, resulting in lengthy reports (Du Toit et al., 2017; Eccles & Krzus, 2010; EY, 2016; Simnett & Huggins, 2015; Solomon & Maroun, 2012a; Van Zyl, 2013). In order to keep the IR concise and readable, there has been a tendency towards providing separate sustainability reports (Du Toit et al., 2017; Lin, 2010; Moneva, Rivera-Lirio, & Muñoz-Torres, 2007). Sustainability reports are designed to provide detailed information on key sustainability issues summarised in the IR. The preparation of a sustainability or CSR report separate from the IR may allow an organisation to provide users with more detailed information on how ESG issues are being managed in the value generation process (Solomon, 2010). Management may, in this context, use a separate CSR report as a vehicle of enhancing the users' understanding, essentially giving the user a view of the "heart and soul" of the entity (Du Toit, 2017, p. 427; Michelon et al., 2015). This in line with a substantive approach to reporting. Conversely, management may use the separate CSR report to obfuscate negative information or detract from information included in the IR (De Villiers, Rinaldi, & Unerman, 2014; De

Villiers & van Staden, 2011; Du Toit, 2017). In this light, the separate sustainability report would be used as a detailed impression management tool in keeping with a symbolic approach. Based on the above debate, the following is the first research question:

**RQ1: Are integrated reports accompanied by a separately prepared sustainability report associated with a lower measure of IR quality?**

Regardless of approach adopted, the integrated report should be the primary vehicle for communicating non-financial information to stakeholders (IIRC, 2013). The integrated report is designed to be a comprehensive, coherent and concise account of the business. The IR should ideally bring together all facets of information, albeit, financial, operational or sustainability (Stubbs & Higgins, 2014). The integrated report is ultimately intended to be "the industry norm" (IIRC, 2013, p. 2). As such, the provision of a separate sustainability report should not, in itself, materially affect the quality of a given integrated report.

### 2.1.2 External CSR assurance

As with traditional financial reports, users of integrated reports called for independent verifications on the credibility, completeness and relevance of CSR information (Hodge, Subramaniam, & Stewart, 2009; IIRC, 2014; Maroun, 2018; Murphy, 2014). Audit and consultancy firms eventually heeded these calls. Naturally, questions have been raised about the mechanics of a formal CSR assurance engagement model (Cohen & Simnett, 2015; Hodge et al., 2009; IIRC, 2015; Maroun, 2018; Maroun & Atkins, 2015; Simnett & Huggins, 2015). The key challenge in assuring CSR information stems from the overriding difference between financial and CSR information: CSR information is dynamic and subjective (Maroun, 2018). CSR information is often forward-looking (deals with strategy), complex, depends on professional judgement and relies heavily on the context in which it is provided (De Villiers et al., 2014; IIRC, 2013; Maroun, 2018). This makes CSR information difficult to audit based on current professional standards (Cohen & Simnett, 2015; Maroun, 2018).

Ackers (2009) found that the prevalence of CSR assurance is growing and in this regard, South African entities are progressing well (EY, 2017). The assurance of integrated reports is vital to the preservation of integrated reporting's long term credibility (IIRC, 2014). Additionally, preserving the integrity of the IR is central to protecting the end user, especially in an environment where users place considerable value in integrated reports (Berthelot et al., 2012; IIRC, 2014; Maroun, 2018; Wolniak & Hąbek, 2016). A high quality integrated report has strong signalling potential, providing users with information that sheds light on an entity's business model, key risks and ESG considerations (Maroun, 2018; Zhou et al., 2017). This ultimately allows investors to assess the long-term viability of an entity (Maroun, 2018;

Zhou et al., 2017). The preservation of IR integrity is crucial in light of recent notable corporate reporting failures[9].

The process of assuring CSR information can go further in assisting an entity in identifying weaknesses in its CSR approach, ultimately resulting in actual changes to organisational practices and disclosure points (Michelon et al., 2015). Akin to the manner in which traditional financial external assurance adds value to an entity after controls testing (IAASB, 2014; Masli, Peters, Richardson, & Sanchez, 2010). Propositions for an interpretive IR assurance model suggests an assurance model that focuses on methods and processes that generate CSR information (Maroun, 2018). The product of which would be a detailed auditor understanding of the entity's value creation process (Maroun, 2018). Following this interpretive approach, assurers of CSR information have the opportunity to identify weakness in a given entity's CSR approach and suggest avenues for improvements to both the entity and its reporting process (Ackers, 2009; Maroun, 2018). In this light, the assurance of CSR information may be considered a substantive undertaking. This would result in a high quality, value relevant integrated report.

The value relevance of adding the entire IR to the subject matter of an assurance engagement is still unclear. There are a few technical matters that need to be addressed:

- the level of assurance has not been agreed upon (Ackers, 2009; Cohen & Simnett, 2015; IIRC, 2014; Maroun, 2018; Maroun & Atkins, 2015);
- there is uncertainty regarding appropriate audit methodology (Ackers, 2009; IIRC, 2014; Maroun, 2018; Maroun & Atkins, 2015);
- the skills of current engagement teams will be insufficient and IR engagements are expected to be extremely costly (Maroun & Atkins, 2015);
- reporting entities have insufficient policies, procedures, systems and controls surrounding the integrated reporting process (Maroun, 2018; Maroun & Atkins, 2015);
- it is more common to have only key performance indicators which are capable of being objectively measured externally assured. This limits the scope of the audit opinion (Maroun, 2018; Maroun & Atkins, 2015); and
- the measurement of materiality also remains an outstanding issue. This issue is compounded by uncertainty over how the completeness of integrated reports will be assured (IIRC, 2014; Maroun, 2018).

[9]the failures of Africa Bank Ltd and more recently failures in financial reporting of Steinhoff International NV. Steinhoff first put its 2017 audited results on hold in early December 2017, after its CEO Markus Jooste abruptly resigned and it announced that PwC was investigating "accounting irregularities requiring further investigation" in its books. These investigations as at 15 January 2018 were still ongoing. Announcements were made by Steinhoff alerting shareholders of possible restatements to 2015 and 2016 financial statements. Its share price has dropped over 90% since December 5 2017, erasing about R180bn in market capitalisation. (as at 15 January 2018) (Cronje, 2018).

A key challenge of CSR assurance that affects the subject matter of this paper are concerns over the effect that CSR assurance will have on the expectation gap[10] (Ackers, 2009; Maroun, 2018; McEnroe & Martens, 2001). Assurers often provide "negative opinions[11]" when providing assurance on CSR/ ESG information (Ackers, 2009). To the average user, there will be an expectation (misconception) that absolute assurance is being provided, even if the assurers clearly state otherwise in the assurance statement (Ackers, 2009; Maroun, 2018). Worse still, there are fears that audit opinions on CSR information could be misconstrued as an endorsement (Maroun, 2018). De Beer (2015) warns that, external assurance should not be mistaken to mean credibility and integrity. Management have sought external assurance in lieu of actually providing CSR information that has integrity and is credible (De Beer, 2015). It is argued that management seek external assurance in order to reverse engineer credibility, relevance, completeness and integrity, thus reaping the positive signalling benefits whilst avoiding the need for fundamental corporate reform (Bachoo, Tan, & Wilson, 2013; De Beer, 2015). Done in pursuant of a symbolic agenda and to meet social demands (legitimisation), obtaining external assurance may be a practice used to meet stakeholder expectations by creating the impression that management is taking CSR seriously (Michelon et al., 2015). In light of this debate the second research question is as follows:

**RQ2: Are integrated reports with an independent assurance statement included in or accompanying the report associated with a higher measure of IR quality?**

In the end, providing assurance over non-financial information can be important for signalling that the CSR information is of a high quality and that the reporting entity takes the relevance of this information seriously (IIRC, 2015; Jones & Solomon, 2010; Maroun, 2018; Maroun & Atkins, 2015). As such the value of CSR assurance cannot be ignored. Users still demand CSR assurance and traditional assurance models are currently used to provide assurance over historical or objective information (often key performance indicators) (Maroun, 2018; Michelon et al., 2015). Nevertheless, it is argued that should an entity's CSR processes adhere to strict corporate governance requirements then, regardless of CSR assurance the IR should be of high quality (De Beer, 2015).

[10] The expectation gap is the notion that there is a difference between what the users of financial statements expect from an audit and what the auditors actually achieving after an audit (McEnroe & Martens, 2001)

[11] Negatively framed opinions contain restricting opinions such as "nothing has come to our attention"

### 2.1.3 GRI and IIRC adoption

Unlike financial reporting, sustainability reporting is predominantly voluntary (Hindley, 2012). Increasing the threat to IR quality is the fact that the content and format of sustainability reports are at the discretion of the reporting entity (Lin, 2010; Romero et al., 2014; Van Zyl, 2013). In addition, different stakeholders often have different interpretations of integrated reports (Lin, 2010). This has left sceptics arguing that sustainability reporting is irrelevant and the information provided lacks credibility (Atkins & Maroun, 2015; Ioannou & Serafeim, 2017; Lin, 2010; Michelon et al., 2015). Fuelling the critics is the fact that sustainability reports tend to be assertive, appear incomplete and tend to cherry pick good news (this is referred to as the "obfuscation hypothesis") (Du Rietz, 2018; Du Toit, 2017, p. 634; Du Toit et al., 2017; EY, 2016; Frerich et al., 2018; Gray & Milne, 2002; Michelon et al., 2015; Van Zyl, 2013). These arguments cast doubt over the value relevance of sustainability reporting (de Klerk & de Villiers, 2012; Marcia et al., 2015).

To preserve and enhance the credibility of integrated reporting these initial weaknesses needed to be addressed. To date, initiatives with the sole objective of being the universal standard of sustainability report preparation have emerged (Jackson, 2005). Worldwide, the commonly used guideline is the Global Reporting Initiative (GRI) (Bebbington et al., 2012; Carels et al., 2013). In South Africa, International Integrated Reporting Council's (IIRC) framework is widely adopted (EY, 2016) (see Appendix A for a list of other frameworks used in practice). King III also provides guidance in drafting integrated reports, however, its sole use in practice is not widespread (Carels et al., 2013). Discussions surrounding the consolidation of these complimentary initiatives have already commenced (King, 2011; Macias & Farfan-Lievano, 2017).

There has been growing concerns that reporting guidelines (IIRC and GRI) were introduced too soon and too quickly (Atkins & Maroun, 2015; Carnegie, 2012; Stubbs & Higgins, 2014). Atkins and Maroun (2015) found that institutional investors were under the impression that reporting guidelines would merely provide management with a disclosure checklist. In support of the obfuscation hypothesis, a checklist would not drive substantive change in a business but provide a platform for the concealment of material information (Atkins & Maroun, 2015; Du Toit, 2017). This practice would be in line with a symbolic approach to integrated reporting. These impressions appear warranted as studies have found that integrated reports hand-pick positive information (Du Rietz, 2018; Du Toit, 2017, p. 634; Du Toit et al., 2017; EY, 2016; Frerich et al., 2018; Gray & Milne, 2002; Michelon et al., 2015; Van Zyl, 2013). Integrated reporting tends towards partial compliance with reporting frameworks, meaning disclosure points are selected if the resultant information will show the reporting entity in a positive light (Hindley, 2012). This supports a symbolic motive to reporting framework adoption. The above argument motivated the third research question:

**RQ3: Are integrated reports with GRI/ IIRC compliance statements associated with a higher measure of IR quality?**

In summary, adopting a reporting framework may allow entities to disclose more information by merely complying to a framework regardless of application (EY, 2016; Michelon et al., 2015). It is feared that the application of reporting guidelines is done for the sake of compliance and legitimisation, in line with a symbolic approach to reporting (de Villiers & Alexander, 2014; Michelon et al., 2015). On the other hand, prior research suggests that non-financial information is value relevant (de Klerk & de Villiers, 2012) and that reporting frameworks exist only to facilitate the articulation of value creating activities of a reporting entity, in line with a substantive approach to reporting.

