



**Understanding the relationship between organisational  
attributes, sustainability reporting and financial performance**

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**A research project submitted to the Gordon Institute of Business Science,  
University of Pretoria, in partial fulfilment of the requirements for the  
degree of Master of Business Administration.**

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## Abstract

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Sustainability Reporting amongst corporates has been growing in prominence with, amongst others, the Principles for Responsible Investment outlined in 2005, the King III Report published in 2010 and International Integrated Reporting framework published in late 2011.

The need for analysing the business case for sustainability reporting underpins the motivation for this research which undertook to ascertain the link between certain organisational attributes, sustainability reporting and financial performance. The literature review identified conflicting results in similar studies, and given that this is a fast evolving field of study, this study was deemed necessary.

A quantitative research method was used utilising financial and operational data for 200 South African organisations, in an attempt to study the correlation between key organisational attributes, sustainability reporting frameworks, and financial performance.

This research adds to the ongoing and dynamic 'business case for sustainability' discussion, by studying the links and correlations between the quality of sustainability reporting, specific organisational attributes and key financial performance ratios.

**Key words:** corporate sustainability, business case, financial performance, GRI, organisation attributes

## Declaration

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I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Miguel Martins

\_\_\_\_\_ day of \_\_\_\_\_ 2011

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# CHAPTER ONE : Introduction

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## 1.1 Introduction

The long term sustainability of organisations has always been a business imperative, but more recently, the context of corporate sustainability has moved from a primarily internal economic orientated focus, with the shareholder and shareholder profits being the primary motivator, to incorporating a more inclusive view of all stakeholders expectations of the business.

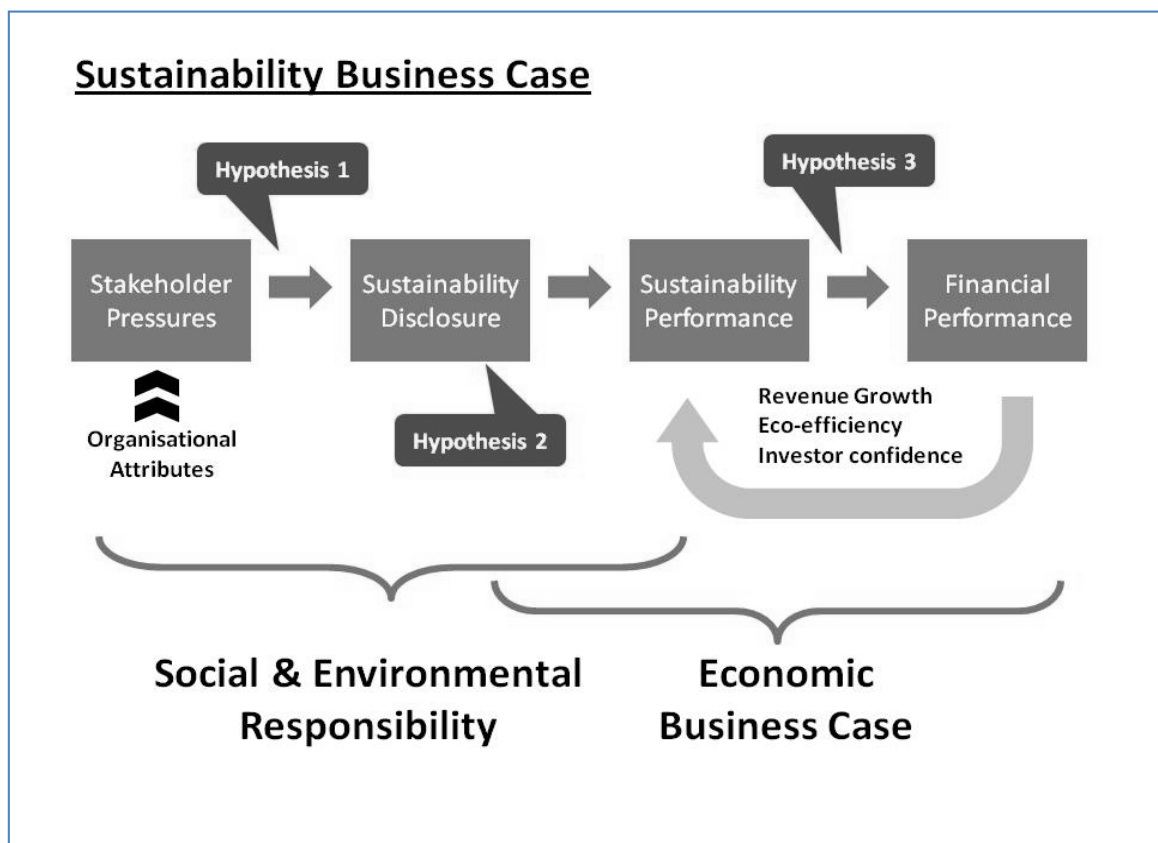
The business case for implementing social and environmental sustainability practices in companies remains a challenge given the investment that is often required.

## 1.2 Research Problem

This report is based on the premise that stakeholder expectations regarding an organisation's environmental and social practices, ultimately creates pressure for additional disclosure, and this disclosure ultimately leads to improved social and environmentally responsible practices by the said organisation. By doing so, the organisation is rewarded by increased favour patronage from the stakeholders, and potentially also benefits from internal process efficiencies, both having a positive impact on financial performance.

Although the links between Sustainability Disclosure and Financial performance are of primary importance in this report, the level of alignment between the rating frameworks themselves will be tested for alignment in objective and output.

Figure 1 : **Sustainability Business Case** (diagram explained in Chapter 3)



### 1.3 Research Scope

The concept of corporate sustainability has been discussed and applied worldwide, across many theoretical backgrounds and management concepts.

The scope of business improvement concepts is equally diverse and sustainability driven management practices are one of many drivers of improved business performance.

The focus of this study will be a high level view of sustainability reporting and performance of South African organisations listed on the Johannesburg Stock Exchange in 2010.

It is expected that, notwithstanding the limitations highlighted later in this research document, the outcomes of the study will be applicable in different geographies and non-listed organisations.

#### **1.4 Rational for the Research**

*The search for competitive advantage is a priority for firms that operate in a complex global environment, to ensure the capacity to create value in the long term (M. Victoria Lopez, 2007, p. 2).*

At its heart is the notion that all major organisations must be held accountable for their social and environmental, as well as financial, activities. The evidence is mounting that sustainability is a pressing and demanding issue which we, as a species, are failing to address with sufficient diligence. (Gray, 2006, p. 17)

To respond to the challenge, industry must be able to measure its progress towards sustainable development. (A. Azapagic, 2000, p. 13)

Coming to the measurement of the bottom line, all managers face the challenge of whether corporate sustainability development really pays off (Dong-shang Chang, 2008, p. 1).

Sustainability disclosure reporting is increasingly becoming one of the key outputs of annual reporting (Dong-shang Chang, 2008; Introduction to SRI Index). The King III Report creates the requirement for companies to report annually on the company's financial results, as well as how a company has, both positively and negatively, impacted on the economic life of the community in which it operated during the year under review; and how the company intends to enhance those positive aspects and eradicate or ameliorate the negative aspects in the year ahead. (King, 2009). Elsewhere in the world, there is increasing stakeholder pressure to do the same.

Companies are publically ranked on various indexes according to the interpretation of sustainability reporting, and thus significant company energy, focus and resources goes into ensuring a representative and well written report. But is it worth the focus, time and cost ? Other than a media opportunity, does sustainability reporting have any beneficial impact on the company, and more importantly, has the implementation of sustainability practices positively benefitted the organisation's financial or operational performance ?

In the World Economic Forum Global Risks Landscape 2011, a survey of management perceptions of the top global risks facing business was conducted. The risks were plotted on an axis of Perceived Financial Impact and Perceived Likelihood. Half of the 37 risks, ranging from infrastructure fragility to geopolitical conflict to flooding, related to social and environmental risks. Social, environmental and economic sustainability issues of Climate Change, Economic disparity and global governance failures were placed in the top 5, above weapons of mass destruction and liquidity and credit crunch (WEF, 2011).

## **1.5 Aim of the Research**

The aim of the research is to add to the body of knowledge with regards to the business case for sustainability reporting.

## CHAPTER TWO : Literature Review

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### 2.1 Introduction

One of the main hurdles in Sustainability reporting has been the absence of an adequate approach that links both financial and sustainability objectives in terms of profitability and risk, the ‘language’ of business. An increasing number of studies have examined the link between financial performance of a company and its environmental and social performance, attempting to find a conceptual link between them (Dong-shang Chang, 2008; Noelia Romero Castro, 2006; M. Victoria Lopez, 2007) .

The results of these studies have not been sufficiently conclusive. The most appropriate question today should be what environmental performance tells us that we still do not know about financial performance, and perhaps the most appropriate direction for research should be to adapt existing tools and models of financial analysis in order to incorporate the impact of sustainability issues on the company’s economic and financial performance. (Noelia Romero Castro, 2006)

Research has pursued the question of whether or not social disclosure and/or social responsibility “creates” or “releases” “value”. (Gray, 2006, p. 13). Some research reports indicated that over a period of time, total social and

environmental disclosure is significantly related to market returns, although these did vary. (Alan Murray, 2006, p. 17)

A positive impact between corporate sustainability reporting and financial performance has been identified in some cases, but further analysis indicated that this was due to an improvement in internal efficiencies, and not increased revenue suggesting that implementing sustainability practices in a company did not create any additional value for existing customers to increase their purchase value, or for new customers to purchase from the company. The efficiency gains would provide a competitive advantage for a time, but competitors would soon match the efficiency gain, making the competitive advantage only temporary. (M. Victoria Lopez, 2007)

Equally, although investors are apparently exhibiting an increasing demand for social and environmental disclosure, there is no evidence of proven links between the price sensitivity of the social and environmental data and the substantial changes in economic circumstances that this data could be signalling (Alan Murray, 2006, p. 4).

As we explore the value of corporate sustainability reporting, we get a sense that it is logical that key non-financial externalities material to the company's performance should be managed and reported upon. No evidence was found, that all investors are exclusively interested in a purely financial appraisal of their investments. Indeed, the very significant growth in ethical investment funds



probably suggests quite the reverse due to the Ethical Investor effect (Alan Murray, 2006). It seems, that even though no definite link was found between corporate sustainability reporting and financial performance, that investors are increasingly wanting more of this type of information.

Thus it remains an open question as to whether or not corporate management is exhibiting wastefulness in undertaking voluntary social and environmental disclosures or successfully signalling their competence to the market. (Alan Murray, 2006, p. 4)

So whether or not research studies can formally identify a contribution to value creation, we can probably assume that marginal and business-as-usual reporting does make a financial contribution to the company or such a financial contribution is believed by managers to exist. (Gray, 2006, p. 13).

