

https://dspace.org/

The incidence and quality of graphs in annual reports: a South African analysis of graph disclosure in state-owned enterprises

Kathrada, Anees Fareed

2020
https://hdl.handle.net/10539/31470

Downloaded from a DSpace repository. https://dspace.org/

University of the Witwatersrand

The Incidence and Quality of Graphs in Annual Reports: A South African Analysis of Graph Disclosure in State-Owned Enterprises

Research Report Submitted by:

Name: Anees Fareed Kathrada

Student Number: 1057682

Email: 1057682@students.wits.ac.za

Date Submitted: 13/12/2019

Primary Supervisor: Professor Yaeesh Yasseen

Co-Supervisor: Zakiyyah Varachia

Ethics clearance number: CACCN/1200

In partial fulfilment of the requirements for the degree of Master of Commerce

DECLARATION

I, Anees Fareed Kathrada, declare that this research report is my own work, except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Commerce at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other University.

Anees Fareed Kathrada

Signed at Johannesburg

On 10 December 2019

Acknowledgements

"Iqra" the Arabic word for "Read" – A word from my religion that has been a guiding light during my thesis.

I would like to express my sincere gratitude and thanks to Allah, my Creator through Whose grace and mercy I was able to complete this study.

A special thanks to my supervisor Professor Yaeesh Yasseen; your contributions, encouragement and advice have been my voice of reason this year, supporting me to fulfil my academic goals and achieve success. I would like also to extend my acknowledgement to Zakiyyah Varachia; thank you for your guidance, input and dedication to my thesis, it has made my academic journey this year possible and most rewarding.

My sincere thanks to Margarethe Booysen for her outstanding and thorough editing of this report.

My parents; words, a thank you and an acknowledgment do not suffice for your unconditional acceptance, love and encouragement which have been both a foundation and a pillar of strength upon which I place my accomplishments and future. My mum – your belief in me knows no bounds. My dad, my teammate – your support is relentless.

Lastly I would like to thank my special friend and fiancée wife for her support, assistance and for motivating me to complete this report.

Abstract

Recent accounting scandals involving VBS Mutual Bank, the Steinhoff retail group and alleged Gupta-related companies have brought the accounting profession into disrepute and created doubt about the adequacy of South Africa's principles of corporate governance and the application of corporate reporting principles. The annual report has become one of the most important ways in which companies communicate with their stakeholders. The format of the annual report has undergone changes over time due to the demands stakeholders have placed on companies to provide a holistic view of the company. There has been an increased use of visual content in corporate reporting. The purpose of this study was to analyse the incidence, quality and measurement distortion of graphs in the annual reports of South African state-owned entities for the financial year ending 2018. Impression management theory, in its original form, considers the actions of individuals performing for an audience to create desired perceptions. Management may attempt to portray a more favourable impression and thus use graphs as a tool to manipulate information and at the same time deceive readers. State-owned entities are accountable to various stakeholders such as parliament and its oversight committees, the government and government agencies, external monitoring parties such as credit-rating agencies, investors and creditors and the public and its special interest groups. This research paper aims to fill the gap in current literature as no research of this nature has been done in the public sector to the author's knowledge.

The research adopted a descriptive quantitative research approach. The research examined the use of graphs by state owned entities in terms of the extent of graph use, the nature and type of graphs used, compliance with good graph standards and the measurement distortion of graphs.

The findings indicated that 64% of South African state-owned entities presented graphs in their annual report indicating the prevalence of the usage of graphs, with non-financial graphs being disclosed much more when compared to financial graphs. In terms of measurement, South African state-owned entities tend to overstate data trends more than understating trends. This was measured using the Graph Discrepancy Index. Presentational enhancement was however noted as not as prevalent. Graphs therefore appear to be used as a form of impression management to manage stakeholder's perceptions of state-owned entities.

Key words: Annual report, Graph, Impression Management, Measurement Distortion, Presentational Enhancement, State-Owned Entities

Table of Contents

1. Introduction 1
1.1. Purpose of the study 1
1.2. Context of the study 2
1.3. Problem Statement 4
1.4. Research aim 4
1.5. Significance of the study 4
1.7. Scope 5
1.8. Limitations 6
1.9. Assumptions 6
1.10. Overview of the research paper 6
2. Literature review 8
2.1. Structured literature review 8
2.2. Annual/Integrated reporting 10
2.2.1. Components of the annual report 10
2.2.2. The use of narrative information, pictures, graphs in annual reports 11
2.2.3. Advantages of graphs 12
2.2.4. Importance of annual/integrated reports 13
2.2.5. Annual reporting in South Africa 14
2.2.6. IFRS vs GRAP 15
2.2.7. Change in reporting landscape 17
2.3. Public Sector 19
2.3.1. Importance of the public sector 19
2.3.2. Public sector and the PFMA 19
2.3.3. Accountability within the public sector 20
2.4. Impression Management 21
2.4.1. Impression management and the use of graphs 21
2.4.2. The stakeholder problem in terms of impression management 23
2.4.3. Guidelines for good graph presentation 24
2.4.4. Calculation of measurement distortion 26
2.4.5. Results from prior research 27
3. Methodology 33
3.1. Research methodology 33
3.2. Paradigms 33
3.3 Population and Sampling 34
3.3.1. Population 34
3.3.2. Sampling 35

3.3.3. Analysis plan – data collection and data analysis 36
3.4. Reliability 38
3.5. Validity 38
3.6. Ethical consideration 39
4. Analysis of results 40
4.1 Descriptive statistics 40
4.1.1 Frequency of graphs 40
4.1.2 Graphic disclosure per schedule 41
4.1.3 Disclosure by graph type 42
4.1.4. Variables graphed 45
4.2. Compliance with standards for good graphs 46
4.3 Measurement distortion 51
4.3.1 Graphs distorted 51
4.3.2 Average GDI 55
4.4 Overall analysis 57
5. Conclusion 58
5.1. Conclusion of the study 58
5.2. Areas of future research 59
6. References 60
7. Appendices 68

List of abbreviations:

AGSA	Auditor General of South Africa
ASB	Accounting Standards Board
CF	Conceptual Framework
ESG	Environmental, Social and Governance
GDI	Graph Discrepancy Index
GDP	Gross Domestic Product
GRAP	Generally Recognised Accounting Practice
IASB	International Accounting Standards Board
IFAC	International Federation of Accountants
IPO	Initial Public Offering
IPSAS	International Public Sector Accounting Standards
IPSASB	International Public Sector Accounting Standards Board
IFRS	International Financial Reporting Standards
JSE	Johannesburg Stock Exchange
KFV	Key Financial Variable
ROA	Return on Assets
SLR	Structured Literature Review
SMEs	Small and Medium-sized Entities
SOE	State-owned Enterprise

List of figures

Figure 1. Layout of literature review 9
Figure 2. Summary of previous research 32
Figure 3. Analysis of graph disclosure 42
Figure 4. Illustration of split between financial and non-financial graphs 43
Figure 5. Analysis of materially distorted graphs 52
Figure 6. Analysis of materially distorted variables 54
Figure 7. Analysis of materially distorted graphs per variable 54
Figure 8. Checklist used to determine compliance with good graph guidelines 70

List of tables

Table 1: Groups of individuals who will Benefit from the Study 5
Table 2: Extract for the Financial Reporting Standards for Different Categories of Companies 15
Table 3: Guidelines for Presenting Financial Statements using GRAP 16
Table 4: Weaknesses and Corrective Actions Relating to Graphs 25
Table 5: Calculation of GDI 27
Table 6: PFMA classification of SOEs 35
Table 7: Schedule Analysis of Graph Disclosure 41
Table 8: Graph Disclosure by Graph Type 43
Table 9: Graph Type per Category 44
Table 10: Graph Type per Schedule 44
Table 11: Graph Type by Category 45
Table 12: South African SOEs Compliance with Good Graphs 47
Table 13: Analysis of Graphs in terms of the Calculation of GDI 51
Table 14: Analysis of the Number of Graphs Distorted 53
Table 15: Analysis of Distortion per Variable 53
Table 16: Average GDI per Schedule 56
Table 17: Average GDI per Schedule and per Variable 57

1. Introduction

1.1. Purpose of the study

The purpose of this study is to analyse the incidence, quality and measurement of distortion of graphs in the annual reports of state-owned entities as included in terms of the Public Finance Management Act (PFMA) schedules. The study was completed using all 277 entities listed on the PFMA schedule as at 31 March 2018.

The recent accounting scandals involving VBS Mutual Bank, the Steinhoff retail group and alleged Gupta-related companies have brought the accounting profession into disrepute and created doubt about the adequacy of South Africa's principles of corporate governance and the application of corporate reporting principles (Mabinda, 2018; Yasseen, Mohamed, & Moola-Yasseen, 2019). In response to these scandals, regulatory authorities from several countries have taken initiatives to improve information disclosures, mitigate conflicts of interest and ensure the independence of auditors to protect the investors interests' and increase the confidence of capital markets (Leuz, Nanda, & Wysocki, 2003). Organisations have a responsibility to conduct their business in a manner which meets the needs of stakeholders without compromising the needs of future generations (Marx & Mohammadali-Haji, 2014). The needs of stakeholders and users of the financial statements vary and have evolved due to increased consciousness regarding environmental, social and governance (ESG) issues (Cook & Sutton, 1995; Holt, Yasseen, & Padia, 2015). Companies are required to increase information in reports which has resulted in an increase in terms of the volume and complexity of the information that is presented, making it increasingly difficult for users to read such reports (Dilla & Janvrin, 2010; Frownfelter-Lohrke & Fulkerson, 2001; Rezaee & Porter, 1993). In 2010, annual reports from FTSE100 companies averaged 175 pages (ACCA, 2012). Annual reports with congested information and intricate reading pose a challenge in understanding the financial data accurately (Saad, Yahya, Hussain, & Hairi, 2011). To allow for simplified reports and easier understanding, narratives are being increasingly used (David, 2001; Rentz, 1992). Graphs, when used accurately, have several benefits such as the ability to focus and attract the readers' attention, facilitate understanding, highlight patterns and trends, help memory recall and break down language barriers (Courtis, 1997). Graphs are one of the mechanisms to convince the users of annual reports that the company is managed efficiently (Beattie & Jones, 1992). The use of graphs is seen as a useful manner to understand the trends indicated by financial information. This is because graphical presentation of numerical data assists readers to observe the trend and draw attention to important data (Coles, 1997). Graphs enable the reader to pay attention to one issue at a time, and due to the size of the annual report, investors tend to rely on information portrayed in graphs to make decisions (Courtis, 1997; Guddal, 2016).

As graphs are usually not subjected to regulation and accounting standards, they have the potential to mislead the reader and manipulate the perception of the information portrayed, as several studies have shown (Beattie & Jones, 2008). The usage of graphs in annual reports therefore carries the potential for management to participate in impression management (Beattie & Jones, 1992). Impression management has its origins from the field of social psychology and can be referred to management acting out of self-interest by exercising discretion in terms of what information is provided and presenting the information in a way in which the readers' perceptions of corporate achievements are distorted (Leary & Kowalski, 1990; Dean Neu, 1991; Yasseen, Moola-Yasseen, & Padia, 2017)

Based on research in the private sector in countries such as USA, UK, Australia, Malaysia, Brazil and Jordan, to name a few, it was found that graphs were used as a means to influence user's impressions of the company (Beattie & Jones, 1992, 1999, 2000, 2001; Guddal, 2016; P. Mather, Ramsay, & Steen, 2000; Saad, Yahya, Hussain, & Hairi, 2006; Sartawi, 2015). Limited studies have been conducted in South Africa on impression management practices through the use of graphs contained in annual reports. Klerk and Wyk (2017) focused on non-financial graph disclosure in the integrated reports of mining companies. Varachia, Yasseen, and Padia (2018) conducted another study which looked at impression management of the top 100 companies listed on the Johannesburg Stock Exchange (JSE). It was concluded in both studies that graphs were used as a means to manage the companies' corporate image. No studies have been done in the public sector to the author's knowledge.

1.2. Context of the study

State-owned enterprises[1] (SOEs) are defined by Gildenhuys, Fox, and Wissink (1991) as government-owned entities which provide services in a business-based model where profits are generated for the provision of services provided. SOEs have been plagued by various problems and are often inefficient about the way the entity is run (Nellis, 1986). These inefficiencies have been blamed on the involvement of government in their operations (Mbo, 2017). Within South Africa fraud and corruption in the public sector is prevalent, such as, tender fraud, bribery, maladministration, and many other situations which cause taxpayers' money to be wasted (WorldBank, 2017). Much attention has been drawn towards certain SOEs such as Eskom, Transnet and South African Airways to name a few due to financial difficulties facing these entities. The Government is active in key sectors, such as services, utilities, transportation, and construction (Madumi, 2018). However as these SOEs are backed by the government, they are generally protected from business failure (Wong, 2004). The Auditor General of South Africa (AGSA) released a report detailing the status of SOEs, particularly focusing on entities

[1] An enterprise that is registered in terms of this Act as a company, and either falls within the meaning of ''state-owned enterprise'' in terms of the PFMA or is owned by a municipality as contemplated in the Local Government: Municipal Systems Act 2000 (Act no.32 of 2000), and is otherwise similar to an enterprise referred to in paragraph (a) of the Companies Act 2008

listed in schedule 2 of the PFMA Act. The report from AGSA (2018) showed that irregular expenditure in SOEs has dramatically increased in the 2017/2018 financial year ends. Furthermore only 23% of entities received a 'clean' audit. The performance of state owned enterprises is an important issue that needs to be addressed as it is important to the economy and cannot be ignored (Mbo, 2017). The level of disclosure in the annual reports SOEs are not of a good standard and there is much room for improvement (Surty, Yasseen, & Padia, 2018). As such it has become increasingly important that users of the financial statements are provided with accurate, and unbiased information (Yasseen et al., 2017).

The annual report is an extremely important source of corporate information (Stanga, 1976). The purpose of the annual report is to communicate information to shareholders and other stakeholders[2] (Anderson, 1998). Most companies, when preparing their annual reports devote their efforts into creating catchy documents, full of photographs, colour and visuals, enhancing the information to be shared with the readers (Brasseur, 2003; Ruiz-Garrido, Palmer-Silveira, & Fortanet-Gómez, 2005; Tufte, 1983). The achievements, performance information, governance, human resources information and financial information for each reporting period are reported in the annual report (Treasury, 2017a). Corporate annual reports often contain graphs to communicate financial information (Burgess, Dilla, Steinbart, & Shank, 2008). Graphs are seen as a low-cost means to enrich annual reports (Frownfelter-Lohrke & Fulkerson, 2001). Graphs can be used to highlight and improve information though excessive use should be avoided (Treasury, 2017a). Whilst, in annual reports there has been an increase in the usage of graphs, standard setters have paid little attention to the design and standards of graphs (Burgess et al., 2008). The visual design has an immediate and stronger impact compared to other numerical, tabular or descriptive formats (Ying Hill & Milner, 2003). As such, graphs that are inappropriately constructed have been a device of manipulation of the financial performance of a company (D. Mather, Mather, & Ramsay, 2005).

The publication of information (financial and non-financial) of provincial and national departments promotes accountability and transparency of the efficiency and effectiveness of government departments in the hope that this will improve trust and confidence in government service delivery (Treasury, 2017a). The reported information must be accurate and balanced, reporting the successes and explaining the shortcomings (Treasury, 2017a). Regulation 27 of the Companies Act, 71 of 2008 (Companies Act) requires SOEs to prepare their financial statements using the International Financial Reporting Standards (IFRS). The (IFRS) contain qualitative characteristics of financial statements, one of which is faithful representation. The introduction of bias may be viewed as rendering the information useless as users may take incorrect decisions in terms of the allocation of capital within markets (Subramanian, Insley, & Blackwell, 1993). Whilst graphs presented in annual reports may not be within

[2] Stakeholders include shareholders, customers, employees, suppliers, society and the natural environment

the scope of IFRS, they should faithfully represent the financial reality of an entity in order to provide useful information (D. Mather et al., 2005).

1.3. Problem Statement

The corporate annual report has been transformed from a rather dull financial document to a colourful marketing and public relations document (Beattie, Dhanani, & Jones, 2008). Previous studies in countries such as the USA, Australia, Malaysia and various countries in Europe showed that companies are extensively presenting more graphs in their annual reports (Beattie & Jones, 2000, 2001; Falschlunger, Eisl, Losbichler, & Greil, 2015; P. Mather et al., 2000; Saad et al., 2006). However, there has been a particular neglect regarding the presentational aspects of the annual report, such as graphs and pictures (Beattie & Jones, 1999). As such management can use graphs to manipulate the information disclosed in reports in order to create a better impression for the reader which may be false and misleading (Beattie & Jones, 1999, 2008).

In a South African context, studies on impression management have been limited. Yasseen et al. (2017) investigated chairpersons' statements as a means of impression management in annual reports. As mentioned in section 1.1, Klerk and Wyk (2017) studied graphs as a means of impression management, however the study was limited to companies in the mining sector and non-financial disclosures only. Varachia et al. (2018) looked at graphs as a means of impression management in the top 100 JSE listed companies. To the authors' knowledge no prior study of this nature has focused on the public sector. Therefore there is a need for the research relating to graph disclosure and impression management to be extended to developing countries such as South Africa and particularly within the public sector.

1.4. Research aim

The aim of this study was therefore specifically focused on determining whether South African SOEs presented graphs in their annual reports and whether the graphs have components of impression management which will, ultimately, result in reporting bias. In order to achieve this, the annual reports of the 277 companies listed on the PFMA schedule as at 31 March 2018 were analysed using four research questions which is based on the study completed by Frownfelter-Lohrke and Fulkerson (2001). These research questions will be discussed in section 3.3.3.

1.5. Significance of the study

Annual/Integrated reporting is continuously evolving towards the integration of financial and non-financial disclosures and thus it is becoming more important to assess if management uses impression

management and reporting bias techniques (Yasseen et al., 2019; Yasseen et al., 2017). The use of such techniques reduces the usefulness of disclosures (Yasseen et al., 2017). There is a call on the public sector in South Africa to spend taxpayers' money efficiently and effectively but the public sector continues to waste valuable resources illegally (PwC, 2015). This study will aim to fill the gap in current literature by analysing the usage of graphs in annual reports and to determine if impression management relating to graphs exists within a South African public sector context.

This study will assist various groups of individuals indicated in Table 1:

Table 1: Groups of individuals who will Benefit from the Study

Groups of individuals	Benefits
Users	Will obtain an understanding on how graphs can be manipulated to change their views and perceptions on the entity. It is particularly important for users of SOEs' annual reports to determine if resources of the entity have been used appropriately.
Regulatory Bodies	The findings can be used to assess whether the use of graphs is widespread and whether graphs are used as a means of impression management
Auditors	Audit procedures could be adapted to mitigate the risk of management bias as auditors will gain an understanding of techniques used by management to manipulate graphs containing financial information.
Management	Management can use the results to gain an understanding of their roles and responsibilities in terms of the annual report and to ensure that they provide appropriate oversight in order to ensure the annual report faithfully represents the performance of a company rather than being a manipulative source of information to enhance management's image to the public

1.7. Scope

SOEs use a variety of disclosures as a platform for impression management. However for the purposes of this study, only graphs disclosed in annual reports will be examined. This study is limited to South African SOEs listed in terms of the PMFA schedules. All 277 entities listed on the PFMA schedule as at 31 March 2018 were used and thus the findings will be representative of the whole population.

According to Beattie and Jones (2008) graphs can be used as a means of impression management in three ways, namely, measurement distortion, selectivity and presentational enhancement. For the purposes of this study however, only measurement distortion and presentational enhancement were examined.

1.8. Limitations

The graph design depicted in annual reports may be influenced by other factors such as the use of design consultants and typesetters in the compilation of the annual report. As such there is a possibility that the size of the graph may be modified when the annual report is sent through for printing. However, for the purposes of the study, this effect has not been taken into consideration. The period of investigation is limited to the 2018 financial year end[3]. Lastly the research is limited to graphs in the integrated reports of South African SOE's.

1.9. Assumptions

The graphs will be divided into subject matters namely financial graphs and non-financial graphs. Financial graphs will be divided into key financial variable (KFV) graphs such as revenue and profit (Beattie & Jones, 1992, 1999). Financial graphs will be classified as 'other graphs' if they are not classified as KFV's.

In prior studies the annual report was viewed as a combination of the front section and the audited financial statements. The front section is voluntary and includes information relating to financial information, as well as the disclosure of non-financial information. The audited financial statements are generally included after the front section. The annual report in these instances is sometimes rebranded as 'integrated annual report' or annual integrated report' (Bray & Chapman, 2012; Roberts, 2014). In other instances the front section and financial statements are presented in separate documents. In these occurrences the separate front section is at times titled as the integrated report. These assumptions were made in Varachia et al. (2018).

For the purposes of this study, the annual integrated report was used where such a report was produced and published by a company. If the integrated report was not available the annual report was used. The terms 'integrated report' and 'annual report' will be used interchangeably.

1.10. Overview of the research paper

Following on the introduction, the research paper is structured as follows. Chapter 2 presents a structured literature review which allowed the researcher to obtain an understanding of, and, analyse and critically evaluate the main research topic (Hart, 2018). Chapter 2 provides an analysis of the prior literature. The chapter is broken into three main sections, namely, annual/integrated reporting, public sector and impression management. Under annual/integrated reporting, the components of the annual report, the usage of narrative information in the annual reports, advantages of graphs and the

[3] If the 2018 annual report could not be obtained, the 2017 annual report was used

importance of the annual report as well as the corporate reporting landscape is explored. The importance as well as accountability in the public sector will then be discussed. Chapter 2 concludes with a discussion on impression management, the stakeholder problem, the guidelines for good graph presentation, the calculation of measurement distortion and results from prior studies. Chapter 3 begins with an explanation of the research method which was used when conducting the research, including the criteria used to determine if presentational enhancement exists and the calculation of measurement distortion. Chapter 4 provides an analysis of the results and findings identified. The paper concludes with Chapter 5 which provides a conclusion to the study and includes a discussion of areas for future research.