The three identified reporting practices represent the foundation of this research. Having established the theoretical framework and detailed the literature underpinning the chosen reporting practices in Sections 2.1, Section 2.2 discusses the literature surrounding the measurement tool used in the methodology to measure IR quality.

## 2.2 Measuring Quality of Sustainability Reports

In order to accurately and reliably measure the quality of a given IR, the different components (or dimensions) of IR quality have been identified from prior literature (Hąbek & Wolniak, 2016; Wolniak & Hąbek, 2016). These 'elements' or quality surrogates were used to create a measuring tool which accurately, reliably and consistently provided a measure of IR quality. The detailed application of this tool is dealt with in Chapter 3. The material dimensions of IR quality as discussed in this sub-section are:

- The length of the IR (a quantity indicator) (Beretta & Bozzolan, 2004; Wolniak & Hąbek, 2016);
- The CSR detail provided relative to the length of the report (a density indicator) (Dagiliene, Leitoniene, & Grencikova, 2014; Michelon et al., 2015);
- The type of measures used to describe CSR information (a measurement indicator) (Freundlieb, Gräuler, & Teuteberg, 2014; Michelon et al., 2015);
- The substance of the information disclosed (a value relevance indicator) (Michelon et al., 2015; Wolniak & Hąbek, 2016); and
- The perspective of user of the IR (an acceptability indicator) (Freundlieb et al., 2014; Michelon et al., 2015)

### 2.2.1 The length of the IR (a quantity indicator)

Prior studies have asserted that the quantity of information provided in an IR is an indicator of the quality of reporting (Beretta & Bozzolan, 2008; Wolniak & Hąbek, 2016). There is, however, one overriding concern: a clear and consistent relationship has not been found to exist between quantity of information in an IR and the quality of the information thereof (Bachoo et al., 2013; Du Toit, 2017). Often, reporting entities have been found to include unnecessary (boilerplate) disclosures in the name of obscuring important details, addressing expectations or meeting regulatory demands (Dagiliene et al., 2014; Wolniak & Hąbek, 2016). South African integrated reports, for example, have been found to be repetitive (Atkins & Maroun, 2015; EY, 2016). Although more detail is provided on different financial and non-financial parameters, this detail is neither easy to understand nor clearly linked to the respective business model, associated business risks and value-creation process (De Beer, 2015; Du Toit, 2017; EY, 2016, 2017; Solomon & Maroun, 2012a). Thus, a quantity-based measuring instrument in itself would inadequately capture the overall quality of CSR disclosures. Nonetheless, the fact that a longer IR contains more information, means, *ceteris paribus*, there is increased opportunity for quality information to be disclosed.

The Quantity Indicator (QI) was defined as the absolute number of sentences less the average absolute number of sentences for an entity of similar industry, all divided by, the average absolute number of sentences of a similar entity in a similar industry (1):

$$QI_{it} = \frac{Vol_{it} - \overline{Vol_{it}}}{\overline{Vol_{it}}} \quad (1)$$

Where: $QI_{it}$ is the quantity indicator; $Vol_{it}$is the observed volume of disclosure of company i in year t and $\overline{Vol_{it}}$ is the average volume[12] of disclosure for that entity industry.

The original Michelon et al. (2015) study controlled for entity size and industry by using an OLS regression model to measure the quantity indicator. This study uses a simple average to control for entity size and industry. Meaningful regression models were not possible given the relatively small sample size of the dataset (refer to Section 3.2.2 for details on the sample size). The differences between this study and the Michelon et al. (2015) study have been summarised in Appendix D.

### 2.2.2 The contents of the report (a density indicator)

This dimension of quality was developed to address the weaknesses identified in the quantity indicator (Section 2.2.1). The objective of this measurement indicator was to capture the extent to which the information, as disclosed in the IR, actually contained CSR/ ESG information.

The GRI guidelines and IIRC's framework require information in an IR to be concise and to avoid unnecessary and excessive disclosures (Du Toit, 2017; GRI, 2011; IIRC, 2013). In this context, the 'density indicator' measured the proportion of an IR that contains actual CSR details. The higher the density indicator, the more CSR information is provided per unit[13] of the IR and the higher the presumed level of IR quality (Beretta & Bozzolan, 2008; Wolniak & Hąbek, 2016). Unlike the quantity indicator, the density indicator penalises integrated reports for excessive, boilerplate and irrelevant details.

The DI was measured as a ratio of the number of sentences that include actual CSR information to the total number of sentences in the IR (from the QI) (Michelon et al., 2015) (2):

$$DI_{it} = \frac{1}{k_{it}} * CSR_{it} \quad (2)$$

[12] A simple average is being used as opposed to a simple linear regression as the industry groups were too small to perform a regression.

[13] a unit has been defined as a single sentence in the IR. Further information has been provided in Section 3.1.2

Where: $DI_{it}$ is the density indicator; $k_{it}$ is the total number of sentences in company i in year t and $CSR_{it}$ is the total number of sentences that contain sustainability information.

### 2.2.3 The measure used to describe sustainability information (a measurement indicator)

The measurement indicator was designed to capture the characteristics of the non-financial information included in integrated reports. Information can be provided in a qualitative, quantitative or monetary format. Generally, users of financial information prefer quantitative or monetary information (Wolniak & Hąbek, 2016) as these often fit easily into traditional mathematical models that are used to articulate value (GRI, 2011; Wiseman, 1982; Wolniak & Hąbek, 2016). Research has found that quantitative monetary disclosures are the most useful for investors (as the primary users of corporate reports) (Michelon et al., 2015). Similar observations have been made in South Africa (Hill & Maroun, 2015).

It has been found that South African users, even after the introduction of integrated reports, still preferred traditional financial statements (monetary information) when making investment decisions (Rensburg & Botha, 2014). This suggests that users find quantitative monetary information more useful (and thus of higher quality) than quantitative non–monetary information. In terms of CSR information, users found quantified and monetised information the most useful for decision making (Hill & Maroun, 2015; Solomon & Maroun, 2012a).

This dimension captured the extent of the reporting entity's use of monetised or quantified forms of measures to represent CSR information. The measurement indicator (MI) was developed from the prior work of Wiseman (1982). As each sentence (a unit) was analysed, a score was awarded to each sentence based on the type of metric that was used to describe the CSR information[14]. The MI was measured as the ratio between "the sum of the weighted average of all the sentences containing CSR information to the total number of sustainability sentences" (Michelon et al., 2015, p. 67) (3):

$$MI_{it} = \frac{1}{n_{it}} \sum_{j-1}^{n_{it}} (w) \quad (3)$$

Where, $MI_{it}$ is the measurement indicator; $n_{it}$ is the total number of sentences with CSR disclosures; w = 3 for a sentence that uses monetary measures to depict CSR information, 2 if non – monetary quantitative measures are used and 1 if qualitative measures are used. It has been assumed that CSR information that is predominantly monetary in nature is of better quality (Hill & Maroun, 2015; Rensburg & Botha, 2014).

[14] If a monetary measure was used: a score of 3 was be awarded, if a non – monetary quantitative measure was used, a score of 2 was be awarded and if a qualitative measure was used, a score of 1 was be awarded (scoring per Michelon et al., 2015; Wiseman, 1982).

### 2.2.4 The substance of the information disclosed (a value relevance Indicator)

The context in which management are making disclosures is an important consideration when determining IR quality. This dimension of quality deals with the fact that management disclose two broad types of information. On the one hand, entities may provide disclosures which relate to actual actions undertaken or results actually achieved in a reporting period. These disclosures are described as action-orientated (referred to as substantive) (Michelon et al., 2015). On the other hand, entities may report information which provides context or describes manager's expectations, these symbolic disclosures have no substance and are less useful than substantive disclosures (C. Cho & Patten, 2007). The objective of the value relevance indicator is to distinguish and measure substantive and symbolic CSR information, thus capturing the "spirit" of the information.

To capture the "spirit" of the information provided, categories were developed based on common character traits of substantive and symbolic information. A simple matrix was then developed (Beretta & Bozzolan, 2004; Michelon et al., 2015) (Table 1) (see also Section 3.2.3).

**Table 1:** A Value Relevance Indicator (Michelon et al., 2015)

| Approach | Future Information | Past Information |
|---|---|---|
| **Symbolic** | (1) Context - Expectations | (2) Policies |
| **Substantive** | (3) Objectives – Goals | (4) Results - Actions |

The greater the extent of the IR (either forward-looking or reflective) which was substantive, rather than symbolic, the higher quality of the IR.

To capture the "spirit" of the information disclosed, a value relevance indicator (VRI) was designed and developed to distinguish between symbolic disclosures and substantive disclosures. This index was developed from the work of Beretta and Bozzolan (2004). As the sampled integrated reports were analysed, the substance of each sentence was assessed and categorised as symbolic or substantive based on pre–set characteristics (Table 1).

Substantive CSR information is of higher quality than symbolic information (Hopwood, 2009). As the sentences in the IR were being analysed, a score of 1 was allocated to substantive sustainability information, whilst a score of 0 was awarded for symbolic information. The VRI was measured as the ratio of the sum of all the substantive and symbolic CSR information to the total number of CSR sentences in a given IR (4):

$$VRI_{it} = \frac{1}{n_{it}} \sum_{j-1}^{n_{it}} (Sub_{ijt}) \quad (4)$$

Where: $VRI_{it}$ is the value relevance indicator; $n_{it}$ is the total number of sentences with sustainability disclosures and $Sub_{ijt}$ is 1 if sentence j in company i in year t contains substantive information but is 0 otherwise.

### 2.2.5 Perspective of the user of the IR (an acceptability index)

Current reporting guidelines iterate the importance of stakeholder cognition and involvement in an entity's CSR strategy and reporting (GRI, 2011; IDSA, 2009; IIRC, 2013). However, these very reporting guidelines provide poor guidance on achieving this. This has resulted in most quality measuring instruments developed by prior literature ignoring the stakeholder dimension of IR quality (Wolniak & Hąbek, 2016). In this context, this research duly introduced a stakeholder dimension to the measuring instrument originally developed by Michelon et al. (2015). User perception of IR quality was approximated using the ease of use and/ or visual appeal of the report (Freundlieb et al., 2014).

It must be noted that "usability" as a concept is much broader than report schematics alone (Freundlieb et al., 2014). Usability encompasses information availability; usefulness; adaptability; ease of interpretation; relevance; reliability and completeness[15] (Freundlieb et al., 2014). It has been found that graphical illustrations assist understanding and the subsequent usability of data (Simon & Larkin, 1987). Moreover, Freundlieb et al. (2014) found that the visual appeal of a report may assist the user when using and understanding a sustainability report, ultimately, affecting the stakeholder's perceived quality of that IR. To that effect, preparers of integrated reports have introduced numerous innovative means of representing large volumes or complex information in easy-to-understand visual mediums/ formats (infographics). Ernst and Young noted increased innovations in representing data in infographics (EY, 2016). These infographics are important to stakeholders as they facilitate the internalisation of CSR content (Freundlieb et al., 2014).