Emerging Conscience economics expects organisations and individuals to make their decisions and action plans on the basis of responsible ethics. Human life is short, and human insight is short-sighted. This deficiency is exaggerated in contemporary business life, which tends to see into the future only as far as the next reporting period. We need to remember that corporate sustainability is a subsystem of societal sustainability and ecosystem sustainability. Companies that refuse to reconsider their environmental and socio-cultural unsustainability, will either be crushed under the increasingly stringent stakeholder pressure or ruin civilization with their irresponsible business actions. (Ketola, 2010, p. 15)

Of the world's 100 largest economic entities, 63 are corporations, not countries. Great power creates great expectations : society increasingly holds global businesses accountable as the only institutions strong enough to meet the huge long-term challenges facing our planet (Werbach, 2009)

## **2.2 Understanding Corporate Sustainability in South Africa**

Sustainable Development was defined by Brundtland in 1987 as 'development which meets the need of the present, without compromising the ability of future generations to meet their own needs' (WCED, 1987). Sustainable development is about satisfying social, environmental and economic goals. One of the challenges is the need to measure the 'level of sustainability' of different sections of society, i.e. local and national governments, industry, local communities and individuals, (A. Azapagic, 2000)

## **2.3 Business Case for Corporate Sustainability**

The business case for implementing social and environmental sustainability practices in companies remains a challenge given the investment that is often required. Corporate Sustainability reporting may have, as one of its benefits, an impact on customers, and their preference for the company's products or services, thus having a positive impact on Revenue. As discussed elsewhere in this report, it is expected that embedding corporate sustainability principles and practices in the organisation would yield competitive advantage. Organizations

constantly seek elements to differentiate them from their competitors, since such elements could become resources that generate long-term sustainable competitive advantages (M. Victoria Lopez, 2007, p. 3).

In addition, legitimacy is a status that comes from the harmony between a corporation's value system and that of society. (M. Victoria Lopez, 2007). The right to do business can no longer be taken for granted with today's socio-economic dynamics. Companies have sought to explore how the company's increased disclosure has enabled the management of its stakeholders and how such disclosure might be used to secure the legitimacy of, either, the individual corporation or, more broadly, corporate capitalism itself. (Alan Murray, 2006).

In a global survey of 50 leaders and 1,500 executives, questions were asked about their perspectives on the intersection of sustainability and business strategy. The most significant benefit in addressing issues of sustainability was the expected positive impact on the company's image and brand (35%) (Maurice Berns, 2009). The public can use their buying power to encourage business towards fulfilling its environmental and social responsibilities. Being on a 'Environmental Offenders' list could mean negative publicity and a potential loss of business which could cost much more than the mere financial penalty. (A. Azapagic, 2000).

But ethical disclosure is not expected to be a final decision point in the buying process, commercial offerings need to be relevant to a wide audience, and

leading with a single green message may exclude new consumers (Werbach, 2009). Therefore, sustainability reporting can be seen as the right to do business (legitimacy), but must still provide a competitive customer value proposition.

Corporate Sustainability principles encourage management and operational practices based on ethical and holistic principles, with a continuous view on future impacts of current actions. Successful businesses are beginning to be defined by their integration of these concepts into management quality, environmental management, brand reputation, customer loyalty, corporate ethics and talent retention. (M. Victoria Lopez, 2007, p. 3).

These practices encourage an approach which is less near term focussed and more long term focussed, where the objective is not to realise immediate maximum gain or performance, but a potentially more rewarding long term output.

In manufacturing industries, many companies realised that pollution prevention and cleaner production, through reduction of waste at source and using resources more efficiently, was the more beneficial options in comparison to the clean-up approach. This was not only in terms of environmental performance but also because they could reduce costs and increase profits. (A. Azapagic, 2000)

Sustainability practices have awoken in interest in investors as a criterion to be considered in the configuration of their investment portfolios, and has led to the emergence of indexes linked to financial markets. Among these are the Dow Jones Sustainability Group Index, the FTSE4Good and the JSE Social Responsibility Index. These indexes have been developed by organizations of

recognised prestige and have given credibility to the notion of investment in firms that employ corporate sustainability criteria. (M. Victoria Lopez, 2007, p. 6).

Given the same return, investors are more and more inclined to invest with companies that display a higher sense of ethical and moral standards in the operations, as indicated by their sustainability reporting. The majority of investors are still largely driven by a financial return on their investment, but will consider sustainability issues in their investment criteria if given the opportunity.

Social and environmental disclosure can actually be seen as an educative process, whose purpose is either to explain the social and environmental complexities underlying the investment or to show the investor what moral choices are being made. (Alan Murray, 2006, p. 5).

## **2.4 Measuring level of Sustainability Reporting in South Africa**

Standardisation of indicators is the next step that may aid identification and comparison of options for more sustainable development of industry. It would enable performance tracking and comparison of different options. The purpose of the indicators may be to inform customers on the levels of sustainability of consumer products delivering the same function but made by different competitors. (A. Azapagic, 2000)

Several indexes are available for measuring the reporting of corporate sustainability, and are largely broken into two groups, localised and international.

Localised indexes include the Dow Jones Sustainability Index (USA), FTSE4Good (UK) and Johannesburg Social Responsibility Index (South Africa) and are relevant for companies listed on those stock markets. International indexes provide a framework for assessing sustainability in a manner that is internationally comparable and accessible. Examples of these are the Carbon Disclosure Project (CDP) and Global Responsibility Index (GRI).

Several other frameworks for accessing corporate sustainability exist which provide a more individual view on corporate sustainability. These include frameworks such as the 5 Capitals Model (The Five Capitals Model, 2007), ISO14001, Du Pont Ratio Pyramid (Noelia Romero Castro, 2006), Sustainability Balanced Scorecard (Frank Figge, 2002; Noelia Romero Castro, 2006), and the integrated Model for Financial Analysis of Sustainability (Noelia Romero Castro, 2006). These frameworks help to link 'soft' factors into the core management of business (Frank Figge, 2002)

## **2.5 Sustainability Reporting and Performance Frameworks**

The measure of sustainable performance of companies can be based on their relative ranking on the indexes described in Table 1. These indexes are reviewed annually and the rankings are based on a mix of quantitative and qualitative questions, which focus on economic, social and environmental sustainability. Limitations in reporting revolve around comparability reporting and consistency between the various companies, as well as year on year reporting for individual companies due to the nature of evolving capabilities.

## 2.6 Measure of Economic Sustainability

Financial performance measurement and reporting is highly regulated in developed markets, and comparable reporting on key financial indicators are common place and credible.

## CHAPTER THREE : Research Questions

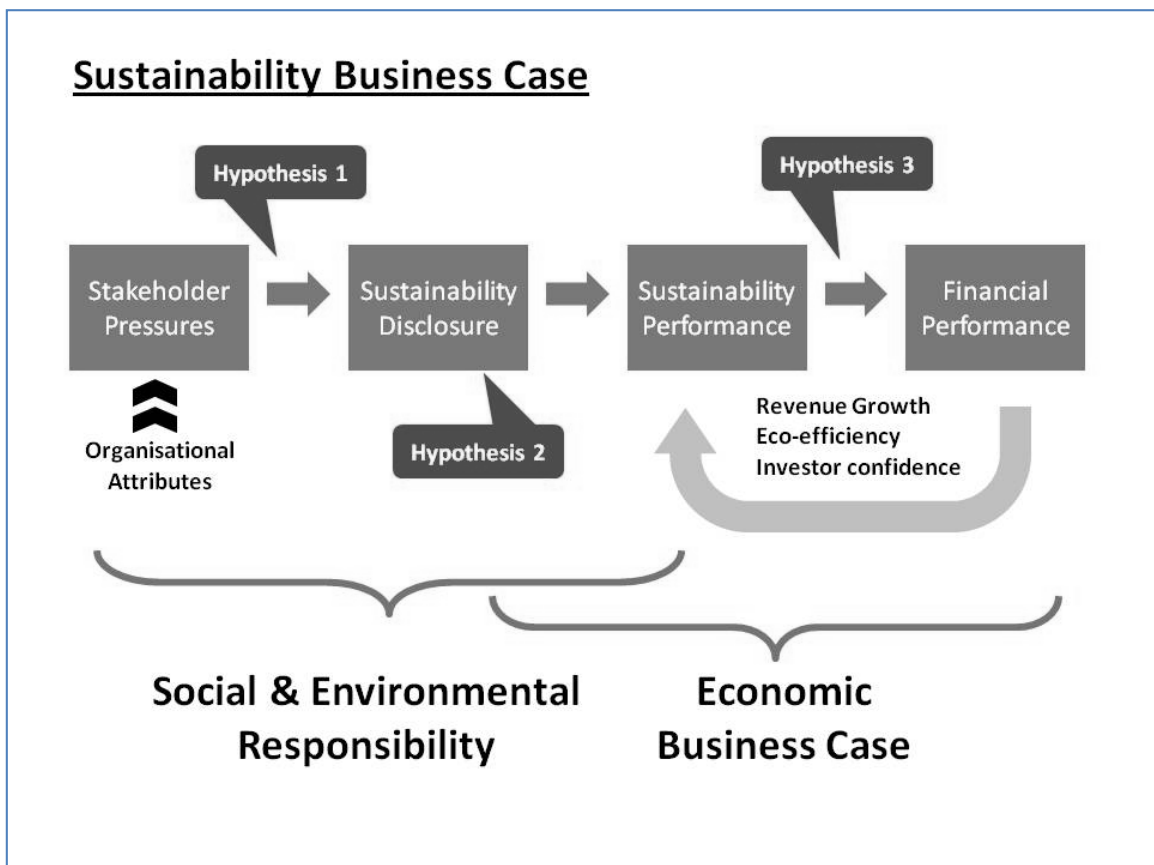
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### 3.1 Introduction

Chapter three detailed the four key questions that formed the basis of the proposed research project. The research questions were developed and guided by the literature review and directly address the key aims of the research.

The diagram below illustrates the relationships that summarises the theory and structure of research project

Figure 2 : Sustainability Business Case





The previous diagram is explained in the following manner;

1. Stakeholders expect organisations to conduct their operations so as to have a negligible, if any, impact on the environment and a positive impact on society.
2. This encourages organisations to produce sustainability reporting which credible communicates their sustainable behaviour and performance.
3. Stakeholders reward those organisations with goodwill and patronage.

### 3.2 Hypothesis One

The existence of and/or increased degree of certain organisational attributes will have a relationship between the level of sustainability disclosure of an organisation. This will be due to the stakeholder pressure engendered by these attributes.

$H_0$  : There is a correlation between identified organisational attributes and the rating of organisational reporting and performance.

$H_A$  : There is no correlation between identified organisational attributes and the rating of organisational reporting and performance.