2. Literature review

The purpose of a literature review is to provide a theoretical framework for a topic under study. The literature review also provides a synthesised overview of current evidence to gain new perspectives and support assumptions and opinions presented in previous studies using research studies, quality improvement projects, models, case studies, and so forth (Baker, 2016). Through the literature review a perspective on the previous research which has been conducted regarding annual reports, the usage of graphs in annual reports, the importance of the public sector, compliance with guidelines for the presentation of graphs, impression management as well as how graphs can be distorted, is provided (Baker, 2016). Information from prior research was obtained and researched, and this was used as a basis to determine whether the data could provide answers to the research questions of the study. The literature review was done in a structured manner as explained in the following section.

2.1. Structured literature review

A structured literature review (SLR) method was used to provide information and insight into the usage of graphs within a South African public sector context. An SLR is a form of secondary study that uses a well-defined methodology to identify, evaluate and interpret all available research relevant to a particular research question or topic area. (Kitchenham, 2004). A logical structure and plan was adopted, which included defining a review process which specifies the research question being addressed and the methods that will be used to perform the review (Kitchenham, 2004). Keyword searchers were conducted using words and phrases such as ‘graph discrepancy index, graphs, annual reports, measurement distortion, and SOEs as it aided in finding information and articles relevant to the research (Wright, Brand, Dunn, & Spindler, 2007). By using the search engine Google Scholar the body of research was investigated and information was obtained from articles which appeared in journals and conference papers. An SLR has been used in prior studies such as: Engelbrecht, Yasseen, and Omarjee (2018), Surty et al. (2018), Phala, Yasseen, Padia, and Mohamed (2018), Yasseen et al. (2019) and Mohamed, Yasseen, and Omarjee (2019). These scholars have studied various aspects of integrated reporting as well as impression management and these studies were consulted for the purposes of the study.

The sections which follow focus on three main concepts, namely annual/integrated reports, the public sector and impression management.

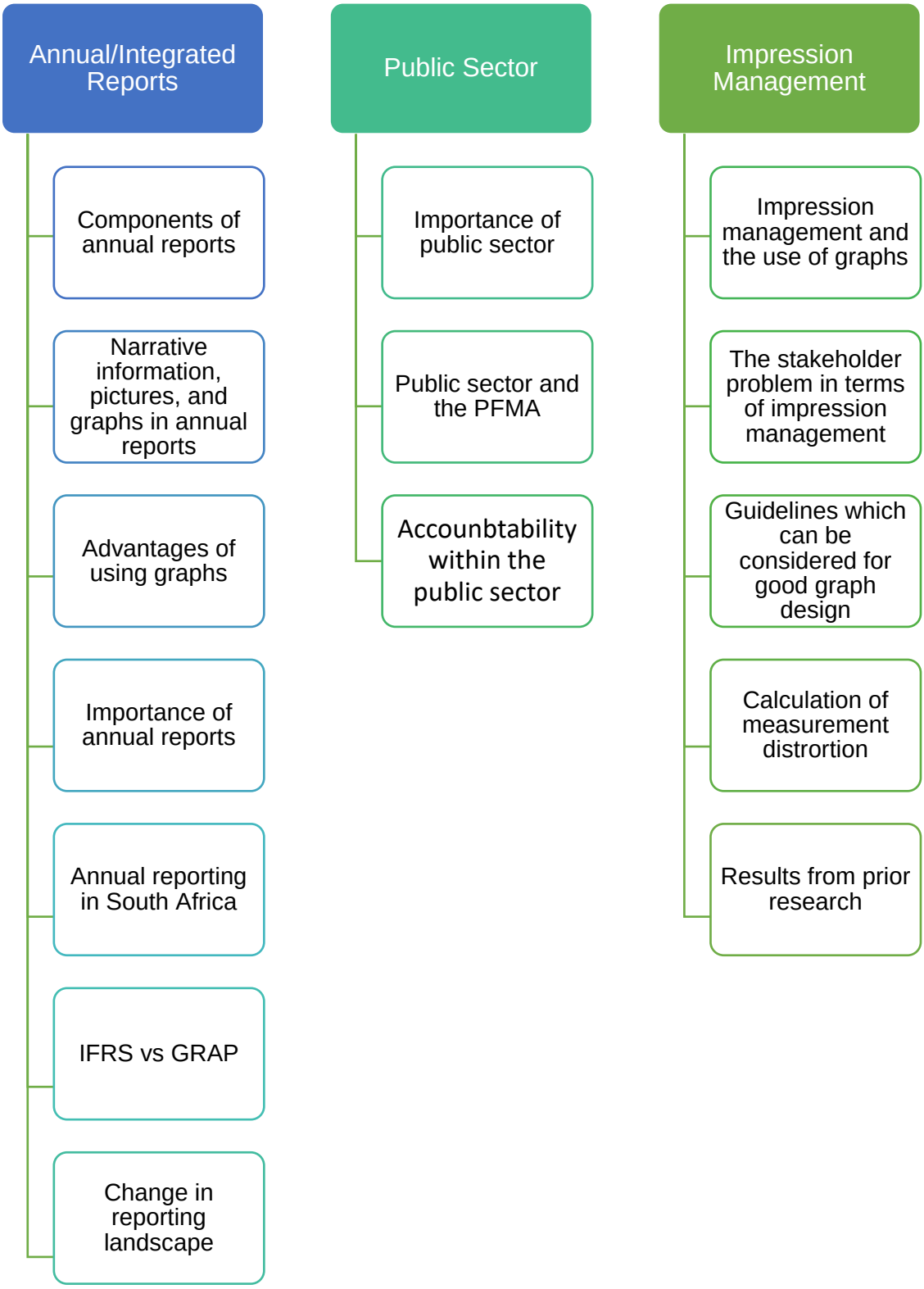


Figure 1. Layout of literature review

2.2. Annual/Integrated reporting

2.2.1. Components of the annual report

The annual report has become one of the most important ways in which companies communicate with their shareholders and potential investors (Lord, 2002). The annual report is regarded to be a vital part of corporate communication as it is a key tool used by companies to communicate information to stakeholders (Firth, 1979; Golja & Paulišić, 2011). Annual reports aim to provide a fair review of the company's business development and its position (Pivac, Vuko, & Cular, 2017). An annual report contains elements of both the company's financial and non-financial information (Pivac et al., 2017). Primarily the purpose of annual reports is to disclose financial information and increasingly non-financial information of the company to its various stakeholders (Padia & Yasseen, 2011).

The disclosure in South African SOEs annual reports is regulated by the Companies Act. The annual report is divided into two sections, namely, the front or non-statutory section and the statutory section, also known as the financial section (Stanton & Stanton, 2002; Uyar, 2009). The non-statutory section is usually in the front of the annual report with the statutory information assigned to the end of the annual report (Stanton & Stanton, 2002). The front section includes the chairperson's letter, directors report, photos of management personnel and financial performance graphics amongst others (Anderson & Epstein, 1995; Penrose, 2008). The financial section consists of four statements, namely, statement of financial position, the statement of financial performance, statement of changes in equity and statement of cash flows (IFRS, 2013; Penrose, 2008). The narrative section is typically voluntary in nature and despite the non-statutory section increasing size, information included in the narrative section of the annual report is not subject to the same strict auditing regulations and accounting standards (Fisher & Hu, 1988; Guddal, 2016). The financial section, on the other hand, is audited, mandatory and highly regulated (Beattie & Jones, 2000; Penrose, 2008).

Graphs are generally categorised as other information as they are included in the voluntary front section of the annual report. In South Africa, auditors adhere to the requirements of the International Standards of Auditing (ISA) when conducting their audits. ISA 720 provides guidance on 'other information in documents containing audited financial statements. According to the International Auditing and Assurance Standards Board auditors have no obligation to report on other information outside of the financial statements (IAASB, 2015). The auditor is required to read the other information to consider whether there are any material inconsistencies with the audited financial statements (IAASB, 2015).

2.2.2. The use of narrative information, pictures, graphs in annual reports

Narratives are seen as cultural artefacts such as images, texts, or events which convey a story (Jameson, 2000). The annual report contains narratives, quantitative information as well as visuals such as graphs and pictures (Stanton & Stanton, 2002). The user's decision-making ability is affected by the use of different formats in the annual report (Bierstaker & Brody, 2001; Tractinsky & Meyer, 1999). Accounting narratives can prove to be useful as it can be used to manage the impression that a user will gain of the company's annual performance (Beattie et al., 2008).

There has been an increased use of visual content in corporate reporting (Beattie et al., 2008; Beattie & Jones, 1997; Ditlevsen, 2012). Voluntary disclosure is considered to be vital in solving the alleged problems with traditional financial reporting (Burgman & Roos, 2007). Companies are using more visuals to convey important corporate information (Havemo, 2018). Annual reports have become filled with visual images that tend to overshadow, the accounting statements (Hopwood, 1996; Lee, 1994). Readers tend to find the financial section of annual reports too technical (David, 2001). The narrative section, contains stylish graphics and artistic photographs that capture attention and text is presented in such a way that allows readers to scan the information (David, 2001). The narrative section presents the company's operations through text, graphs and photographs rather than simply presenting information to users, which is found in the financial section (David, 2001).

The use of visuals helps readers to interpret information and it also activates readers imaginations (Douglis, 2000). By using visuals such as photographs, the data presented in the form of text can be corroborated and users are persuaded that the information presented is correct and truthful (Buchanan, 2001; Graves, Flesher, & Jordan, 1996). The use of photographs of the board of directors, customers and buildings creates a sense of realness (Havemo, 2018). The relevance of the photo in an accounting context does not depend solely on the subject, but also on the relationship between the referent and the representation (Havemo, 2018). Tables, provided that the table is simple and unambiguous, assist in improving understanding of the narrative section. (Stephen & Hornby, 1995). Traditionally, tables are used to present numbers (Chan, 2001). Graphs and tables are used as two competing presentation formats for displaying numerical information (Chan, 2001). There has been broad support for the view that graphs are better than tables in instances where the amount of information that is shown is not substantial (Beattie & Jones, 1994). Diagrams visualise abstract concepts and their relationships (Kress & Van Leeuwen, 2006). Pictures, graphs and diagrams can be utilised to highlight and improve understanding of information, though excessive use should be avoided (Treasury, 2017b). With the introduction of information and graphics technologies in recent years, graphs have become more popular and are commonly adopted as inexpensive decision aids (Chan, 2001).

Graphs can be described as visual displays of quantitative data (Guddal, 2016). They are means of visually communicating statistical data and relationships using the presentation of symbols, words and

numbers (Mohd Isa, 2006). There are several different types of graphs that exist, such as column, bar, line and pie, some of which are more suitable than others to communicate certain types of data (Guddal, 2016). Graphs are better than other visuals such as tables at highlighting trends and relations between different values (Vessey & Galletta, 1991). The advantages of graphs will be discussed further in the following section.

2.2.3. Advantages of graphs

Several stakeholders such as investors, employees and shareholders read the annual report however the time spent reading is limited (Frownfelter-Lohrke & Fulkerson, 2001). The magnitude and complexity of financial information included in annual reports has resulted in shareholders taking little interest in this information (Rezaee & Porter, 1993). The annual report has become too complex, long and intimidating for readers (Rezaee & Porter, 1993). Prior research studies have shown that users with no accounting background find it difficult to understand the financial statements and rely on the director's report or chairman's statement as the alternative source of financial information (Lee & Tweedie, 1976). Investors use a limited amount of time reading annual reports, and often rely only on information portrayed in graphs when making a decision (Guddal, 2016). Various studies have been completed to determine the average time an investor spends reading annual reports. Readers spend on average 15 minutes reading annual reports (Bastardo, 2015). Accurate graph representation has become very important due to the increasing size of annual reports, the high usage of graphs and investors tendency to focus on them (Guddal, 2016).

Graphs are a simple yet powerful medium for written communication of quantitative ideas (Frees & Miller, 1998). By using graphs, information can to be communicated effectively since graphs present information in a clear manner which is easy to read and also more visually attractive (Beattie & Jones, 2001; Kosslyn, 1989). Users can simply glance at graphs to view trends inherent in a data set (Rahman, Hamdan, & Ibrahim, 2014). Graphs can present a large amount of data in a small space, express important relationships between quantities, compare different sets of data, and describe data, thus providing a simplified view of sometimes complex relationships (Frees & Miller, 1998). Due to its low cost, efficiency and effectiveness in which information is communicated, the usage of graphs has increased (Chan, 2001). When used accurately, graphs have several benefits: they have the ability to focus and attract the readers' attention (especially when there is increased colour), facilitate understanding, highlight patterns and trends, help memory recall and break down language barriers (Courtis, 1997). Users are more likely to remember information in the graphs as people can store the pattern of the graph in their memory (Martin, 1989; Paivio, 1974).

2.2.4. Importance of annual/integrated reports

Communication between management and the company's stakeholders takes place in many forms (Courtis, 1998). The most comprehensive means of communication between a company and its stakeholders is considered to be annual reports which have the potential to make information easily available in a single document (Hooks, Coy, & Davey, 2002; D. Mather et al., 2005). Annual reports are an integral part of public entities reporting (Treasury, 2017b). The annual report has a wide variety of stakeholders which include suppliers, employees, business partners, customers , local communities, legislators, parliament, regulators, tax-payers and policy-makers (ASB, 2004; IIRC, 2013). The annual report is a formal communication document which comprises of qualitative information, narratives and graphs which seeks to inform stakeholders about the company's business history, current financial status as well as future direction (Courtis, 1995). According to Uyar (2009) the annual report conveys non-financial information (i.e. environmental considerations, social responsibility, profiles of employees, board of directors, investments in research, and development, productivity, etc.) as well as financial information (i.e. revenues, earnings, revenue growth, return on assets (ROA), capital structure, stock returns, etc.).

The annual report was not always considered to be a useful source of information for information (Bartlett & Chandler, 1997; Stainbank & Peebles, 2006). The main reason was due to information in the annual reports, published in the 1970's, not meeting the requirements of stakeholders (Stainbank & Peebles, 2006). Decision-making by stakeholders was previously influenced by prepared financial statements which evaluated previous year's performances (Watson & Monterio, 2011). With the progression of time however, user's needs have shifted (DiPiazza Jr & Eccles, 2002). There has been an increased focus on social, governance and environmental issues by stakeholders (Adams & Simnett, 2011). The number (de Villiers, Venter, & Hsiao, 2017) of companies producing sustainability reports has been steadily rising (Milne & Gray, 2007). The disclosure of non-financial information has increased and includes information such as the business opportunities, risks, key business processes and developments in IT amongst others (Robb & Zarzeski, 2001; Watson & Monterio, 2011).

Integrated reporting is a new reporting framework that recommends the integration of financial and non-financial information in a single report. Integrated reporting aims to incorporate new ideas on reporting that could change the corporate reporting landscape, improve investors" ability to assess firms" prospects, and provide solutions to overcome the oft-repeated criticisms of traditional accounting reporting models (de Villiers, Venter, & Hsiao, 2017). Integrated reporting represented an evolution of the provision of social , environmental and financial information in a format where the different kinds of disclosures are interconnected (Finance, Governance and Sustainability: Challenges to Theory and Practice, 2017)

The quality of information presented in annual reports influences investors' and other stakeholders' decisions (Healy & Palepu, 2001). The annual report contains information that is useful to stakeholders in their decision-making particularly in their decisions to invest or divest from the entity (Smith & Taffler, 1992; Smith & Taffler, 2000). Readers and particularly investors place high reliance and credibility on the annual report (Penrose, 2008; Stanga, 1976). The annual report is considered to be a significant fountainhead of information as it is extensively circulated, has extensive coverage and is seen as a potent means of communication since information is conveniently accessible in a single document (Stanga, 1976).

Stainbank and Peebles (2006) completed a questionnaire-based study in order to determine the relative importance preparers and users of annual reports in South Africa attach to sources of communication from a company in determining whether to invest or divest in a company. The results of this study illustrate that preparer's favour stockbroker advice while users prefer management's communication. The results also showed that reports were ranked as the second most important source of information by users. Preparers consider the annual report to be the most crucial source of company reports with the preliminary announcement subsequent to it. This is in contrast to users who view the preliminary announcement of the company as the most crucial source of company reports followed by the annual reports.

2.2.5. Annual reporting in South Africa

In South Africa the Companies Act governs the type of companies that can be formed. The accounting standards applicable to a company are influenced by the type of company formed. The Companies Act categorises companies as either profit companies or non-profit companies. Profit companies are split into state-owned companies, private companies, personal liability companies and public companies. The requirements for SOEs will be discussed further.

South Africa has several frameworks in place for the preparation of the financial statements, including IFRS, IFRS for Small and Medium-sized Entities (SME's) and GRAP. The framework to be used depends on the type of company and the public interest score of the company. Once the type of company has been determined and the public interest score has been calculated, the correct financial reporting framework for the entity can be determined in terms of Regulation 27 of the Companies Regulation.

Table 2: Extract for the Financial Reporting Standards for Different Categories of Companies

Category of Companies	Financial Reporting Standard
State owned companies or non-profit entities which are required to have their financial statements audited	IFRS but in the case of any conflict with any requirements in terms of the Public Finance Management Act, the latter prevails.

According to Regulation 27 of the companies' regulation, SOEs will prepare their financial statements using IFRS unless there is any conflict with the PFMA. In accordance with the constitution, entities listed on the PFMA must prepare their financial statements using GRAP (PFMA, 1999). All entities included in the PFMA are required to be audited by the AGSA on an annual basis (PFMA, 1999).The differences between IFRS and GRAP will be discussed further.

2.2.6. IFRS vs GRAP

The objective of IFRS is to provide information which is useful for the users in making economic decisions about the reporting entity (IFRS, 2013). The objective of GRAP is to provide sufficient information in order to fulfil the requirement of being publicly accountable (ASB, 2004).

The economic decisions taken by users also differ. Where an entity uses IFRS, the economic decisions by the users depend on the ability of the entity to generate cash and cash equivalents (IFRS, 2013). Where an entity uses GRAP, the economic decisions of the users depend on whether sustainable service delivery can be provided (ASB, 2004).

The users of financial information in terms of the Conceptual Framework in IFRS are both existing as well as potential investors and other creditors. The main purpose of these users of information is for capital funding (IASB, 2013; Whittington, 2008). In terms of GRAP, the user base includes a much larger population which includes, but is not limited to, government entities, suppliers and creditors and the general public (ASB, 2004). The reasoning behind having such a large user base is that the decisions made by the entity will have a far greater impact than entities in the private sector (ASB, 2004).

Under both reporting frameworks, the financial statements are prepared under the going concern assumption. IFRS assumes that an entity is a going concern if an entity has neither the intention nor the need to cease operations for the foreseeable future (IFRS, 2013). The going concern of an entity is only an issue on a rare occasion argues GRAP. Going concern issues only occur in rare occasions as, government will normally resolve any issues with going concern by raising taxes or some other intervention to ensure the continuation of the operations (ASB, 2004).

The introduction of the PFMA in 1999 and the Accounting Standards Boards (ASB) in 2002 have laid the foundation for value-added and transparent financial reporting in the South African public sector (Van Wyk, 2004). The ASB was tasked with setting standards known as GRAP. The standards have been developed in line with the International Public Sector Accounting Standards (IPSAS) (IPSASB, 2017). The IPSAS are standards specifically developed for the use by public sector entities and are issued by the International Public sector Accounting Standards board (IPSASB) of the International Federation of Accountants (IFAC) (IPSASB, 2017).

Entities using GRAP are required to comply with the applicable standards (ASB, 2010). The purpose of the financial statements is to provide financial information about the financial position, financial performance and cash flows of an entity (ASB, 2010). This allows for the provision of useful information for users of the information to make the determination if resources have been allocated appropriately (ASB, 2010).

The complete set of financial statements should include the following:

Table 3: *Guidelines for Presenting Financial Statements using GRAP*

Statement of financial position	• Present both assets and liabilities • Assets and liabilities should be disclosed as either current or non-current • Equity represent the net assets of the company
Statement of financial performance	• Include revenue and expenses for the particular year under assessment
Statement of changes in net assets	• Presented to show a reconciliation between the opening and closing balances of equity
Cash flow statement	• Allows the users of the financial statements to identify how the company generates its cash flows and how the entity utilises the cash flows
The notes to the financial statements	• Include the basis of the preparation of the financial statements • Provide additional information required by standards of GRAP

	• Provide additional information that may be useful to the users of the financial statements

Source: (ASB, 2010)

Regulation 27 of the Companies Act 2008 requires SOEs prepare their financial statements using IFRS unless stated otherwise under the PFMA. As such the financial statements will include:

- a statement of financial position as at the end of the period
- a statement of profit and loss and comprehensive income[4]
- a statement of changes in equity for the period
- a statement of cash flows for the period
- and notes, comprising a summary of significant accounting policies and other explanatory information (Holt et al., 2015; IASB, 2010; IFRS, 2013).

GRAP 1 states that entities are also required to present information to assist users in assessing the performance of the entity as well as to assess if effective stewardship or accountability has been appropriately applied (ASB, 2010). To overcome this issue, the use of annual reports can be used to provide both the financial information and the non-financial information necessary to ensure effective stewardship has taken place (Padia & Yasseen, 2011; Yuthas, Rogers, & Dillard, 2002).

2.2.7. Change in reporting landscape

Prior research by (Beattie et al., 2008; Zeller, Stanko, & Jin, 2012) has shown that the presentation in annual reports have changed. For many years, the sole function of the annual report was to inform investors of the firm's financial well-being however the needs of stakeholders are continuously changing due to technological advancements, competition and regulation (Guthrie & Murthy, 2009; Kotler & Rath, 1983). Research by Lee (1994), Bartlett and Chandler (1997) and Beattie et al. (2008) have investigated the changes as well as the structure of the annual report. It was found that the quantity of voluntary information contained in the annual report as well as the size of the report has increased. The study by Lee (1994) indicated the annual report increased by 108% in size whilst voluntary disclosure (164%) increased faster than regulatory disclosure (67%). This is in line with a more recent study by Beattie et al. (2008) in which the results shown an increase in the size of the annual report as well as the number of voluntary disclosures. Although the usage of graphs was found to be universal, it was found that there is an increase in the number of non-financial graphs such as corporate social responsibility graphs.