[15] Some of these components of usability were addressed by other measures of IR quality. (1) Information availability was addressed by only obtaining integrated reports from official entity websites. (2) Usefulness and (3) adaptability were addressed by the measurement indicator (Section 2.2.3). (4) Relevance was dealt with by the value relevance indicator (Section 2.2.4). Only the ease of interpretation was captured directly by the acceptability indicator.

To capture this dimension of quality and in keeping with the findings of Freundlieb et al. (2014), the proportion of the IR that was devoted to various infographics was captured. The greater the relative portion of the IR devoted to various infographics, the greater the quality of the IR.

Although it is difficult to measure actual user's perception of an IR quality (Bachoo et al., 2013), these perceptions represent a crucial dimension of IR quality. Consequently, this study introduced the acceptability indicator (AI). The AI measured the usefulness of the IR to end users (Freundlieb et al., 2014), by indirectly approximating user perceptions of quality. The objective of the AI was to measure the proportion of the IR that was devoted to infographics designed to assist the user in understanding the information being disseminated.

The AI was defined as the proportion of the total area of the IR that was devoted to infographics. The AI was the ratio of the sum of the surface areas of all infographics (measured using an appropriate formula for surface area) to the total surface area of the IR (measured as the surface area of each page (length x breath) multiplied by the number of pages in the IR). It is noted that an IR that consists predominantly of infographics (i.e. an AI that approaches 1) may not be particularly useful to end users. As a result, the AI's definition was adjusted: should a given IR have a higher than average AI, the report will be deemed of a higher quality than a normal report (5). The AI was defined and introduced into the original methodology of Michelon et al. (2015):

$$AI_{it} = \left(\frac{1}{A_{it}} * Va_{it}\right) - \dddot{Va}_{it} \quad (5)$$

Where: $AI_{it}$ is the acceptability indicator; $A_{it}$ is the total surface area of the IR of company i in year t; $Va_{it}$ is the surface area of a IR of company i in year t devoted to visual mediums and $\dddot{Va}_{it}$ represents the average AI. The differences between this study and the Michelon et al. (2015) study have been summarised in Appendix D.

In summary, IR quality is asserted to consist of the following dimensions:

**Table 2**: Summary of IR quality dimensions

| IR QUALITY DIMENSION | DEFINITION |
|---|---|
| Quantity indicator<br>(Beretta & Bozzolan, 2004; Wolniak & Hąbek, 2016) | $QI_{it} = \frac{Vol_{it} - \overline{Vol_{it}}}{Vol_{it}}$<br>Where $QI_{it}$ is the quantity indicator. $Vol_{it}$ is the observed volume of disclosure of company i in year t and $\overline{Vol_{it}}$ is the average volume of disclosure for that size entity in its industry. |
| Density indicator<br>(Dagiliene et al., 2014; Michelon et al., 2015) | $DI_{it} = \frac{1}{k_{it}} * CSR_{it}$<br>Where $DI_{it}$ is the density indicator. $k_{it}$ is the total number of sentences in company i in year t. $CSR_{it}$ is the total number of sentences that contain sustainability information. |
| Measurement indicator<br>(Freundlieb et al., 2014; Michelon et al., 2015) | $MI_{it} = \frac{1}{n_{it}} \sum_{j-1}^{n_{it}} (w)$<br>Where, $MI_{it}$ is the measurement indicator, $n_{it}$ is the total number of sentences with CSR disclosures, w = 3 for a sentence that uses monetary measures to depict CSR information, 2 if non – monetary quantitative measures are used and 1 if qualitative measures are used. It will be assumed that CSR information that is predominantly monetary in nature is of better quality. |
| Value relevance indicator<br>(Michelon et al., 2015; Wolniak & Hąbek, 2016); | $VRI_{it} = \frac{1}{n_{it}} \sum_{j-1}^{n_{it}} (Sub_{ijt})$<br>Where $VRI_{it}$ is the value relevance indicator, $n_{it}$ is the total number of sentences with sustainability disclosures, $Sub_{ijt}$ is 1 if sentence j in company i in year t contains substantive information (whether future or reflective) and is 0 otherwise. |
| Acceptability indicator<br>(Freundlieb et al., 2014; Michelon et al., 2015) | $AI_{it} = \left(\frac{1}{A_{it}} * Va_{it}\right) - \dddot{Va}_{it}$<br>Where $AI_{it}$ is the acceptability indicator. $A_{it}$ is the total surface area of the IR of company i in year t. $Va_{it}$ is the surface area of a IR of company i in year t devoted to visual mediums and $\dddot{Va}_{it}$ represents the average AI. |

# Chapter III: Methodology

This section begins by overviewing the research design and method in Section 3.1. Having outlined the design and method, a description of the data capturing process is provided in Section 3.2. Thereafter, Section 3.2.2 provides details on the sample selection process and resultant sample size. Section 3.3.3 describes the mechanics of the coding process for the dependent variables while Section 3.3.4 does the same for the independent variables. Section 3.3 closes this chapter by defining the overall IR quality measure and by describing the data analysis process. The objective of this section is to clearly set out the research design and method.

## 3.1 Research Design

Social research requires a research design before data can be collected or results thereof analysed (De Vaus & de Vaus, 2001). The objective of this section is to outline the research design. An effective research design is pivotal to ensure that the evidence collected enables the research questions to be answered as completely as possible (De Vaus & de Vaus, 2001). The research design discussed in Section 3.1.1 deals with the "logical problem and not the logistical problem" (De Vaus & de Vaus, 2001, p. 9). The logistical problem is then discussed in Section 3.1.2.

### 3.1.1 The logical problem

Positivist research methods follow this general format: 1) a theory is identified from a set of events or generated from prior literature; 2) a hypothesis is generated from the theory; 3) data is collected which either supports or rejects the hypotheses and ultimately the theory and 4) the theory is then amended where necessary (Creswell & Creswell, 2017; Gordon & Porter, 2009; Lee, 1991; Phillips & Burbules, 2000). Positivist research is objective by nature (Walsh & Stewart, 1993). The ultimate goal of positivist research is to discover the ultimate truth. Although, it has been argued that knowledge is abstract and as such, an absolute truth can never be found (Phillips & Burbules, 2000). In contrast, social constructivist research seeks to explain the world as it is (De Vaus & de Vaus, 2001). Unlike positivist research, the researcher's role is pivotal in constructivist research. In social constructivist research, multiple truths may be apparent (De Vaus & de Vaus, 2001). In such an environment an objective approach is not suitable. To that end, the ultimate goal of social constructivist research is to reveal multiple perspectives of the same phenomenon (Leedy & Ormrod, 2005). Both methods are suitable in their own rights for exploratory studies (Creswell & Creswell, 2017).

Exploratory studies result in new insights being gained, they clarify concepts and theories and in doing so identify avenues for future research (Creswell & Clark, 2017). Exploratory studies may be conducted using a qualitative or quantitative method (Creswell & Clark, 2017). As such, both positivist and social constructivist research methods are suitable for exploratory studies (Creswell & Clark, 2017; De Vaus

& de Vaus, 2001). A positivist approach relies on quantified data and methods to predict or explain a set of phenomena (Lee, 1991). A positivist approach also allows for specific controls to be introduced into a dataset (Gordon & Porter, 2009). The strategic use of controls has the potential to result in substantial improvements to a study's internal validity (Gordon & Porter, 2009). On the other hand, qualitative research is mainly subjective as it relies on the views and experiences of the selected subjects (Creswell & Creswell, 2017).

This research is exploratory in nature. Using a positivist approach, this research aims to empirically determine whether three identified reporting practices are associated with integrated report quality. The scientific method adopts a quantitative approach as this is often the case with positivist studies (Creswell & Creswell, 2017). Quantitative methods are best suited for papers that attempt to identify factors (the three reporting practices – Section 2.1.1 to 2.1.3) that influence an outcome (IR quality – Section 2.2) and understanding the best predictors of outcomes (the predictive regression models – Section 3.3) (Creswell & Creswell, 2017).

Having established the research design in this section, the logical approach to this research has been determined. The next section describes the logistical approach adopted in this research to address the research questions.

### 3.1.2 The logistical problem

The scientific method used in this paper was a Spearman's rho. The Spearman's rho is a non-parametric alternative to the Pearson correlation. The Spearman's rho does not rely on any assumptions relating the distribution of variables in the population (Field, 2009). The Spearman's rho can be interpreted in the same way as the Pearson correlation (Pallant, 2013). The objective of this paper is not to identify a causal relationship between the dependent and independent variables, but rather to determine if there is a correlation and the direction hereof. The Spearman's rho is the primary analysis of this research paper.

In keeping with the exploratory design of this paper, this study goes further and develops predictive models for all significant relationships identified in the primary analysis (Section 4.3). In this secondary quantitative analysis, a stepwise OLS regression is performed for all statistically significant relationships identified in the primary analysis. Causal relationships are not necessary to generate the predictive models in the secondary analysis (De Vaus & de Vaus, 2001). Stepwise methods are frequently used in empirical research to evaluate the order of importance of variables (Thompson, 1995). The significance of the regression models were determined using an ANOVA (Section 4.3.2 to 4.3.3). The method and interpretation thereof focused on the direction of the relationship between variables.

The last phase of research design is to determine what methods or techniques will be used to collect data (Creswell & Creswell, 2017). In accounting research, there are two main approaches to measuring disclosures (Guthrie & Abeysekera, 2006). The first approach is to use a content analysis and the second is to use disclosure indices (Guthrie & Abeysekera, 2006). Content analyses involve codifying qualitative or quantitative information into categories based on chosen criteria (Weber, 1990). This is done to derive patterns in the presentation and reporting of information (Guthrie & Abeysekera, 2006). Content analyses have the advantage of allowing predominantly qualitative information to be systematically transcribed into quantitative data on which detailed, objective statistical procedures can be applied (Guthrie & Abeysekera, 2006). Content analyses do have the drawback of being notoriously time consuming and cumbersome (Guthrie & Abeysekera, 2006; Michelon et al., 2015) and are bias towards the quantity of disclosures rather than the quality thereof (Guthrie & Abeysekera, 2006).

A disclosure index approach comprises of a pre-selected items which are scored or ranked (Guthrie & Abeysekera, 2006). This method has the limitation of treating all values as equal (Ryan, Stanley, & Nelson, 2002). In its simplest form, disclosure indices use a binary coding system (Guthrie & Abeysekera, 2006). Allowances can be made to include additional facets. Content analyses and disclosure indices can be combined to eliminate the methodological weaknesses (Guthrie & Abeysekera, 2006).

This research gathered data using a content analysis which included elements of disclosure indices. Content analyses are often used in studies on integrated reports (Guthrie & Abeysekera, 2006; Michelon et al., 2015). A content analysis remains the transcription method of choice as a detailed content analysis has the potential to significantly increase construct validity. In order to perform a content analysis, certain technical requirements must be met (Guthrie & Abeysekera, 2006; Guthrie, Petty, Yongvanich, & Ricceri, 2004). Firstly the unit of analysis must be clearly defined. Second, the data capturing process must be systematic with the categories clearly defined and lastly, the content analysis must be reliable and valid (Guthrie & Abeysekera, 2006; Guthrie et al., 2004).

First, the unit of analysis in this study has been identified as a single sentence. Prior studies have considered and argued using an entire page or paragraphs as the unit of analysis (Guthrie & Abeysekera, 2006). However, it is clear that a single sentence includes a single idea and conveys a single meaning. It is to this end that Gray, Kouhy, and Lavers (1995) suggest a single sentence as a unit of analysis should the content analysis need to represent meaning. Sentences are complete within themselves. Using a sentence as a measuring unit improves internal validity and reliability of the content analysis (Milne & Adler, 1999). Second, the data capturing process for measuring the quality of integrated reports (IR Quality) and its surrogates has to be clearly defined. This has been discussed in detail in

Section 3.2. Lastly, the content analysis needs to be reliable and valid. Reliability and validity of the content analysis is addressed in the following section.

