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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

FACULTY OF COMMERCE, LAW AND MANAGEMENT

SCHOOL OF ACCOUNTACY

RESEARCH REPORT

The Relationship between Corporate Social Responsibility and Firm Performance: A Study of South African Listed Companies

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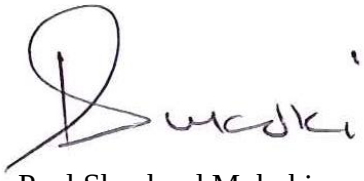
Declaration

I declare that this research is my own original work and that all sources have been accurately reported and acknowledged. The report is submitted for the degree of Masters of Commerce at the University of the Witwatersrand, Johannesburg. This research has not been submitted for any degree or examination at this or any other university.



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List of Acronyms

Acronym	Expansion
BSR	Business for social responsibility
COM	Community relations
CS	Corporate sustainability
CSP	Corporate social performance
CSR	Corporate social responsibility
CSRO	Corporate social responsibility overall rating
EMP	Employee relations
ENV	Environmental performance
ESG	Economy, social & governance
FEM	Fixed-effects model
FP	Firm performance or firm's financial performance
GOV	Governance
GTA	Growth in total assets
JSE	Johannesburg Stock Exchange
KLD	Kinder, Lydenberg, Domino and Co., Inc.
LEV	Leverage
MLA	Multiple linear analysis
MRA	Multiple regression analysis
NGO	Non-governmental organisation
OLS	Ordinary least squares
TQ	Tobin's Q ratio
REM	Random-effects model
ROA	Return on assets
SA	South Africa
SD	Sector (industry) dummy
SRI	Social responsible investment
TBL	Triple bottom line (reporting, accounting, auditing, the TBL refers to social, environmental and financial factors)
UN	United Nations
UNIDO	Industrial development organization
US	United States
VIF	Variance inflation factor
WBCSD	World Business Council for Sustainability Development

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Abstract

A growing number of institutional investors that are adopting corporate social responsibility (CSR) philosophy are playing a crucial role in influencing listed companies to adopt and address CSR issues. CSR is defined as "…a concept whereby companies integrate social and **environmental concerns in their business operations…" (European Commission, 2010). CSR is** now widely accepted as a way of doing business in the contemporary environment. It is evident in companies that are spending large sums of money, time and effort on satisfying various stakeholders' requirements for responsible behaviour. Despite the growing pressure on companies to become socially responsible, the direct benefits of CSR contribution to firm performance remain questionable. From existing literature the relationship between CSR and firm performance have pointed to mixed results (Gladysek & Chipeta, 2012; Aggarwal, 2013). This study examines the relationship between CSR performance and firm performance using the CSRHub sustainability indexes as proxy for CSR performance. The firm performance measures of firm value (Tobin's Q) and financial accounting performance (return on assets) were used. Annual data of firms from the Johannesburg Stock Exchange (JSE) from year 2009 to 2012 was analysed using the Multiple Regression Analysis techniques. The study revealed that significant and positive relationship exists between CSR/environmental performance and firm value of listed South African companies. The study concluded that there is no significant relationship between firm performance and the other components of CSR such as community relations, employment relations, and governance. The relatively small sample size of the listed companies, some missing values on the sample data and the shorter time period on the study are the main limitations acknowledged in this report. In the overall, the study provides important insights for understanding the contribution of CSR and its disaggregated components to firm performance.

Key words: Corporate social responsibility, corporate social performance, firm performance, Return on investment (ROA), Tobin's Q,