[4] The statement will be referred to as the statement of financial performance effective 2020

The introduction of integrated reporting has seen a further development in the corporate reporting landscape (Yasseen et al., 2017). There have been increasing concerns that traditional corporate reporting is insufficient to meet the information needs of a variety of stakeholders (Cohen, Holder-Webb, Nath, & Wood, 2012). Issues such as huge national debts, large unemployment rates, persistent fraud and unethical behaviour in managing public organisations, and increasing concerns for the environment have left large segments of stakeholders frustrated with the existing social and economic order, particularly with the logic, principles, and practices currently in place (Busco, Frigo, Riccaboni, & Quattrone, 2013). The increasing possibility of including all financial and non-financial information in one report led to the creation of the International Integrated Reporting Council (IIRC) in 2009 (Manes-Rossi, 2018). The primary purpose of an integrated report is to explain to providers of financial capital how an organisation creates value over time (IIRC, 2013). Integrated reporting attempts to combine the reporting of different aspects of organisational activities on a common platform with a combined objective (Abeysekera, 2013). The key objective of integrated reporting is to enhance accountability and stewardship with respect to the broad base of six kinds of capital namely financial, manufactured, intellectual, human, social and relational, and natural (Busco, Frigo, Paolo, & Angelo, 2013).

There has been renewed focus on the role of directors and the importance of good governance, which have been rightly provoked by recent corporate scandals (IoDSA, 2018). The King IV Report on Corporate Governance was released in November 2016 with an effective date of 1 April 2017 (EY, 2018; KPMG, 2016). King IV ensures that the adoption and interpretation of corporate governance principles are accessible to all types of entities across all sectors such as non-profit organisations, private companies as well as public sector entities (IoDSA, 2015; KPMG, 2016). Transparency and accountability are cornerstones of King IV (IoDSA, 2018). Good corporate governance is paramount to the success of the SOE and those affected by it as it ensures frameworks and structures in place to ensure the SOE fulfils its mandate (IoDSA, 2016). King IV recommends that SOEs should ensure it is a responsible corporate citizen as it is funded from the tax contributions by private and corporate citizens and thus are accountable to these citizens and the state (IoDSA, 2016). Furthermore the governing body of a SOE serves as an accounting authority and carries fiduciary duties in respect of it in terms of the PFMA (IoDSA, 2016). The governing body should have the necessary balanced composition which includes the necessary skills, experience, diversity and knowledge as it is a key factor in determining the performance of a SOE (IoDSA, 2016). The application of King shows good governance, however it is not against the law if King is not applied (Padia & Yasseen, 2011). Good governance can be interpreted as effective leadership (Padia & Yasseen, 2011).

2.3. Public Sector

2.3.1. Importance of the public sector

The public sector is regarded by many countries as a powerful engine of economic growth and sustainable development (Madumi, 2018). SOEs have been rising in influence in the global economy over the past decade (PWC 2015). Developing countries such as South Africa view public corporations and SOEs as an instrumental device to stimulate and accelerate gross domestic product (GDP), employment and infrastructure development (Madumi, 2018). The public sector has always been an important element of many economies, particularly advanced ones (Kowalski, Büge, Sztajerowska, & Egeland, 2013). SOE's have become important instruments in both social and economic policy in industrialised economies as well as developing countries (Khongmalai, Tang, & Siengthai, 2010). Most SOE's have a direct impact on the lives of citizens through the services and infrastructure they provide (AGSA, 2017).

In South Africa, SOEs play a vital role in government activities and in the delivery of basic services to the people (Madumi, 2018). South Africa, a transitional country, has a long history of using SOE's as a means of socio-economic advancement (DJ Fourie, 2001). SOE's have operated as a state mechanism to provide services to citizens such as infrastructure, utilities and mass transportation amongst others (Khongmalai et al., 2010). SOE's are also seen as an important stakeholder contributor towards supporting and promoting urban growth and development (Ovens, 2013). Following the democratic election in 1994, South Africa introduced corporatisation in some sectors to promote effective and efficient service delivery (Ovens, 2013). Thus, the importance of SOE's to the economy cannot be undermined (PwC, 2015). Armstrong (2015) notes that, "SOEs produce approximately 15% of GDP in Africa, 8% in Asia and 6% in Latin America". It has been estimated that globally, SOEs still account for 20% of investment and 5% of employment. Overall, SOEs play an important role in a number of major economies (Mnyaka, 2014).

2.3.2. Public sector and the PFMA

The need to maintain and ensure stability in the public sector is imperative (PwC, 2015). One way in which stability and sustainable development in South Africa is aimed to be achieved is through the PFMA (Madue, 2007). The primary objective of the PFMA is to regulate financial management in South Africa (Erasmus, 2008; PFMA, 1999). The PFMA plays an important role in the regulation of good corporate governance practices (D Fourie, 2009). The purpose of the PFMA is to improve accountability in the public sector by making managers of an entity responsible for their actions and performance (Erasmus, 2008; PFMA, 1999). Through the PFMA, management are able to use resources effectively whilst still being held accountable for the consumed resources (Madue, 2007; PFMA, 1999). As entities

on the PFMA have to be audited annually, it ensures responsibility and creates an incentive for management to act in the best interest of the entity (Erasmus, 2008; PFMA, 1999).

The PFMA as at 29 March 2018 has 277 entities listed in terms of the act (Treasury, 2018). These entities are separated into three different schedules (PFMA, 1999). The PFMA classifies public institutions in terms of Constitutional Institutions (Schedule1), Major Public Entities (Schedule 2) and Other Public Entities (Schedule 3). Other public entities (Schedule 3) are split into Part A: National Public Entities, Part B: National Government Business Enterprises, Part C: Provincial Public Entities and Part D: Provincial Government Business Enterprises. Schedule 1 entities are seen as protection mechanisms as the function is to strengthen and protect constitutional democracy in South Africa (WCPP, 2015). Schedule 2 entities run in accordance with general business principles, have the most autonomy of all public entities, have extensive borrowing powers and are intended to generate profits and declare dividends. Schedule 3B and 3D entities generate income but may be either substantially self-funded or substantially government funded. These entities also function according to general business principles but have less autonomy and borrowing powers compared to Schedule 2 entities. Schedules 3A and 3C are extensions of a public entity and are mandated to fulfil a specific economic or social responsibility of government. These entities have the least autonomy and rely on government funding and public money (Treasury, 2017b).

2.3.3. Accountability within the public sector

The annual report is a long-lived mechanism of corporate accountability and governance (Lee, 1994). The annual report is viewed as an important means for companies to discharge accountability (Chang & Most, 1985; Winfield, 1978). Accountability is defined by Schlenker, Britt, Pennington, Murphy, and Doherty (1994) as the condition of being answerable to audiences for performing up to certain standards, thereby fulfilling responsibilities, duties, expectations, and other charges". The Integrated Reporting Council (IIRC) stated the need for greater accountability by the board of directors and managers to stakeholders. Managers are accountable to outside parties for their decisions and actions, with the annual report serving as an accountability mechanism to react to the concerns of external parties (Stanton & Stanton, 2002). Accountability in the public sector is viewed as difficult to achieve (Sinclair, 1995). Accountability in the public sector is developing and a work in progress (Sands, 2004). However given the fact that many stakeholders will be affected, stakeholders will want more accountability from government (Krambia-Kapardis & Clark, 2010). Accountability through the disclosure of information is particularly important and requires broadening the scope of disclosure beyond a financial focus in order to ensure the annual report contains sufficient qualitative information (Hooks et al., 2002).

Accountability is a key aspect of the public to be aware of the performance of the entities in the public sector and is based on the belief that the public have the right to know the performance of the entity (Luke, 2010). The need for accountability from public sector organisations has been driven not only by government but by all interested stakeholders of the relevant public sector entities (KPMG, 2012). It is imperative that government highlights the performance of the entity in a reliable manner (Lodhia & Burritt, 2004).

Accountability in the context of SOEs is a difficult act to balance (Luke, 2010). SOEs have opposing objectives as they have a duty to make a profit but also to meet certain social and environmental objectives (Luke, 2010). This makes defining the 'boundary of accountability' by SOEs a difficult and often a complex issue (Luke, 2010). The dissatisfaction of taxpayers in respect of the use of funds by the state has consequently led to accountability becoming a key issue of SOEs which cannot be ignored (Luke, 2010). The need for SOEs to undertake greater accountability has been driven mainly due to social, economic and technological forces that are experienced in respect of the use of taxpayers' money (Hoque & Moll, 2001). SOEs are accountable to various stakeholders such as parliament and its oversight committees, government and government agencies, external monitoring parties such as credit-rating agencies, investors and creditors and the public and its special interest groups (Challen & Jeffery, 2005). As such accountability within the public sector is different and much broader than accountability in the private sector. There is a relatively narrow financial emphasis in the more profit driven private sector (Challen & Jeffery, 2005).

2.4. Impression Management

2.4.1. Impression management and the use of graphs

The theory of impression management, in its original form, considers the actions of individuals performing for an audience to create desired perceptions (Pennington & Tuttle, 2009). Impression management is the action taken by an individual in order to control the impressions of others formed on them (Bolino, Kacmar, Turnley, & Gilstrap, 2008; Leary & Kowalski, 1990). In terms of this theory, individuals are viewed as actors performing to an audience to gain support for moral, social or financial goals (Cialdini & De Nicholas, 1989). Although impression management is typically discussed as a means of personal influence, in its broader applications, it may occur in any situation where an organisation's representatives act as gatekeepers of information, and in doing so, affect audience's attitudes, opinions and behaviour (Gardner & Martinko, 1988). It occurs when management selects the information to display and presents that information in a manner that is intended to distort readers' perceptions of corporate achievements (Godfrey, Mather, & Ramsay, 2003).

Financial disclosure literature has a further strand, namely, impression management, which tries to explain management's attempts to manage the interpretation of disclosed financial data in the annual

report (P. Mather et al., 2000). The annual report may be used by management to present a self-interested view of corporate performance (P. Mather et al., 2000). Communications between management and shareholders are designed to legitimise management's actions and convince shareholders that the company is being run competently and efficiently. As a result impression management occurs due to the motivation of management to dictate the corporate reporting agenda and present a self-serving view of performance (Beattie & Jones, 2002; P. Mather et al., 2000; Rahman et al., 2014).

The theory of impression management examines management's attempts to manipulate the interpretation of financial reports by strategically selecting, displaying and presenting narrative information in corporate documents in a manner that is intended to distort readers' perceptions of corporate achievements (Falschlunger et al., 2015; Godfrey et al., 2003). According to the impression management theory, the use of impression management is seen to be "proactive" when it is designed to enhance a corporation's image and "control-protective" when it is used to protect an established image where that image is threatened as a result of a predicament (Dowling & Pfeffer, 1975). There is preference to place images that have positive expected values whilst negatively valued images are avoided (Gardner & Martinko, 1988).

Prior research has indicated that information is manipulated by management for two reasons: that the annual report is considered a mechanism of accountability as well as a way to minimise incertitude within investors (Yasseen et al., 2017). Frink and Ferris (1998) argued that in an accountability context, individuals engage in impression management in anticipation of an evaluation of their conduct. Impression management thus constitutes a way of influencing the impressions and decisions of relevant parties in order to win rewards and avoid sanctions. The first and more significant fact is that users have used the annual report as an indicator of management performance (Brennan, Guillamon-Saorin, & Pierce, 2009; Klerk & Wyk, 2017). This is in line with Aerts (2005b) who found that positive organisational or accounting outcomes are seen to be a reflection of managerial competence and, therefore, they do not require much further explanation to make them consistent with the desired corporate image. On the other hand, negative organisational or accounting outcomes appear to require explanation to render them legitimate (Aerts, 2005a). The second reason is that public companies feel compelled to minimise the uncertainty of investors (Yasseen et al., 2017). Investor uncertainty inevitably leads to falling share prices and reduced investor confidence (Aerts, 2001).

Management may attempt to portray a more favourable impression and thus use graphs as a tool to manipulate information and at the same time deceive readers (Aerts, 2005b; Stanton & Stanton, 2002). Graphs in corporate annual reports form part of a powerfully designed annual report package that offers considerable potential for "impression management." (Lee, 1994). Non-regulated and voluntary disclosure, such as the use of graphs, is easier for management to manipulate and provides the

opportunity for impression management (Brennan et al., 2009). It is easier to manipulate graphs as there is no regulations in place, nor is it audited to determine if graphs are inconsistent (Klerk & Wyk, 2017). Tufte (1983) defines measurement distortion as the occurrence of disproportion between the graph numbers and the underlying number. Selectivity relates to only disclosing positive and favourable information. Lastly according to Penrose (2008), when the layout of the graph's elements is modified to understate or highlight specific information for users, this is termed presentational enhancement.. This is achieved through selecting different graph types, colours, axis, scales, and sizes (Penrose, 2008).

Management's desire to present itself in a positive light is not necessarily a sinister act (Yasseen et al., 2017). However, within the context of management's motivation to present itself favourably, this practice may have the unintended consequence of misleading the users of the annual report (Yasseen et al., 2017). As such there is a risk that impression management leads to a contravention of the basic principle of financial reporting, namely, the presentation of financial information fairly and without bias, and by doing so reduce the usefulness of the annual report (Clatworthy & Jones, 2006). Faithful representation means that the information is neutral and free from bias and that it has been identified by the IASB in its Conceptual Framework ('the Framework), as a characteristic of useful information (IASB, 2018a). Neutral information is termed as such when it is free from bias in the selection or presentation of financial information, thus ensuring that information is free from manipulations that results in users viewing this information more favourably (IASB, 2018a). Lastly, financial information that is free from error is not necessarily accurate in every aspect; rather there may have been exclusions or errors not disclosed in the financial information (IASB, 2018a). Impression management results in conflicts with the qualitative characteristics of the Framework as the information that is presented is no longer neutral and unbiased (Beattie & Jones, 2000, 2008).

The accounting regulation framework does not include graphs within the current standards and as such do not account for discrepancies in graph design and presentation (Burgess et al., 2008). Graphs should be depicted impartially and with veracity in order to be beneficial and advantageous to users although they do not fall within the field of general purpose financial reporting (P. Mather, Ramsay, & Serry, 1996). As graphs are not required to be audited, there is a possibility for graphs to falsely represent data, as several studies have shown (Beattie & Jones, 1992; Courtis, 1997).

2.4.2. The stakeholder problem in terms of impression management

Stakeholder theory, developed by Freeman (1984) argues that other groups (for example, employees, suppliers, customers and the public) can affect the success of an organisation. Management are expected to act in the best interest of the company and its stakeholders however, as management has better information in terms of the company's financial performance they can take actions to act in

managements best interests (Osma & Guillamón-Saorín, 2011). Schedule 3A entities are mandated to fulfil a specific economic or social responsibility of government and as such their decisions and results affects a wide range of stakeholders.

Companies prepare annual reports by taking a variety of users into consideration (Frownfelter-Lohrke & Fulkerson, 2001). Impression management can be seen as an action of the stakeholder theory, as it involves voluntary disclosure which can be motivated by management self-serving, biased reporting (Leung, Parker, & Courtis, 2015). Different impression management strategies are adopted for different stakeholders (Marcus & Goodman, 1991). The objective of impression management is to depict the annual reports in a manner that is self-serving to management (D Neu, Warsame, & Pedwell, 1998). Recent financial and service delivery issues have placed the spotlight on management of SOEs. Management performance cannot occur under direct observation and therefore those individuals that provide finance rely on reports developed by management to evaluate management performance and effort (Bannister & Newman, 2006; Lewellen, Park, & Ro, 1996). Management is thus motivated to manipulate performance directly or indirectly, the former via financial statements, while the latter through manipulation of corporate communications, for example, the front section of the annual report to create a favourable perception of performance (Subramanian et al., 1993).

Corporate narrative documents which include annual reports are regarded as a description of the decision behaviour of the firm's management and thus reflect the performance of management (Prakash & Rappaport, 1977). As a result, managers may be tempted to engage in impression management with the expectation that shareholders and stakeholders may respond in more positive ways (Prakash & Rappaport, 1977). In order to maintain their management position, justify their compensation and portray to stakeholders that their actions are in the best interest of the company, managers tend to willingly disclose information (Inchausti, 1997). Management has the ability to decide whether graphs should be used and which variables are to be depicted graphically based on the message they wish to present to users, thus leading to a bias in reporting (Beattie & Jones, 1999). Trends can be emphasised or minimised due to the message being manipulated using graphical construction techniques (Beattie & Jones, 1999). The disclosure of favourable information and changes in graphical depictions of a graph causes information to be manipulated and therefore biased (Beattie & Jones, 1997).

2.4.3. Guidelines for good graph presentation

Graphs are symbolic displays requiring interpretation according to certain conventions (Kosslyn 1989). To ensure users can use effectively, graphs should represent the underlying relationship in the data for users to be able to perceive this (Cleveland & Cleveland, 1985). The graph will fail in its communication role if the user cannot perceive the relationships inherent in the underlying data

(Cleveland & Cleveland, 1985; Frownfelter-Lohrke & Fulkerson, 2001). Careful planning is required in the presentation of graphs as it creates a powerful impression of the data represented (Kruskal, 1975).

According to Tufte (1983) an effective graphs should contain six traits. The six principles which are discussed in the research conducted by Uyar (2009) and Huang, Chung, and Cheng (2008) are as follows: 1) There must be a direct proportion between the magnitude of the change depicted graphically and the change presented by the numerical data; 2) In order to avoid any confusion the graphs must be adequately labelled; 3) There must be a correlation between changes in the graph design and the numerical data – data variation and not design variation should be depicted by the graph; 4) The reader's attention should not be diverted due to visual effects contained by the graph, thus these should be excluded; and, 5) The uses of deflated and standardised units of monetary measurement are preferred to nominal units with regards to time – series of data and 6) the graphs should have sufficient information and context to allow for the data to be interpreted accurately by the reader.

Frownfelter-Lohrke and Fulkerson (2001) composed a list of eleven deficiencies in graphs and the corrective action for each weakness. This was based on research conducted by Tufte (1983), Jarett (1993), Jarett and Babad (1988) and the Canadian Institute of Chartered Accountants (CICA, 1993). The list of weaknesses and corrective actions is shown in Table 4 below. Using the corrective action below, a checklist was developed by Frownfelter-Lohrke and Fulkerson (2001) which identifies the guidelines for good graphs.

Table 4: *Weaknesses and Corrective Actions Relating to Graphs*

Number	Weakness	Corrective Action
1.	Inadequate chart titles and labels	Labels should be explicit and comprehensive and significant incidences in the data should be emphasised (Jarett, 1993; Tufte, 1983).
2.	No numerical labels	The column representing numerical values (the specifier) should have the number indicated above the column, with no data inside the bar (Jarett, 1993)
3.	Obtrusive backgrounds with no clearly defined borders	There should be no brightly coloured or patterned backgrounds and each graph published should be enclosed in a border (Jarett, 1993; Tufte, 1983)
4.	Optical illusions	The use of three dimensional graphs should be avoided while two dimensional graphs are recommended (Tufte, 1983).

5.	Inappropriate colour	A graph should contain a maximum of six colours with the use of a legend to indicate what each colour represents (Jarett & Babad, 1988).
6.	Trendy visual effects	The design of the graph should be simple with unessential decorations excluded (Tufte, 1983).
7.	Missing, vague, or multiple zero baselines and/or data markers that do not begin at a zero baseline	The scales should begin at zero and should also be continuous (CICA, 1993).
8.	Multiple scales on the vertical axis	A single scale should be used since multiple scales may result in misinterpretation and confusion for the reader (CICA, 1993).
9.	Time series data shown in reverse order	The time series should be in sequential order as a time series in reverse order challenges the user's ability to determine the actual trend (Tufte, 1983).
10.	Exaggerated width of data markers or spaces	There should be uniformity and even spacing between bars – bars should not be disproportionate in height or width (Tufte, 1983).
11.	Overextended scales	There should be a direct proportion between the representation of the graph and any changes in numerical values. Failure to adhere to this principle will cause distortions to the graphs (Tufte, 1983).

2.4.4. Calculation of measurement distortion

Measurement Distortion refers to the violation of proportionality between the numbers displayed in a graph and the numerical quantities portrayed, a fundamental principle of graph construction (Tufte, 1983). The Graph Discrepancy Index (GDI), originates from the lie factor introduced by Tufte (1983). The GDI is commonly used to both identify and quantify the measurement distortion of graphs (D. Mather et al., 2005). The distinguishing feature of a graph is that the representation of quantitative information, as physically measured on the surface of the graph, should be directly proportional to the underlying numerical values (Tufte, 1983). Measurement distortion can therefore occur when the graph does not mirror the numerical values accurately (Uyar, 2009). The GDI originated from the lie factor introduced by Tufte (1983). Taylor and Anderson (1986) later modified the lie factor to produce the GDI which is calculated as follows:

Table 5: *Calculation of GDI*

GDI = 100 * [(a-b) – 1] or [(a-b)/b] *100
Where a = (g2 – g1)/g1 and b = (d2-d1)/d1
g1 and g2 = the height of the first column and the last column in the graph in cm
d1 and d2 = data for the first column and the last column in the graph
a = percentage change depicted in graph
b = percentage change depicted in data

The GDI assists with assessing whether trends are exaggerated or understated (Penrose, 2008; Varachia et al., 2018). The GDI is a percentage ranging from –100% to +∞. If no measurement distortion exists, the GDI is zero (Penrose, 2008). The size by which the trend portrayed in the graph is exaggerated or understated is represented by positive or negative values (D. Mather et al., 2005). The exaggeration of an upward trend and the understatement of a declining trend both provide a more positive impression of the company's performance (Penrose, 2008).

2.4.5. Results from prior research

Many attempts to improve graphical disclosure have emerged all over the world, since Steinbart (1989) introduced the issue of misleading information through graphs. The first research of this nature was conducted in the USA by Steinbart (1989). The sample included 319 annual reports from the Fortune 500 for the financial year ending 1986. The study aimed to establish if the values presented in the financial statements matched those in the graphs, to establish whether presentational enhancement was taking place and to determine the level of distortion in financial graphs. The results showed that the majority (79%) of companies included graphs in their annual reports. The average GDI was 11% when the GDI was used as a measure. Companies with good performance were found to include more graphs (74%) than companies with bad performance (53%).