### 3.1.3 Reliability and validity

The reliability and validity of content analyses have two main problems (Milne & Adler, 1999): first is the capturers. Where there are more than one coders, this is usually addressed by cross-coding and comparing differences. This research does not have that issue as only one primary coder was used. The research assistant only coded the independent variables. Second is the reliability of the coding instrument itself. In order to protect research quality, (Guthrie et al., 2004) proposed two methods of safeguarding the reliability and validity of the measuring instrument that are applicable to this study:

1) Selecting the measuring criteria from well-established and relevant literature. The literature framework was discussed in detail in Section 2.2.
2) Creating a measurement instrument with specific categories and a strong theoretical baking. This has been discussed in detail in Sections 2.2.

### 3.1.4 Summary

In summary, this exploratory study follows a positivist approach. The research method is quantitative in nature. The primary analysis uses a Spearman's rho to address the research questions. The secondary analysis uses a stepwise OLS regression to explore an alternate application of the dataset and to inspire future research. A content analysis was performed to transcribe information disclosed into IR quality surrogates and ultimately IR quality. The remainder of this chapter describes the data collection process (Section 3.2). Thereafter, Section 3.2.2 provides details on the sample selection process and resultant sample size. Section 3.2.3 describes the mechanics of the coding process for the dependent variables. Section 3.2.4 does the same for the independent variables. Section 3.3 closes this chapter by defining the overall IR quality measure and by describing the data analysis process.

## 3.2 Data Collection

### 3.2.1 Measurement tool

The final measurement tool captured:

- The absolute number of disclosures in a given IR (Section 2.2.1);
- The ratio of disclosures that were actually CSR information (Section 2.2.2);
- The type of measures used to represent the CSR information (Section 2.2.3);
- The "spirit" of the CSR information (Section 2.2.4); and
- The users' ease of use (Section 2.2.5)

These dimensions of quality were then combined into a single comprehensive quality measure (Section 3.3). The above dimensions of quality and the overall IR quality measure (IRQ) constitute the dependent variables. The reporting practices identified in Sections 2.1.1 to 2.1.3 are the independent variables and are discussed in Section 3.2.3. The next section discusses sample selection and size.

### 3.2.2 Samples

A content analysis was performed by the researcher and a single research assistant on the JSE top 40 entities (as at 01 January 2015). The JSE top 40 represents approximately 80% of the JSE by market capitalisation (CourtneyCapital, 2013). The period of review ran from 2015 to 2017 (limited to integrated reports released in 2017 as at the time of coding).

JSE-listed entities were selected as these have been on the forefront of integrated reporting adoption and innovation (EY, 2017). The researcher selected 2015 to 2017 for the following reasons:

- during this period integrated reports were said to be improving (EY, 2016, 2017); and
- notable corporate reporting failures threatened to cast doubt on the value relevance of integrated reporting in South Africa

The following were prerequisites for sample selection, entities must have been:

- a part of the JSE top 40 as at 01 January 2015;
- continuously listed on the JSE throughout the period under review;
- have a downloadable integrated report for each period selected, available on official websites; and
- have control data available.

This left 120 potential integrated reports. A sample size of 40 entities and 93 distinct integrated reports was selected. 27 reports in 2017 were not released at the time of coding.

### 3.2.3 Data collection: dependent variables

A content analysis was performed to systematically transcribe text into binary scores. Content analyses remain a popular choice for this type of research due to its reliability in capturing CSR information (Michelon et al., 2015). The analysis was performed on a sentence by sentence basis[16] (Figure 1). For each sentence within a given IR the following was captured:

1) A "1" was assigned when a sentence contained CSR information (as prescribed by the GRI) or a "0" otherwise (quantity and density indicators) – Section 2.2.1 and 2.2.2.
2) A "1" was assigned for sentences that contained contextual information, detailed a commitment, expressed management expectations, disclosed a specific objective, described an action undertaken in the reporting period or disclosed results achieved in a period. A "0" was assigned otherwise (value relevance indicator) – Section 2.2.4.
3) A "1" for sentences that contained qualitative, quantitative or monetary information. A "0" was coded otherwise (measurement indicator) – Section 2.2.3.
4) Measured the surface area of any visual mechanisms used (acceptability indicator) – Section 2.2.5.

Figure 1 and Figure 2 provide illustrative examples of the coding sheets used and Table 3 provides examples of sentences in integrated reports and their respective codes.

**Figure 1:** An example of coded quantity, density, measurement and value relevance indicators:

| Presence (1,0) | Context | Commitment / Expectations | Objectives | Actions | Results | Qualitative | Quantitative | Monetary |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | | | | | 1 | | |
| 1 | 1 | | | | | | | 1 |
| 1 | 1 | | | | | | 1 | |
| 1 | 1 | | | | | 1 | | |
| 1 | | | | | 1 | 1 | | |
| 0 | | | | | | | | |
| 1 | 1 | | | | | 1 | | |
| 0 | | | | | | | | |
| 1 | 1 | | | | | 1 | | |
| | | | | | | | | |
| | | | | | | | | |

[16] The measuring unit will be defined as an individual sentence in a sampled IR. Sentences will be more reliable than paragraphs or pages (Michelon et al., 2015)

**Figure 2:** An example of the coded acceptability indicator:

| | Circle | | Rectangle | | Other | | | |
|---|---|---|---|---|---|---|---|---|
| Name of Diagram | Diameter (cm) | Radius (cm) | Length (cm) | Breadth (cm) | Shape | | | Surface Area |
| | | 0 | | | | | | 0 |
| | | 0 | 17 | 19 | | | | 323 |
| | | 0 | 19 | 27 | | | | 513 |
| | | 0 | 19 | 28 | | | | 532 |
| | | 0 | 19 | 28 | | | | 532 |
| | | 0 | 17 | 18 | | | | 306 |
| | | 0 | 17 | 13 | | | | 221 |
| | | 0 | 19 | 28 | | | | 532 |
| | | 0 | 17 | 28 | | | | 476 |

**Table 3**: Showing extracts from integrated reports and respective codes:

| **Sentence (entity, year)** | **Code** |
|---|---|
| Following an increased focus on capital discipline and in response to current conditions, capital expenditure was reduced, before capitalised losses, to $4.0 billion (Anglo American, 2015). | CSR information; actions; monetary. |
| In addition to the generally difficult consumer environment, we faced the double challenge this year of a stronger rand and lower global fishmeal prices (Oceana group, 2017). | CSR information; context; qualitative. |
| Gold fields is committed to acting responsibly, honestly and with respect for others (Gold Fields, 2015). | CSR information; commitment; qualitative. |
| The table below summarises the minimum statutory capital across material group subsidiaries and the actual solvency capital held as a percentage of this requirement, for each of them at 30 June 2016 (Discovery 2016). | Not CSR information. |
| Media24's social responsibility initiatives, totalling R60m in the review period, are focused on education, digital media training and enterprise development (Naspers, 2017). | CSR information; result; monetary[17]. |

[17] If a sentence contained both quantitative and monetary information, it was coded as monetary

### 3.2.4 Data collection: independent and control variables

This study defined the following independent variables:

1) The provision of a stand-alone CSR report – a dummy variable of "1" was allotted if the reporting entity provided a stand-alone CSR report or "0" otherwise.
2) The independent assurance of key performance indicators – a dummy variable of "1" was allotted if the reporting entity provided an assurance statement or "0" otherwise.
3) Compliance with IIRC/ GRI – a dummy variable of "1" was allotted if the reporting entity provided a IIRC/ GRI compliance statement or "0" otherwise.

This study controlled for entity industry. This control is embedded in the quantity indicator (Section 2.2.1) as it is the only indicator directly affected by an entity's industry. Entities operating in socially sensitive industries[18] – mainly involving resources – inevitably disclose additional information relating to their impact on the environment (C. Cho, Guidry, et al., 2012).

[18] Entitles in the following industries were classified as sensitive: chemical, mining, metals, paper, petroleum, and utility (C. Cho, Guidry, Hageman, & Patten, 2012)

## 3.3 Data Analysis

In reworking the model used by Michelon et al. (2015), as described in Sections 2.2.1 – 2.2.5, the measured indicators were collected and an overall IR quality score for each IR was determined ($IRQ_i$) (6). IRQ is defined as the arithmetic mean of the standardised indicators (following the Michelon et al. (2015) methodology, the quantity, value relevance and acceptability indicators were standardised to avoid a scaling effect. This means that these indicators are between 0 and 1). IRQ is defined as:

$$IRQ_i = \frac{1}{5} * \ (QI_{it} + DI_{it} + MI_{it} + \ VRI_{it} + AI_{it}) \ (6)$$

IRQ then formed the foundation of the three null and alternate hypotheses:

$H_0^{RQ1}$ = the existence of a separate CSR report is negatively associated with IR quality.
$H_1^{RQ1}$ = the existence of a separate CSR report is not negatively associated with IR quality.

$H_0^{RQ2}$ = integrated reports with CSR assurance statements are positively associated with IR quality.
$H_1^{RQ2}$ = integrated reports with CSR assurance statements are not positively associated with IR quality.

$H_0^{RQ3}$ = integrated reports with GRI/ IIRC compliance notes are positively associated with IR quality.
$H_1^{RQ3}$= integrated reports with GRI/ IIRC compliance notes are not positively associated with IR quality.

Assumptions required to perform a Pearson's correlation were not met (refer Section 4.1.2). A non-parametric Spearman's rho was performed instead to determine the strength and significance of correlation. For all significant relationships that were identified in the Spearman's rho, a stepwise regression was performed to design a significant regression model that best predicted the dependent variables using independent variations (refer Section 4.3).

The regression model took this generic form:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \varepsilon_i$$

Where:

| Variable | Description |
|---|---|
| $\beta_0$ | Constant |
| $\beta_1$ | The unstandardized coefficient for a separate CSR report |
| $\beta_2$ | The unstandardized coefficient for CSR assurance (assurance statement) |
| $\beta_3$ | The unstandardized coefficient for GRI/ IIRC compliance (compliance statement) |
| $X_{1i}$ | Dummy variable 1 if separate CSR report, 0 if not |
| $X_{2i}$ | Dummy variable 1 if independent IR assurance statement, 0 if not |
| $X_{3i}$ | Dummy variable 1 if GRI/ IIRC compliance statement, 0 if not |

The method and the interpretation thereof focused on the direction of the relationship between variables. When assessing the direction of the association, the sign of the correlation coefficient was assessed. Positive association is depicted by a positive coefficient, while a negative association is depicted by a negative coefficient. The strength of the correlation was determined using the coefficient. The test was performed with a 95% confidence level. The section that follows outlines and provides an analysis of the results.

## 3.4 Summary

In summary, a content analysis was performed to transcribe information disclosed into IR quality surrogates and ultimately IR quality. IR quality and its surrogates constitute the dependent variable while the identified reporting practices represent the independent variables. Content analyses were performed in the sampled 93 integrated reports. These integrated reports were from JSE top 40 entities listed in the JSE continuously between 2015 and 2017. This exploratory study followed a positivist approach. The research method was quantitative in nature. The primary analysis used a Spearman's rho to address the research questions. The secondary analysis uses a stepwise OLS regression to explore an alternate application of the dataset and to inspire future research. Results from the primary and secondary analyses are presented in Chapter 4. Chapter 4 includes an objective interpretation of the results.