Organisational attributes to be analysed :

- Market capitalisation
- No of employees
- Extractive type processing : yes/no
- High rate of resources used in processes : high / medium / low
- High rate of waste produced : high / medium / low
- Significant direct/indirect social impact : high / medium / low
- Multi-national organisations : yes/no
- Dual listed organisations : yes/no

### 3.3 Hypothesis Two

The rating of the level and quality of disclosure has been a key output of the Global Reporting Index and the Carbon Disclosure Project, but is this conducted in the same manner across both frameworks and for all organisations ?

$H_0$  : Different sustainability rating frameworks will not produce a similiar ranking of sustainability disclosure performance for the same set of organisations, in the same year ?

$H_A$  : Different sustainability rating frameworks will produce varying ranking of sustainability disclosure performance for the same set of organisations, in the same year ?

### 3.3 Hypothesis Three

The literature review has indicated that a business focus on sustainability reporting will be positively correlated with increased revenues due customers' increased patronage, increased cost efficiencies resulting from eco efficiencies, and improved investor affinity in due to increased expectations of performance stability within the same industry.

$H_0$  : The rating of sustainability reporting is correlated to the rating of the same organisation's financial performance ?

$H_A$  : The rating of sustainability reporting is not correlated to the rating of the same organisation's financial performance ?

Financial performance indicators to be correlated to :

- Price Earnings Ratio  
-as an indicator of investor expectation of medium to long term performance.
- Year on year Revenue Growth  
-as an indicator of increased customer patronage.
- Cost to income ratio  
-as an indicator of cost efficiencies, possibly due to eco-efficiencies.
- Market capitalisation :  
-as an indicator of overall size of the organisation's operations.

### 3.5 Summary

This chapter detailed the key research hypothesis and questions that have guided this research.

Hypothesis one attempted to find a correlation between organisational attributes and the quality of sustainability reporting and performance. Hypothesis two attempted to ascertain the alignment of a variety of sustainability frameworks in terms of how they rated organisations' reporting performance. Finally, hypothesis four attempted to add to the business case for sustainability discussion by attempting to find a correlation between an organisations sustainability reporting and financial performance. The following chapter will discuss the research methodology used to address the three research questions stated above.

## Chapter Four : Research Methodology

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### 4.1 Introduction

This chapter covers the process and methodological approach utilised for this research. The ultimate goal of this study was to support the ongoing discussion regarding the business case for sustainability, by analysing the correlation between an organisation's attributes, the quality of sustainability reporting and financial performance.

### 4.2 Research Method

A quantitative, descriptive research method was chosen as this methodology was best used in previous research (Dong-shang Chang, 2008; Noelia Romero Castro, 2006; M. Victoria Lopez, 2007). Using secondary financial data, an attempt was made to find a correlation between key organisational attributes, rating of sustainability reporting and financial performance. The secondary financial performance data was sourced from organisations' annual reports available at the Johannesburg Stock Exchange.

A quantitative methodology was preferred over a qualitative method, as a qualitative method would not have proven adequate for the purposes of addressing the hypothesis and research question.

### **4.3 Research Process**

As per the Research Process described in Business Research Methods (Blumberg, Cooper, & Schindler, 2008), the research process followed included defining the management dilemma, defining the research questions, research design, sample design, data collection, data analysis and research reporting.

The research utilised secondary data, data which was already collected and recorded by someone else (Blumberg, Cooper, & Schindler, 2008), for research efficiency purposes. The data collected was fit for purpose and comparable as, in South Africa, company reported data undergoes assurance processes in line with regulated governance requirements.

### **4.4 Population**

As per (Blumberg, Cooper, & Schindler, 2008), a population is the total collection of elements about which we wish to make some inferences. For this study, the population includes all companies on the Johannesburg Stock Exchange Main Board, that reported for 2010, and that were reviewed for quality of GRI reporting by Sustainability Services (see appendix).

#### **4.5 Sample Size and Sampling Method**

A sample is a selection of elements of a population by which conclusion can be drawn on the whole population (Blumberg, Cooper, & Schindler, 2008).

The sample was determined by the available sustainability reporting and performance data available for the JSE listed companies, through the GRI and CDP sustainability reporting frameworks described.

Data from organisational annual reports for periods ending in 2010 was used as this include the most recent and comprehensive data available.

#### **4.6 Unit of Analysis**

The unit of analysis describes the level at which the research is performed and which objects are researched (Blumberg, Cooper, & Schindler, 2008). The unit of analysis in this study is the JSE listed organisation.



## 4.7 Data Gathering

Sustainability reporting ratings data was sourced, at an organisational level, from the various indicated sustainability rating frameworks, ie. Global Reporting Initiative (GRI) as rated by Sustainability Services, and as reported by Carbon Disclosure Project (CDP).

Company financial performance and attributes data was sourced from published annual reports, for 2010. All the data was inputted onto an excel spreadsheet, cleaned and then analysed using SAS statistical software.

Table 1 : Data structure : JSE main board organisations – 2010

	<b>Sustainability Disclosure ratings, Financial Performance and Organisation Attributes</b>								
<b>Company</b>	X	X	X	X	X	X	X	X	X
<b>A, B, C etc</b>	X	X	X	X	X	X	X	X	X

(refer to attached document for full listing of organisation data)

## **4.8 Data Analysis**

The data was checked for gaps and errors that would impact results, and to manage the risk of type one and two errors. To do so, frequency distributions and histograms we analysed to check for data usability.

### **4.8.1 Standardising the numeric rating the companies' Sustainability Reporting**

As the data was analysed using SAS, all alphabetic indicators (categorical variables) were converted to numeric indicators which still provided an indication of performance.

### **4.8.2 Data Analysis – Hypothesis One**

Using the data gathered, organisational attributes were correlated to the two sustainability ratings, GRI and CDP.

### **4.8.3 Data Analysis – Hypothesis Two**

The organisation disclosure ratings of the two sustainability rating frameworks were correlated to one another to test the level of correlation between them.

#### 4.8.4 Data Analysis – Hypothesis 3

The sustainability reporting ratings of the two sustainability rating frameworks were correlated to key financial performance ratings.

Table 2 : Correlation to the GRI and CDP indexes:	Price Earnings Ratio	Year on Year Revenue Growth	Cost to Income Ratio	Market Capitalisation
<b>Organisation 1</b>	X	X	X	X
<b>Organisation 2</b>	X	X	X	X
<b>Organisation 3</b>	X	X	X	X

The financial performance indicators are described below :

##### Price Earnings Ratio

The Price Earnings Ratio was obtained from the organisation’s annual financial report, or JSE reports if not available. The Price Earnings ratio illustrates the value placed on the organisation, as a multiple above the most recent earnings reported, and is a reflection on the expected future earnings of the organisation by investors.

$$\text{Price Earnings Ratio} = \frac{\text{share price at year end}}{\text{net income after tax}}$$

## Revenue Growth %

Revenue relates to the top line income of the organisation. Revenue growth is the year on year growth in this line item.

$$\text{Revenue Growth} = \frac{\text{Revenue}_{\text{Year 2}} - \text{Revenue}_{\text{Year 1}}}{\text{Revenue}_{\text{Year 1}}}$$

## Cost to Income Ratio

Cost to Income ratio illustrates the efficiency with which the organisation utilises its operations (ie. costs) to generate revenue.

$$\text{Cost to Income Ratio} = \frac{\text{Operating Costs}}{\text{Revenue}}$$

## Market Capitalisation

Market Capitalisation is the financial value of the company, based on its share price.

$$\text{Market Capitalisation} = \text{Number of shares on issue} \times \text{share price}$$

## 4.9 Summary

This chapter explained the methodological approach utilised in the study. This quantitative study utilised a statistical approach to address the three hypothesis. The quality of sustainability disclosure of JSE listed organisations was correlated with organisational attributes and financial performance, sourced from secondary data sourced from the 2010 annual reports.

The following chapter will demonstrate the results of the analysis undertaken in this chapter.

## Chapter 5 : Results

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### 5.1 Data Sourcing

The data was sourced from the top 200 companies listed on the Johannesburg Stock Exchange, which had produced a sustainability report. This was done predominantly using the McGregor database to download individual company reports, and where necessary sourcing the data directly from the company website. The relevant data was sourced from the individual reports and typed to an excel table in preparation for statistical analysis.

All reports used were for the 2010 reporting year, ensuring that all companies' performance was within a similar economic period, reporting cycle, regulatory and other challenges, to ensure a satisfactory of comparability.

Sustainability Disclosure and performance data for each company was also sourced from : (refer appendix for details and source of these reports)

- JSE Social Responsibility Index 2010
- Carbon Disclosure Report 2010
- King III and GRI +12, A 2011 Review of Sustainability Reporting in South Africa (a review of GRI reporting of 2010 South African company reports)

The following fields were sourced per company (where possible) in alignment to the analysis required as per the stated hypothesis;

Table 3 : Description of Variables

	<b>Field</b>	<b>Category</b>	<b>Description</b>
<b>1</b>	Global Reporting Initiative (GRI)	Sustainability Disclosure	The GRI is an international organisation that produces a comprehensive sustainability reporting framework. This Framework sets out the principles and Performance Indicators that organisations can use to measure and report their economic, environmental, and social performance.
<b>2</b>	Carbon Disclosure Project (CDP)	Sustainability Disclosure	The Carbon Disclosure Project is an independent organization holding the largest database of corporate climate change information in the world.
<b>3</b>	Price Earnings Ratio	Financial Performance	This indicates the share price multiple to the earnings per share. The P/E ratio indicates the long term value attributed to the share.
<b>4</b>	Revenue Growth	Financial Performance	2009 / 2010 revenue growth by the organisation. This will indicate the level of success the organisation has in attracting increasing volumes of customers or business, or an increasing average deal size.

	<b>Field</b>	<b>Category</b>	<b>Description</b>
<b>5</b>	Cost to Income Ratio	Financial Performance	Operating costs as a percentage gross profit. This indicates the relative efficiency with which the company produces its product, or performs its service.
<b>6</b>	Market Capitalisation	Company Attribute	The number of shares in issue multiplied by the share price at the company's financial year end.
<b>7</b>	No Employees (Full Time)	Company Attribute	The number of full time employees the company has at year end. This excludes temporary employees or contractors who may come into the organisation on a season or project by project basis.
<b>8</b>	Extractive	Company Attribute	Does the company have a direct impact on communities and environment due to extractive operations, eg. extracting ore, tree felling, harvesting agriculture, fishing, etc ?
<b>9</b>	Resource Use - hi/med/low	Company Attribute	To what extent does the company utilise resources in its processes ? (high / medium / low)  The impact on communities and the environment will be indirect here, but still significant.