Beattie and Jones are considered experts with respect to graph usage, given their extensive contribution to the topic. The first known study by Beattie and Jones (1992) was conducted in the UK and included 289 companies in the UK which were analysed for the financial year ended 1989. The study examined selectivity regarding whether the performance of the company had an impact on KFV's that were graphed. The study was extended by Beattie and Jones (1997) to conduct a comparison using the annual reports of 85 UK and 91 US companies for the year ended 1990. In Australia Beattie and Jones (1999) studied the graph usage in Australian companies. The scope of the study extended to include effect of industry classification, graph type, topics graphed, length of time series graphed, graphic designer and presentational enhancement. The sample included the top 100 companies listed

on the Australian Stock Exchange at 31 December 1991. Beattie and Jones (2000) analysed selectivity as a means of impression management. The sample included 137 of the top UK companies which were in existence for the five-year period 1988 to 1992. Beattie and Jones (2001) conducted research in Australia, UK, US, Germany, France, and The Netherlands and 50 leading companies from each of these six important countries worldwide were included in the study. Beattie et al. (2008) investigated the presentational change in the annual reports of UK companies with a particular focus on graph usage. The results of these studies will be discussed in the following paragraphs.

The results from Beattie and Jones (1992) found that 79% of companies in the UK used graphs with 65% graphing at least one KFV. It was concluded by performing chi-squared tests of independence between the use of graphs and the directional change of the company performance indicator that companies tend to present more KFV graphs when performance is better. The average GDI for the listed entities KFV graphs was 11% (which is very similar to Steinbart (1989)). It was found that 30% of KFV graphs were materially distorted where a threshold of 5% was considered to be material however 20% of KFV graphs were distorted if a 10% threshold was used. Exaggeration (22%) was more prevalent than understatement (8%)

Beattie and Jones (1997) findings showed that 80% of UK companies used graphs whereas 92% of US companies used graphs in the annual report. In terms of material distortion, the mean GDI (where a threshold of 5% was used for materiality) in the UK was 7% which was lower than the US with 16%. This showed an increase in the mean GDI compared to the two previous studies of Steinbart (1989) and Beattie and Jones (1992). In terms of measurement distortion, 24% of KFV graphs in both the US and UK were materially distorted. Graphs in both the UK and the US were found to have instances of non-compliance with graph design and construction principles.

The study by Beattie and Jones (1999) in Australia found that 89% of companies presented graphs in their annual reports. Selectivity, presentational enhancement and measurement were noted. 34% of the KFV graphs were materially distorted (where 5% was considered as the threshold for materiality). The mean GDI score for listed entities was 11% and KFV graphs were likely to enhance the financial results of the company as 31% of distortions created a more favourable view whereas 19% created a less favourable view.

Strong evidence was found in Beattie and Jones (2000) showing that companies engage in impression management by selecting to present graphs based on the performance of the company. Companies were found to more likely present graphs in their annual report when income and EPS increased. The research concluded that financial graphs in annual reports can be used to favourably influence the reader’s impression of company performance, resulting in a reporting bias.

Beattie and Jones (2001) aimed to study comparative graphical reporting practices in different countries. Across the six countries, 263 (88%) of the companies studied included graphs in their annual reports. In total, there were 2364 graphs, including 515 key performance variable (KPV) graphs across 196 companies. The three countries with the highest percentage of companies using graphs were Australia, The Netherlands, and the US. Across the whole sample, 65% of companies used at least one KPV. French and Dutch companies were the highest users of KPVs (80%), while German companies used the least (28%), reflecting wide intercountry variation. French companies used, on average, 11 graphs in each annual report, while UK companies used only 5.2 graphs in each report. When adjusted to include only those companies using graphs, this becomes 12.5 graphs for each French company and 6.3 graphs for each UK company. The four most frequently graphed topics across the six countries are segmented sales, earnings, sales, and segmented earnings, demonstrating the importance of sales and earnings across their sample. Lastly the graphical practices of France and Germany were found to be extremely different.

According to the study by Beattie et al. (2008) graph usage had increased by 20% from 1989 (79%) to 2004 (99%), which was due to an increase in non KFV graphs. It was also found that there was a decrease in KFV graphs. Selectivity was found in the use of graphs but this had slightly declined from 1989. It was found that 49% of graphs were distorted using a 10% threshold for material distortion.

Selectivity was studied in Australia by P. Mather et al. (1996). The sample included the top 150 Australian Stock Exchange listed companies as at December 1992, as well as 44 non-profit entities. The study aimed to investigate whether the number of KFV graphs presented was affected by the company's performance. The study also aimed to investigate if there was a correlation between the performance of the company and the measurement distortion in the graphs. Listed companies displayed more graphs (83%) when compared to non-profit entities (73%). For the top 50 companies, there was no evidence of selectivity. However for next top 100 companies evidence of selectivity was found indicating that smaller companies included more KFVs when their performance improved. The average GDI for listed companies was 16% whilst the average GDI for non-profit entities was 106%. With a threshold of 10%, 21% of KFV graphs were materially distorted whilst 30% of KFV graphs were materially distorted with a 5% threshold. Graphs were found to be more exaggerated (16%) than understated (14%). No correlation was found between the performance of the company and the measurement distortion in the graphs.

P. Mather et al. (2000) investigated graph usage, presentation and selection of variables to graph in Australian companies making their initial public offering (IPO) of shares in the Australian capital market. The sample consisted of 484 prospectuses. Overall 28% of prospectuses included graphs. The average number of graphs was 4.25. The most common graph types used were bar and column (59%).

The mean GDI was 56%, using a 5% threshold. However the mean GDI for KFV's was -2%. Overall exaggeration (35%) was found to be more frequent than understatement (29%).

Frownfelter-Lohrke and Fulkerson (2001) conducted a study on 37 US-listed and 37 non US-listed companies. The companies were taken from across 12 countries on the New York Stock Exchange and the study was over a 10 year period (1984 to 1994). The study examined the incidence of graphs, the subject matter of graphs, measurement distortion and compliance with standards for good graphs. It was found that 79% of reports contained graphs. In terms of US vs non US companies, 89% of US-listed companies used graphs whilst 86% of non US-listed companies used graphs. The graphs displayed tended to show more financial information rather than non-financial information. In terms on compliance, the graphs were found not to comply with guidelines relating to good graph practices. It was found that both groups included distorted graphs but the non U.S. companies had a greater number of distorted graphs. The graphs in US reports had an average distortion of 81% whilst non US companies had an average distortion of 173%.

In Turkey, Uyar (2009) conducted research on the top 100 companies listed on the Istanbul Stock Exchange for the financial year ended 2006. The aim of the study was to analyse whether there are differences in the graph disclosure in the annual report across different industries. It was found that 75% of companies were found to disclose graphs. The average number of graphs per annual report was found to be 8.6. In line with prior studies, it was found that the disclosure of graphs increased as profitability increased. In terms of compliance with standards for good graphs, graphs did not always follow guidelines. Some deficiencies noted included reversed time series, non-zero baselines and missing gridlines and vertical axis. Measurement distortion was not considered as part of the study.

Rahman et al. (2014) conducted a study in Malaysia. The sample included 54 non-financial public listed entities. The entities were analysed over a 30 year period using 10 year intervals (1974 to 2004). The study focused on the type of graph used, topics graphed and the trend in disclosure of graphical information over the period mentioned above. There was an increase in graph disclosure from 15% in 1974 to 65% in 2004. The most popular type of graph over the period analysed was the bar graph. It was also concluded the level of voluntary disclosure increased.

Falschlunger et al. (2015) conducted research on the usage of graphs in Europe. The sample included the top 50 European companies listed on the Fortune 500 index for the years 2006, 2009 and 2012. The study assessed measurement distortion, selectivity and presentational enhancement. In 2006 there was a 97.7% graph usage whilst there was a 100% graph usage in 2009 and 2012. It was found that companies were selective regarding information presented as the topics presented in graphs differed for the applicable years. If there is a positive trend, companies tend to show longer time series. Distortion was found in both KFVs and non KFVs were found to be distorted. Presentational enhancements were used for favourable information rather than for unfavourable information.

Guddal (2016) studied graphic disclosure practices in the annual reports of Norwegian listed companies. The sample included 52 companies which represented 70% of the total volume of trade on the Oslo stock exchange in 2014. The result showed that 83% of entities disclosed graphs in their annual reports. No evidence of selectivity was found which contradicts prior studies. It was also found that 19% of graphs were materially distorted however 10% was used as a threshold.

In Brazil, Nunez (2016) studied the use and misuse of graphs in the stand alone annual reports in Brazilian listed companies. It was found that 92% of companies disclosed graphs in their annual reports. Of the financial graphs presented, 35% of graphs were KFV. Column graphs were used by 82% of companies and accounted for 53% of graphs. In terms of presentational enhancement, some deficiencies included lack of a financial variable axis, multiple scales and scales not beginning at zero. In terms of measurement distortion, 59% of graphs were materially distorted. Lastly 31% of the total graphs, were materially exaggerated whilst 28% were materially understated.

Research conducted in South Africa is limited. The first known study was conducted by Klerk and Wyk (2017) and focused on impression management by investigating environmental, social and governance (ESG) graphs in the integrated reports of mining companies for the period 2010 to 2013. Selectivity and measurement were investigated as a means of impression management. Most companies (86%) were found to present graphs in their annual reports. Companies were found to show a decreasing trend in bad news topics and increasing trend in good news topics. In terms of impression management only 1% of graphs were found to be distorted. The study was however limited since it only focused non-financial graphs in the mining sector.

A study by Varachia et al. (2018) was conducted on the top 100 JSE listed companies for the financial year ending 2017. Only 98 annual reports were obtained. Presentational enhancement and measurement distortion were looked at in terms of impression management. 98% of companies were found to use graphs. The mean GDI was found to be 68% using a 5% threshold which is much higher compared to Klerk and Wyk (2017). Presentational enhancement was also noted to take place by Varachia et al. (2018). Some deficiencies included missing gridlines, missing variable axis as well as no data attached to the specifier.

The figure below details some of the previous researches of this nature that have taken place.

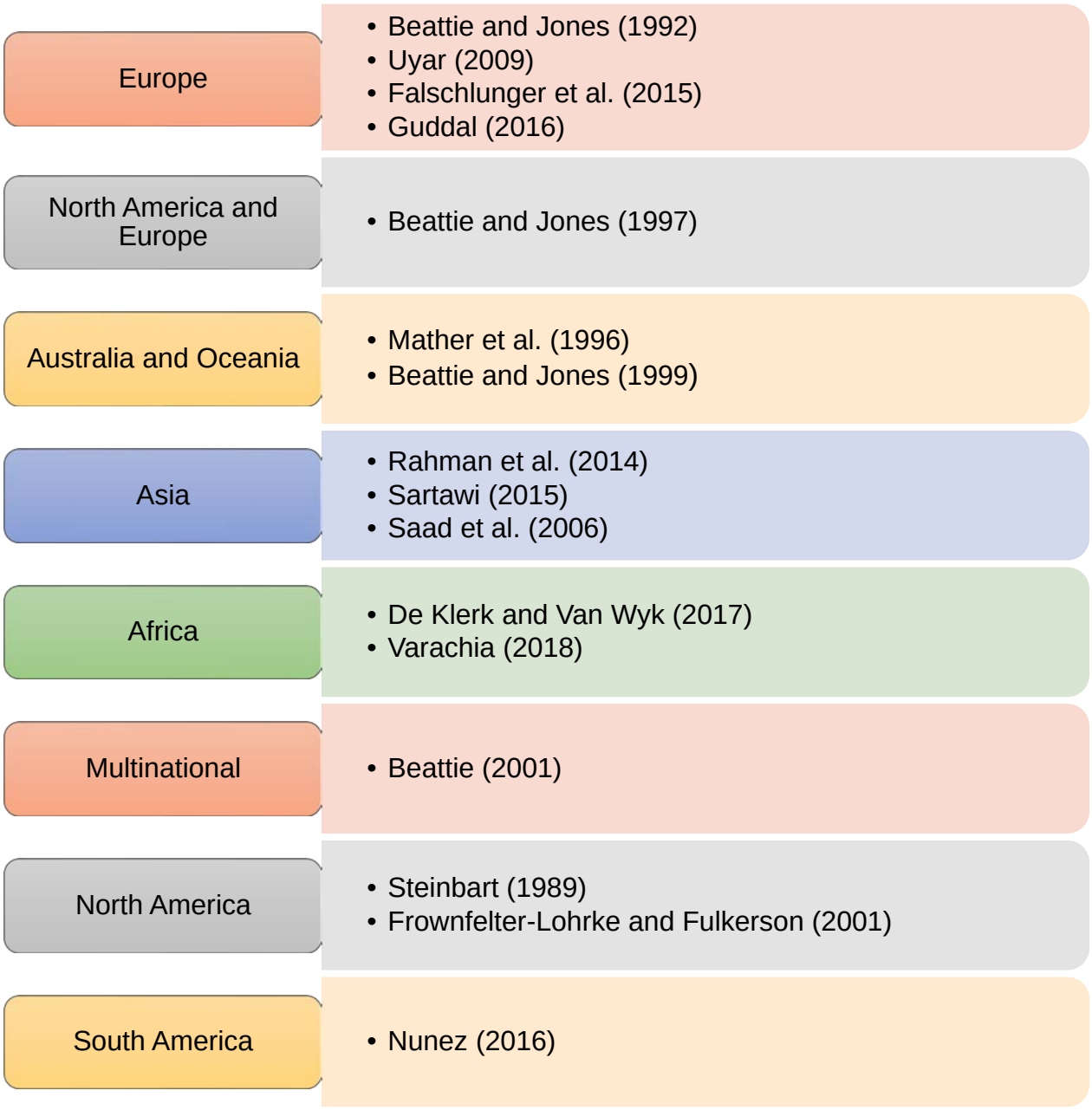


Figure 2. Summary of previous research

3. Methodology

This chapter lays out methodological and procedural steps applied by the researcher in solving the main research problem.

3.1. Research methodology

This study is replicated based the studies by Frownfelter-Lohrke and Fulkerson (2001) and Varachia et al. (2018). In order to achieve the purpose of the study, the graphs in the annual reports of SOEs were examined for specific components, determined by the research questions posed.

There are three various types of research methodologies namely quantitative, qualitative and mixed methods. A quantitative methodology has the objective of explaining the relationship between different variables which may exist and qualitative research revolves around the development of a theory from interpreting a set of results (Newman, Benz, & Ridenour, 1998). Mixed methods incorporate elements of both qualitative and quantitative research methodologies (Creswell & Creswell, 2017; Johnson & Onwuegbuzie, 2004; Johnson, Onwuegbuzie, & Turner, 2007).

Quantitative research involves the collection of data so that information can be quantified and subjected to statistical treatment in order to support or refute “alternate knowledge claims” (Creswell & Creswell, 2017). Quantitative research is aimed at making generalisations that add to existing theories (Leedy & Ormrod, 2013). Quantitative research involves collecting data in numerical form which can be ranked, categorised or measured (McLeod, 2017). One characteristic of quantitative research is that the study can be replicated. Quantitative data is based on measured values and can be checked by others because numerical data is less open to ambiguities of interpretation (Antonius, 2003). There are three broad classifications of quantitative research: descriptive, experimental and causal comparative (Leedy & Ormrod, 2001). The descriptive research approach is a basic research method that examines the situation, as it exists in its current state (Williams, 2007). Descriptive research involves the identification of attributes of a particular phenomenon based on an observational basis, or the exploration of the correlation between two or more phenomena (Williams, 2007).

3.2. Paradigms

According to Terre Blanche and Durrheim (1999), the research process has three major dimensions: ontology, epistemology and methodology. Guba, Lincoln, Denzin, and Lincoln (1998) stated that a research paradigm is intrinsically associated with all three dimensions of research. According to Kuhn (1977), the term paradigm refers to a research culture with a set of beliefs, values, and assumptions that a community of researchers has in common regarding the nature and conduct of research. A paradigm hence implies a pattern, structure and framework or system of scientific and academic ideas, values and assumptions (Olsen, Lodwick, & Dunlap, 1992). Simply put, it is an approach to thinking

about and doing research. The methodology chosen depends on what one is trying to do rather than a commitment to a particular paradigm (Cavaye, 1996). One type of research paradigm which can be followed is positivism. Positivism is one of four major research paradigms recognized in research which provide assumptions and beliefs about the worlds view influencing the intention, motivation and expectations underlying the research (Saunders, Lewis, & Thornhill, 2012). Positivists seek to obtain law-like generalisations by conducting value-free research to measure social phenomena (Wahyuni, 2012). Positivists believe that different researchers observing the same factual problem will generate a similar result by carefully using statistical tests and applying a similar research process in investigating large samples (Creswell, 2009). This is because the researcher's findings are observable and quantifiable as statistical analysis is usually used (Grant & Giddings, 2002).

This study was conducted within a positivist research paradigm using a descriptive quantitative research method. The researcher has examined the degree of graph usage, the nature and type of graphs used, compliance with good graph standards and the measurement distortion of graphs. The calculation of measurement distortion and compliance with good graphs utilised measures that have been researched and used in other previous studies and is not owned by the researcher. This minimises subjectivity during data collection and analysis since formal structured research instruments were applied.

The following are the research questions that were examined for the purposes of the study and was based on the study by Frownfelter-Lohrke and Fulkerson (2001):

RQ1: What is the incidence of graphs included in the annual reports of South African SOEs?

RQ2: What subject matter of graphs is included in the annual reports of the South African SOEs?

RQ3: Are graphs included in the annual reports of South African SOEs in compliance with standards for good graphs?

RQ4: Is there a significant distortion of graphs included in the annual reports of South African SOEs?

3.3 Population and Sampling

3.3.1. Population

The selection of the population is based on what is going to provide the most useful information (Saunders, Lewis, & Thornhill, 2009). As mentioned in Section 2.2.5 The Companies Act categorises companies as either profit companies or non-profit companies. Profit companies are split into state-owned companies, private companies, personal liability companies and public companies. A SOE is defined as an enterprise registered in terms of the Companies Act and is either listed as a public entity in schedule 2 or 3 of the Public Finance Management Act (PFMA) or owned by a municipality or

government. For the purpose of this study, the type of companies studied were SOEs. The population of SOEs relates to companies listed on the PFMA schedule. The integrated/annual report has been selected as the mode of communication for this study in order to ensure that adequate information will be accessible in order to obtain data required for the research questions. Lastly, in SOEs, information corresponding to graphs is easily accessible, further supporting data collection. This will also allow for comparisons to be made with prior studies in the private sector where the annual reports were also used as a medium of communication.

3.3.2. Sampling

Data gathering is crucial in research, as the data is meant to contribute to a better understanding of a theoretical framework (Bernard, 2002).The selection of the population is based on what is going to provide the most useful information, therefore, the selection of the sample should be based on a matter of judgement. Purposive sampling is the most commonly used sampling method in which the sampling is done on a non-probability basis and is often fundamental to the quality of the data which has been gathered (Acharya, Prakash, Saxena, & Nigam, 2013; Tongco, 2007). Purposive sampling may also be used with both qualitative and quantitative research techniques (Tongco, 2007). Total population sampling is a type of purposive sampling (Etikan, Musa, & Alkassim, 2016). Total population sampling is a technique where the entire population that meet the criteria (e.g. specific skill set, experience, etc.) are included in the research being conducted (Etikan et al., 2016). In any research study, the best strategy is to investigate the problem in the whole population (Acharya et al., 2013). In order to ensure the best possible representation of the population, a purposive sampling technique for this research was selected.

The PFMA classified companies into various schedules as at 31 March 2018 as indicated in Table 6:

Table 6: PFMA classification of SOEs

Schedule	Number of entities
Schedule 1 - Constitutional institutions	9
Schedule 2 – Major public entities	21
Schedule 3A - National Public entities	153
Schedule 3B – National government entities	22
Schedule 3C – Provincial public entities	56
Schedule 3D – Provincial government business enterprises	16

This results in a total of 277 entities. The 277 entities were selected as the sample. This sample will allow for comparisons to be made to prior studies.

The research examined the period of the financial year terminating in 2018 thus ensuring the most current results for companies are obtained. All companies would have issued their 2018 annual reports at the time the research was conducted, thus ensuring uniformity as all the 2018 results are included in the sample. It would be assumed that the 2018 annual reports of the 277 companies have been published and therefore can be used as the sample for the objectives of this research.

3.3.3. Analysis plan – data collection and data analysis

The following section

discusses the data collection method and the data analysis for each research question. In order to answer the research questions, the data was obtained from the 2018 annual reports of the SOEs which were downloaded from the SOEs websites.

The data was recorded on an Excel spreadsheet. The information that was recorded for the SOEs selected included: the name of the SOE, the schedule under which the SOE falls, type of graphs, subject matter of graphs, the guidelines for good graphs and the calculation of GDI. The type of graphs was split between financial graphs and non-financial graphs. A detailed explanation of each research question will follow.

RQ1 & RQ2: *The incidence of graphs included in the annual reports of South African SOEs and the subject matter of graphs included in the annual reports of the South African SOEs*

The first research question examined the usage of graphs in annual reports by South African SOEs. The second research question investigated the subject matter of graphs (that is financial and non-financial graphs) that were presented more in the annual report of South African SOEs. The graphs were split between the categories of financial graphs and non-financial graphs. Financial graphs were split further into categories namely, sales, profit, and other financial graphs which do not fall in these specific categories.

The total number of graphs presented in the annual reports were counted and recorded on the Excel spreadsheet mentioned above. The count further included the number of graphs according to the subject matter namely financial and non–financial graphs. Furthermore the number of graphs in total and per subject matter for each schedule were also counted. The average number of graphs per annual report and per schedule was also calculated. The results were compared to prior research to establish whether these SOEs have similar results to studies conducted in the private sector in other countries.

The graph types that were most commonly presented in the annual reports were also investigated. The graph type categories were obtained from Frownfelter-Lohrke and Fulkerson (2001) and include the

following categories: area, bar, column, pie diagram, line, stacked bar/column, combination of line-bar/column and other. The results obtained were compared with prior studies in the private sector.