# Chapter IV: Results and Conclusion

## 4.1 Results of Analysis

This section presents and objectively interprets the research findings. This research paper set out to determine if three identified reporting practices correlate with IR quality. To that end, the theoretical framework underpinning the three reporting practices was outlined in detail in Section 2.1.1 to 2.1.3. To measure IR Quality, this study, using prior literature, disaggregated the concept of IR quality into quality surrogates (Section 2.2). After the quality surrogates were measured, IR quality was measured as a simple average (Section 3.3). Once all 93 integrated reports were transcribed, descriptive statistics were calculated (Table 4). The Kolmogorov-Smirnov and Shapiro-Wilk tests were performed to assess normality (section 4.1.2). In the primary analysis, the dataset was used in a Spearman's rho to determine the strength and the direction of the relationships between the dependent and independent variables. These results are presented in Section 4.1. In the secondary analysis, the stepwise regression models are generated and presented in Section 4.3. These models were generated to explore the possibility of reliably estimating the independent variables using the dependent variables and to set a foundation for future research.

### 4.1.1 Descriptive statistics

**Table 4**: Descriptive Statistics

| Descriptive Statistics: | | No. of Observations | Mean | Median | Standard Deviation | Minimum | Maximum |
|---|---|---|---|---|---|---|---|
| **Quantity** | **No. of Sentences** | **93** | 1053 | 1019 | 426 | 183 | 2775 |
| | **No. of pages** | **93** | 105 | 105 | 4 | 43 | 256 |
| | **Quantity indicator (QI)** | **93** | 0.164 | 0.052 | 0.605 | -0.609 | 3.000 |
| **Density Indicator** | | **93** | 0.906 | 0.940 | 0.147 | 0.174 | 1.329 |
| **Measurement** | **Measurement Indicator (MI)** | **93** | 1.318 | 1.309 | 0.107 | 0.938 | 1.574 |
| **Value Relevance** | **Value Relevance Indicator (VRI)** | **93** | 0.513 | 0.450 | 0.405 | 0.223 | 2.864 |
| **Acceptability Indicator** | | **93** | 0.063 | 0.006 | 0.197 | -0.223 | 0.944 |
| **Integrated Report Quality** | | **93** | 0.593 | 0.560 | 0.161 | 0.362 | 1.214 |

A total of 93 integrated reports were coded. On average, an IR consisted of 1 053 sentences, over an average of 105 pages. The longest IR came in at 2 775 sentences, over 256 pages. The average density indicator of 0.906 shows that on average 90.6% of information in coded integrated reports consists of CSR information. The average measurement indicator tending towards 1 (at 1.318) shows that on average coded integrated reports contained relatively more qualitative information. On average 6.3% of surface area of integrated reports coded was dedicated to infographics.

### 4.1.2 Statistical approach: Spearman's rho

Spearman's rho was used to determine if monotonic relationships exist between the selected independent variables (a separate CSR report, CSR assurance statement and GRI/ IIRC compliance statement) and the identified dependent variables (quantity, density, measurement, value relevance, acceptability indicators and IR quality). A Spearman's rho was performed as the assumptions for a Pearson's correlation were not met (Field, 2009; Pallant, 2013). The Kolmogorov-Smirnov and Shapiro-Wilk tests were performed to assess normality within the dependent variables (results summarised in Table 5 and depicted graphically in Appendix B). All dependent variables were found to deviate significantly from normality.

**Table 5:** Tests of Normality

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Quantity Indicator (QI) | .190 | 93 | .000 | .786 | 93 | .000 |
| Density Indicator (DI) | .352 | 93 | .000 | .526 | 93 | .000 |
| Measurement Indicator (MI) | .094 | 93 | .042 | .946 | 93 | .001 |
| Value Relevance Indicator (VRI) | .393 | 93 | .000 | .390 | 93 | .000 |
| Acceptability Indicator (AI) | .195 | 93 | .000 | .861 | 93 | .000 |
| Integrated Report Quality (IR Quality) | .166 | 93 | .000 | .840 | 93 | .000 |

a. Lilliefors Significance Correction

There is collinearity between CSR assurance and adopting a reporting framework (correlation of 0.612 - Table 6). This collinearity is not expected to impact the regression models in Section 4.3. No multi-collinearity among the independent variables was observed (Table 6).

**Table 6:** Correlation among Independent Variables

| | | **Separate CSR report** | **GRI/ IIRC** | **Assurance** |
|---|---|---|---|---|
| **Separate CSR report** | Pearson Correlation | 1 | .289** | .278** |
| | Sig. (2-tailed) | | .005 | .007 |
| | N | 93 | 93 | 93 |
| **GRI/ IIRC** | Pearson Correlation | .289** | 1 | .612** |
| | Sig. (2-tailed) | .005 | | .000 |
| | N | 93 | 93 | 93 |
| **Assurance** | Pearson Correlation | .278** | .612** | 1 |
| | Sig. (2-tailed) | .007 | .000 | |
| | N | 93 | 93 | 93 |

The results of the Spearman's rho have been summarised in the section that follows. Included in the next section is an objective interpretation of the tabulated results.

### 4.2. Results of Spearman's rho

The sections that follow present the results of the Spearman's rho. The results for each independent variable (reporting practice) are included under a separate heading. This sub-section follows the following general format: first, the results of the Spearman's rho are tabularised and presented, then statistically significant relationships are identified, this is then succeeded by a discussion on the research questions and hypotheses in light of the results and finally, statistically significant relationships with the newly introduced acceptability indicator are discussed.

#### 4.2.1 Separate CSR report:

The significance, strength and direction of the relationship between the dependent variables and the independent variable were determined using the Spearman's rho. The quantity indicator, density indicator, measurement indicator, value relevance indicator and overall integrated report quality were dependent variables and the use of a separate CSR report was the independent variable. The results are presented in Table 7 and an interpretation follows:

**Table 7**: Summary Spearman's rho – Separate CSR report

| **Spearman's rho** | **Separate CSR report** | |
|---|---|---|
| **Quantity Indicator (QI)** | Correlation Coefficient | 0.129 |
| | Sig. (2-tailed) | 0.219 |
| | N | 93 |
| No significant correlation | | |
| **Density Indicator (DI)** | Correlation Coefficient | -0.049 |
| | Sig. (2-tailed) | 0.642 |
| | N | 93 |
| No significant correlation | | |
| **Measurement Indicator (MI)** | Correlation Coefficient | *0.269 |
| | Sig. (2-tailed) | 0.009 |
| | N | 93 |
| *Correlation is significant at the 0.01 level (2-tailed) | | |
| **Value Relevance Indicator (VRI)** | Correlation Coefficient | 0.253 |
| | Sig. (2-tailed) | **0.015 |
| | N | 93 |
| ** Correlation is significant at the 0.05 level (2-tailed) | | |
| **Acceptability Indicator (AI)** | Correlation Coefficient | 0.192 |
| | Sig. (2-tailed) | ***0.065 |
| | N | 93 |
| *** Moderately significance | | |
| **Integrated Report Quality (IR Quality)** | Correlation Coefficient | ****0.242 |
| | Sig. (2-tailed) | 0.02 |
| | N | 93 |
| **** Correlation is significant at the 0.05 level (2-tailed) | | |

From the Spearman's results summarised in Table 7, the following observations have been made:

- There is statistically significant evidence supporting a weak positive monotonic correlation between having a separate CSR report and the measurement indicator (MI). The correlation coefficient is less than 0.3, as such, the strength of the relationship is considered low (Pallant, 2013).
- Having a separate CSR report has a very weak moderately significant positive monotonic relationship with the acceptability indicator (AI). The correlation coefficient is less than 0.3, as such, the strength of the relationship is considered low (Pallant, 2013) and the results may have limited practical application.
- There is statistically significant evidence supporting a weak positive monotonic correlation between providing a separate CSR report and the value relevance indicator (VRI). The correlation coefficient is less than 0.3, as such, the strength of the relationship is considered low (Pallant, 2013) and the results may have limited practical application.

Overall, there is statistically significant evidence supporting a weak positive monotonic correlation between having a separate CSR report and IR quality (IRQ). The correlation coefficient is less than 0.3, as such, the strength of the relationship is considered low (Pallant, 2013) and the results may have limited practical application.

Although a significant correlation is evident, it is weak (correlation coefficient of 0.242). This result does not prove a relationship between a stand-alone report and IQR. The coefficient does indicate a positive association. For the purposes of addressing RQ1, it would appear that there is evidence in favour of the alternate hypothesis. When answering the research question, the direction of the relationship is considered over the strength of the relationship.

There is a weak, moderately significant relationship between providing a separate CSR report and the introduced acceptability indicator (AI). This is the only instance where a relationship between an independent variable and the newly introduced acceptability indicator was evident, albeit a weak one.

### 4.2.2 The use of GRI/ IIRC frameworks

The significance, strength and direction of the relationship between the dependent variables and the independent variable were determined using the Spearman's rho. The quantity indicator, density indicator, measurement indicator, value relevance indicator and overall integrated report quality were dependent variables and compliance (evidenced by a compliance statement) with GRI/ IIRC reporting guidance was the independent variable. The results are presented in Table 8 and an interpretation follows:

**Table 8:** Summary Spearman's rho – GRI/ IIRC Frameworks

| Spearman's rho | GRI/ IIRC | |
|---|---|---|
| **Quantity Indicator (QI)** | Correlation Coefficient | 0.169 |
| | Sig. (2-tailed) | 0.106 |
| | N | 93 |
| No significant correlation | | |
| **Density Indicator (DI)** | Correlation Coefficient | -0.088 |
| | Sig. (2-tailed) | 0.403 |
| | N | 93 |
| No significant correlation | | |
| **Measurement Indicator (MI)** | Correlation Coefficient | -0.172 |
| | Sig. (2-tailed) | *0.098 |
| | N | 93 |
| *Moderately strong evidence | | |
| **Value Relevance Indicator (VRI)** | Correlation Coefficient | 0.049 |
| | Sig. (2-tailed) | 0.641 |
| | N | 93 |
| No significant correlation | | |
| **Acceptability Indicator (AI)** | Correlation Coefficient | 0.074 |
| | Sig. (2-tailed) | 0.478 |
| | N | 93 |
| No significant correlation | | |
| **Integrated Report Quality (IR Quality)** | Correlation Coefficient | 0.156 |
| | Sig. (2-tailed) | 0.134 |
| | N | 93 |
| No significant correlation | | |

From the Spearman's results summarised in Table 8, the following observations have been made:

- There is moderately significant evidence supporting a negative monotonic correlation between the use of a reporting framework and the measurement indicator (MI). The correlation coefficient is less than 0.3, as such, the strength of the relationship is considered low (Pallant, 2013) and the results may have limited practical application.
- The correlation between using a reporting framework and IR quality (IRQ) is not statistically significant.

The evidence provided is not strong enough to reject the null hypothesis $H_0^{RQ2}$ in favour of the alternate hypothesis($H_1^{RQ2}$). This evidence does not however prove the null hypothesis.