CHAPTER ONE – INTRODUCTION

1.1 Background

The influence of the socially responsible investment (SRI) on firms to adopt corporate social responsibility (CSR) values and strategies has become intense in recent years. Literature suggests that this development is being driven by the rapid shift in SRI from margin to mainstream investment practice over the past few decades (Sparkes & Cowton, 2004; Glac, 2008; Herringer, Firer & Viviers, 2009). The growing number of institutional investors adopting SRI philosophy is playing a crucial role in influencing listed companies to address CSR issues. Such institutions now have greater power and influence on the financial markets and the entire economy hence the executives of corporates are hastily taking notice of their needs and concerns (Sparkes & Cowton, 2004). It is evident that CSR is becoming widely accepted as a way of doing business in the modern business environment (McGuire, Sundgren & Schneeweis, 1988; Waddock Graves, 1997; Kim, 2010). Although there are various definitions for SRI, Herringer et al., (2009:11), broadly defined it as "…an investment strategy that balances financial and social objectives…" This implies that promoters of SRI are not focusing only on the financial performance of companies, but also on their environmental, social and governance (ESG) performance, commonly referred to as "triple bottom line" (TBL) (Slaper & Hall, 2011; Aggarwal, 2013). The determination by companies to seek capital from SRI sector is viewed as putting immense pressure on management to focus on CSR as a way of attracting capital (Sparkes & Cowton, 2004; Aggarwal, 2013; Kadyan & Aggarwal, 2014). Additionally, demands from 'stakeholders' for accountability and transparency in the measurement and reporting of social, environmental, and economic performance are adding pressure on firms to prioritise CSR issues (Wood & Jones, 1995; Key, 1999; Lourenço, Brabco, Curto & Eugénio, 2012). Freeman (1984) argues that shareholders include 'stakeholders' with diverse individuals and groups who affects or are affected by a firm's actions. Firms are therefore using the stakeholder theory to find efficient methods to manage relationships between them and several of their stakeholders with a view to combine profit maximisation with stakeholder benefits and expectation

(Ghelli, 2013). The theory focuses on aligning the interests of the firm and that of the stakeholders. Stakeholders can influence decisions that contribute to the wealth of a company (Post et al., 2002). For example, stakeholders' demands from "employees" include having better work environment and fair compensation; while "customers" expect to receive safe, quality and reliable products. "Communities" expect protection of public health, avoidance of industrial accidents and positive human rights among many other things. On the other hand, "environmentalists" desire to see good resource management, control of pollution and efficient energy use. Ruf, Muralidhar et al., (2001:143) equated CSR to "…meeting the demands of multiple stakeholders…" According to Post et al., (2002), companies with irresponsible behaviour toward employees, customers and community risk losing these critical resources. The importance of this theory is that performance is judged by the stakeholders whose demands and interests should be fulfilled (Lourenço, et al., (2012).There is however, a widespread belief that investors are interested in SRI because such investments have potential to influence company performance (Cooper, Gulen, & Schill, 2008; Sartorius & Wolmarans, 2009; Gladysek & Chipeta, 2012). Firms which prioritise SRI have the potential not only to create shareholder value, but also to create sustainable competitive advantage through efficient stakeholder management, improvement in operational efficiency, brand image, cheaper access to capital and increased returns (Adams, et al., 2012; Lourenço, et al., 2012).

However, on the other end, is a group of scholars who are against firms taking up CSR initiatives. This group supports the shareholder theory, which states that the goal of a company is to maximise shareholders' value (Friedman, 1970). The group follows the view championed by neo- classical economists such as Milton Friedman (1970) who argued that the sole responsibility of companies is "…to make as much money as possible while conforming to the basic rules of society, both those embodied in law and those embodied in ethical custom…". Thus, according to Greenwood (2001), a company is deemed to be a vehicle for creating wealth for those who risk capital. Proponents of the shareholder view believe that "…solving social problems is the responsibility of the state. Corporate philanthropy and other activities not directly related to generating shareholder wealth are both a waste of shareholders' money, and potentially immoral because they amount to stealing from

owners…" (O'Toole & Mayer, 2010:87). This view suggests that CSR projects are an outflow of resources that cannot create wealth and is bound to be resisted by shareholders. These proponents do not see any profit arising from engaging in CSR activities.

Because of these divergent views, the theoretical debate to analyse the relationship between CSR and financial performance began a few decades ago, and is still going on without reaching any conclusion (Aupperle, Carroll & Hatfield, 1985; (McGuire, et al., 1988; Griffin & Mahon, 1997; Graves & Waddock, 1997; McWilliams& Siegel, 2000; Ruf et al., 2001; Orlitzky, et al., 2003; Nelling & Webb, 2009, Crisóstomo, Freire, & Vasconcellos, 2011). It is in this context that this research is undertaken with special reference to the South African context.