***RQ3**: Compliance with standards for good graphs in the annual reports of South African state owned entities*

For graphs to serve their purpose of summarising information and highlighting relationships, the graphs should be properly designed. The poor design and construction of graphs can potentially render helpful graphical communications ineffective and misleading (CICA, 1993). As mentioned in Section 2.4.3, there are currently no standards in place for graph design however there has been research conducted to identify the characteristics of good graph design. The eleven weaknesses and recommendations have been included in Table 4. Based on the previous research, Frownfelter-Lohrke and Fulkerson (2001) established a list of deficiencies that are found when graphs are incorrectly designed. Based on these deficiencies, recommendations were also given to enhance graph design. The study by Beattie and Jones (1997) used the principles for good graphical representations identified by Kosslyn (1989). In order to measure the compliance with good graph guidelines, the checklist created by Frownfelter-Lohrke and Fulkerson (2001) was used. Additionally guidelines based on the checklist developed by Beattie and Jones (1997) will also be incorporated. Figure 8 refers to the checklist that was used to assess compliance with good graph standards.

All graphs found in the annual reports were analysed against the checklist. The questions on the checklist were either answered as Yes, No or Not Applicable. Some questions were not applicable to certain graphs, for example, questions relating to axes of pie charts. Using Excel, a count of each answer for every question was done and a percentage of compliance was calculated. The results were compared to prior research in the private sector in other countries.

***RQ4:** Level of distortion in graphs in annual reports in state-owned entities*

Measurement distortion was calculated on Excel using the GDI formula mentioned in Section 2.4.4

. The heights were measured to the nearest millimetre and was then converted to centimetres to comply with the GDI formula. Values above 5% or below -5% will be classified as materially exaggerated and materially understated as suggested by Tufte (1983). This premise was used in prior studies such as Beattie and Jones (1992), Beattie and Jones (1997) , D. Mather et al. (2005) and Varachia et al. (2018).

Measurement distortion was calculated for all graphs for which the GDI was applicable. The GDI could not be used to calculate measurement distortion for certain graphs such as pie charts and area graphs. Measurement distortion could also not be calculated for graphs which did not have the required data. Graphs was split into three categories: graphs in which GDI was calculated, graphs which did not have

data – and therefore no GDI could be calculated - and graphs for which a GDI could not be calculated due to its nature. The analysis focused on the graphs for which measurement distortion was calculated.

Of the graphs for which the GDI was calculated, the graphs were further split into graphs that were materially distorted (>5% or <-5%) and graphs which were not materially distorted. To identify whether graphs surpassed the 5% threshold in real terms, a formula was utilised. An analysis of the number of financial and non-financial graphs that were distorted was conducted. A further analysis of the average GDI for the population, for each subject matter and schedule was conducted. The results were then compared to the private sector.

The reliability and validity of the study will now be discussed. Reliability and validity are concepts which are critical to the success of a research study.

3.4. Reliability

Reliability is defined by Joppe (2000) as the extent to which data and results reflects an accurate representation of the entire population and whether the study can be replicated. Reliability is about consistency and whether or not another researcher could obtain the research and re-perform the study (White, 2003). The reliability of the study is achieved as the data relating to graphs will be obtained from the annual reports of 277 SOEs listed in terms of the PFMA schedule which will ensure an accurate representation of the entire population as well as stability as the analysis will remain unchanged. Reliability is also achieved as the study is replicated based on the studies conducted by Frownfelter-Lohrke and Fulkerson (2001) and Varachia et al. (2018) which improves the reliability of the study (Neuman, 2007).

3.5. Validity

Joppe (2000) defines validity as the determination of whether the research truly measures that which it was intended to measure and whether the results are truthful. For a study to be valid it should answer the questions and meet objectives that the study aims to achieve (White, 2003). Validity is important in this research as it will provide other researchers with a high degree of confidence that useful methods were selected (Straub, Boudreau, & Gefen, 2004). The data that will be collected will be from annual reports which are publicly available thus reducing any concerns relating to subjectivity of the data. The sample size will include 277 SOEs. This will ensure sufficient data is collected in order to answer and facilitate each research questions. All results from the data that will be collected will be communicated in the results irrespective of positive or negative findings.

Internal and external validity

Internal and external validity are types of validity. Internal validity refers to how well the study tests the relationship between events described by the hypothesis (Gordon & Porter, 2009). External validity refers to how well the results from a study can be generalised from a sample to the population (Gordon

& Porter, 2009). External validity was achieved as the total population was used as the sample for the research.

Content validity

Another type of validity is known as content validity (Heale & Twycross, 2015). Content validity looks at whether the questions adequately covers all the content needed in order to meet the objectives of the study (Heale & Twycross, 2015). Content validity was ensured in this study since the measures applied to each research question provided facilitation to the researcher to draw a conclusion thus ensuring that the research question is answered. A proper correlation between the research questions and measures was ensured since the research questions were obtained from a replicated study.

3.6. Ethical consideration

When conducting research, ethical consideration is vital in order for the researcher to distinguish between what is acceptable and non-acceptable behaviour. When conducting research it is important that objectivity and integrity is maintained. In a quantitative study objectivity and integrity are achieved by minimizing the researcher's subjectivity in the study (Neuman, 2007) . The companies used in this study remained anonymous in the analysis of results. The data that was collected related to information that was required and not to achieve a pre-determined outcome. All data and information that has and will be used from other researchers will be cited. A Declaration on Professional Ethics ('Declaration') has been put in place by The International Statistical Institute ('ISI') which guides quantitative researchers and statisticians and assists in ensuring that ethical judgements are made (ISI, 2010). The ISI (2010) requires that the statistical methodologies used are transparent, the results are presented in an impartial manner and data and the analysis of the data are completed honestly and openly. Finally all findings from the study will be communicated irrespective of positive or negative findings.

4. Analysis of results

The study was conducted to determine if graphs used by South African SOEs employ impression management techniques. Impression management was investigated using two techniques, namely, measurement distortion and presentational enhancement. The sample included all 277 entities listed on the PFMA schedule in order to inspect the type of graphs, the frequency of graphs and whether the graphs contain components of impression management. However only 254 annual reports were obtained and 23 annual reports could not be obtained.

The structure of Chapter Four is structured as follows. The section will begin with a discussion on the frequency of graphs, graph disclosure per schedule, disclosure by graph type and disclosure by variable (financial and non-financial). Compliance with standards with good graphs will then be discussed. The discussion on management distortion will follow. The chapter will conclude with the overall analysis of the results.

4.1 Descriptive statistics

The section will discuss the incidence of graphs that appeared in the annual reports of South African SOEs as well as the frequency of graphs by each schedule listed in the PFMA. The type of variable graphed (financial or non-financial graph) will also be discussed.

4.1.1 Frequency of graphs

The analysis of results indicates that 162 of the 254 (64%) entities made use of graphic disclosure in their annual reports. There was a total of 3186 graphs that were disclosed across 162 entities. The average number of graphs amounted to 12.54 graphs per annual report. This is significantly different to the study conducted by Varachia et al. (2018), where the average number graphs was 41 graphs per annual report when considering the Top 100 JSE listed companies. In the study conducted by Klerk and Wyk (2017) where mining companies were analysed, the average number of graphs was 25 per annual report. The results were similar to Guddal (2016) study where the average number of graphs was 12.6 graphs per annual report in Norway.

The use of graphs in South African SOEs is not as common and does not conform to the results that has been found in prior studies conducted in the private sector. In the study conducted by Varachia et al. (2018) 98% of the companies used graphic disclosure in their annual reports. The study by Klerk and Wyk (2017) showed that 86% of South African mining companies used graphs. The results appear to be similar to Sartawi (2015) where 64% and Rahman et al. (2014) where 65% of entities in Jordan and Malaysia included graphs in annual reports. South African SOEs has less graph disclosure in annual reports when compared to Australia (89%) (Beattie & Jones, 1999), Brazil (92%) (Nunez, 2016),

UK (99%) (Beattie et al., 2008), Norway (83%) (Guddal, 2016), Turkey (75%) (Uyar, 2009). In the six country comparison study by Beattie and Jones (2001) the frequency of the graph disclosure was as follows: Australia (92%), France(88%), Germany (84%), Netherlands (90%), UK (82%) and the USA (90%).

4.1.2 Graphic disclosure per schedule

Schedule 3A entities had the most graphs as 1629 (51%) graphs were disclosed. This could be seen as reasonable as schedule 3A had the most entities (58%). This was followed by schedule 3B entities where 611 (19%) graphs were disclosed.

When looking at the number of entities per schedule, schedule 3A entities represented 148 entities (58%) of the sample. Schedule 3C entities represented the second largest portion of the sample with 43 entities (17%). The smallest portion of the sample was represented by Schedule 1 entities with 9 (4%) entities. If the average number of graphs per schedule is considered, schedule 3B entities have the most graphs with 32.16 graphs per annual report. This is followed by schedule 2 with an average of 28.33 graphs. Schedule 3D entities have the lowest average with 3.64 graphs. Table 7 and Figure 3 illustrates the graph disclosure per schedule.

Table 7: Schedule Analysis of Graph Disclosure

Schedule	Graphs per Schedule	% of Graphs per Schedule	# Companies per Schedule	% Companies per Schedule	Average per Schedule
Schedule 1	105	3.30	9	3.54	11.67
Schedule 2	595	18.68	21	8.27	28.33
Schedule 3A	1629	51.13	148	58.27	11
Schedule 3B	611	19.18	19	7.48	32.16
Schedule 3C	195	6.12	43	16.93	4.53
Schedule 3D	51	1.60	14	5.51	3,64
Grand Total	**3186**	**100**	**254**	**100**	**12.54**

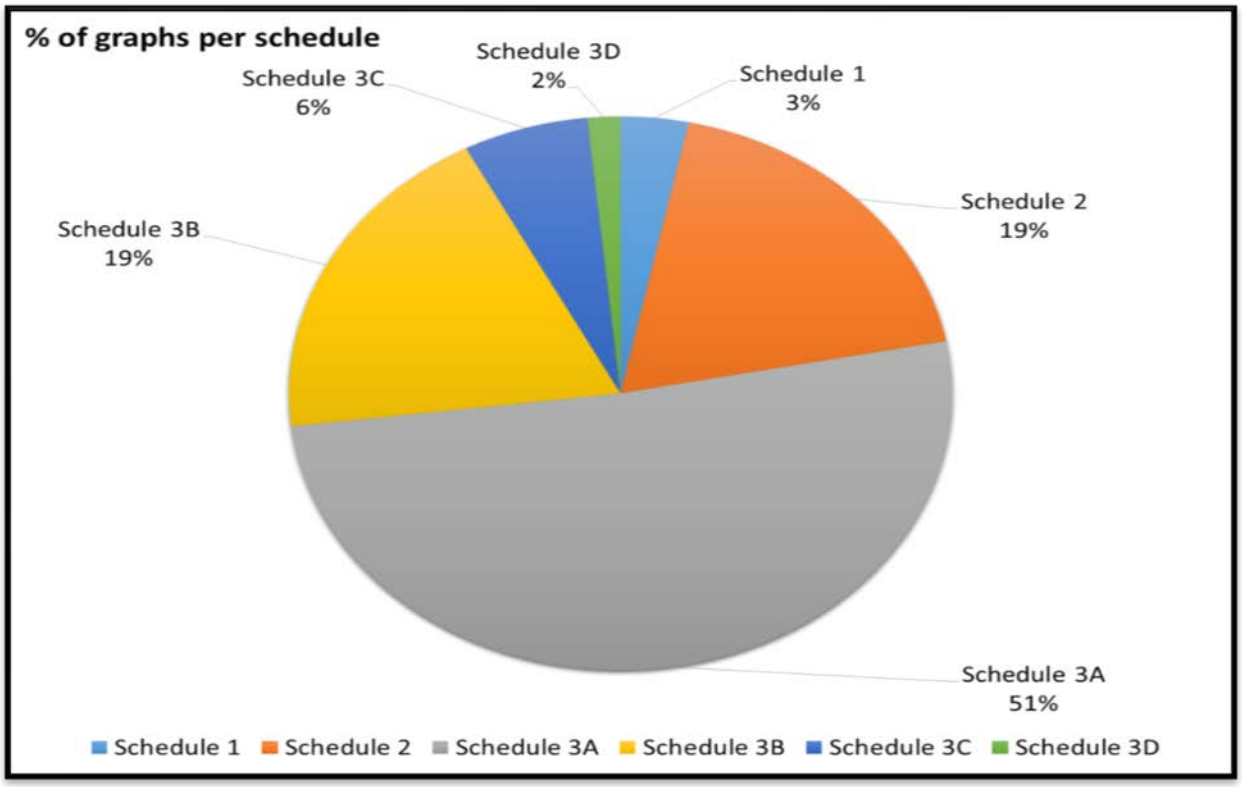


Figure 3. Analysis of graph disclosure

4.1.3 Disclosure by graph type

The most frequently used graph type was the bar graph (40%). This was followed by pie charts (19%) and column graphs (17%). Bar graphs were found to be the best graph type where a quick summary of information is required (Coll, 1992). This is in contrast to Varachia et al. (2018) where column graphs (34.3%) were the most frequently used followed by pie charts (24%) and bar graphs (12%). Prior studies such as Klerk and Wyk (2017), Guddal (2016), Falschlunger et al. (2015), and Sartawi (2015) indicate that column graphs were the most commonly used graph. The results were similar to US and UK companies where the bar, column, and pie charts were the most popular type used (Beattie & Jones, 1997). In terms of the category 'other', graphs related to scatter plot diagrams as well, combination of line and stacked bar and combination of line and stacked columns graphs.

Table 8: Graph Disclosure by Graph Type

Type of Graph	Total	%
Bar	1270	39.86
Pie	621	19.49
Column	537	16.85
Stacked Bar	228	7.16
Line	210	6.59
Other	143	4.49
Combination Line/Bar	114	3.58
Combination Line/Column	48	1.51
Area	15	0.47
Grand Total	**3186**	**100**

Type of variable graphed- financial and non-financial category

SOEs used non-financial graphs to a larger extent when compared to financial graphs. 71% (2268) related to non-financial graphs, and 29% (918) relate to financial graphs. The reason for the greater use of non-financial graphs could be attributed to the mandates of schedule 1, 3A, 3C and 3D entities as mentioned under Section 2.3.2. Refer to figure 4 for an illustration of the split between financial and non-financial graphs.

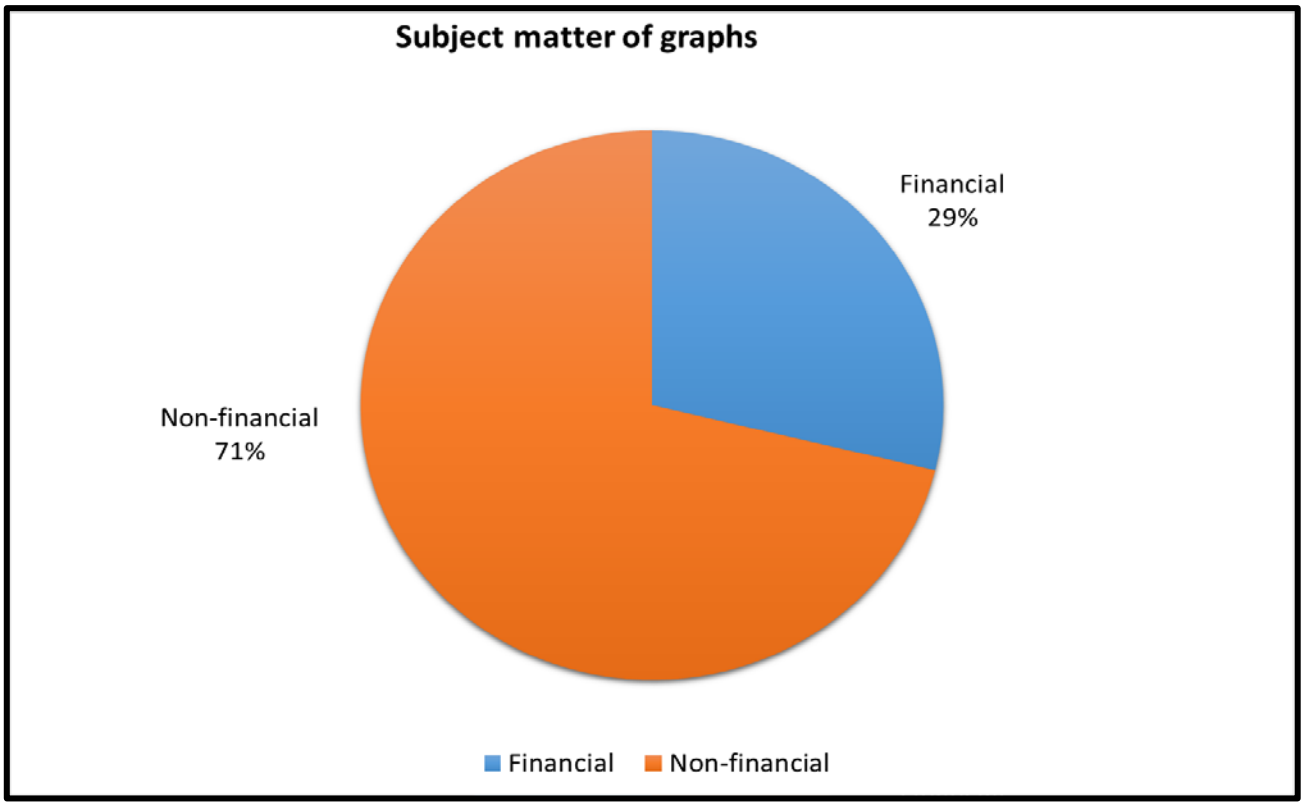


Figure 4. Illustration of split between financial and non-financial graphs

Type of graph type- financial and non-financial category

The most common graph used in each category was the bar graph, (39%) for non-financial graphs and (43%) for financial graphs. For non-financial graphs, the pie chart was the second most commonly used (23%) whilst the column was the second most popular financial graph (15%). The top 3 graphs for each category types showed similar results with bar graphs, column graphs and pie charts being the most popular as indicated in Table 9 below.

Table 9: Graph Type per Category

Type of Graph	Non-Financial	%	Financial	%
Area	10	0.44	5	0.54
Bar	875	38.58	395	43.03
Column	397	17.50	140	15.25
Combination Line/Bar	59	2.60	55	5.99
Combination Line/Column	27	1.19	21	2.29
Line	141	6.22	69	7.52
Other	105	4.63	38	4.14
Pie	523	23.06	98	10.68
Stacked Bar	131	5.78	97	10.57
Grand Total	**2268**	**100.00**	**918**	**100.00**

Type of variable graphed –financial and non-financial category per schedule

Schedule 3A had the most financial 418 (46%) and non-financial graphs (1223) (54%), however this could be expected given that schedule 3A had the most entities and graphs. Schedule 1 had significantly more non-financial (95%) graphs than financial (5%). This could be due that Schedule 1 entities mandates focusing much more on non-financial aspects compared to other Schedules. This was the same for schedule 3B which had significantly more non-financial (74%) graphs compared to financial graphs (26%). The number of financial and non-financial graphs per schedule is indicated in Table 10 below.

Table 10: Graph Type per Schedule

Schedule	1	2	3A	3B	3C	3D	Total
Financial	5	250	418	156	66	23	918
Non-financial	89	344	1223	455	129	28	2268
Overall total	94	594	1641	611	195	51	3186

Type of graph – financial category

Across all variables, the most frequently used type of graph is the bar graph. Overall, in the financial category, the bar graph was the most used followed by column graphs and pie charts. This is in contrast with the results of Varachia et al. (2018) study where the column graph was the most used overall followed by pie charts and line graphs. The graph type per financial variable is indicated in Table 11 below.

Table 11: *Graph Type by Category*

Type of Graph	Sales	Profit	Other	Total Financial	%
Area	1	0	4	5	0.54
Bar	59	26	310	395	43.03
Column	23	8	109	140	15.25
Combination Line/Bar	5	1	49	55	5.99
Combination Line/Column	5	1	15	21	2.29
Line	9	0	60	69	7.52
Other	3	3	32	38	4.14
Pie	30	0	68	98	10.68
Stacked Bar	17	0	80	97	10.57
Grand Total	**152**	**39**	**727**	**918**	**100.00**

4.1.4. Variables graphed

South African SOEs disclose more non-financial graphs, with 2268 (71%) non-financial graphs being disclosed when compared to 918 (29%) financial graphs presented. This is in contrast to Varachia et al. (2018) where 61% of graphs disclosed were financial and 39% non-financial graphs were presented.

The number of non-financial graphs could be due to the mandates of certain schedules as certain schedules such as schedule 1 and 3A which are not profit driven but rather have a specific social responsibility to address. Most annual reports include the distribution of the board with regards to race, gender, experience, skills and independence as the most frequent form of non–financial information. A possible reason for this could be due to the introduction of King IV. Various characteristics of the composition of a company's board are required to be disclosed by King IV - Principle 7. This was found to be the case in South African SOEs. Another common form of non-financial information found was the disclosure of information relating to service delivery and achievements by entities. Service delivery

is a crucial measure for the success of a SOE. Further information disclosed relates to the number of employees appointed, trained and terminated by a company, the race, age and gender of employees, targets in terms of race and gender and contract versus permanent employees.

4.2. Compliance with standards for good graphs

The results relating to presentational enhancement and whether evidence of presentational enhancement has been found in the graphs displayed in the annual reports of SOEs will be discussed in this section. The analysis is based on the questions included in Appendix A. The results are shown on Table 12.

The graphs presented in the annual reports of South Africa SOEs show some deficiencies relating to compliance with standards for good graphs. The most prevalent non-compliance appears to be that graphs do not include gridlines (37%). Graphs also appear to exclude the specifier (36%) which may pose a challenge to examine relationships and trends. Graphs also lack of a financial variable axis as 20% of graphs had no axis which may pose a challenge to the user to collect the reliable information (Frownfelter-Lohrke & Fulkerson, 2001). 13% of graphs had a non-zero starting axis which is considered bad practice and can make it difficult to see the differences in data points (Cleveland, 1994; Tufte, 1983). 14% of the graphs disclosed time sequence in a reverse which may cause confusion to a reader due to the norm of data being presented from left to right and top to bottom (Arunachalam, Pei, & Steinbart, 2002). 6% of graphs also had multiple vertical axes which may cause confusion to the user. 21% of graphs had data within the graph. 1% of graphs were found to have broken scales. In terms of using visual effects, 9% of graphs were found to be three-dimensional whilst 10% of graphs had obstructive backgrounds which created a trendy visual effect which may distract readers from the actual information on the graph. In terms of background colour, 93% of graphs had either white or grey backgrounds with the other 7% of the graphs having other colours. Majority of graphs had 6 or less colours as only 6% of graphs had more than 6 colours. Majority (99%) of graphs had clearly defined borders whilst 100% of graphs had evenly spaced bars within the graph. Graphs disclosed by South African SOEs contained presentational enhancement to a slight degree but overall the greater extent of graphs were in compliance with good graph standards.