### 4.2.3 CSR assurance

The significance, strength and direction of the relationship between the dependent variables and the independent variable were determined using the Spearman's rho. The quantity indicator, density indicator, measurement indicator, value relevance indicator and overall integrated report quality were dependent variables and independent assurance of key performance indicators (KPIs) disclosed in integrated reports was the independent variable. The results are presented in Table 9 and an interpretation follows:

**Table 9:** Summary Spearman's rho – CSR Assurance

| Spearman's rho | Assurance | |
|---|---|---|
| **Quantity Indicator (QI)** | Correlation Coefficient | 0.078 |
| | Sig. (2-tailed) | 0.457 |
| | N | 93 |
| No significant correlation | | |
| **Density Indicator (DI)** | Correlation Coefficient | -0.026 |
| | Sig. (2-tailed) | 0.804 |
| | N | 93 |
| No significant correlation | | |
| **Measurement Indicator (MI)** | Correlation Coefficient | 0.017 |
| | Sig. (2-tailed) | 0.872 |
| | N | 93 |
| No significant correlation | | |
| **Value Relevance Indicator (VRI)** | Correlation Coefficient | 0.114 |
| | Sig. (2-tailed) | 0.278 |
| | N | 93 |
| No significant correlation | | |
| **Acceptability Indicator (AI)** | Correlation Coefficient | -0.025 |
| | Sig. (2-tailed) | 0.81 |
| | N | 93 |
| No significant correlation | | |
| **Integrated Report Quality (IR Quality)** | Correlation Coefficient | 0.117 |
| | Sig. (2-tailed) | 0.264 |
| | N | 93 |
| No significant correlation | | |

Across the board (Table 9), the provision of independent assurance on key KPIs does not have a significant correlation with any quality indicators, including the overall IR quality indicator. This inconclusive evidence suggests that there is insufficient evidence presented to reject the null hypothesis ($H_0^{RQ3}$) in favour of the alternate ($H_1^{RQ3}$). This evidence does not however prove the null hypothesis.

In summary, the measurement indicator and IR quality had statistically significant regression models (Section 4.2.1 and 4.2.2 respectively). For these variables, a stepwise regression was performed to generate a predictive model (section 4.3). The quantity, density, value relevance and acceptability indicators did not exhibit significant relationships with the independent variables, as such significant regression models were not generated.

## 4.3 Generation of Step-Wise Regression Models

In keeping with the exploratory nature of this paper, significant regression predictive models were estimated. For all significant correlations identified in Section 4.2, a step wise regression was performed to determine if a significant regression model could be generated to predict the dependent variables using the independent variables. The measurement indicator and IR quality had statistically significant regression models. These models have been discussed in Sections 4.3.2 and 4.3.3. The quantity, density, value relevance and acceptability indicators did not exhibit significant relationships with the independent variables, as such significant regression models were not expected. After performing step-wise regressions inserting all the independent variables, the un-tabulated results confirmed this suspicion. Before the regression models were generated for the measurement indicator and overall IR quality, a test for normality was performed on the dataset. This was done to determine if a regression analysis can be performed.

### 4.3.1 Normality of residuals and relationship between standardised residuals

The measurement indicator (MI) and IR quality (IRQ) residuals were approximately normally distributed (Figures 9 and 11) and there were no relationships between the standardised residuals and the predicted values (Figures 10 and 12). The key assumptions for performing a regression analysis were met. Sections 4.3.2 and 4.3.3 present the regression models.

**Figure 9:**

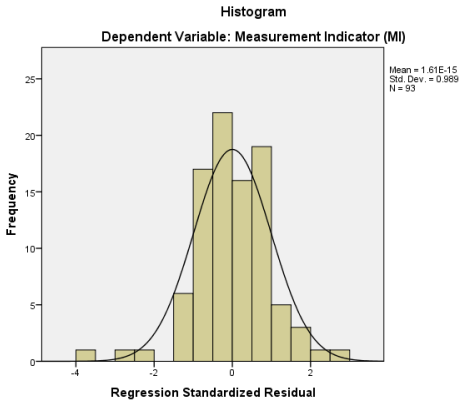



**Figure 10:**

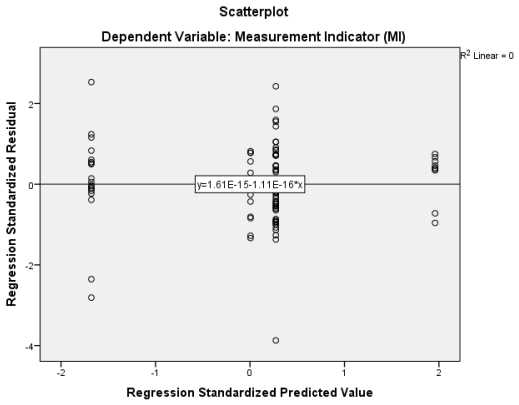


**Figure 11:**

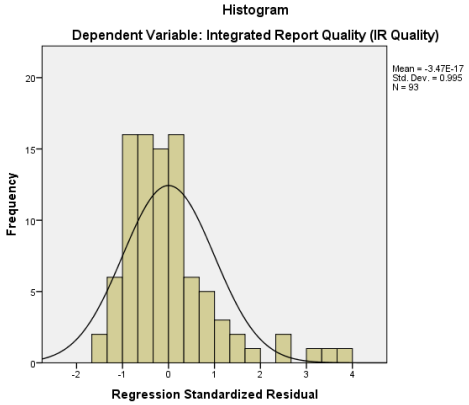
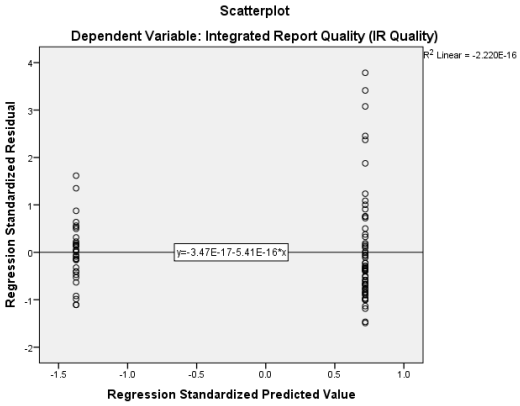



**Figure 12:**




### 4.3.2 Regression model: measurement indicator

Using a stepwise regression, Model 1 and 2 (Table 10) were identified. Table 11 uses an ANOVA to test for the significance of the models. The coefficient of correlation and determination have been presented in Table 12. Following the tabulated results is a discussion on the regression models.

**Table 10:** Coefficients: Measurement Indicator (MI)

| | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | **Model** | **B** | **Std. Error** | **Beta** | **t** | **Sig.** |
| 1 | (Constant) | 1.279 | .018 | | 69.566 | .000 |
| | Separate CSR report | .060 | .023 | .266 | 2.629 | .010 |
| 2 | (Constant) | 1.319 | .023 | | 56.134 | .000 |
| | Separate CSR report | .077 | .023 | .342 | 3.339 | .001 |
| | GRI/ IIRC | -.066 | .026 | -.264 | -2.577 | .012 |

**Table 11:** ANOVA: Measurement Indicator (MI)

| **Model** | | **Sum of Squares** | **df** | **Mean Square** | **F** | **Sig.** |
|---|---|---|---|---|---|---|
| 1 | Regression | .075 | 1 | .075 | 6.914 | .010[a] |
| | Residual | .985 | 91 | .011 | | |
| | Total | 1.060 | 92 | | | |
| 2 | Regression | .142 | 2 | .071 | 6.993 | .002[b] |
| | Residual | .917 | 90 | .010 | | |
| | Total | 1.060 | 92 | | | |

a. Predictors: (Constant), Separate CSR report
b. Predictors: (Constant), Separate CSR report, GRI/ IIRC

**Table 12:** Model Summary – Measurement Indicator (MI)

| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** |
|---|---|---|---|---|
| 1 | .266[a] | .071 | .060 | 0.104023264 |
| 2 | .367[b] | .134 | .115 | 0.100940612 |

a. Predictors: (Constant), Separate CSR report
b. Predictors: (Constant), Separate CSR report, GRI/ IIRC

A regression model that includes only having a separate CSR report (Model 1) is significant (with a p value of 0.010 – Table 11). Model 1 explains 6% of the variation in the MI (Table 12). A regression model including both providing a separate CSR report and GRI/ IIRC adoption (Model 2) explains 11.5% of the variation in the measurement indicator (Table 12 – Model 2). Model 2 is significant (with a $p$ value of 0.002 – Table 11). Although model 2 is statistically significant, an $R^2$ of 0.115 shows that the model may have limited practical significance (Gordon & Porter, 2009). The coefficients have been summarised in Table 9. The expected MI can be expressed as:

$$\hat{y}_{MI} = 0.077(X_{1i}) - 0.066(X_{3i}) + 1.319 \text{ (Model 2)}$$

Where: $\hat{y}_{MI} = the\ expected\ measurement\ indicator$; $X_{1i} = a\ separate\ CSR\ report$ and $X_{3i} = GRI/\ IIRC\ compliance\ statement$.

### 4.3.3 Regression model: IR quality

Using a stepwise regression, Model 3 (Table 13) was identified. Table 14 uses an ANOVA to test for the significance of the models. The coefficient of correlation and determination have been presented in Table 15. Following the results tables is a discussion on the regression models.

**Table 13:** ANOVA: Integrated Report Quality (IRQ)

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 3 | Regression | .166 | 1 | .166 | 6.823 | .011[a] |
| | Residual | 2.214 | 91 | .024 | | |
| | Total | 2.380 | 92 | | | |

a. Predictors: (Constant), Separate CSR report

**Table 14:** Coefficients: Integrated Report Quality (IRQ)

| | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | Model | B | Std. Error | Beta | t | Sig. |
| 3 | (Constant) | .535 | .028 | | 19.388 | .000 |
| | Separate CSR report | .089 | .034 | .264 | 2.612 | .011 |

a. Dependent Variable: Integrated Report Quality (IR Quality)

**Table 15:** Model Summary – Integrated Report Quality

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 3 | .264[a] | .070 | .060 | .155986335 |

a. Predictors: (Constant), Separate CSR report

The regression Model 3 is significant (with a $p$ value of 0.011 – Table 14) and it explains 6% of the variation in IRQ (Table 15 – Model 3). Although model 3 is statistically significant, an $R^2$ of 0.06 shows that the model (as with model 2 in Section 4.3.2) may have limited practical significance (Gordon & Porter, 2009). The coefficients have been summarised in Table 14. The expected IRQ can be expressed as:

$$\hat{y}_{IRQ} = 0.089(X_{1i}) + 0.535 \text{ (Model 3)}$$

Where:
$\hat{y}_{IRQ} = the\ expected\ integrated\ report\ quality$ and $X_{1i} = a\ separate\ CSR\ repory.$

### 4.3.4 Summary

In summary, the primary analysis found the following significant relationships:

- The provision of a stand-alone CSR report to have a significant relationship with IR quality. Drilling down into the quality surrogates, the provision of a stand-alone CSR report was found to have significant relationships with the measurement indicator and the newly introduced acceptability indicator.
- The use of a GRI/ IIRC framework did not exhibit a significant relationship with IR quality. Upon further investigation, a significant relationship was evident with the measurement indicator and
- Across the board (IR quality and its surrogates), independent assurance as evidenced by an assurance statement did not reveal any significant relationships.

The secondary analysis developed two significant regression models. The predictive models were designed to predict the measurement indicator and IR quality.

The section that follows includes detailed discussions and comments on the results. This discussion covers the results in relation to existing research (Section 4.4.1). Followed by these discussions are concluding remarks (Section 4.4.2). Finally, this Chapter ends of with a discussion of the limitations of this study and avenues for future research (Section 4.5).