	<b>Field</b>	<b>Category</b>	<b>Description</b>
<b>10</b>	Waste	Company Attribute	To what extent does the company produce waste in its processes ? (high / medium / low)  This will have a direct impact on communities and environment.
<b>11</b>	Social Impact	Company Attribute	To what extent does the company have a social impact through its operations, product or services?  (high / medium / low)
<b>12</b>	Multi National	Company Attribute	Does the organisation have operations or customers in countries other than South Africa ?
<b>13</b>	Dual Listed	Company Attribute	Is the organisation listed on other exchanges other than the Johannesburg Stock Exchange ?

## 5.2 Descriptive Data Review

Although 200 organisations were included in the data sourcing exercise, there were data gaps in some fields across organisations. (see Appendix for comprehensive data table)

The data is considered credible due to it being sourced from audited public organisational reports. Annual reporting by South African companies is governed by various regulatory frameworks including the Companies Act and JSE Reporting requirements, as well as being required to adhere to Generally Accepted Accounting Practice (GAAP) and International Financial and Reporting Standards (IFRS). This governance around financial reporting, generally extends to all matters reported in company's annual reports.

The data set was made up of both continuous and categorical variables. Continuous variables refer to a continuous measurement, whilst categorical variables have no natural ordering and meaningful analysis is difficult. (Albright, Winston, & Zappe, 2009) Whether a variable is continuous or categorical dictates the type of analysis to be used.

Table 4 : Variables for Analysis

<b>No.</b>	<b>Field</b>	<b>Continuous or Categorical</b>	<b>Sample (n)</b>	<b>Mean</b>	<b>Standard Deviation</b>
1	<b>GRI Score</b>	Continuous	200	43.268	17.309
2	<b>CDP</b>	Continuous	58	0.7796	0.088
3	<b>Price Earnings Ratio</b>	Continuous	104	25.169	43.585
4	<b>Revenue Growth %</b>	Continuous	161	0.12472	0.4697
5	<b>Cost to Income Ratio %</b>	Continuous	38	0.5945	0.3009
6	<b>Market Capitalisation (R'bn)</b>	Continuous	110	31.244	110.233
7	<b>No Employees</b>	Continuous	138	15,225.471	23,566.566
8	<b>Extractive</b>	Categorical	164	n/a	n/a
9	<b>Resource Use</b>	Categorical	164	n/a	n/a
10	<b>Waste</b>	Categorical	164	n/a	n/a
11	<b>Social Impact</b>	Categorical	164	n/a	n/a
12	<b>Multi National</b>	Categorical	166	n/a	n/a
13	<b>Dual Listed</b>	Categorical	166	n/a	n/a

## Methodology

As discussed earlier in the paper, a quantitative, descriptive research method was chosen as this methodology was best used in previous research (Noelia Romero Castro, 2006; Dong-shang Chang, 2008; M. Victoria Lopez, 2007) . Using secondary data, an analysis of correlation and/or effect of the key organisational attributes, sustainability reporting ratings and financial performance was conducted.

Correlation measures the strength of a linear relationship between two numerical variables (Albright, Winston, & Zappe, 2009). Correlation is used only for analysing continuous versus continuous data. The relationship is 'strong' if the points in a scatterplot cluster tightly around some straight line. Scatterplots that rise from left to right will tend to have positive covariance and correlation. The opposite is true for those dropping from left to right (Albright, Winston, & Zappe, 2009).

Coding - categorical variables had to be coded to enable statistical analysis.

The coding was done as follows ;

Table 5 : Yes/No coding

	Yes	No
<b>Extractive</b>	1	0
<b>Mutli National</b>	1	0
<b>Dual Listed</b>	1	0

Table 6 : High/Medium/Low coding

	High	Medium	Low
<b>Resource Use</b>	3	2	1
<b>Waste</b>	3	2	1
<b>Social Impact</b>	3	2	1

High, Medium and Low is a subjective rating based on the level of resource use, waste and social impact suggested in the annual report.

The following analytical procedure was followed :

1. Test if Correlation is possible between two variables
  - Run a scatter plot
  - Test for Normality : Histogram and Normal distribution
2. If the variables are normally distributed and there is a linear relationship, then use Pearson.
3. If the variables are not normally distributed, then use Spearman.

We will test  $H_0$  to indicate no correlation, and  $H_A$  to indicate a correlation.

Tests done to determine the relationship between variables :

- a) Continuous versus continuous : Correlation test
- b) Categorical vs categorical : Fishers Exact Test
- c) Continuous vs Categorical : Generalised Linear Model (GLM)

The Chi-squared test was not used as it did not achieve 5 observations in each combination. The Fishers Exact Test was therefore used.

The Fishers Exact Test tests the Hypothesis ( $H_0$ ) that there is no linear association between variables. The alternate hypothesis ( $H_A$ ) tests that there is a relationship between the variables. In other words, if  $P > 0.05$ , do not reject, and if  $P < 0.05$ , reject.

## 5.4 Data Analysis

### 5.4.1 Hypothesis One

**$H_0$  : There is a correlation between identified organisational attributes and the rating of organisational Sustainability reporting.**

The organisational attributes analysed included;

1. number of employees,
2. whether the organisation has a high, medium or low extractive process, whether the organisation has a high, medium or low use of resources,
3. whether the organisation produces high, medium or low levels of waste,
4. whether the organisation has a high, medium or low social impact,
5. whether the organisation was a multi-national,
6. and whether it was dual listed.

All these variables, other than Number of Employees, are categorical variables and were analysed using the General Linear Model method. The relationship between the categorical variables and continuous variables was determined using the General Linear Model method.

The General Linear Model is an ancova model, which is an analysis of the co-variance. It is referred to as an analysis of the co-variance due to the test statistics used to test these hypotheses are constructed by partitioning the variance, or rather the sum of the squares of the data.

## Relationship to GRI Score :

Table 7 : F and P value for GRI / organisational attributes

	F – value	P > F	
<b>Extractive</b>	0.27	0.6037	Do not reject H <sub>0</sub>
<b>Resource Use</b>	0.09	0.9125	Do not reject H <sub>0</sub>
<b>Waste</b>	0.37	0.6899	Do not reject H <sub>0</sub>
<b>Social Impact</b>	1.75	0.1794	Do not reject H <sub>0</sub>
<b>Multi-National</b>	0.48	0.4885	Do not reject H <sub>0</sub>
<b>Dual Listed</b>	10.02	0.0022	Reject H <sub>0</sub>
<b>Market Capitalisation</b>	1.18	0.2815	Do not reject H <sub>0</sub>
<b>Number of Fulltime</b>	12.49	0.0007	Reject H <sub>0</sub>

An F-value test is any statistical test in which the test statistic has an F-distribution under the null hypothesis. It is most often used when comparing statistical models that have been fit to a data set, in order to identify the model that best fits the population from which the data were sampled.

The P-value (calculated as the probability that the F distribution is greater than the calculated test statistic F) is used to test the hypothesis.

If  $P > 0.05$  then accept H<sub>0</sub> and reject H<sub>A</sub>, indicating that there is not an association between the 2 variables.

From the above results table, we can see that only Dual Listed and Number of Fulltime Employees have an effect on the GRI Score.



## Relationship to CDP Score :

Table 8 : F and P value for CDP / organisational attributes

	F – value	P > F	
<b>Extractive</b>	0.18	0.6739	Do not reject H <sub>0</sub>
<b>Resource Use</b>	0.02	0.8837	Do not reject H <sub>0</sub>
<b>Waste</b>	0.03	0.8703	Do not reject H <sub>0</sub>
<b>Social Impact</b>	0.17	0.8467	Do not reject H <sub>0</sub>
<b>Multi-National</b>	0.09	0.7649	Do not reject H <sub>0</sub>
<b>Dual Listed</b>	3.93	0.0568	Reject H <sub>0</sub>
<b>Market Capitalisation</b>	1.08	0.3071	Do not reject H <sub>0</sub>
<b>Number of Fulltime</b>	2.02	0.1660	Do not reject H <sub>0</sub>

No attribute has an effect on the CDP score.

At 0.0568 Dual Listing is so close to 0,05 that it is prudent to reject H<sub>0</sub>.

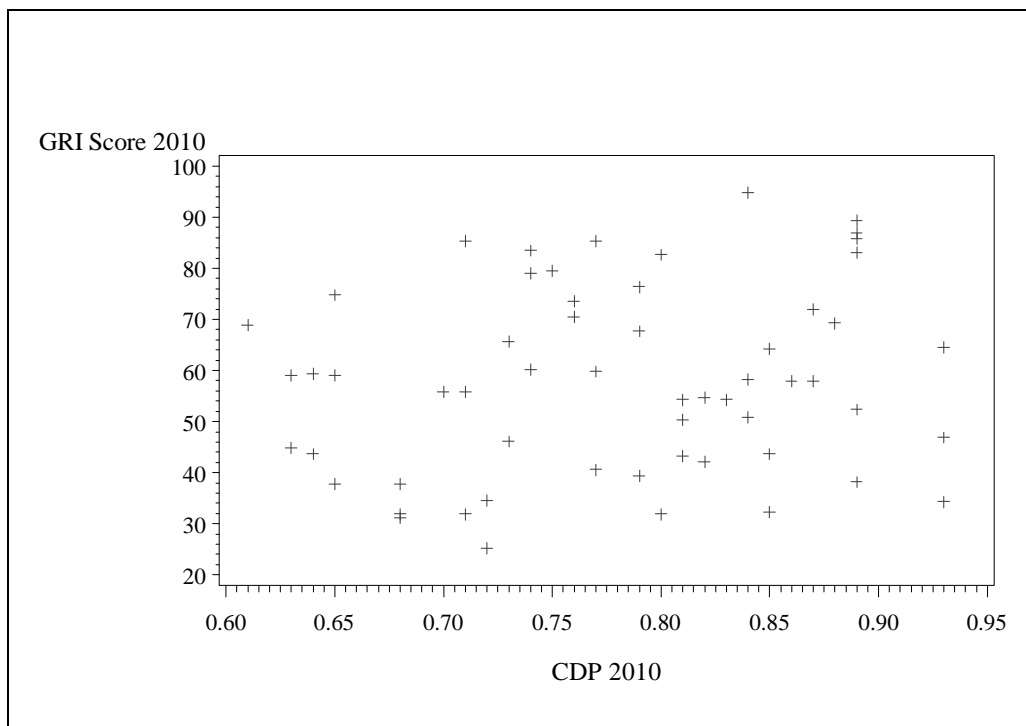
## 5.4.2 Hypothesis Two

$H_0$  : Different sustainability rating frameworks will produce a similar ranking of sustainability Disclosure performance for the same set of organisations, in the same year ?

To do a correlation test, we need to test for linearity (linear relationship) using scatter plots, and normality using a histogram.

### Scatterplot

Figure 2 : GRI Score vs Market Capitalisation



The scatter plot indicates a linear relationship between the GRI and CDP Scores.