Table 12: South African SOEs Compliance with Good Graphs

Question	Guidelines	Findings - Current Study
1	**Inadequate chart titles and labels**	
1.1	Is the graph detailed and labelled? (Yes)	99%
	Is the graph detailed and labelled? (No)	1%
1.2	Are important events labelled? (Yes)	100%
	Are important events labelled? (No)	0%
	Axis	
	Numeric scale	
1.3	Is there a scaled financial variable axis? (Yes)	80%
	Is there a scaled financial variable axis? (No)	20%
1.4	Where is the financial variable axis located?	
	Conventionally - Left	97%
	Unconventionally - Right	3%
	Specifier - The column which represents the numeric values	
1.5	Is there a number attached to the specifier? (Yes)	64%
	Is there a number attached to the specifier?(No)	36%
1.6	Is the numeric label on the specifier horizontal? (Yes)	87%
	Is the numeric label on the specifier horizontal? (No)	13%
	Scale	
1.7	Is the scale continuous or broken?	
	Continuous (Yes)	99%
	Broken (No)	1%
1.8	Does the scale begin at zero? (Yes)	87%

Question	Guidelines	Findings - Current Study
	Does the scale begin at zero? (No)	13%
	Time Axis	
1.9	Is there a scaled time axis? (Yes)	97%
	Is there a scaled time axis? (No)	3%
1.10	Is the numeric label on the time axis horizontal? (Yes)	93%
	Is the numeric label on the time axis horizontal? (No)	7%
	Gridlines	
1.11	Are there gridlines included? (Yes)	63%
	Are there gridlines included? (No)	37%
2	**Obtrusive backgrounds**	
	What colour is the background of the graph?	
	White	76%
	Grey	17%
	Yellow	0%
	Beige/Ivory	1%
	Black	1%
	Other colours	4%
	Picture	1%
3	**Borders**	
	Are there clearly defined borders? (Yes)	99%
	Are there clearly defined borders? (No)	1%
4	**Optical Illusion**	
	Is the graph three-dimensional? (Yes)	9%
	Is the graph three-dimensional? (No)	91%

Question	Guidelines	Findings - Current Study
5	**Inappropriate use of colour**	
	How many colours are in the graph?	
	Fewer than 6 (<6)	94%
	More than 6 (>6)	6%
6	**Legend**	
	Is there a legend? (Yes)	80%
	Is there a legend? (No)	20%
7	**Trendy visual effects**	
7.1	Do borders detract from the graph? (Yes)	10%
	Do borders detract from the graph? (No)	90%
7.2	Are there any data inside the graph? (Yes)	21%
	Are there any data inside the graph? (No)	79%
8	**Multiple scale on the vertical axis**	
	Is there a single scale or multiple scale?	
	Single	94%
	Multiple	6%
9	**Time series portrayed in reverse order**	
	Is the data on the graph in sequential or reversed sequential order?	
	Sequential	86%
	Reversed	14%
10	Exaggerated width of data markers or spaced	
	Are the bars of uniform width and evenly spaced? (Yes)	100%
	Are the bars of uniform width and evenly spaced? (No)	0%

Comparison with prior studies

The study conducted by Uyar (2009) analysed deficiencies in graphs using the 11 deficiencies noted by Frownfelter-Lohrke and Fulkerson (2001), included under Section 2.3.3. Some of the deficiencies included missing vertical, non-zero baselines axes, using multiple vertical axes with different scales, not showing data values and reversing time-series (Uyar, 2009). The graphs displayed by South African SOEs showed the same deficiencies.

The study by Varachia et al. (2018) noted deficiencies in graphs. Some of these deficiencies include missing variable axis (39%), no gridlines (82%), no data attached to the specifier (27%), and data shown vertically (22 were some of the major deficiencies found. Regarding the presentation of a time axis, 36% of graphs did not require a time axis (due to the nature, for example, pie chart or the information that was being depicted did not require a time scale). Lastly 14% of graphs were found to have reversed timelines. The results from South African SOEs showed similar results to that in the private sector with the same deficiencies being noted.

A study on Australian companies, carried out by Beattie and Jones (1999) also examined presentational enhancement. There were slight variations in the questions compared to the guidelines used by Frownfelter-Lohrke and Fulkerson (2001) in terms of the questions. There is noncompliance to good graph standards in graphs used in Australian companies in terms of the use of non–zero baselines and gridlines, use of scaled financial axis and time axis and three–dimensional graphs. Studies conducted in the US, Turkey and Europe showed that 13% of graphs analysed did not have a scaled financial variable axis, which is lower than the 20% of graphs in South African SOEs. 29% of graphs omitted the time axis which is significantly higher than the omission noted for South African SOEs (3%). It was found that more Australian companies use gridlines as 43% of graphs did not include gridlines whereas 37% of the graphs of South African SOEs did not include gridlines. Further 16% of graphs were three-dimensional compared to 9% in South African SOEs. Australian companies appear to avoid presentational enhancement in terms of displaying the time series in reverse order as only 2% of graphs were found to have an unconventional ordering of time series.

Guddal (2016) analysed presentational enhancement in KFV graphs. Some of the common issues found was that 51% of graphs had no gridlines, 22% of graphs had no financial variable axis and 10% of graphs had multiple scales. Other issues found related to obstructive visual effects (2%), and 1% of graphs were three dimensional. In the study by Nunez (2016), 34% of graphs had no financial variable axis. It was also found that 28% of graphs had a zero-baseline scale. When considering only KFV graphs, 25% of graphs had obstructive visual effects.

4.3 Measurement distortion

The GDI is most commonly used to both identify and quantify the measurement distortion of graphs (Tufte, 1983). Measurement distortion may be used to misrepresent a graph thus allowing a graph to be used for the purpose of impression management (Beattie & Jones, 2008; Guddal, 2016), as discussed under Section 2.3.1 of the Literature Review. Measurement distortion was measured using the GDI. The GDI was derived by Taylor and Anderson (1986) based on the lie factor developed by Tufte (1983). A materiality threshold of 5% was chosen to determine whether a graph is materially distorted or not based on prior research such as Beattie and Jones (1997) conducted in the UK and USA and Varachia et al. (2018) where the study was conducted in South Africa. The GDI is the traditional used to measure distortion, commonly used in previous studies, and thereby allows for comparisons.

Of the 3186 graphs found in annual reports, GDI was only calculated for 1911 graphs. The 1911 graphs were the sample used for the purpose of the GDI analysis. No data was available for 654 graphs and therefore the GDI could not be calculated. The GDI could not be calculated for 621 graphs due to the nature of the graphs. Table 13 shows the analysis of how the GDI was calculated with a split between financial and non-financial graphs.

Table 13: Analysis of Graphs in terms of the Calculation of GDI

Reason	Financial	Non-financial	Total
GDI calculated	607	1304	1911
No data available	213	441	654
Not applicable due to nature of graph	98	523	621
Total	918	2268	3186

4.3.1 Graphs distorted

Of the 1911 graphs where a GDI was calculated, 1272 (67%) were materially distorted. The remaining 639 graphs (33%) were either not distorted or were not materially distorted. As there are more graphs which are materially distorted this could indicate that graphs used by South Africa SOEs are biased when presenting data. Table 13 displays the percentage of materially distorted graphs compared with graphs which are not distorted or not materially distorted.

The results appear to be similar to Varachia et al. (2018) where 68% of graphs were distorted. The percentage of graphs which contain measurement distortion appears to be higher than results in previous studies conducted in other countries. In the study conducted by Beattie and Jones (1992),

30% of graphs in the UK were found to contain measurement distortion; this reduced to 24% according to the study by Beattie and Jones (1997). The percentage of UK distorted graphs increased to 60% in the study conducted by Beattie et al. (2008). In Australia, 34% of the graphs contained material measurement distortion as noted by Beattie and Jones (1999). The study conducted by P. Mather et al. (2000) showed that 57% of graphs were materially distorted. The results in Europe Falschlunger et al. (2015) found that 43% of graphs contained measurement distortion. This is the same as the percentage of incorrectly constructed graphs in Jordanian banks as indicated by Sartawi (2015). In Norway 20% of graphs were found to be distorted however a GDI of over 10% was considered to be materially distorted (Guddal, 2016). In Beattie and Jones (1999), it was found that 34% of graphs were materially distorted. It was also found in Beattie and Jones (1997) that 24% of graphs in the USA and UK we materially distorted. In Brazil Nunez (2016), found that 31% of graphs were materially distorted, however 10% was used as an indicator. The breakdown of the number of graphs distorted is shown in Figure 5 and Table 14 below.

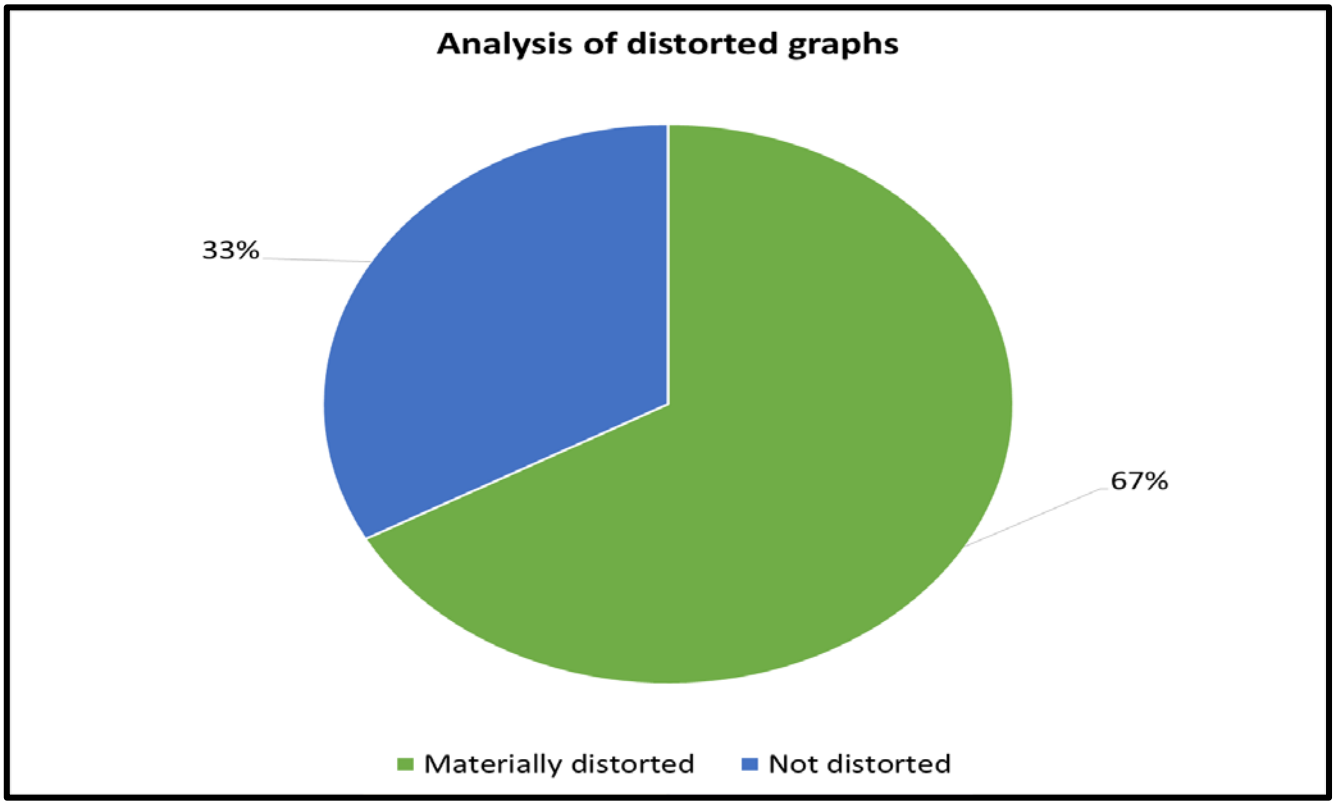


Figure 5. Analysis of materially distorted graphs

Table 14: Analysis of the Number of Graphs Distorted

Variable	Materially Distorted	%	Not Distorted or Not Materially distorted	%	Total	%
Financial						
Sales	59	3%	24	1%	83	4%
Profit	18	1%	9	0%	27	1%
Other financial	338	18%	159	8%	497	26%
Total financial	**415**	22%	**192**	10%	607	32%
Non-financial	857	45%	447	23%	1304	68%
Total	**1272**	67%	**639**	33%	1911	100%

Analysis of distortion per variable

In terms of variables graphed, non-financial variable graphs are materially distorted on a larger scale (67%) than financial graphs (33%). This can be seen as reasonable due to the number of non-financial graphs compared to financial graphs. When analysing financial variable graphs, other financial graphs were the most distorted (27%) followed by sales (5%). The analysis of materially distorted graphs per variable is displayed in Table 15 and Figure 6 and 7.

Table 15: Analysis of Distortion per Variable

Variable	Materially distorted graphs	% of Total distorted graphs (1272)	% of Specific variable (Financial vs Non-financial)
Financial			
Sales	59	5%	14%
Profit	18	1%	4%
Other financial	338	27%	81%
Total financial	415	33%	100%
Non-financial	857	67%	100%
Total	**1272**	**100%**	100%

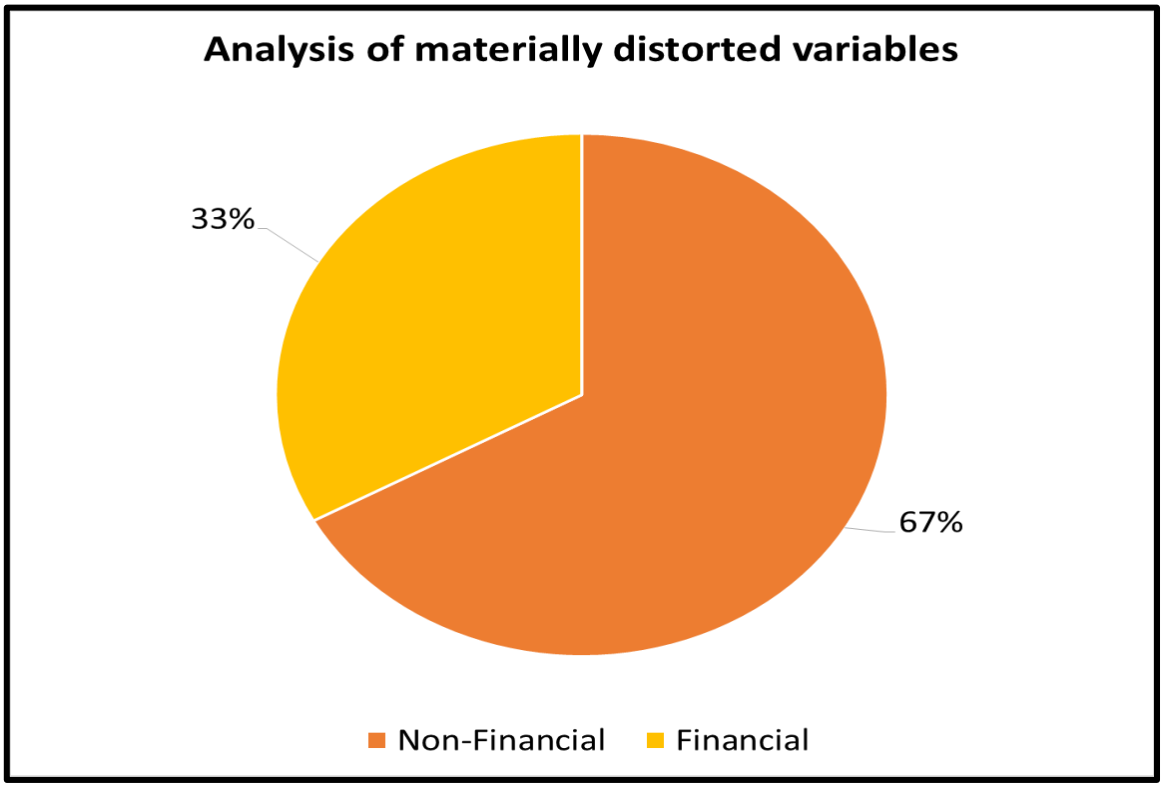


Figure 6. Analysis of materially distorted variables

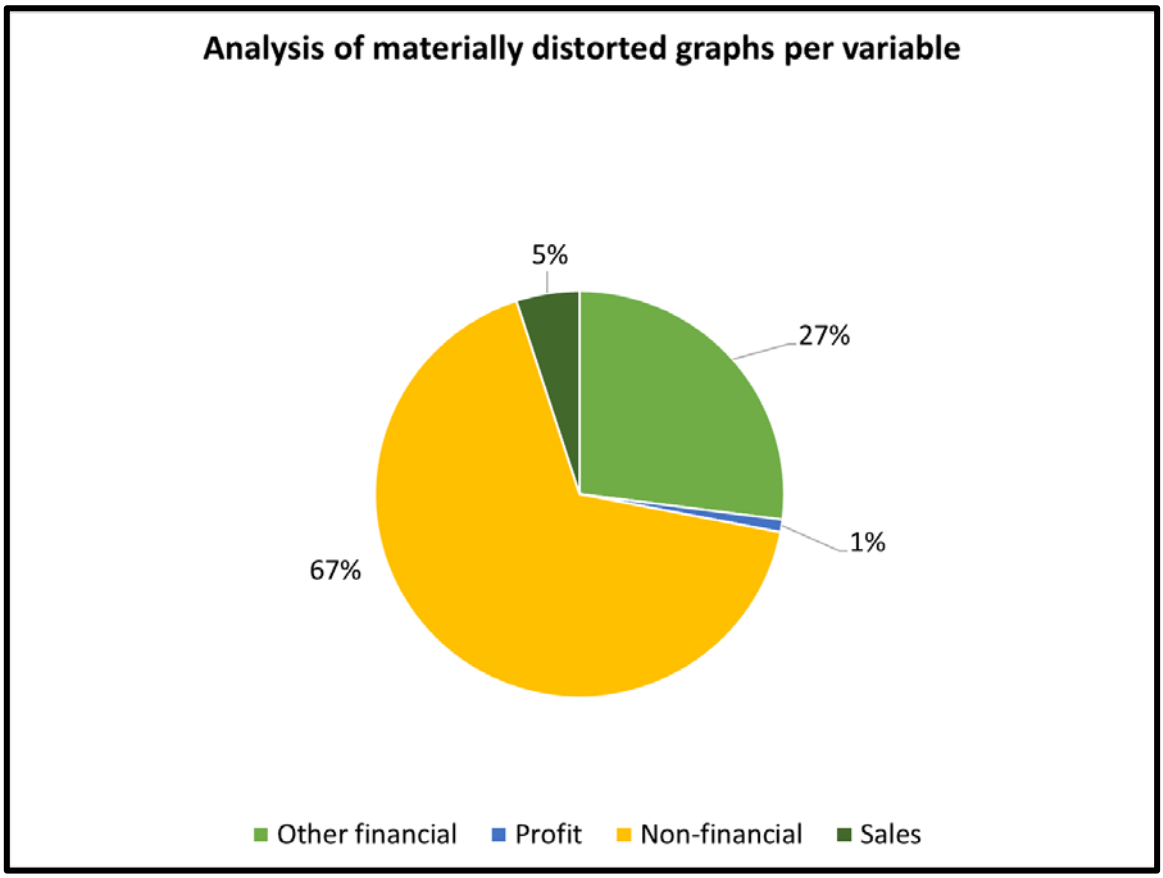


Figure 7. Analysis of materially distorted graphs per variable

4.3.2 Average GDI

When considering the average GDI, there seems to be significant measurement distortion for both financial and non-financial graphs disclosed in the annual reports of South African SOEs. Overall, the average GDI[5] for all graphs was 117% which shows that the graphs of South African SOEs show material measurement distortion and graphs are distorted in order to reflect a positive trend. The average GDI for material exaggeration was higher (361%) when compared to material understatement (-93%). Graphs of South African SOEs are materially overstated, as the information is displayed to produce a more positive impression of the company for the users of financial statements.

When looking at the average GDI per schedule, schedule 2 has the highest overall average GDI with 333%. It is interesting to note that entities such as Transnet, South African Airways and Eskom are schedule 2 entities. Schedule 2 entities are meant to operate as profit entities. The second highest schedule was schedule 3A with 66%. The schedule with the lowest overall average GDI was schedule 3D (6%). The average GDI for material exaggeration was higher in every schedule when compared to material understatement.

The results of South African SOEs are the same as those from previous studies conducted in that the average GDI was found to reflect a favourable trend as trends were exaggerated. In terms of the average GDI, Varachia et al. (2018) had an overall GDI of 134%. The average GDI for material exaggeration was higher (305%) when compared to material understatement (-93%) showing very similar results. The average GDI in the study by Beattie and Jones (1992) showed UK companies had a much lower average GDI of 11%. This further decreased to 7% according to (Beattie & Jones, 1997). The study by Frownfelter-Lohrke and Fulkerson (2001) showed that the average GDI found for non-US listed companies was calculated as 173% whilst the average GDI for US listed companies was found to be 81%. The average GDI of European countries was significantly higher as it was calculated as 773% (Falschlunger et al., 2015). The average GDI in Australian companies was calculated as 11% (Beattie & Jones, 1999) and 55% in Australian IPO prospectuses (P. Mather et al., 2000). The average GDI was 8% in charity reports in the study conducted by (Beattie & Jones, 1994). No average GDI was calculated in Guddal (2016), Rahman et al. (2014), and Klerk and Wyk (2017). The results obtained for the average GDI is displayed in Table 16.