## 4.4 Discussion and Conclusion

This research paper set out to identify whether common reporting practices adopted by reporting entities listed in the JSE are adopted symbolically or substantively. This was achieved by identifying three reporting practices:

1) the use of a stand-alone sustainability report;
2) the independent assurance of key performance indicators (KPIs) disclosed in integrated reports; and
3) the compliance (evidenced by a compliance statement) with GRI/ IIRC reporting guidance

and statistically determining if an association with IR quality (and its surrogates) existed.

IR quality was measured by disaggregating the principle of IR quality into 5 quality surrogates namely: the absolute number of disclosures in a given IR; the ratio of disclosures that are actually CSR information; the type of measures used to represent the CSR information; the "spirit" of the CSR information and the users' ease of IR use.

To address the research questions, the primary analysis involved the used a Spearman's rho on 93 sampled integrated reports. In the secondary research an OLS stepwise regression was performed to develop significant predictive models. The results of this analysis are presented in the next section.

### 4.4.1 Discussion of results

The use of a stand-alone CSR report was found to have the most significant correlation with enhanced IR quality. Suggesting this act increases overall IR quality and is substantive approach to integrated reporting. It is also worth noting that the use of a separate CSR report has the greatest and most significant positive correlation with IR quality (IRQ).

A significant weak positive correlation between the use of a separate CSR report and the measurement indicator (MI) suggests that lengthy qualitative disclosures are reserved for the CSR report. The significant weak positive correlation with the value relevance indicator suggests this practice affords entities the opportunity to disclose relevant information in the IR (Table 7). This is not to suggest that the stand-alone CSR report includes only boilerplate information. Further to the theme of enhanced reporting quality, the very weak, moderately significant, positive relationship between the use of a separate CSR report and the acceptability indicator suggests that disclosing detailed information in a separate CSR report allows reporting entities to innovate with the use of infographics when drafting integrated reports. These findings are in line with EY (2016, 2017). Although the evidence is weak, it appears that the use of a stand-alone CSR report is associated with enhanced reporting quality. This evidence suggests that this practice is associated with innovative, concise and usable integrated reports. Supporting a substantive approach to integrated reporting.

A statistically significant correlation was not observed between the presence of a GRI/ IIRC compliance statement and overall IRQ. There is a moderately strong negative correlation between the presence of a compliance statement and the measurement indicator (MI). This supports obfuscation theory (Du Toit, 2017). Although the evidence is weak, it appears to support that reporting guidelines adoption obfuscates existing high quality monetary and quantitative CSR information. This supports a symbolic approach to integrated reporting. This finding supports concerns over the "check boxing" phenomenon (Atkins & Maroun, 2015; Du Toit, 2017). Due to the difficulty in providing boilerplate quantitative or monetary information, boilerplate information is expected to come in a qualitative fashion and the results support this. A significant relationship between GRI/ IIRC adoption and the introduced acceptability indicator does not exist. This suggests that GRI/ IIRC adoption is not associated with additional or reduced use of infographics. It appears that although GRI/ IIRC framework adoption may assist in the gathering of information, it does not affect the dissemination of the information thereof.

There are no significant relationships between the external assurance of KPIs (CSR assurance) and IRQ or any of its surrogates. This result suggests CSR assurance is sought in pursuant of a symbolic agenda. This evidence suggests a rift between the perceived value of CSR assurance and the statistical benefit thereof. This is not to negate the well documented benefits of CSR assurance (Atkins & Maroun, 2015; Carnegie, 2012; Lin, 2010; Maroun & Atkins, 2015; Stubbs & Higgins, 2014; Van Zyl, 2013). Considering user demand for CSR assurance, it appears that this practice could serve only to further increase the expectation gap[19] (Maroun, 2015, 2018; Maroun & Atkins, 2015). This result suggests, management obtain CSR assurance in pursuit of organisational legitimacy. CSR assurance has no apparent relationship with IRQ and any of its surrogates (including the newly introduced acceptability index). These results suggest their isomorphic inclusion is merely an expectation management exercise. This supports a symbolic approach to integrated reporting. These deductions are in line with De Beer (2015) assertion: should an entity's CSR process strictly adhere to corporate governance and regulatory requirements, then, regardless of CSR assurance, the IR should be of high quality.

[19] The expectation gap is the notion that there is a difference between what the users of financial statements expect from an audit and what the auditors actually achieving after an audit (McEnroe & Martens, 2001)

### 4.4.2 Concluding remarks

At the heart of this paper is the IRQ measurement tool. Based primarily on the work of Michelon et al. (2015), this study contributed to growing literature on integrated reporting by adding one more dimension to the concept of IR quality: the acceptability indicator. This dimension introduced a metric for the end user. Until now, no measure of IR quality took into account the user's perspective when measuring the quality of an IR. This robust measurement tool may be the platform for various future applications (see Section 4.5.2). This study has three key achievements from the use of this IRQ measurement tool.

Firstly, this research has shown, empirically, that the use of a stand-alone CSR report has a significant and positive association with IR quality, making it the only apparent substantive practice. In past literature this practice has been considered a concealment tactic (Beretta & Bozzolan, 2008; Michelon et al., 2015), but our research suggests otherwise. This practice has been found to be an impressions management tool (C. Cho, Michelon, & Patten, 2012; Michelon, 2011; Michelon et al., 2015). Our results, in a South African context, suggest this practice enhances disclosure quality. In modern times, information is not power as it has become easily available (Du Rietz, 2018). In light of this, the true value of integrated reporting is not embedded in the quantum of information provided, but rather in the insights it provides about an entity's value proposition (Du Rietz, 2018; Maroun, 2015). Stand-alone CSR reports appear to allow entities the room to make the integrated report the primary vehicle of corporate communication.

Secondly, the results of this paper suggest that the use of reporting frameworks has yet to statistically improve the quality of integrated reports. The use of reporting frameworks as checklists is supported by the moderately significant negative relationship between having a GRI/ IIRC compliance statement and the MI. Ultimately, a checklist approach risks the obfuscation of higher quality disclosures (De Villiers et al., 2014; Du Toit, 2017) and the results support this. Although evidence was moderately significant, it is line with prior research (Michelon et al., 2015), suggesting that in a South African context, this practice can be seen symbolic, supporting obfuscation theory.

Lastly, there are no significant relationships between the independent assurance of KPIs (CSR assurance statement) and the quality of an IR or any of the quality surrogates. This is in line with the observations of Michelon et al. (2015). From this it appears that CSR assurance is a symbolic undertaking. The results suggest CSR assurance risks widening the expectation gap. Users of financial information perceive CSR assurance as the silver-bullet of verifying the credibility (read: quality) of non-financial disclosures (Hodge et al., 2009; Maroun, 2015, 2018; Maroun & Atkins, 2015; Murphy, 2014; Romero et al., 2014). These user perceptions may, in turn, be used by reporting entities to manage user expectations. Widespread calls for CSR assurance has seen the practice become the rule and less

of an exception (Maroun, 2015, 2018; Maroun & Atkins, 2015; Romero et al., 2014) but the practice remains crippled by fundamental limitations (see Section 2.1.2). It appears that for the time being at least, independent assurance fails to statistically enhance IR quality and is ultimately a symbolic act.

## 4.5 Study Limitations and Directions for Future Research

### 4.5.1 Study limitations

This study is not without limitation:

- First, the coding process was incredibly time consuming. This was worsened by lengthy integrated reports (averaging 1053 sentences each). This resulted in constraints on the sample size and affects the infer-ability of the results. This weakness was mitigated by sampling the JSE top 40 entities, which although by quantum covers only 10% of the JSE population, covers 80% of the JSE population by market capitalisation (CourtneyCapital, 2013);
- Second, the construct validity of this paper was negatively affected by the use of judgement in two key areas: 1) when capturing the value-relevance indicator. This weakness was mitigated by having a single primary coder. The research assistant only transcribed the independent variables and 2) when identifying the IR quality surrogates. It is not currently possible to define and measure all dimensions of IR quality. Defining the quality dimensions required the use of judgement. Although this study introduces a dimension of quality that measures the users' perception of IR quality, many more potential dimensions have not been considered (refer Section 4.5.2); and
- Lastly, this study has not considered the concept of materiality. Some information is inherently more important than others. The coding process assumed that all sentences are equal (refer Section 4.5.2).

When interpreting these results, readers are firstly cautioned not to attribute a causal relationship between variables. This study does not prove a causal relationship nor does it prove the direction of possible causation. For example, the significant weak positive correlation between using a stand-alone CSR report and overall IR quality does not prove that having a separate report results is an IR of better quality nor does it suggest that the lack of a separate CSR report means an IR will be of inferior quality.

Secondly, given the weak correlations and low coefficients of determination readers are cautioned when drawing conclusions on the strength of the relationships identified. It is must be noted that correlation coefficients greater than 0.3 are ideal (Pallant, 2013). However, for the purposes of addressing the research questions in this paper, focus was placed on the direction of the relationship with less emphasis 6on the correlation between variables. Evidence gathered in research is always imperfect (Phillips &

Burbules, 2000). It is for this reason that readers are reminded that the evidence gathered does not prove or disprove hypotheses but rather indicates a failure to reject (Phillips & Burbules, 2000).

### 4.5.2 Directions for future research

The above weaknesses are a platform for future research. The quality surrogates (dimensions) defined in this study may have numerous other applications:

Firstly, relationships between any one of the identified dimensions of quality, including the overall IR quality, and factors such as (but not limited to) share prices and profitability levels can be studied. Furthermore, following in the footsteps of this exploratory study, the IR quality measurement tool may be updated to take into account additional dimensions of quality. Additional surrogates have the potential to improve construct validity of this study. Additional IR quality surrogates have the potential to improve the regression models discussed in Section 4.3.2 and 4.3.3. Additional IR surrogates could include:

- the level of integration of CSR information as envisaged by Carels et al. (2013) and Solomon and Maroun (2012b). This is especially relevant in an environment where the integration of financial and non-financial information is still considered superficial (McNally et al., 2017);
- the readability of non-financial information as measured by Du Toit (2017); and
- materiality in the context of integrated reporting as studied by Lai, Melloni, and Stacchezzini (2017). The work of Lai et al. (2017) and Eccles and Krzus (2014) may be incorporated into the quality measurement tool. For instance, Eccles and Krzus (2014) two key questions when determining materiality may be added as a separate dimension of quality[20].

Secondly, in order to address the scaling effect, the existing data set may be expanded. By increasing the existing dataset, future research may adopt a statistical methodology similar to Michelon et al. (2015) where panel data is used and where size and industry are controlled using an OLS regression as opposed to a simple average used in this study when measuring the quantity indicator (Section 2.2.1).

Lastly, with the introduction of King IV a material change is disclosure practices is expected. This measurement tool and existing dataset may be used to assess if there are statistical improvements to reporting quality as a consequence of the change in the fundamental principle of the new code. King III adopts an "apply *or* explain basis of compliance as opposed to an "apply *and* explain" basis introduced in King IV (Du Toit, 2017; Dumay et al., 2017; IDSA, 2016).