### Test for Normality : GRI

To test for normality the following hypothesis test is performed;

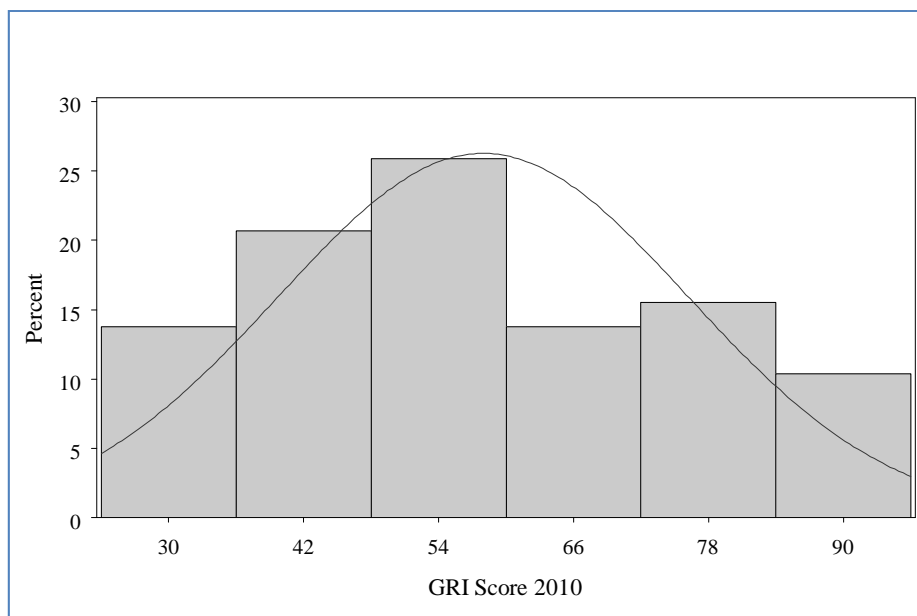
$H_0$  : Normal distribution, and  $H_A$  : Not normal distribution.

The Shapiro-Wilk test is used to test for normality, which should not reject  $H_0$  (normality distribution) based on a p value of 0.0892.

Table 9 : GRI - Test for Normality (Shapiro-Wilk Test)

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.96467	Pr < W	0.0892
Kolmogorov-Smirnov	D	0.076037	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.069639	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq	0.543289	Pr > A-Sq	0.1613

Figure 3 : Histogram - GRI Score



Therefore, GRI is normally distributed.

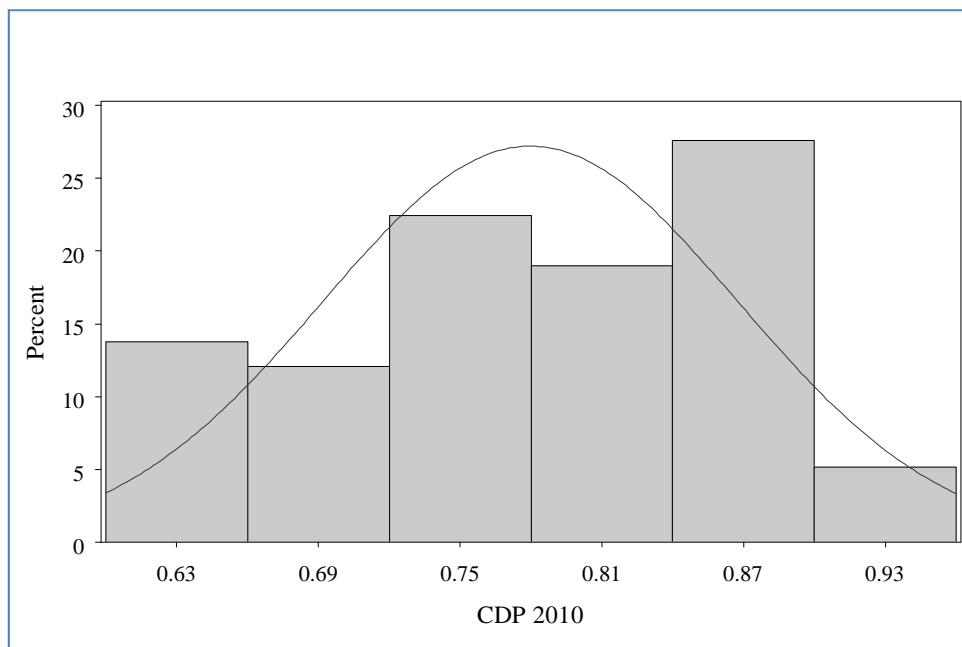
## Test for Normality : CDP

The Shapiro-Wilk test is used to test for normality, which should not reject  $H_0$  (normality distribution) based on a p value of 0.0810.

Table 10 : CDP - Test for Normality (Shapiro-Wilk Test)

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.963787	Pr < W	0.0810
Kolmogorov-Smirnov	D	0.081101	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.067897	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq	0.517193	Pr > A-Sq	0.1904

Figure 4 : Histogram - CDP Score



Therefore, CDP is normally distributed.

With both GRI and CDP demonstrating a positive result for a normal distribution, a Pearson test is best to test correlation.

## Pearson Test

### P-Test

Rho is used for correlations based on sample data, whereas Rho denotes a correlation based on an entire population (Albright, Winston, & Zappe, 2009).

Table 11 : P-test - CDP

Pearson Correlation Coefficients, N = 58	
Prob >  r  under H0: Rho=0	
	CDP_2010
Rho	0.16925
P - value	0.2040

The test for correlation is a P value < 0.05, which rejects H<sub>0</sub> (Null Hypothesis).

The P-value = 0.2040 (probability), which rejects H<sub>A</sub>, and therefore accepts H<sub>0</sub>.

## Pearson Correlation Results

Where  $H_0$  : there is no correlation, and  $H_A$  : there is a correlation;

Correlation co-efficients : Range between -1 and 1 where;

Rho = -1      perfect linear relationship (correlation)

Rho = 0      weak linear relationship

Rho = 1      strong linear relationship

If  $H_0$  is rejected, in other words there is a correlation, the strength of the relationship is determined using Rho;

Table 12 : Rho relationship strengths

Rho	Relationship
> 0.7	Strong
0.4 – 0.7	Medium
< 0.4	Weak

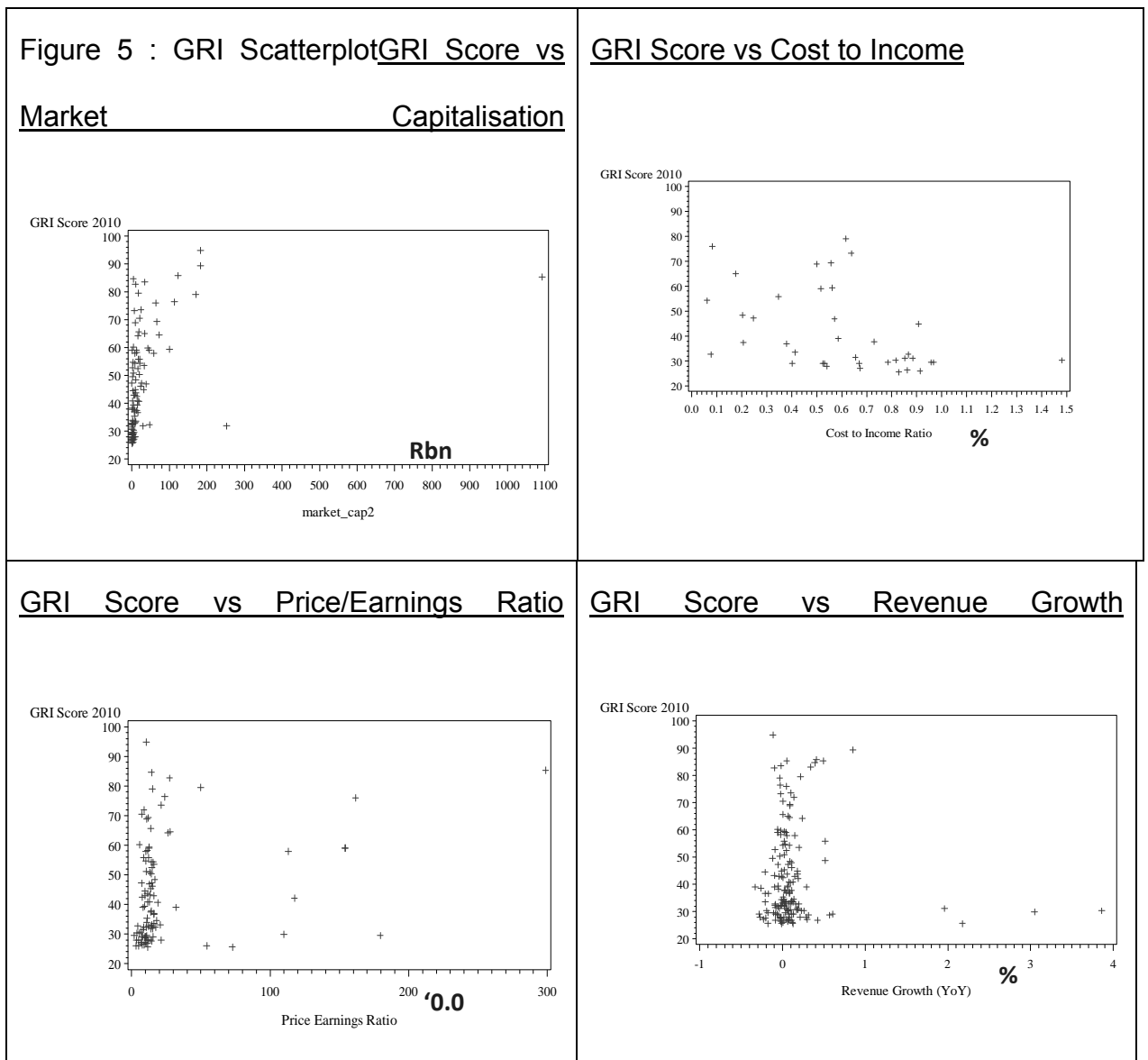
From the above it can be seen that at P-value = 0.2040, the Null Hypothesis is not rejected, and that there is no correlation.

Therefore, we can conclude that GRI Score and CDP are not correlated.

### 5.4.3 Hypothesis Three

$H_0$  : The rating of sustainability reporting is correlated to the rating of the same organisation's financial performance ?

To do a correlation test, we need to test for linearity (linear relationship) using scatter plots, and normality using a histogram. As these variables are continuous, a correlation analysis is applicable.



There is a weak linear relationship across all scatter plots.