1.2 Statement of the problem

From the above synopsis, it is evident that companies are spending significant amounts of money, time and effort in satisfying various stakeholders' requirements (Karlson & Chakarova, 2007; Lourenço, et al., 2012). Though there is growing pressure on companies to become socially responsible, the direct benefits of CSR contribution to firm performance remain questionable. Previous studies conducted to examine the effect of CSR on firm performance have pointed to mixed results (Gladysek & Chipeta, 2012; Aggarwal, 2013). For example, in the United States (US), Cochran & Wood (1984) examined the relationship between CSR and firm's financial performance taking into consideration the ages of the companies' assets and found weak positive link between CSR and financial performance even after adjusting for asset age. The reasoning behind taking into account the assets' ages was that firms built before the 1960s' were conceived to be below certain CSR standards compared to those built in later years. Similarly, Waddock and Graves (1997) in their study to examine the relationship between institutional ownership and corporate social performance (CSP) in US firms concluded that improvement in firm's CSP invoked no penalty in institutional ownership, but rather attracted more investors to buy shares in such a firms. This conclusion supported the existence of positive links between CSP and firm performance. On the other hand, some studies (e.g. Wright & Ferries, 1997; Griffin & Mahon, 1997; Crisóstomo et al., 2011) found negative links between CSR and firm financial performance. For instance, Wright and Ferries (1997) found that firms that disinvested from the South African market during the apartheid era suffered substantial losses. This indicates a backlash against firms that behaved in a socially responsible manner at that time. In their study of Brazilian firms, Crisóstomo et al.,(2011) examined CSR, firm value and financial performance and found negative effects of CSR on firm values.The results showed a neutral effect of firm's financial performance on CSR.

Besides this, most of these studies focused on corporates in the well-developed markets (Cochran& Wood, 1984; Waddock & Graves, 1997), with few studies carried out in the developing or emerging markets (Dawkins & Ngunjiri, 2008; Dobers & Halme,2009; Aggarwal, 2013) where CSR is increasingly becoming a major issue.

An interesting development is that in recent years, a new set of CSR ratings of firms have emerged which could provide avenues for further research in this area. The ratings are obtained from CSRHub, a US-based company that compiles CSR ratings of companies using data pulled from various rating agencies. It is worthwhile to test whether the CSRHub's CSR ratings would provide evidence of positive link between CSR performance and firm performance or not. Furthermore, the database can disaggregate the CSR index (represented by the Corporate Social Responsibility Overall rating (CSRO) into sub-component ratings for Community Relations (COM), Employee Relations (EMP), Environmental (ENV) and Governance (GOV) performance. This provides an opportunity to study which of these CSR sub-components are the key drivers of corporate social performance (CSP), in addition to gain understanding on the relationship between CSR and firm performance, a matter that remains vague and inconclusive.

1.3 Purpose of the study

The purpose of this study is to examine the relationship between CSR performance and firm performance (FP)using the CSRHub sustainability indexes as proxy for CSR performance for listed companies in South Africa. The firm performance will take into account, firm value and financial accounting performance.

1.4 Significance of the study

This study is significant because it further explores the relationship between CSR performance and FP in an emergent market. It may have implications for academics, investors, business leaders and managers in many ways.

Firstly, for academics, the study will broaden the understanding of CSR in developing nations by investigating the CSR-firm performance relationship of South African firms using the CSRHub Sustainability indexes in relation to the four sub-components of CSR Overall (CSRO) ratings- namely community, employees, environment and corporate governance ratings. CSR has been implemented mostly in the developed nations. Secondly, the additional evidence to be uncovered on the relationship between CSR- firm performance will provide an incentive for investors to prioritise CSR in their business strategies especially in developing nations. Finally, the study will conceptualise the importance of CSR reporting and encourage voluntarily disclosure of CSR information for use in the CSR ratings. This should find resonance with business leaders and managers who strive to demonstrate transparency to their various stakeholders.

1.5 Research questions

The main research question for the study is:

What is the relationship between CSR performance and firm performance in South Africa?

The sub-questions are:

a. Does a company's COM rating have influence on firm performance?

b. Does a company's EMP rating have influence on firm performance?

c. Does a company's ENV rating have influence on firm performance?

d. Does a company's GOV rating have influence on firm performance?

1.6 Hypotheses

Following from these questions, the hypotheses formulated were:

Ho1: CSR performance has no significant impact on firm performance within the South African market.

Ha1: CSR performance has a significant impact on firm performance within the South African market.

Ho2: There is no significant relationship between a company's COM rating and firm performance.

Ha2: There is a significant relationship between a company's COM rating and firm performance.

Ho3: There is no significant relationship between a company's EMP rating and firm performance.

Ha3: There is a significant relationship between a company's EMP rating and firm performance.

Ho4: There is no significant relationship between a company's ENV rating and firm performance.

Ha4: There is a significant relationship between a company's ENV rating and firm performance.

Ho5: There is no significant relationship between a company's' GOV rating and firm performance.

Ha5: There is a significant relationship between a company's GOV rating and firm performance.