[5] The average GDI was calculated after removing a graph with a GDI of 30700% as it is regarded as an outlier for the purposes of this study

Table 16: Average GDI per Schedule

Type of distortion							
Schedule	**1**	**2**	**3A**	**3B**	**3C**	**3D**	**Total**
Exaggeration - >/5%	54%	649%	218%	187%	117%	80%	361%
Understatement - </5%	-44%	-155%	-68%	-179%	-42%	-40%	-93%
Overall total	-2%	333%	66%	43%	35%	6%	141%

Analysis of average GDI per variable

Overall, non-financial graphs had a higher overall average GDI at 121% compared to the financial graphs at 111%. Both financial and non-financial graphs were more materially exaggerated than understated. Schedule 2's non-financial graphs were the most materially exaggerated (826%) whilst schedule 3B's non-financial graphs were the most materially understated (256%). Schedule 3A's financial graphs had the highest material exaggeration (458%) whilst schedule 2's financial graphs were the most materially understated (171%). The results obtained for the average GDI per schedule and per variable is shown in Table 17 below.

Table 17: Average GDI per Schedule and per Variable

	Financial		Overall Total	Non-financial		Overall Total
	Exaggeration - >/5%	Understatement - </5%		Exaggeration - >/5%	Understatement - </5%	
Schedule						
1	52%	-11%	20%	54%	-49%	-6%
2	270%	-171%	60%	826%	-143%	492%
3A	458%	-70%	166%	125%	-68%	24%
3B	148%	-43%	61%	207%	-256%	30%
3C	175%	-42%	80%	76%	-42%	10%
3D	38%	-50%	-24%	121%	-12%	62%
Total	317%	-87%	111%	380%	-97%	121%

4.4 Overall analysis

The results show that the usage of graphs in annual reports is common. It is evident from the results that graph usage is prevalent in the annual reports of South African SOEs. It was found that 64% of entities used graphs in their annual reports to present information. In total 3186 graphs were displayed which resulted in an average of 12.54 graphs per annual report. The bar graph was the most commonly used graph, which is not consistent with prior studies where the column graph was the most frequently used. South African SOEs tend to show more non-financial graphs than financial graphs. This could be due to the mandates of SOEs when compared to entities in the private sector. In terms of the non-financial graphs disclosed, various ESG measures were graphed.

As mentioned graphs provide the chance for management to engage in impression management to further the interests of management. Graphs disclosed by South African SOEs contained presentational enhancement to a slight degree but overall the greater extent of graphs were in compliance with good graph standards. As such management do not use presentational enhancement as a means of impression management.

However measurement distortion was found in the graphs in the annual reports of South African SOEs as a means of impression management. Measurement distortion was measured using the GDI and it was noted that the majority (67%) of graphs were materially distorted and as a result, may impact the judgement of users. The average GDI for graphs was calculated as 141% depicting that the trends tend to be exaggerated. This may signify that graphs are utilised as a means to portray the company's actual performance more advantageously, particularly in terms of service delivery due to the nature of the non-financial graphs disclosed. The results relating to the incidence of graphs, the variables graphed and the distortion appear to be consistent with prior studies.

5. Conclusion

5.1. Conclusion of the study

The purpose of this study was to analyse the incidence, quality and measurement distortion of graphs in the annual reports of South African SOEs for the financial year ended 2018. Distortion of graphs were investigated in two measures, namely, presentational enhancement and measurement distortion. There was evidence of significant measurement distortion and presentational enhancement which signify the use of impression management in graphs and that graphs are utilised as a means to affect perceptions of users on the performance of entities.

The results of the study showed that 64% of entities presented graphs in their annual reports. There was an average of 12.54 graphs per annual report. There was a total of 3186 graphs presented across the companies which presented graphs. Schedule 3A had the most graphs with 1629 (51%) graphs being disclosed.

The graphs presented in the annual reports of South Africa SOEs show some deficiencies relating to compliance with standards for good graphs. The most prevalent non-compliance to graph standards is in terms of graphs that do not contain gridlines (37%). The results from South African SOEs showed similar results to that in the private sector with the same deficiencies being noted. Overall, although some non-compliance with good graph standards was found, presentational enhancement does not seem to be used by South African SOEs as an objective to distort graphs.

Measurement distortion was measured using the GDI that was derived by Taylor and Anderson (1986) based on the lie factor developed by (Tufte, 1983). The GDI is most commonly used to both identify and quantify the measurement distortion of graphs (Tufte, 1983). 5% is the materiality threshold that was selected in order to evaluate whether a graph is materially distorted or not based on prior research. Of the 3186 graphs found in annual reports, GDI was only calculated for 1911 graphs due to the remaining graphs not having data or due to the nature of the graph. Of the 1911 graphs where a GDI was calculated, 1272 (67%) were materially distorted. The remaining 639 graphs (33%) were either not distorted or were not materially distorted. As there is a high number of graphs which are materially distorted this could indicate that graphs presented by South Africa SOEs are distorted and therefore biased when presenting data. The results appear to be similar to Varachia et al. (2018) where 68% of graphs were distorted. There appears to be a higher percentage of graphs which contain measurement distortion when compared to previous studies conducted in other countries.

When looking at the variables graphed, it was found that non-financial variable graphs are materially distorted on a greater scale (67%) than financial graphs (33%). When analysing financial variable graphs, other financial graphs were the most distorted (27%) followed by sales (5%). When considering

the average GDI, there seems to be notable measurement distortion in both financial and non-financial graphs presented in the annual reports of South African SOEs. Overall, the average GDI for all graphs was 117% which shows that the graphs of South African SOEs exhibit material measurement distortion and graphs are misrepresented to depict a favourable trend. The average GDI for material exaggeration is higher (361%) when compared to material understatement (-93%). When looking at the average GDI per schedule, schedule 2 has the highest overall average GDI with 333%. It is interesting to note that entities such as Transnet, South African Airways and Eskom are schedule 2 entities. Schedule 2 entities are meant to operate as profit entities.

The results of this study suggest that graphs are utilised as a common communication medium. From a South African state-owned perspective, impression management in graphs were found in the form of measurement distortion whilst presentational enhancement was not as prevalent.

5.2. Areas of future research

There is an opportunity for this study to be extended into countries with similar economies such as South Africa as there is a gap in the existing body of knowledge. The study can also be extended over longer periods to study selectivity as a means of impression management. Additional research can be undertaken to understand if the strong presence of impression management in the country is temporary due to the current delicate political and economic situation or if it is a persistent problem and needs more focus for improvement. The study could be continued to establish whether companies develop their own annual reports or if companies make use of designers to do so. This could aid in establishing whether management utilises distortions as a purposeful strategy or whether distortions are present due to the employment of designers who may not be accustomed to the criteria that should be met when compiling annual reports. This will provide further clarity on the topic and will assist in the limitation relating to typesetters. The non-financial graphs can also be further classified into ESG categories and further analysis can be done to see which ESG measure is being disclosed most often as well as which measure is most distorted.

6. References

Abeysekera, I. (2013). A template for integrated reporting. *Journal of Intellectual capital, 14*(2), 227-245.

ACCA. (2012). Re-assessing the value of corporate reporting. Retrieved from https://www.accaglobal.com/content/dam/acca/global/PDF-technical/financial-reporting/reassessing-value.pdf

Acharya, A. S., Prakash, A., Saxena, P., & Nigam, A. (2013). Sampling: Why and how of it. *Indian Journal of Medical Specialties, 4*(2), 330-333.

Adams, S., & Simnett, R. (2011). Integrated Reporting: An opportunity for Australia's not-for-profit sector. *Australian Accounting Review, 21*(3), 292-301.

Aerts, W. (2001). Inertia in the attributional content of annual accounting narratives. *European accounting review, 10*(1), 3-32.

Aerts, W. (2005a). Narrative accounting disclosures. *The Blackwell encyclopedia of management; 1: Accounting/Cooper, CL [edit.].*

Aerts, W. (2005b). Picking up the pieces: impression management in the retrospective attributional framing of accounting outcomes. In *Accounting, Organizations and Society* (Vol. 30, pp. 493-517).

AGSA. (2017). Status of state-owned enterprises. Retrieved from https://www.agsa.co.za/Portals/0/Reports/PFMA/201617/GR/04%20status%20of%20state-owned%20enterprises.pdf

Anderson, R. (1998). Regulating corporate annual reports in Australia. *Business and economic History*, 522-534.

Anderson, R., & Epstein, M. (1995). The Usefulness of Annual Reports: Australian shareholders want more information in annual reports and clearer explanations of what the numbers mean. *Australian Accountant, 65*, 25-25.

Antonius, R. (2003). *Interpreting quantitative data with SPSS*: Sage.

Armstrong, P. (2015). Corporate Governance and State-owned Enterprises. Retrieved from https://www.ifc.org/wps/wcm/connect/1299668047f4ee8bae58ff299ede9589/EB_IFC_Phil_Armstrong.pdf?MOD=AJPERES

Arunachalam, V., Pei, B. K. W., & Steinbart, P. J. (2002). Impression Management with Graphs: Effects on Choices. *Journal of Information Systems, 16*(2), 183-202. doi:10.2308/jis.2002.16.2.183

ASB. (2004). Framework for the preparation and presentation of financial statements. In: Accouting Standards Board.

ASB. (2010). *Presentation of financial statements (GRAP 1)*. Retrieved from

Baker, J. D. (2016). The purpose, process, and methods of writing a literature review. *AORN journal, 103*(3), 265-269.

Bannister, J. W., & Newman, H. A. (2006). Disclosure biases in proxy performance graphs: The influence of performance and compensation committee composition. *Review of Accounting and Finance, 5*(1), 30-44.

Bartlett, S. A., & Chandler, R. A. (1997). The corporate report and the private shareholder: Lee and Tweedie twenty years on. *The British accounting review, 29*(3), 245-261.

Bastardo, A. C. L. B. B. (2015). *Graph usage in financial reports: Evidence from Portuguese listed companies.*

Beattie, V., Dhanani, A., & Jones, M. J. (2008). Investigating presentational change in UK annual reports: A longitudinal perspective. *The Journal of Business Communication (1973), 45*(2), 181-222.

Beattie, V., & Jones, M. (1994). An empirical study of graphical format choices in charity annual reports. *Financial Accountability and Management, 10*(3), 215-236.

Beattie, V., & Jones, M. J. (1992). The use and abuse of graphs in annual reports: theoretical framework and empirical study. *Accounting and Business Research, 22*(88), 291-303.

Beattie, V., & Jones, M. J. (1997). A comparitive study of the use of financial graphs in the corporate annual reports of major US And UK Companies. *Journal of International Financial Management & Accounting, 8*(1), 33-68.

Beattie, V., & Jones, M. J. (1999). Australian financial graphs: an empirical study. *Abacus, 35*(1), 46-76.

Beattie, V., & Jones, M. J. (2000). Impression management: the case of inter-country financial graphs. *Journal of International Accounting, Auditing and Taxation, 9*(2), 159-183.

Beattie, V., & Jones, M. J. (2001). A six-country comparison of the use of graphs in annual reports. *The International Journal of Accounting, 36*(2), 195-222.

Beattie, V., & Jones, M. J. (2002). Measurement distortion of graphs in corporate reports:an experimental study. *Accounting, Auditing & Accountability Journal, 15*(4), 546-564.

Beattie, V., & Jones, M. J. (2008). Corporate reporting using graphs: a review and synthesis. *Journal of Accounting Literature, 27*, 71-110.

Bernard, H. R. (2002). Research Methods in Anthropology. ed. *Califonia: AltaMira Creek*.
Bierstaker, J. L., & Brody, R. G. (2001). Presentation format, relevant experience and task performance. *Managerial Auditing Journal, 16*(3), 124-129.
Bolino, M. C., Kacmar, K. M., Turnley, W. H., & Gilstrap, J. B. (2008). A multi-level review of impression management motives and behaviors. *Journal of Management, 34*(6), 1080-1109.
Brasseur, L. E. (2003). *Visualizing Technical Information: A Cultural Critique (Baywood's Technical Communications Series)*: Bay Press, Incorporated.
Bray, M., & Chapman, M. (2012). *What does an Integrated Report look like?* Retrieved from
Brennan, N. M., Guillamon-Saorin, E., & Pierce, A. (2009). Methodological Insights: Impression management: developing and illustrating a scheme of analysis for narrative disclosures–a methodological note. *Accounting, Auditing & Accountability Journal, 22*(5), 789-832.
Buchanan, D. A. (2001). The role of photography in organization research: a reengineering case illustration. *Journal of Management Inquiry, 10*(2), 151-164.
Burgess, D., Dilla, W., Steinbart, P., & Shank, T. (2008). Does graph design matter to CPAs and financial statement readers? *Journal of Business & Economics Research, 6*(5), 111-124.
Burgman, R., & Roos, G. (2007). The importance of intellectual capital reporting: evidence and implications. *Journal of Intellectual capital, 8*(1), 7-51.
Busco, C., Frigo, M. L., Paolo, Q., & Angelo, R. (2013). Redefining corporate accountability through integrated reporting: What happens when values and value creation meet?
Busco, C., Frigo, M. L., Riccaboni, A., & Quattrone, P. (2013). Integrated reporting. *Concepts and Cases that*.
Cavaye, A. L. (1996). Case study research: a multi-faceted research approach for IS. *Information systems journal, 6*(3), 227-242.
Challen, D., & Jeffery, C. (2005). Definition of the reporting entity. *Australian Accounting Review, 15*(35), 71-78.
Chan, S. Y. (2001). The use of graphs as decision aids in relation to information overload and managerial decision quality. *Journal of information science, 27*(6), 417-425.
Chang, L. S., & Most, K. S. (1985). *The Perceived Usefulness of Financial Statements for Investors' Decisions*: University Presses of Florida.
Cialdini, R. B., & De Nicholas, M. E. (1989). Self-presentation by association. *Journal of personality and social psychology, 57*(4), 626.
CICA. (1993). *Using ratios and graphics in financial reporting*: Canadian Institute of Chartered Accountants.
Clatworthy, M. A., & Jones, M. J. (2006). Differential patterns of textual characteristics and company performance in the chairman's statement. *Accounting, Auditing & Accountability Journal, 19*(4), 493-511.
Cleveland, W. S. (1994). The elements of graphing data (revised ed.). *Murray Hill, NJ*.
Cleveland, W. S., & Cleveland, W. S. (1985). *The elements of graphing data* (Vol. 2): Wadsworth Advanced Books and Software Monterey, CA.
Cohen, J. R., Holder-Webb, L. L., Nath, L., & Wood, D. (2012). Corporate reporting of nonfinancial leading indicators of economic performance and sustainability. *Accounting Horizons, 26*(1), 65-90.
Coles, S. (1997). Creating effective graphs and charts. *Industrial management & data systems, 97*(3), 114-118.
Coll, J. H. (1992). An experimental study of the efficacy of tables versus bar graphs with respect to type of task. *Information & Management, 23*(1), 45-51.
Companies Act, No. 71 of 2008, (2008).
Cook, M., & Sutton, M. H. (1995). Summary annual reporting: A cure for information overload. *Financial Executive, 11*(1), 12-15.
Courtis, J. K. (1995). Readability of annual reports: Western versus Asian evidence. *Accounting, Auditing & Accountability Journal, 8*(2), 4-17.
Courtis, J. K. (1997). Corporate annual report graphical communication in Hong Kong: effective or misleading? *The Journal of Business Communication (1973), 34*(3), 269-284.
Courtis, J. K. (1998). Annual report readability variability: tests of the obfuscation hypothesis. *Accounting, Auditing & Accountability Journal, 11*(4), 459-472.
Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches. *Los angeles: University of Nebraska–Lincoln*.
Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*: Sage publications.
David, C. (2001). Mythmaking in annual reports. *Journal of Business and Technical Communication, 15*(2), 195-222.
de Villiers, C., Venter, E. R. & Hsiao, P. -. C. K., 2017. Integrated reporting: Background, measurement issues, approaches and an agenda for future research. *Accounting & Finance,* 57(4), pp. 937 - 959.

Dilla, W. N., & Janvrin, D. J. (2010). Voluntary disclosure in annual reports: The association between magnitude and direction of change in corporate financial performance and graph use. *Accounting Horizons, 24*(2), 257-278.
DiPiazza Jr, S. A., & Eccles, R. G. (2002). *Building public trust: The future of corporate reporting*: John Wiley & Sons.
Ditlevsen, M. G. (2012). Telling the story of Danisco's annual reports (1935 through 2007-2008) from a communicative perspective. *Journal of Business and Technical Communication, 26*(1), 92-115.
Douglis, P. (2000). Annual report photojournalism: Telling it like it is. *Communication World, 17*(3), 44-45.
Dowling, J., & Pfeffer, J. (1975). Organizational legitimacy: Social values and organizational behavior. *Pacific sociological review, 18*(1), 122-136.

Engelbrecht, L., Yasseen, Y., & Omarjee, I. (2018). The role of the internal audit function in integrated reporting: a developing economy perspective. *Meditari Accountancy Research, 26*(4), 657-674. doi:doi:10.1108/MEDAR-10-2017-0226
Erasmus, L. (2008). Financial performance in terms of the PFMA-what does it mean? *Southern African Journal of Accountability and Auditing Research, 8*(1), 57-66.
Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics, 5*(1), 1-4.
EY. (2018). *EY's Excellence in Integrated Reporting Awards 2018*. Retrieved from https://www.bbrief.co.za/content/uploads/2018/08/EY-Excellence-In-Integrated-Reporting_2018final.pdf
Falschlunger, L. M., Eisl, C., Losbichler, H., & Greil, A. M. (2015). Impression management in annual reports of the largest European companies: A longitudinal study on graphical representations. *Journal of Applied Accounting Research, 16*(3), 383-399.
Finance, Governance and Sustainability: Challenges to Theory and Practice, 2017. *Sustainability Accounting and Integrated Reporting.* Abingdon: Routledge.

Firth, M. (1979). The impact of size, stock market listing, and auditors on voluntary disclosure in corporate annual reports. *Accounting and Business Research, 9*(36), 273-280.
Fisher, S. A., & Hu, M. Y. (1988). *Does The CEO's Letter To The Shareholders Have Predictive V.* Paper presented at the Business Forum.
Fourie, D. (2001). The restructuring of state-owned enterprises: South African initiatives. *Asian Journal of Public Administration, 23*(2), 205-216.
Fourie, D. (2009). Institutional mechanisms and good governance: A perspective on the South African public sector. *Journal of Public Administration, 44*(4), 1114-1123.
Freeman, R. (1984). Strategic management: A stakeholder theory. *Journal of Management Studies, 39*(1), 1-21.
Frees, E. W., & Miller, R. B. (1998). Designing effective graphs. *North American Actuarial Journal, 2*(2), 53-70.
Frink, D. D., & Ferris, G. R. (1998). Accountability, impression management, and goal setting in the performance evaluation process. *Human relations, 51*(10), 1259-1283.
Frownfelter-Lohrke, C., & Fulkerson, C. L. (2001). The incidence and quality of graphics in annual reports: an international comparison. *The Journal of Business Communication (1973), 38*(3), 337-357.
Gardner, W. L., & Martinko, M. J. (1988). Impression management in organizations. *Journal of Management, 14*(2), 321-338.
Gildenhuys, H., Fox, W., & Wissink, H. (1991). *Public macro-organisation*: Juta & Co.
Godfrey, J., Mather, P., & Ramsay, A. (2003). Earnings and impression management in financial reports: the case of CEO changes. *Abacus, 39*(1), 95-123.
Golja, T., & Paulišić, M. (2011). What can we expect from corporate reporting? The case of Croatia. *SEER: Journal for Labour and Social Affairs in Eastern Europe*, 51-60.
Gordon, T. P., & Porter, J. C. (2009). Reading and understanding academic research in accounting: A guide for students. *Global Perspectives on Accounting Education, 6*, 25.
Grant, B. M., & Giddings, L. S. (2002). Making sense of methodologies: A paradigm framework for the novice researcher. *Contemporary nurse, 13*(1), 10-28.
Graves, O. F., Flesher, D. L., & Jordan, R. E. (1996). Pictures and the bottom line: the television epistemology of US annual reports. *Accounting, Organizations and Society, 21*(1), 57-88.
Guba, E., Lincoln, Y. S., Denzin, N., & Lincoln, Y. (1998). The landscape of qualitative research: Theories and issues. *Competing paradigms in qualitative research*, 105-117.
Guddal, T. (2016). *Graph usage in annual reports, evidence from Norwegian listed companies.*
Guthrie, J., & Murthy, V. (2009). Past, present and possible future developments in human capital accounting: a tribute to Jan-Erik Gröjer. *Journal of Human Resource Costing & Accounting, 13*(2), 125-142.