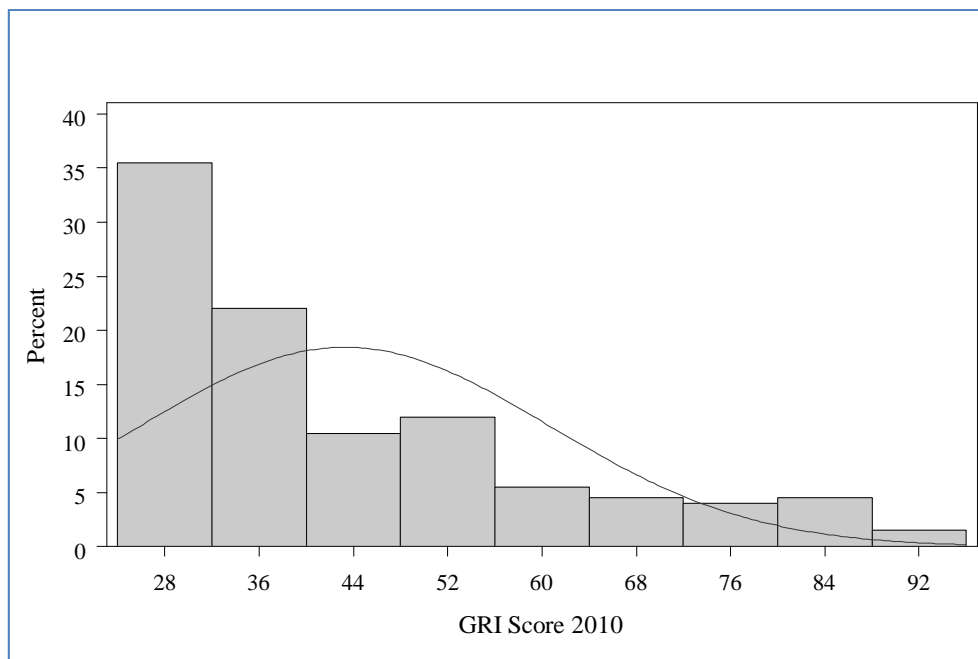
**Test for Normality : GRI**

The Shapiro-Wilk test is used to test for normality, which rejects  $H_0$  (normality distribution) based on a p value  $< 0.0001$ .

Table 13 : GRI - Test for Normality (Shapiro-Wilk Test)

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.852317	Pr < W	<0.0001
Kolmogorov-Smirnov	D	0.166733	Pr > D	<0.0100
Cramer-von Mises	W-Sq	1.670526	Pr > W-Sq	<0.0050
Anderson-Darling	A-Sq	9.968583	Pr > A-Sq	<0.0050

Figure 6 : Histogram - CDP Score



The histogram is skewed to the left, and does not illustrate a positive result for a normal distribution.

### Spearman Test



## P-Test

The test for normality is a P value  $< 0.05$ , which rejects  $H_0$ . The P-value  $< 0.0001$  at and therefore not normally distributed.

Therefore reject Normality for the GRI Score variable.

## Spearman Correlation Results to GRI

A strong relationship is when  $Rho > 0.7$ , and medium relationship is between 0.4 and 0.7, and below 0.4 is a weak relationship.

Table 14 : Spearman Correlation Results to GRI

	<b>Rho</b>	<b>P-value</b>	<b>Results</b>
<b>Revenue Growth</b>	0.02508	0.7521	Accept $H_0$
<b>Cost to Income</b>	0.49099	0.0017	Reject $H_0$
<b>Price / Earnings Ratio</b>	0.34148	0.0004	Reject $H_0$
<b>Market Capitalisation</b>	0.69019	$< 0.001$	Reject $H_0$

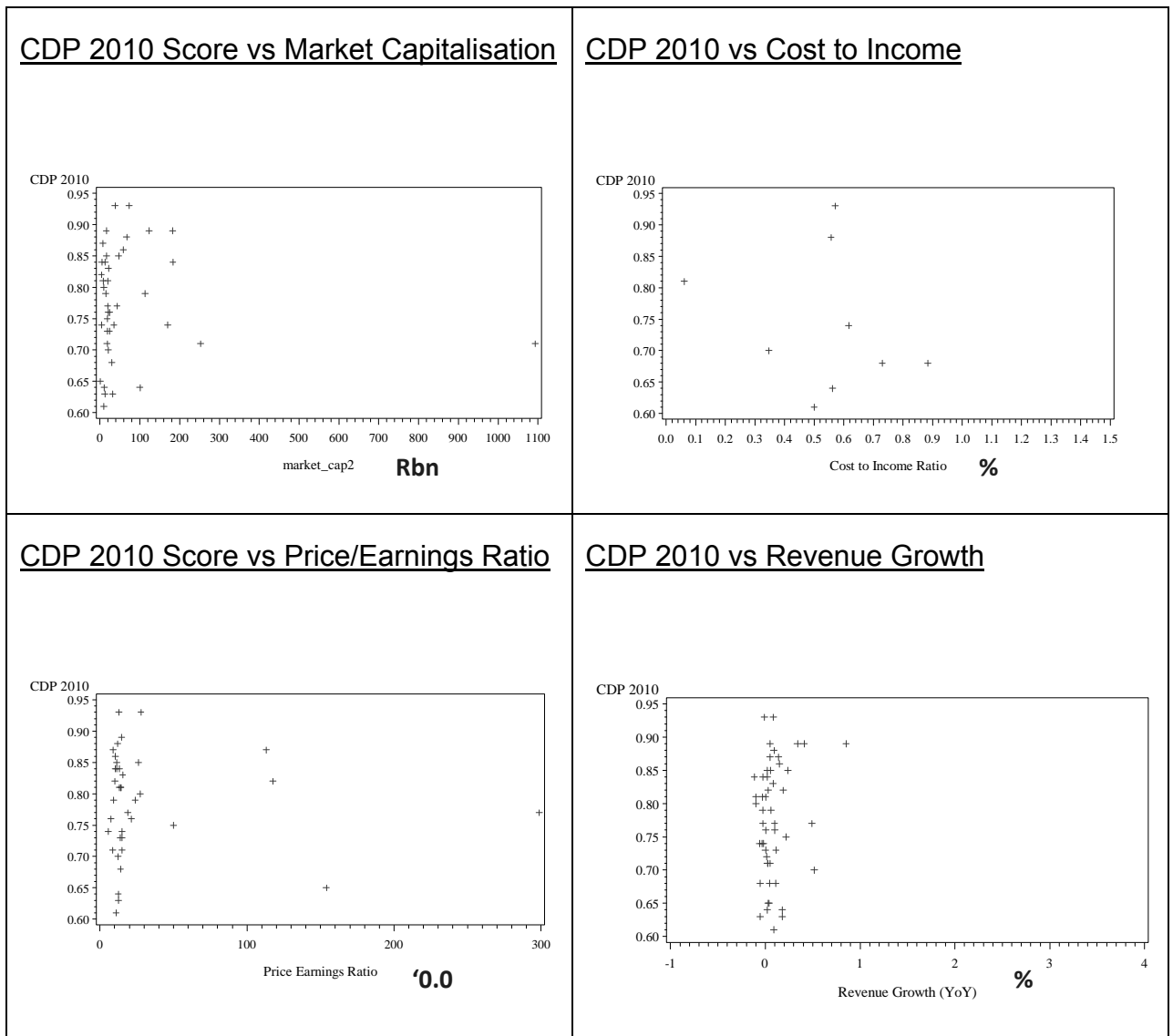
From the above it can be seen that Cost to Income, Price / Earnings Ratio, and Market Capitalisation have a correlation to GRI. Revenue Growth is not correlated, most likely due to outlier effect.

Market Capitalisation has a medium strength correlation of 0.69 as does Cost to Income at 0.49. Price Earnings at 0.34 has a weak relationship.

## CDP 2010 vs Price/Earnings Ratio, Revenue Growth, Cost to Income Ratio, and Market Capitalisation.

To do a correlation test, we need to test for linearity (linear relationship) using scatter plots, and normality using a histogram. As these variables are continuous, a correlation analysis is applicable.

Figure 7 : CDP Scatterplots



The scatterplots indicate a clear linear relationship between the CDP Score and cost to income, but a limited relationship with market capitalisation, price/earnings ratio and revenue growth.

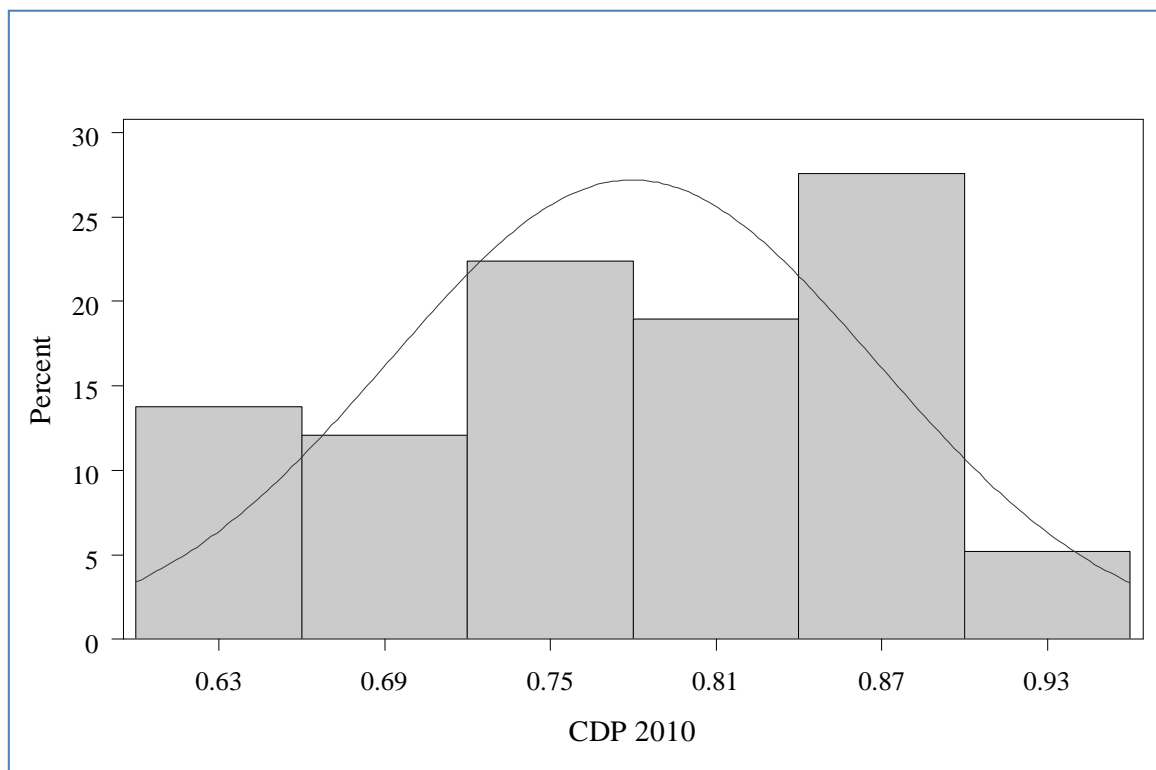
## Test for Normality : CDP

The Shapiro-Wilk test is used to test for normality, which rejects  $H_0$  (normality distribution) based on a p value = 0.0810.