1.7 Structure of the research report

The research report has five chapters. Chapter 1 covers the introduction, while Chapter 2 presents a review of the existing literature on CSR; particularly highlighting the theoretical framework linking CSR with firm performance. Chapter 3 describes the research methodology with an emphasis on the sources of data, data collection methods and analysis tools. The chapter also highlights the multiple regression models, specification tests, the assumptions, limitations and delimitations of the research. Chapter 4 presents and discusses the results of the regression analysis. Finally, chapter 5 presents the summary of research findings and recommendations for future studies. It also discusses the limitations of the study.

CHAPTER TWO - LITERATURE REVIEW

2.1 Introduction

This chapter examines the existing literature and theoretical framework underpinning the relationship between CSR and firm performance (FP) or financial performance (both terms are used interchangeably in this study) in an attempt to address the research questions stated in section 1.5. The literature review traces issues ranging from the concept, definition and evolution of CSR, financial performance, to whom the social responsibility is owed using the stakeholders theory, the measurement of the constructs- CSR and FP, the metrics for the measurement, the drivers of CSR, reasons for engaging in CSR, meaning and understanding of firm's financial performance. Finally, it will discuss CSR performance based on various stakeholders' expectations.

2.2 Evolution of CSR

Corporate social responsibility has changed from a narrow and often poorly understood notion into a complex and multifaceted concept. In the contemporary business world, CSR is influencing corporate decision making (Cochran, 2007). Early discussions on this concept were started by a small group of academicians comprising Professor Adolf A. Berle and Professor E. Merrick Dodd in a series of articles in the Harvard Law Review (Cochran, 2007). Their discussion centered on whether firms owe responsibility to anyone other than their own shareholders. Professor Berle emphasized shareholders' primacy, whilst Professor Dodd argued that corporate managers were responsible to the public as a whole and not just to shareholders (Cochran, 2007). Dodd (1932) further argued that the managers' responsibility to the public was permitted and encouraged by the law, essentially because the firms' operations are of service to the community rather than because they brought profits to the shareholders. According to Berle (1954:169), Prof Berle, on realizing the factual observation of Dodd, declared that "…the argument has been settled, at least for the time being, squarely in favour of Professor Dodd's contention…'' Professor Berle conceded that corporate managers owe responsibility to the public.

In the 1950s and 1960s, there were a few developments that set pressure on corporate managers to rethink adopting CSR. The developments included the birth of environmental activism and the civil rights movement which were strengthened following the landmark decision in the case between Brown and the Board of Education in 1954. In this case, the United States Supreme Court nullified racial segregation in public schools; including the variety of Non-governmental organizations (Cochran, 2007). All these organizations engaged the media to focus the attention of the public to management practices which they considered unethical and irresponsible. In the 1970s, their effort began to yield dividend as firms begun to respond by initiating changes in their products, policies, among others (Cochran, 2007). The nomenclature of the subject was changed from corporate social responsibility to corporate social responsiveness. Firms still argued they owe no responsibility but were simply responding to a good sense of judgment to do what they considered obviously to be right.

In the following decade (1970s), there were the neo-classical economists led by Milton Friedman who strengthened the argument in favour of the firms claiming they owe no responsibility to the wider public. Using Agency theory, Friedman (1970) argued that firms have only one responsibility: profit maximization to shareholders (Ghelli, 2013). Other scholars such as Sethi (1975) changed CSR to corporate social performance and this was also expanded by Caroll (1979). Later, Wartick and Cochran (1985) refined the concept of corporate social performance. The argument behind corporate social performance was the recognition that firms have ethical obligations towards their immediate neighbourhood and the society in general and that they must also respond strategically to the social pressures (Cochran, 2007). Freeman (1984) advanced the Stakeholder theory which argued that managers should tailor-make their policies to satisfy numerous constituents, not just shareholders. These constituents included workers, customers, suppliers and the local community among the said stakeholders (Freeman 1984).

Other prominent authors such as Chester Benard (1938), Hebert Simon (1945), Howard Bowen (1953) and Peter Drucker (1954) contributed to this argument whether or not the corporate

managers have responsibility toward larger stakeholders than the shareholders. These authors argued in favour of managers having social responsibility. Michael Porter, a Harvard Business School Professor, also favourably spoke about the same position in 2003. Porter (2003) reiterated the position of Milton Friedman (1970) by articulating that CSR spending through social activities could help a company to be more successful. Porter (2003) also concluded that one cannot separate social responsibilities from economic activities in business. On the question of allowing individuals and not companies to handle social issues for reason of capability, Porter (2003) maintained that companies would be more effective than individuals in addressing these issues because companies have relevant expertise and resources far beyond those of individuals.