[20] Q1: "Who participates in the materiality process?" and Q2: "Whom do the institution's agents plan to address when they determine which issues are material and which are not" (Eccles & Krzus, 2014, p. 539)

# Appendices

## Appendix A: List of Reporting Frameworks

This is a list of reporting frameworks often adopted to draft integrated reports (Van Zyl, 2013):

- Framework for Integrated Reporting and the Integrated Report. Discussion Paper
- Toward Integrated Reporting: Communicating Value in the 21st Century. Discussion Paper
- King Code on Governance Principles (King, III/ IV)
- Code for Responsible Investing by Institutional Investors in South Africa
- JSE Socially Responsible Investment (SRI) Index Minimum Requirements and Criteria
- The Global Reporting Initiative Third Generation (GRI G3) Sustainability Reporting Guidelines

## Appendix B: Kolmogorov-Smirnov and Shapiro-Wilk Tests

This is the graphical representation of the Kolmogorov-Smirnov and Shapiro-Wilk tests. There was no normality within the dependant variables:

**Figure 3:** Quantity Indicator:

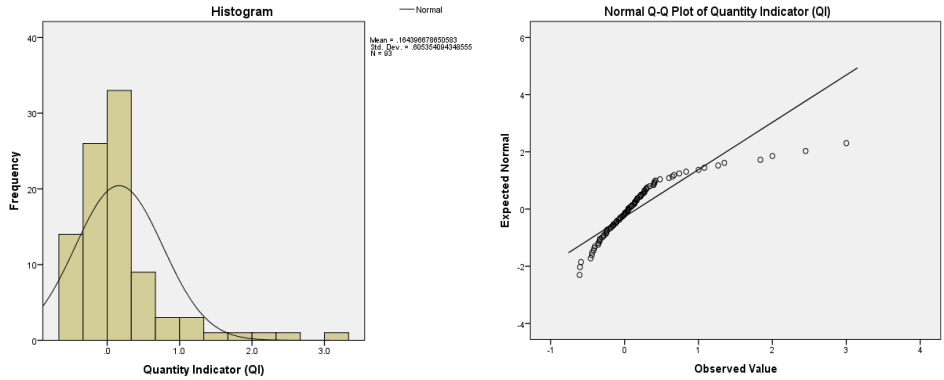



**Figure 4:** Density Indicator:

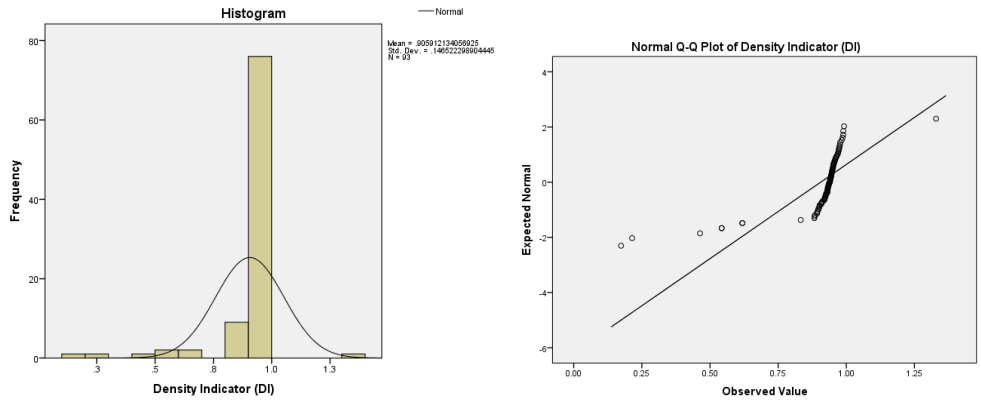


**Figure 5:** Measurement Indicator:

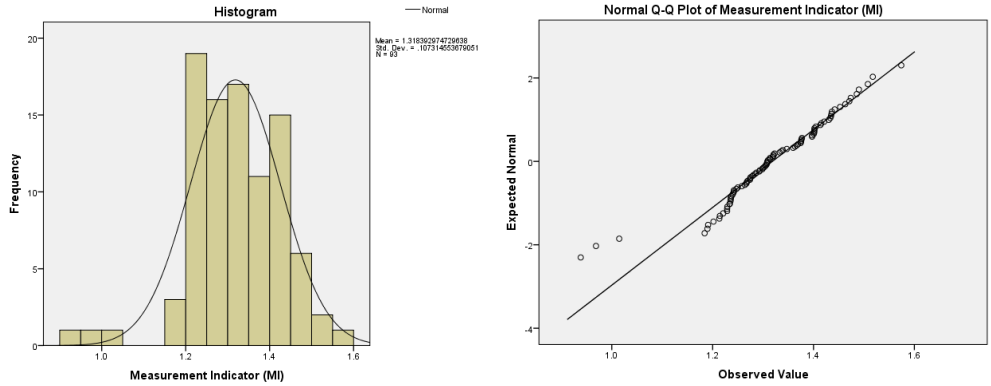



**Figure 6**: Value Relevance Indicator:

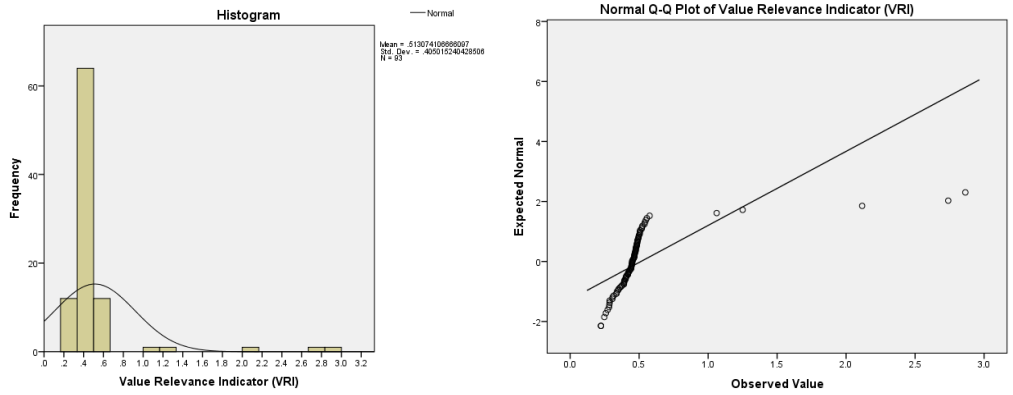



**Figure 7:** Acceptability Indicator:

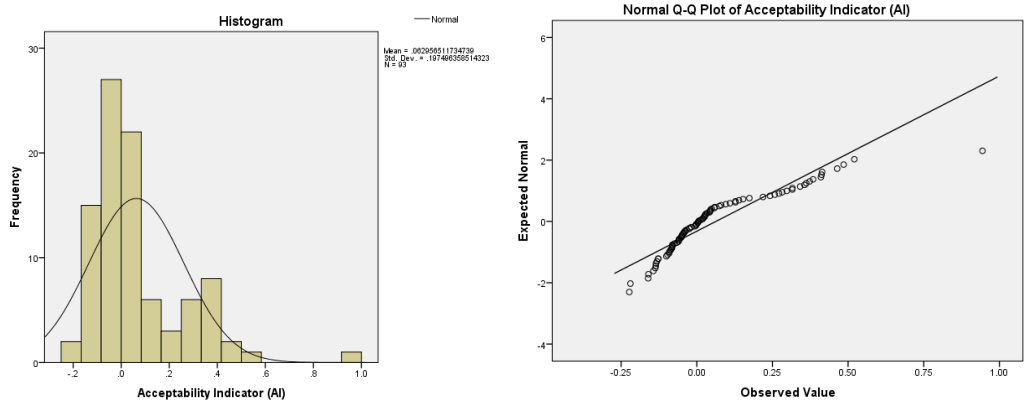
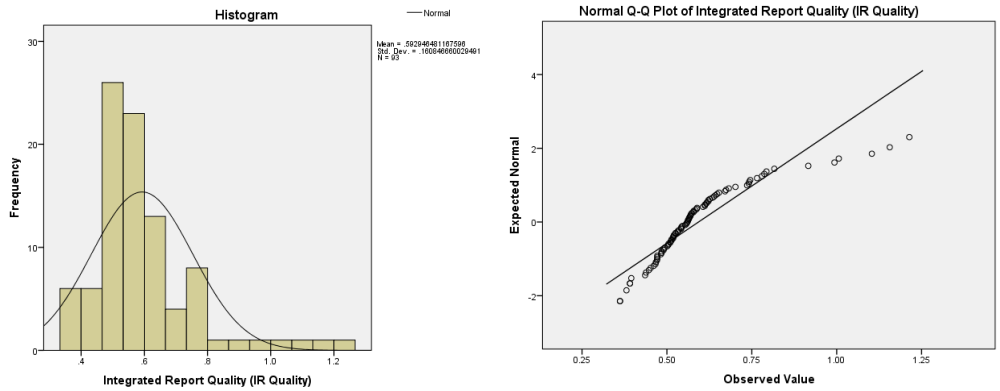


**Figure 8:** Integrated Report Quality:



# Appendix C: The Coding Template

This is the coding sheets used. This coding sheet was adapted from the work of Michelon et al. (2015):

| | | | |
|---|---|---|---|
| | **General information and Control Data** | | |
| | Name of firm | | |
| | Year | | |
| | Separate CSR Report | | If the entity provides a separate CSR report = 1, if not=0 |
| | GRI/ IIRC application | | Does the entity have a GRI/KING-III/IIRC compliance note? If yes=1, if no=0 |
| | Degree of GRI/ IIRC application | | A,A+,B,B+,C,C+ |
| | Independent report assurance | | Is the report being independently assured? If yes=1, if no=0. |
| | CSR commitee | | Is there a CSR committee at the board of directors level? If yes=1 if no=0 |
| | Total sentences in the integratd report | 0 | Would be equal to the n. of lines in matrix below |
| | Total pages in the integrated report | | |
| | Total surface area of integrated report | | Total numbe of pages*surface area of an A4 page |

| | | | **Content of the information disclosed** | | | | | **Type of info disclosed** | | |
|---|---|---|---|---|---|---|---|---|---|---|
| N. of sentence | **GRI ITEMS** | **Presence (1,0)** | **Context** | **Commitment / Expectations** | **Objectives** | **Actions** | **Results** | **Qualitative** | **Quantitative** | **Monetary** |
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |

| Acceptability Indicator | | Circle | | Rectangle | | Other | | | |
|---|---|---|---|---|---|---|---|---|---|
| Name of Diagram | | Diameter (cm) | Radius (cm) | Length (cm) | Breadth (cm) | Shape | Formulae | | Surface Area |
| 1 | | | 0 | | | | | | 0 |
| 2 | | | 0 | | | | | | 0 |
| 3 | | | 0 | | | | | | 0 |
| 4 | | | 0 | | | | | | 0 |
| 5 | | | 0 | | | | | | 0 |
| 6 | | | 0 | | | | | | 0 |
| 7 | | | 0 | | | | | | 0 |

## Appendix D: Differences Between this Study and the Michelon et al. (2015) study

| The Michelon et al. (2015) Study | This Study | Reason for difference | Reference |
|---|---|---|---|
| The effects that entity size and industry may have on the quantity indicator were controlled for using an OLS regression. | A simple average was used to control for entity size and industry | The sample size in this study was not large enough to stratify the sample by industry and still generate meaningful regression models | Section 2.2.1 |
| The measure of IR quality does not include a dimension to measure the user's perspective | The acceptability indicator is introduced to indirectly measure the user's perspective of IR quality | The user perspective of IR quality has often been omitted from IR quality measurement tools. This study introduced the acceptability indicator to indirectly measure the user's perspective of integrated report quality | Section 2.2.5 |
| The study was performed on entities listed on the London Stock Exchange. | This study was performed on entities listed on the Johannesburg Stock Exchange. | South Africa has been heralded as a pioneer in integrated reporting. With the requirement for all listed entities (on the JSE) to produce an integrated report, South African integrated reports have been on the forefront of reporting innovation. Using Michelon et al. (2015) methodology, this research set out to test the value relevance of integrated reporting in South Africa | Section 3.2.2 |

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