Table 15 : CDP - Test for Normality (Shapiro-Wilk Test)

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.963787	Pr < W	0.0810
Kolmogorov-Smirnov	D	0.081101	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.067897	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq	0.517193	Pr > A-Sq	0.1904

Figure 8 : Histogram - CDP



The histogram illustrates a positive result for a normal distribution.

## P-Test

The test for normality is a P value  $< 0.05$ , which rejects  $H_0$ . The CDP 2010 P-value = 0.0810 and therefore normally distributed. Therefore accept Normality for the CDP 2010 variable.

## Pearson Correlation Results to CDP 2010

A strong correlation would result in a result of between 0.7 and 0.9. The closer the P-value to 1.0, the linear the relationship. Less than 0.5 and  $H_0$  is rejected.

Table 16 : Pearson Correlation Results to GRI

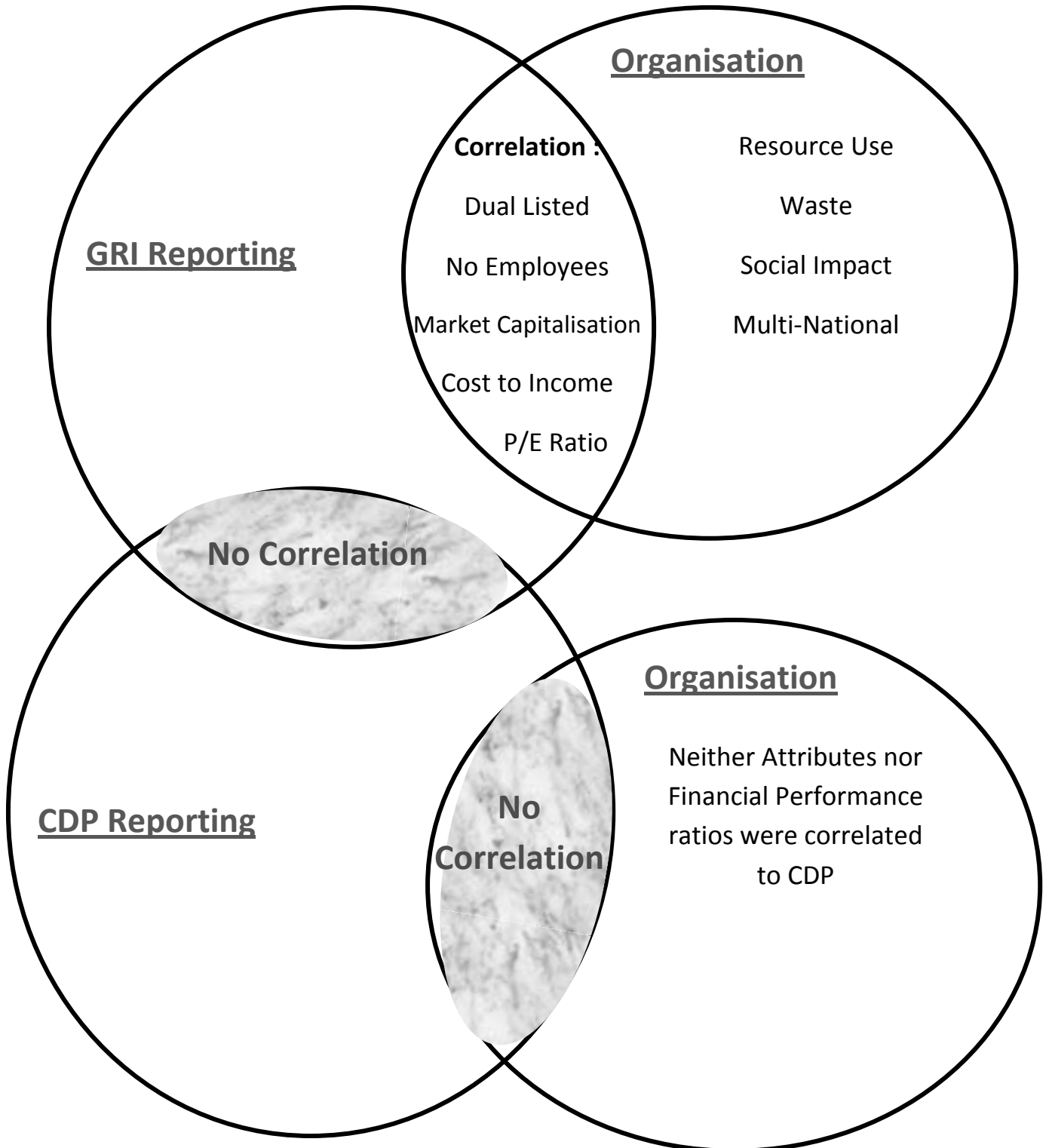
	<b>Rho</b>	<b>P-value</b>	<b>Results</b>
<b>Revenue Growth</b>	0.17249	0.2261	Accept $H_0$
<b>Cost to Income</b>	0.22884	0.5537	Accept $H_0$
<b>Price / Earnings Ratio</b>	0.05435	0.7459	Accept $H_0$
<b>Market Capitalisation</b>	0.06602	0.6817	Accept $H_0$

There does not exist a correlation relationship between any of the four variables and CDP, as the P-value is greater than 0.05.

## 5.5 Graphical Summary of Results

3 interlinking Venn Diagrams summarise the outcomes of the three hypotheses between the organisation attributes and financial performance, and both GRI and CDP.

Figure 9 : Venn Diagram (Correlations)



## Chapter 6 : Discussion of Results

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### 6.1 Introduction

In the report we have done a broad literature review to gain insight into existing thinking in the link between sustainability reporting, organisational attributes and financial performance.

The statistical analysis of the hypothesis provided analytical support to the evidence to the proposed points of view in the literature review.

The literature review described that one of the main challenges in Sustainability reporting, has been the absence of links to financial performance in terms of profitability and risk, the 'language' of business. Previous studies by (Dong-shang Chang, 2008; Dong-shang Chang, 2008; M. Victoria Lopez, 2007) have attempted to establish this link.

This study utilised three hypotheses to support these ongoing attempts to establish a link between sustainability reporting and financial performance, with interesting results.

## 6.2 Hypothesis One

**H<sub>0</sub> : There is a correlation between identified organisational attributes and the rating of organisational Sustainability reporting.**

In 2006, Alan et al reported that there was no evidence of proven links between the price sensitivity of the social and environmental data and the substantial changes in economic circumstances that this data could be signalling. This was the case, even though investors were exhibiting an increasing demand for organisations to increase disclosure their social and environmental activities. Ketola (2010) referred to companies that refuse to reconsider their environmental and socio-cultural unsustainability, being negatively impacted by the increasing stakeholder pressure.

This led us to consider what were the organisational attributes that would encourage stakeholders to focus their attention on a particular company, and through some form of stakeholder activism, encourage the company to provide an increased level and quality of sustainability disclosure. Such encouragement could be through increased patronage, by choosing to provide patronage elsewhere, or ultimately protest against the organisation in a public manner.

Stakeholder pressures, from regulators, customers and/or investors, was inferred as the motivating factor for manufacturing industries, to improve their environmental impact due to pollution and production processes. (A. Azapagic, 2000)

The organisational attributes that were included in the analysis included those organisational attributes that would trigger some action from stakeholders, and thus the company would want to manage the impact of these actions through a quality approach to sustainability reporting.

Of the eight attributes analysed for an effect on the quality of GRI sustainability reporting, only the number of employees and the fact that an organisation was dual listed had any effect.

Similarly, when the attributes were analysed for an effect on the quality of CDP reporting, only the fact that the organisation was dual listed had an effect.

In contrast, no attributes had an effect on the quality of CDP reporting.

Surprisingly, the attributes referring to the organisation's extractive nature, level of resource use, level of waste emissions and social impact, had no effect on the quality of sustainability reporting that organisation chose to disclose. One would imagine that these types of organisations would be under most pressure from stakeholders to provide quality sustainability reporting.



From a stakeholder perspective this indicates that the specific stakeholder groups that may be encouraging organisations to have a higher level of disclosure, and therefore an increased consideration for social and environmental issues, were the organisation's people (attribute : No of Full time employees) and regulators (attributes : dual listed).

There was not evidence that other stakeholders, such as civil society and local communities, were seen to be influencing the organisation to increase its quality of sustainability reporting, due to the visible and tangible nature of its operations.

This may also be why an increasing amount of regulatory compliance is being used as a tool to encourage organisations to improve their social and environmental impacts through increased disclosure of these. These regulations include the King III report put out in March 2010, the International Integrated Reporting Committee (IIRC) standards which provides specific guidance on the structure and format of disclosures, and the Code for Responsible Investing in South Africa (CRISA) launched in July 2011 which as its first principle encourages investment institutions to perform a social and environmental review of any private or listed company within which it invests.

The evidence also suggests that neither an organisation's high extraction or high resource use characteristics, nor its high waste output or social impact, compels the organisation to provide a higher quality level of disclosure or quality of reporting.

### 6.3 Hypothesis Two

**$H_0$  : Different sustainability rating frameworks will produce a similar ranking of sustainability disclosure performance for the same set of organisations, in the same year ?**

It could be expected that the two indexes used for this analysis, being CDP and GRI, would produce a similar range of results for the companies analysed, given their similar objectives of encouraging increase levels of sustainability disclosure. Although CDP focuses more on the environmental impact of an organisation, and the GRI provides a broader scope including social and economic, the relative review of quality of reporting and disclosure produced would be expected to be relatively similar.

The scatterplot indicated a linear relationship between CDP and GRI, and both had histograms that were normally distributed. But ultimately the Pearson test produced results that the two indexes are not correlated.

Therefore a company which scores in the top quartile of GRI will not necessarily achieve the same result in CDP.

This may be due the different elements of each index having a different weighting, ie. where CDP, which is primarily focussed on carbon footprint disclosure for an organisation, and provides higher recognition for companies that are reporting a decreasing impact on climate change, whereas GRI would provide an equal weighting across social, environment, human rights, economic, etc.

These differing results explain why in both Hypotheses one and three, the relationship between the attributes and the two indexes as well as the financial performance and the 2 indexes provided different results.

The implication of potentially conflicting results for the same organisation, could cause confusion as to what an organisation should focus on in its sustainability reporting, as well as potentially causing credibility issues regarding these indexes.

An example of this in the data is Gold Reef Casino Resorts which scores first in the CDP but comes 52<sup>nd</sup> in GRI. Similarly, Grindrod Limited which is ranked last in CDP, is ranked 18<sup>th</sup> in GRI – within the top third of all companies.