Hart, C. (2018). *Doing a Literature Review: Releasing the Research Imagination*: Sage.
Havemo, E. (2018). Visual trends in the annual report: the case of Ericsson 1947-2016. *Corporate Communications: An International Journal, 23*(3), 312-325.
Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-based nursing, 18*(3), 66-67.
Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of accounting and economics, 31*(1-3), 405-440.
Holt, Z., Yasseen, Y., & Padia, N. (2015). A comparison of non-fi nancial strategy disclosure in the annual reports of South African and Indian listed companies. *Southern African Business Review, 19*(3), 48-77.
Hooks, J., Coy, D., & Davey, H. (2002). The information gap in annual reports. *Accounting, Auditing & Accountability Journal, 15*(4), 501-522.
Hopwood, A. G. (1996). Making visible and the construction of visibilities: shifting agendas in the design of the corporate report-Introduction. In: PERGAMON-ELSEVIER SCIENCE LTD THE BOULEVARD, LANGFORD LANE, KIDLINGTON ….
Hoque, Z., & Moll, J. (2001). Public sector reform–Implications for accounting, accountability and performance of state-owned entities–an Australian perspective. *International Journal of Public Sector Management, 14*(4), 304-326.
Huang, S. Y., Chung, Y.-H., & Cheng, W.-W. (2008). The Effects Between Numerical Tabulations And Graphs Of Financial Information On The Judgment Of Investors. *Review of Business Information Systems, 12*(4), 41-56. doi: https://doi.org/10.19030/rbis.v12i4.4344
IAASB. (2015). International Standards on Auditing.
IASB. (2010). International Accounting Standard 1 - Presentation of Financial Statements. In: International Accounting Standards Board.
IASB. (2013). The Conceptual Framework For Financial Reporting 2010. In: International Accounting Standards Board.
IASB. (2018a). Conceptual Framework for Financial Reporting. In: International Accounting Standards Board.
IFRS. (2013). Internation Financial Reporting Standards. In: Internation Financial Reporting Standards.
IIRC. (2013). The international IR framework. In: International Integrated Reporting Council.
Inchausti, B. G. (1997). The influence of company characteristics and accounting regulation on information disclosed by Spanish firms. *European Accounting Review, 6*(1), 45-68. doi:10.1080/096381897336863
IoDSA. (2015). King IV Questions & Answers. In I. o. D. i. S. Africa (Ed.): Institute of Directors in Southern Africa.
IoDSA. (2016). *King IV Sector Supplements for State-Owned Entities*. Retrieved from https://cdn.ymaws.com/www.iodsa.co.za/resource/resmgr/King_IV/sector_supplements/SOE_supplement.pdf
IoDSA. (2018). Understanding King IV and what it is intended to achieve. Retrieved from https://www.iodsa.co.za/news/389613/Understanding-King-IV-and-what-it-is-intended-to-achieve.htm
IPSASB. (2017). About IPSASB. Retrieved from https://www.ipsasb.org/about-ipsasb
ISI. (2010). Declaration on Professional Ethics. International Statistical Review (Vol. 54). In: International Statistical Institute.
Jameson, D. A. (2000). Telling the investment story: A narrative analysis of shareholder reports. *The Journal of Business Communication (1973), 37*(1), 7-38.
Jarett, I. (1993). *Computer graphics and reporting financial data*. New York: John Wiley & Sons.
Jarett, I., & Babad, Y. (1988). *Financial graphics: Communications for the 1990's: The need for financial graphic standards.* Chicago: Illinois CPA Society.
Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher, 33*(7), 14-26.
Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of mixed methods research, 1*(2), 112-133.
Joppe, G. (2000). Testing reliability and validity of research instruments. *Journal of American Academy of Business Cambridge, 4*(1/2), 49-54.
Khongmalai, O., Tang, J. C., & Siengthai, S. (2010). Empirical evidence of corporate governance in Thai state-owned enterprises. *Corporate Governance: The international journal of business in society, 10*(5), 617-634.
Kitchenham, B. (2004). Procedures for performing systematic reviews. *Keele, UK, Keele University, 33*(2004), 1-26.
Klerk, M. d., & Wyk, L. v. (2017). *Impression management and the use of graphs in integrated reports of the South African mining sector*. Paper presented at the 2017 Southern African Accounting Association - Biennial International Conference Proceedings, Champagne Sports Resort - Drakensberg.
Kosslyn, S. M. (1989). Understanding Charts and Graphs. *Applied Cognitive Psychology, 3*(3), 185-225.

Kotler, P., & Rath, G. A. (1983). Design: A powerful but neglected marketing tool. *Die Unternehmung*, 203-221.
Kowalski, P., Büge, M., Sztajerowska, M., & Egeland, M. (2013). State-owned enterprises.
KPMG. (2012). Integrated Reporting issue 2: Performance insight through better business reporting.
KPMG. (2016). King IV Summary Guide. Retrieved from https://assets.kpmg/content/dam/kpmg/za/pdf/2016/11/King-IV-Summary-Guide.pdf
Krambia-Kapardis, M., & Clark, C. (2010). Public sector financial reporting: a user needs study in Cyprus. In: PrintXpress.
Kress, G., & Van Leeuwen, T. (2006). Visual interaction. *The discourse reader, 2*.
Kruskal, W. (1975). *Visions of maps and graphs.* Paper presented at the Proceedings of the International Symposium on Computer-Assisted Cartography, Auto-Carto II.
Kuhn, T. (1977). The structure of scientific theories, 2nd edn., ed. Suppe. In: University of Chicago Press, Chicago.
Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two-component model. *Psychological bulletin, 107*(1), 34.
Lee, T. (1994). The changing form of the corporate annual report. *Accounting Historians Journal, 21*(1), 215-232.
Leedy, P., & Ormrod, J. (2001). Practical research and design: Upper Saddle River. *New Jersey: Merryll Prentice Hall*.
Leedy, P., & Ormrod, J. (2013). Practical research: planning and design, 10thedn. In: Pearson Education Inc, Upper Saddle River, NJ.
Leung, S., Parker, L., & Courtis, J. (2015). Impression management through minimal narrative disclosure in annual reports. *The British Accounting Review, 47*, 275-289.
Leuz, C., Nanda, D., & Wysocki, P. D. (2003). Earnings management and investor protection: an international comparison. *Journal of financial economics, 69*(3), 505-527.
Lewellen, W. G., Park, T., & Ro, B. T. (1996). Self-serving behavior in managers' discretionary information disclosure decisions. *Journal of accounting and economics, 21*(2), 227-251.
Lodhia, S. K., & Burritt, R. L. (2004). Public sector accountability failure in an emerging economy: The case of the National Bank of Fiji. *International Journal of Public Sector Management, 17*(4), 345-359.
Lord, H. L. (2002). Annual reports: A literature review (1989–2001). *Journal of Technical Writing and Communication, 32*(4), 367-389.
Luke, B. (2010). Examining accountability dimensions in state-owned enterprises. *Financial Accountability & Management, 26*(2), 134-162.
Mabinda, Z. (2018). Corporate governance: What more needs to be done?, 47-49. Retrieved from https://journals.co.za/docserver/fulltext/comcare_v38_n1_a3.pdf?expires=1569923968&id=id&accname=57716&checksum=48592AF288B8C9ED04F0BCAC4C70D496
Madue, S. (2007). Public Finance Management Act, 1 of 1999-a compliance strategy. *Politeia, 26*(3), 306-318.
Madumi, P. (2018). *Are State-Owned Enterprises (SOEs) catalysts for or inhibitors of South African economic growth?*
Manes-Rossi, F. (2018). Is integrated reporting a new challenge for public sector entities? *African Journal of Business Management, 12*(7), 172-187.
Marcus, A. A., & Goodman, R. S. (1991). Victims and shareholders: The dilemmas of presenting corporate policy during a crisis. *Academy of management journal, 34*(2), 281-305.
Martin, D. M. (1989). *How to prepare the annual report: a guide to writing, designing and presenting company reports*: Director Books.
Marx, B., & Mohammadali-Haji, A. (2014). Emerging trends in reporting: an analysis of integrated reporting practices by South African top 40 listed companies. *Journal of Economic and Financial Sciences, 7*(1), 231-250.
Mather, D., Mather, P., & Ramsay, A. (2005). An investigation into the measurement of graph distortion in financial reports. *Accounting and Business Research, 35*(2), 147-160.
Mather, P., Ramsay, A., & Serry, A. (1996). The use and representational faithfulness of graphs in annual reports: Australian evidence. *Australian Accounting Review, 6*(2), 56-63.
Mather, P., Ramsay, A., & Steen, A. (2000). The use and representational faithfulness of graphs in Australian IPO prospectuses. *Accounting, Auditing & Accountability Journal, 13*(1), 65-83.
Mbo, M. (2017). *Drivers of organisational performance: a state owned enterprise perspective.* Stellenbosch: Stellenbosch University,
McLeod, S. (2017). What's the difference between qualitative and quantitative research? Retrieved from https://www.simplypsychology.org/qualitative-quantitative.html
Milne, M. J., & Gray, R. (2007). Future prospects for corporate sustainability reporting. *Sustainability accounting and accountability, 1*, 184-207.

Mnyaka, T. Z. (2014). *The role of state-owned enterprise (SOE)-led infrastructure development in the creation of a developmental state in South Africa: case study of city of Johannesburg.*
Mohamed, W., Yasseen, Y., & Omarjee, F. Z. (2019). The perceptions of South African accounting practitioners on the post-implementation of IFRS for SMEs in an institutionalised environment. *Journal of Economic and Financial Sciences, 12*(1), 1-11.
Mohd Isa, R. (2006). Graphical information in corporate annual report: a survey of users and preparers perceptions. *Journal of Financial Reporting and Accounting, 4*(1), 39-59.
Nellis, J. R. (1986). *Public enterprises in sub-Saharan Africa* (Vol. 1): World Bank Washington, DC.
Neu, D. (1991). Trust, impression management and the public accounting profession. *Critical perspectives on accounting, 2*(3), 295-313.
Neu, D., Warsame, H. A., & Pedwell, K. A. (1998). Managing public impressions: Environmental disclosures in annual reports. *Accounting, Organizations and Society, 23*(3), 265-282.
Neuman, L. W. (2007). *Social Research Methods, 6/E*: Pearson Education India.
Newman, I., Benz, C. R., & Ridenour, C. S. (1998). *Qualitative-quantitative research methodology: Exploring the interactive continuum*: SIU Press.
Nunez, B. (2016). *The use and misuse of graphs in stand-alone annual reports evidence from Brazilian listed companies.*
Olsen, M., Lodwick, D. G., & Dunlap, R. E. (1992). Viewing the World Ecologically (Boulder, CO. In: Westview Press.
Osma, B. G., & Guillamón-Saorín, E. (2011). Corporate governance and impression management in annual results press releases. *Accounting, Organizations and Society, 36*, 187-208.
Ovens, W. (2013). The Role and Significance of State Owned Enterprises, Public Entities and other Public Bodies in the Promotion of Urban Growth and Development in South Africa. In: IUDF.
Padia, N., & Yasseen, Y. (2011). An examination of strategy disclosure in the annual reports of South African listed companies. *South African Journal of Business Management, 42*(3), 27-35.
Paivio, A. (1974). Spacing of repetitions in the incidental and intentional free recall of pictures and words. *Journal of Verbal Learning and Verbal Behavior, 13*(5), 497-511.
Pennington, R., & Tuttle, B. (2009). Managing impressions using distorted graphs of income and earnings per share: The role of memory. *International Journal of Accounting Information Systems, 10*(1), 25-45.
Penrose, J. M. (2008). Annual report graphic use: a review of the literature. *The Journal of Business Communication (1973), 45*(2), 158-180.
PFMA. (1999). *Public Finance Management Act*. Retrieved from http://www.treasury.gov.za/legislation/pfma/act.pdf
Phala, L., Yasseen, Y., Padia, N., & Mohamed, W. (2018). A comparative study on strategy disclosure between emerging markets and developed markets. *Journal of Indian Business Research, Forthcoming*.
Pivac, S., Vuko, T., & Cular, M. (2017). Analysis of annual report disclosure quality for listed companies in transition countries. *Economic research-Ekonomska istraživanja, 30*(1), 721-731.
Prakash, P., & Rappaport, A. (1977). Information inductance and its significance for accounting. *Accounting, Organizations and Society, 2*(1), 29-38.
PwC. (2015). *PWC (2015), State-Owned Enterprises Catalysts for public value creation?*
Rahman, A. A., Hamdan, M. D., & Ibrahim, M. A. (2014). The use of graphs in Malaysian companies' corporate reports: A longitudinal study. *Procedia-Social and Behavioral Sciences, 164*, 653-666.
Rentz, K. C. (1992). The value of narrative in business writing. *Journal of Business and Technical Communication, 6*(3), 293-315.
Rezaee, Z., & Porter, G. L. (1993). Can the annual Report be improved? *Review of Business, 15*(1), 38.
Robb, S. W., & Zarzeski, L. E. S. T. (2001). Nonfinancial disclosures across Anglo-American countries. *Journal of International Accounting, Auditing and Taxation, 10*(1), 71-83.
Roberts, L. (2014). SPECIAL REPORT: Need to get up to speed on integrated reporting. doi:https://www.accountancysa.org.za/special-report-need-to-get-up-to-speed-on-integrated-reporting/
Ruiz-Garrido, M. F., Palmer-Silveira, J. C., & Fortanet-Gómez, I. (2005). Discursive Strategies in Annual Reports: The Role of Visual. *The Association for Business Communication, 7*.
Saad, R. A. J., Yahya, M. A., Hussain, M., & Hairi, M. (2006). A correlation between performance and graphic presentation in unit trust's annual report.
Saad, R. A. J., Yahya, M. A., Hussain, M., & Hairi, M. (2011). The relationship between performance and graphic presentation in Unit Trusts' Annual Reports: Malaysian evidence. *Journal of Business Management and Accounting (JBMA), 1*(1), 1-15.
Sands, V. J. (2004). Regulatory independence, public accountability and the Victorian prison system. *Australian Journal of Public Administration, 63*(4), 50-58.

Sartawi, I. I. M. (2015). GRAPHICAL REPORTING PRACTICES IN THE ANNUAL REPORTS OF JORDANIAN BANKS: AN EMPIRICAL ANALYSIS. *CORPORATE OWNERSHIP & CONTROL*, 371.
Saunders, M., Lewis, P., & Thornhill, A. (2012). Research methods for business students (6. utg.). *Harlow: Pearson*.
Schlenker, B. R., Britt, T. W., Pennington, J., Murphy, R., & Doherty, K. (1994). The triangle model of responsibility. *Psychological review, 101*(4), 632.
Sinclair, A. (1995). The chameleon of accountability: forms and discourses. *Accounting, Organizations and Society, 20*(2-3), 219-237.
Smith, M., & Taffler, R. (1992). The chairman's statement and corporate financial performance. *Accounting & Finance, 32*(2), 75-90.
Smith, M., & Taffler, R. J. (2000). The chairman's statement-a content analysis of discretionary narrative disclosures. *Accounting, Auditing & Accountability Journal, 13*(5), 624-647.
Stainbank, L., & Peebles, C. (2006). The usefulness of corporate annual reports in South Africa: perceptions of preparers and users. *Meditari Accountancy Research, 14*(1), 69-80.
Stanga, K. G. (1976). Disclosure in published annual reports. *Financial Management (pre-1986), 5*(4), 42.
Stanton, P., & Stanton, J. (2002). Corporate annual reports: research perspectives used. *Accounting, Auditing & Accountability Journal, 15*(4), 478-500.
Steinbart, P. J. (1989). The Auditor's Responsibility for the Accuracy of Graphs in. *Accounting Horizons, 3*(3), 60.
Stephen, P., & Hornby, S. (1995). The joys of statistics. *Library Review, 44*(8), 56-62.
Straub, D., Boudreau, M.-C., & Gefen, D. (2004). Validation guidelines for IS positivist research. *Communications of the Association for Information systems, 13*(1), 24.
Subramanian, R., Insley, R. G., & Blackwell, R. D. (1993). Performance and readability: A comparison of annual reports of profitable and unprofitable corporations. *The Journal of Business Communication (1973), 30*(1), 49-61.
Surty, M., Yasseen, Y., & Padia, N. (2018). Trends in integrated reporting: a state-owned company analysis. *Southern African Business Review, 22*(1).
Taylor, B., & Anderson, L. (1986). Misleading graphs: Guidelines for the accountant. *Journal of Accountancy, 162*, 126-135.
Terre Blanche, M., & Durrheim, K. (1999). Practical research: applied methods for social research. In: Cape Town: University of Cape Town Press.
Tongco, M. D. C. (2007). Purposive sampling as a tool for informant selection. *Ethnobotany Research and applications, 5*, 147-158.
Tractinsky, N., & Meyer, J. (1999). Chartjunk or goldgraph? Effects of presentation objectives and content desirability on information presentation. *MIS quarterly*, 397-420.
Treasury. (2017a). *Annual Report Guide for National and Provincial Departments*. Retrieved from http://www.treasury.gov.za/publications/annual%20reports/national%20treasury/Annual%20Report%20Guide%202012.pdf
Treasury. (2017b). Annual Report Guide for Schedule 3A and 3C Public Entities. Retrieved from https://oag.treasury.gov.za/Publications/20.%20Annual%20Report%20Guide/Public%20entities/Public%20Entities%20AR%20Guide_April%202017.pdf
Treasury. (2018). PUBLIC INSTITUTIONS LISTED IN PFMA SCHEDULE 1, 2, 3A, 3B, 3C AND 3D Retrieved from http://www.treasury.gov.za/legislation/pfma/public%20entities/2018-03-29%20Schedules%201%20to%203D.pdf
Tufte, E. (1983). *The Visual Display of Quantitative Information* (1st ed.). Cheshire, CT: Graphics Press.
Uyar, A. (2009). An analysis of graphic disclosure in annual reports: the case of Turkey. *Managerial Auditing Journal, 24*(5), 423-444.
Van Wyk, H. (2004). Perspectives of effective financial management in the public sector. *Journal of Public Administration, 39*(3), 411-420.
Varachia, Z., Yasseen, Y., & Padia, N. (2018). *The frequency and quality of graphs in Annual Reports: A South African analysis of graph disclosure in listed entities*. Retrieved from
Vessey, I., & Galletta, D. (1991). Cognitive fit: An empirical study of information acquisition. *Information systems research, 2*(1), 63-84.
Wahyuni, D. (2012). The research design maze: Understanding paradigms, cases, methods and methodologies. *Journal of applied management accounting research, 10*(1), 69-80.
Watson, L. A., & Monterio, B. J. (2011). The next stage in the evolution of business reporting—The journey towards an interlinked, integrated report. *The Chartered Accountant*, 75-78.
WCPP. (2015). *Chapter Nine Institutions - Constitution of South Africa, 1996*.
White, B. (2003). *Dissertation skills: for business and management students*: Cengage Learning EMEA.

Whittington, G. (2008). Fair value and the IASB/FASB conceptual framework project: an alternative view. *Abacus, 44*(2), 139-168.
Williams, C. (2007). Research methods. *Journal of Business & Economics Research (JBER), 5*(3).
Winfield, R. (1978). An investigation into private shareholder usage of financial statements in New Zealand. *Accounting Education, 18*, 93-101.
Wong, S. C. (2004). Improving corporate governance in SOEs: An integrated approach. *Corporate Governance International, 7*(2).
WorldBank. (2017). Combating Corruption. Retrieved from https://www.worldbank.org/en/topic/governance/brief/anti-corruption
Wright, R. W., Brand, R. A., Dunn, W., & Spindler, K. P. (2007). How to write a systematic review. *Clinical Orthopaedics and Related Research (1976-2007), 455*, 23-29.
Yasseen, Y., Mohamed, W., & Moola-Yasseen, M. (2019). The use of impression management practices in the chairman's statements in South African annual reports: An agency theory perspective. *Communicare: Journal for Communication Sciences in Southern Africa, 38*(1), 37-56.
Yasseen, Y., Moola-Yasseen, M., & Padia, N. (2017). A preliminary study into impression management practices in chairman's statements in South African annual reports: an attribution theory perspective. *Communicare: Journal for Communication Sciences in Southern Africa, 36*(1), 47-66.
Ying Hill, W., & Milner, M. (2003). Guidelines for graphical displays in financial reporting. *Accounting Education, 12*(2), 135-157.
Yuthas, K., Rogers, R., & Dillard, J. F. (2002). Communicative action and corporate annual reports. *Journal of Business Ethics, 41*(1-2), 141-157.
Zeller, T., Stanko, B., & Jin, H. (2012). Investigating presentational change in company annual reports: An extension. *Academy of Accounting & Financial Studies Journal, 16*(3).

7. Appendices

The questions were based on the study completed by Frownfelter-Lohrke and Fulkerson (2001), however additional questions were obtained from the study completed by Beattie and Jones (1997). The source of the question is noted below:

Question Number	Weaknesses noted in graphs	**Applicable to all graphs.** (*If not selected pie diagrams are excluded*)	Frownfelter-Lohrke and Fulkerson (2001)	Beattie and Jones (1997)
1	**Inadequate chart titles and labels**			
1.1	Is the graph detailed and labelled? (Yes/No)	✓	✓	
1.2	Are important events labelled? (Yes/No)	✓	✓	
	Axis			
	Numeric scale			
1.3	Is there a scaled financial variable axis? (Yes/No)			✓
1.4	Where is the financial variable axis located?			✓
	Conventionally - Left (Yes/No)			
	Unconventionally - Right (Yes/No)			
	Specifier -The column which represents the numeric values			
1.5	Is there a number attached to the specifier? (Yes/No)	✓		✓
1.6	Is the numeric label on the specifier horizontal? (Yes/No)			✓
	Scale			
1.7	Is the scale continuous or broken?		✓	
	Continuous (Yes/No)			
	Broken (Yes/No)			
1.8	Does the scale begin at zero? (Yes/No)		✓	
	Time Axis			
1.9	Is there a scaled time axis? (Yes/No)			✓
1.10	Is the numeric label on the time axis horizontal? (Yes/No)			✓

Question Number	Weaknesses noted in graphs	Applicable to all graphs. (*If not selected pie diagrams are excluded)*	Frownfelter-Lohrke and Fulkerson (2001)	Beattie and Jones (1997)
	Gridlines			
1.11	Are there gridlines included? (Yes/No)			✓
2	**Obtrusive backgrounds**			
	What colour is the background of the graph?	✓	✓	
	White (Yes/No)			
	Grey (Yes/No)			
	Yellow (Yes/No)			
	Beige/Ivory (Yes/No)			
	Black (Yes/No)			
	Other colours (Yes/No)			
	Picture (Yes/No)			
3	**Borders**			
	Are there clearly defined borders? (Yes/No)		✓	
4	**Optical illusion**			
	Is the graph three-dimensional? (Yes/No)	✓	✓	
5	**Inappropriate use of colour**			
	How many colours are in the graph?	✓	✓	
	Less than 6 (<6) (Yes/No)			
	More than 6 (>6) (Yes/No)			
6	**Legend**			
	Is there a legend? (Yes/No)	✓	✓	
7	**Trendy visual effects**			
7.1	Do borders detract from the graph? (Yes/No)	✓	✓	
7.2	Is there any data inside the graph? (Yes/No)	✓	✓	
8	**Multiple scale on the vertical axis**			
	Is there a single scale or multiple scale?		✓	

Question Number	Weaknesses noted in graphs	**Applicable to all graphs.** (*If not selected pie diagrams are excluded)*	Frownfelter-Lohrke and Fulkerson (2001)	Beattie and Jones (1997)
	Single (Yes/No)			
	Multiple scale on the vertical axis (Yes/No)			
9	**Time Series portrayed in reverse order**			
	Is the data on the graph in sequential or reversed sequential order?		✓	
	Sequential (Yes/No)			
	Reversed (Yes/No)			
	Bar Graph - Time should run from top to bottom Column Graph - Time should run from left to right			
10	**Exaggerated width of data markers or spaced**			
	Are the bars of uniform width and evenly spaced? (Yes/No)		✓	

Figure 8. Checklist used to determine compliance with good graph guidelines