2.3 Defining Corporate Social Responsibility

Given the above historical development of CSR, it is important at this stage to discuss a working definition of CSR for the purpose of this study. The definition of CSR has no strong consensus according to many researchers (McWilliams, et al., 2006). Pedersen (2006) says CSR is an ambiguous and much debated construct. A plethora of definitions have been offered by various authors, and these are examined here. CSR is used as a synonym for business ethics or corporate philanthropy and considered as related only to environmental policy (McWilliams, et al., 2006).

Davies (1973: 312) defined CSR as "…the firm's consideration of, and response to, the issues beyond the narrow economic, technical, and legal requirements of the firm to accomplish social benefits along with the traditional economic gains which the firm seeks…". This definition reflects the understanding of that time, which acknowledged CSR as an ethical issue, with a well-defined scope but failed to identify to whom the responsibility are owed nor the fact that the issues should be integrated with the operations of the company.

CSR is also defined by many entities to demonstrate their understanding of the concept. For instance, World Business Council for Sustainability Development (WBCSD) (2002) defines CSR as the continuing commitment by business to behave ethically and contribute to economic

development while improving the quality of life of the workforce and their families as well as the local community and society at large. This definition identifies the scope of CSR and the stakeholders to whom duties are owed but it is short of the fact that the CSR activities should be integrated with the regular functions of the company. Another definition given by Business for Social Responsibility (BSR) (2006:6) states that CSR is "…achieving commercial success in ways that honor ethical values and respect people, communities, and the natural environment…" Similar to the definition by the WBCSD, the definition by the BSR identifies stakeholders (but not all of them), and the fact that CSR is an ethical concept. The definition lacks the integration aspect and does not identify all the stakeholders.

The European Commission (2010) defines CSR as a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis. This definition includes the firms' acknowledgement of responsibility regarding social, economic and environmental issues. It also points out that these issues are integrated with the main objective of a firm, that is, economic or profit making. This definition also sees CSR as an ethical issue, handled on voluntary basis, and beyond the requirements of the law for the organization.

For the purpose of this study, the definition of CSR by the European Commission (2010) which defines CSR "…as a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis…" will be used as it is closer to the elements CSR should emphasize in application. The United Nations Industrial Development Organization (UNIDO) has also adopted this definition, which is an indication it's widely and globally acceptance (http://www.unido.org/en/what-we-d-/trade/csr/what-is-csr.html). Ideally, the definition of CSR must emphasize the following contents: firstly, the identification of the scope or areas of coverage. Secondly, these items must be integrated into the regular functional activities of the firm. Thirdly, the activities must be ethical, beyond the

requirements of the law and fourth, identifying the stakeholders to whom the responsibility is owed is important.

2.4 Reasons firms engage in CSR activities

Having given a working definition of CSR, this section, using existing literature provides current understanding as to 'what motivate firms to engage in CSR?' Swanson (1999) grouped the motivations into external and internal factors. External factors are those beyond the powers of the company while internal factors are those that are considered relevant by the company or its agency.

2.4.1 External factors

The main external factors are the institutional and stakeholder pressures. Research confirms that firms engage in CSR due to institutional pressure (Harrison & Cochran, 2005; Aggarwal, 2013; Kadyan &Aggarwal, 2014). The pressure includes complying with regulations (Fineman & Clarke, 1996), standards and certification (Christmann & Taylor, 2006), expectations of stakeholders including customers (Christmann & Taylor, 2006), shareholders (David, et al., 2007), the media (Davidson & Worrell, 1988), the local community (Marquis, Glynn, & Davies, 2007), activist and the non-governmental organizations (Greening & Gray, 1994).

Stakeholders influence CSR initiatives in diverse manner. For instance Sen and Bhattacharya (2001) confirmed that customers as a stakeholders influenced companies through their evaluation of the firms products or services and product purchasing. Greening and Gray (1994) also found out that various interest groups exert influence on companies using public statements which cause firms to change their policies to align with societal interests. In other words, stakeholders apply pressure to influence firms to priories CSR. This pressure is likely to affect revenue making, resource generation capacity of a firm and its reputation.

2.4.2 Internal reasons for CSR activities

Maignan, Ferrell, and Hult (1999), argue that many companies actively engage in CSR activities because the concept aligns with the values the companies cherish and the missions they pursue. For

example, companies like Coca Cola, IBM and others, have laudable corporate values which align with requirements of CSR activities. It would be out of place for these companies to live by value and standards which are different from what they put forward as their values.