One of the benefits of an organisation providing information to these (and other) indexes is for the organisation to benchmark itself against peers, from which insights are gained as to where the organisation needs to focus going forward. There is a risk that presenting a perceived conflicting view for the same organisations, causes confusion as to where the organisation stands and what it needs to focus on, while negatively impact the credibility of the index itself, and undermining the objective of using such indexes to encourage the improvement of sustainability disclosure.

## 6.4 Hypothesis Three

**H<sub>0</sub> : The rating of sustainability reporting is correlated to the rating of the same organisation's financial performance ?**

This study joins a number of previous studies aimed at investigating the link between financial performance of a company and its environmental and social performance (Dong-shang Chang, 2008; Noelia Romero Castro, 2006; M. Victoria Lopez, 2007). These studies were not conclusive, and the aim of this research was attempt to add to this body of knowledge.

From the results of this study we have been able to determine a correlation between Market Capitalisation, Price/Earnings ratio and Cost to Income to GRI, and no correlation between CDP and financial performance.

The financial performance correlations to GRI were medium for market capitalisation and cost to income, and weak for price earnings ratio.

It had been previously suggested by Noelia et al (2006), that future research should be undertaken to adapt existing tools and models of financial analysis in order to incorporate the impact of sustainability issues on the organisation's financial performance. Given the resultant correlations above, this may well be possible.

This research also supports Gray (2006) who suggested that social disclosure and/or social responsibility may “creates” or “releases value”.

With Revenue having no correlation to GRI or CDP, this contradicts Maurice et al's (2009) suggestion that the most significant benefit in addressing issues of sustainability was the expected positive impact on the company's image and brand (35%), which in turn would lead to increased customer loyalty, patronage and a positive revenue impact (Maurice Berns, 2009). Similarly, this also impacts Azapagic's view that being on a 'Environmental Offenders' list could mean negative publicity and a potential loss of business. (A. Azapagic, 2000). Although it must be noted that the specific impact of environmental violators was not the research objective.

As expressed by Alan et al, the Ethical Investor effect (Alan Murray, 2006) found that investors are increasingly wanting more sustainability reporting, and by implication would rather invest in organisations with increased disclosure. The PE ratio had a medium correlation to GRI which suggests a link between quality reporting disclosure and investor valuation of the organisation. The weak correlation though, indicates that the value of disclosure is not widespread as an investment criteria or that its use as a key investment criteria is prioritised lower than other criteria.

Considering the correlations observed in this research study, success in business could be taking on an increased set of skills and actions where the integration of concepts of environmental management, brand reputation, customer loyalty, corporate ethics and talent retention are starting to be

considered as key to sustainability business financial performance as proposed by Lopez et al. (M. Victoria Lopez, 2007).

We may not go as far as suggesting we're heading towards the stage suggested by Werbach where society is in the initial stages of placing an increasing expectation on business as the only institutions strong enough to meet the huge long-term socio-environmental challenges facing our planet (Werbach, 2009), but that currently, the expectation is that business have a clear understanding of their own impact, before doing more.

In a competitive environment, organizations constantly seek elements to differentiate them from their competitors, since such elements could become resources that generate long-term sustainable competitive advantages (M. Victoria Lopez, 2007). The notion that embedding corporate sustainability principles and practices in the organisation could yield competitive advantage.

Financial performance comes from increased revenue generation, at improving internal efficiencies. Investment performance comes from achieving this sustainably for the long term.

Civil society can use their buying power to encourage business towards fulfilling its environmental and social responsibilities. Being on a 'Environmental Offenders' list could mean negative publicity and a potential loss of business which could cost much more than the mere financial penalty. (A. Azapagic, 2000). The South African consumer may not be considered to be particularly activist, but at some level it is conceivable that when having to choose one product over another, a organisation's known sustainability credentials could sway the decision to purchase or utilise its services over a competitors.

## CHAPTER SEVEN : Conclusion

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### 7.1 Review of research objectives

As annual organisational reporting moves from financial and risk orientated reporting to a more inclusive style of reporting, incorporating social and environmental issues, so the business case for sustainability reporting remains a challenge given the investment in capacities and processes that is often required, versus the value produced from such reporting.

This research study was based on the premise that stakeholder expectations regarding an organisation's environmental and social practices, ultimately creates pressure for additional disclosure, and this disclosure ultimately leads to improved social and environmentally responsible practices by the said organisation. By doing so, the organisation is rewarded by increased patronage from stakeholders, and potentially also benefits from internal process efficiencies, both having a positive impact on financial performance.

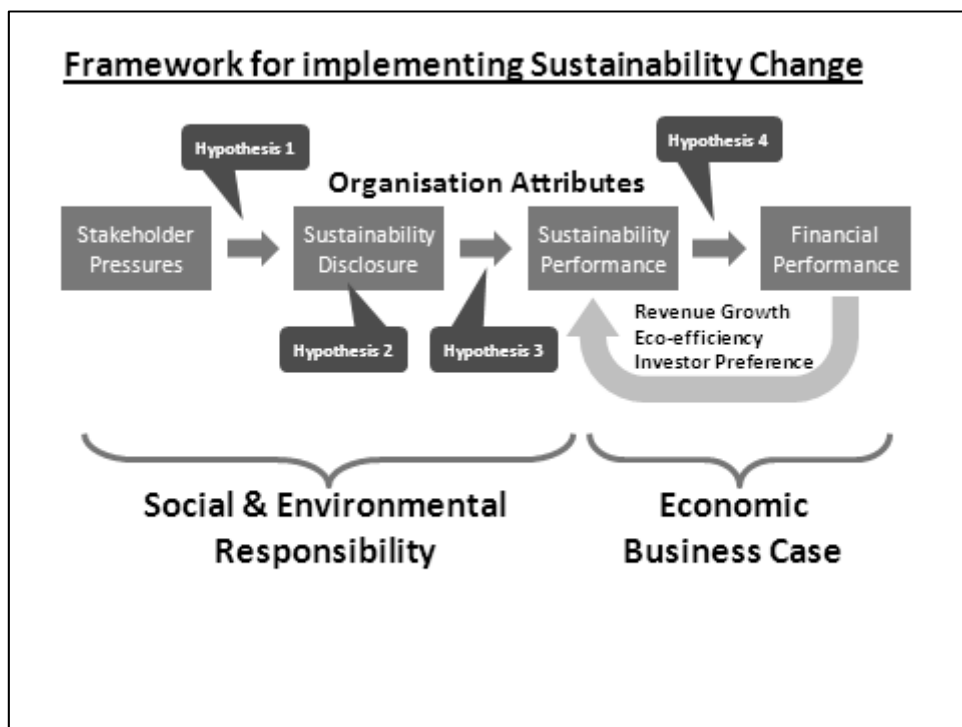
This research study included three hypothesis that covered differing perspectives on the relationship between organisation attributes and the quality of sustainability reporting, whether the sustainability indexes (namely GRI and CDP) were correlated to produce similar results, and whether the quality of sustainability reporting was at all linked to financial performance, including



revenue growth, internal cost efficiencies and investor perceptions (as indicated through the organisation's p/e ratio). This is illustrated in Lopez et al's (2007) comment; 'the search for competitive advantage is a priority for firms that operate in a complex global environment, to ensure the capacity to create value in the long term'.

Graphically, these hypotheses are demonstrated in the following manner :

Figure 1 : Sustainability Business Case



## 7.2 Key Findings

Hypothesis one tested for a relationship between an organisation's operational attributes, with a specific focus on its impact on the environment and local communities. The finding was a relationship between the number of employees employed by the organisation and the quality of GRI reporting, whilst the dual listing of an organisation would impact on CDP reporting.

The differing links and strength of relationships between the organisational attributes and financial performance to GRI and CDP was the focus of hypothesis two, which did identify the two indexes as being correlated. Although, with differing focuses, it would be expected that there would be a difference in the strength of relationship between different variables.

Testing of hypothesis three found a link between quality of GRI and CDP Report and market capitalisation, price / earnings ratio and cost to income, whilst revenue growth was linked to CDP reporting only.

What was interesting across the study was the relatively low strength of the relationship between organisation attributes, quality of GRI and CDP Reporting and financial performance. The evidence is mounting that sustainability is a pressing and demanding issue (Gray, 2006) and it would be expected that stakeholder pressure, both internal and external to the organisation, would be driving the need for organisations to do more and report on these efforts.

Stakeholders need to continually encourage and reward organisations to act more socially sensitive and environmentally friendly, which will validate

management's concern regarding the challenge of whether the focus on corporate sustainability really pays off (Dong-shang Chang, 2008).

### **7.3 Recommendations based on the Research**

Given the links and relationship identified in this study, and as social and environmental issues become more apparent, it would be prudent for management to take issues of sustainability into consideration when planning and running the day to day operations.

With the King III Report of March 2010, International Integrated Reporting Committees framework for reporting of September 2011 and the Code for Responsible Investing in South Africa released in July 2011, amongst others, regulators are leading other stakeholders in encouraging business to act more responsibly, be more social and environmentally sensitive and think holistically in terms of remaining sustainable in the long term.

Stakeholder representative groups should be voicing their concerns and rewarding those organisations that heed their call and behave appropriately with their patronage. Organisations should be thinking about how to take advantage of this growing trend by early on demonstrating their social and environmental awareness, and continuing to produce higher quality reporting. An obvious competitive advantage may not be currently apparent, but as external stakeholder awareness grows, organisations should be trying to see how they can leverage this.

## 7.4 Recommendations for Future Research

This area of study is still wide open for a wide variety of potential research options, having academic and real world application opportunities.

Given the insights gained from this study, the most immediate areas for further research could be;

- A similar study, but with a specific industry focus, eg. mining or manufacturing. It may be that the links and degree of relationships will vary from industry to industry.
- A time based study over a period of several years would be able to depict an organisation's sustainability journey, and further highlight the changing relationship and links between organisational attributes and financial performance as an organisation moves from little/no reporting of sustainability matters, to producing a high quality report.
- This research report has indicated a potential lack of interest in most stakeholders towards sustainability reporting and, if this is in fact the case, it would be worthwhile understanding what stakeholders feel about this communication tool, whether it's achieving its objectives and how, if at all, it could be improved.
- Lastly, it would be very interesting to research levels of stakeholder awareness and sensitivity of sustainability issues and how, if it all, this impacts on the level of engagement (purchasing, supplying, etc) with organisations displaying differing levels of sustainability sensitivity.

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## 9 Appendixes

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### 9.1 Sustainability Services

SustainabilityServices.co.za conducts a comprehensive annual review of compliance to the Global Reporting Initiative (GRI) G3 Guidelines in South Africa. Analysis of over 400 JSE listed companies, and other known non-listed companies, is provided in a report that offers a ranking according to a 'G3 compliance score'. [www.sustainabilityservices.co.za](http://www.sustainabilityservices.co.za)