According to Sprinkle and Maines (2010), another internal motivation for companies for adopting CSR is that the concept helps companies recruit, motivate, and retain high profile and scarce manpower. They argue that staff motivation is a powerful bottom-line benefit of corporate responsibility. It is also known that employees seek socially responsible employers (Middleton, 2009). Another business related motivation for CSR activity is customer related. CSR may entice customers to buy a company's products or services. For instance, Couran Cove Island Resort situated on Gold Coast of Australia, and Mandarin Oriental Las Vegas reputed to be eco-friendly and sustainable attracts clients who are lovers of sustainable products and environment (Ecology and Environment, Inc., 2008). A focus on environment could have impact on costs. For instance, Wal-Mart (2006) repackaged its toys and transportation, container and shipping costs were reduced remarkably.

2.5 The theoretical framework

This section discusses an overview of the firm theory and stakeholder theory. The relationship between CSR performance and FP is at the core of this research. To understand this relationship better, the theory of the firm and the stakeholder theory will be discussed.

2.5.1 The theory of the firm

The theory of the firm has its origins in the 18th century and is derived from 'Adam Smith's (1937) idea of the relationship between producer/owners and consumers' (Key, 1999; Boaventura, da Silva & Bandeira-de-Mello, 2012). From Adam Smith's perspective, the economic man's goal is to "maximize the wealth of the firm and is based on the contractual duties owed to owners" (Key, 1999:318). In other words, the theory of the firm establishes profit maximization as its goal (Boaventura, et al., 2012). The 'profit maximization' goal theory brought into question the nature

and characteristic of the 'profit to be maximized', that whether it is accounting or economic, short or long term among other characteristics (Boaventura, et al., 2012). From an economist point of view, Jansen (2001) clarifies that the objective of the firm should be to seek maximization of long-term market value, which makes it possible for a firm to generate cash over-time. This is consistent with growth of stock price. However from the accounting point of view, firm's objective is to maximize sales revenue and minimize accounting costs. This suggests that CSR activities increase costs to companies, hence might reduce accounting profit of firms (Orlitzky et al., 2003; Lys, et al., 2013).

2.5.2 The stakeholder theory

The early work on the stakeholder theory is traced to Edward R. Freeman in 1984. The theory contrasts the neo-classical position of shareholder primacy which was heavily supported by Milton Friedman (1970). The stakeholder theory is used to analyze those groups to whom firms owe responsibility (Jones, 1995; Key, 1999; Moir, 2001). Freeman (1984:32) defined stakeholder "…as any group or individual who can affect or is affected by the organization in the process of achieving its objectives…" He further divided stakeholders into primary and secondary and defined the primary stakeholders as those with a going concern and if not continuously engaged, the firm cannot survive. Examples of those in this group include employees, shareholders, investors, customers and suppliers (Kristoffersen, Gerrans & Clark-Murphy, 2005). On the other hand, Clarkson (1995) defined secondary stakeholders as those who influence or affect, or are influenced or affected by the organization but who are not engaged in transactions with the organization and are not essential for its survival. Examples of this are the communities and environmental activists.

Stakeholder theory is both managerial and ethical theory with the purpose of finding efficient method of managing the relationship between the organization and its several stakeholders (Ghelli, 2013). This means being able to integrate the stakeholders' expectation into the objectives of profit maximization. Van Beurden and Gossling (2008) argue that the success of an organization depends on the extent to which the organization is able to manage its relationships with the primary and

secondary stakeholders, and this indeed is the central idea of the stakeholder theory. It is therefore not possible for organizations to succeed without delivering value to important stakeholders (Campbell, 1997; Post, et al., 2002; Peloza & Papania, 2008).

Different stakeholders have different opinions and expectations about what it means to be 'socially responsible' (Peloza & Papania, 2008). Using the stakeholder framework, management should be able to and differentiate the interests of owners, employees, customers and society at large (Figure 1), and formulate strategies that address the needs of the various stakeholders (Freeman, 1984; Peloza & Papania, 2008).According to this theory, performance is judged by the stakeholders whose demands and interests should be fulfilled (Lourenço, et al.,(2012).In support, Ruf et al., (2001) also argue that the stakeholder theory is an important CSR framework which asserts that the financial benefits towards shareholders can only generated when management meets the demands of multiple stakeholders. This suggests that there are benefits from improving CSR performance.

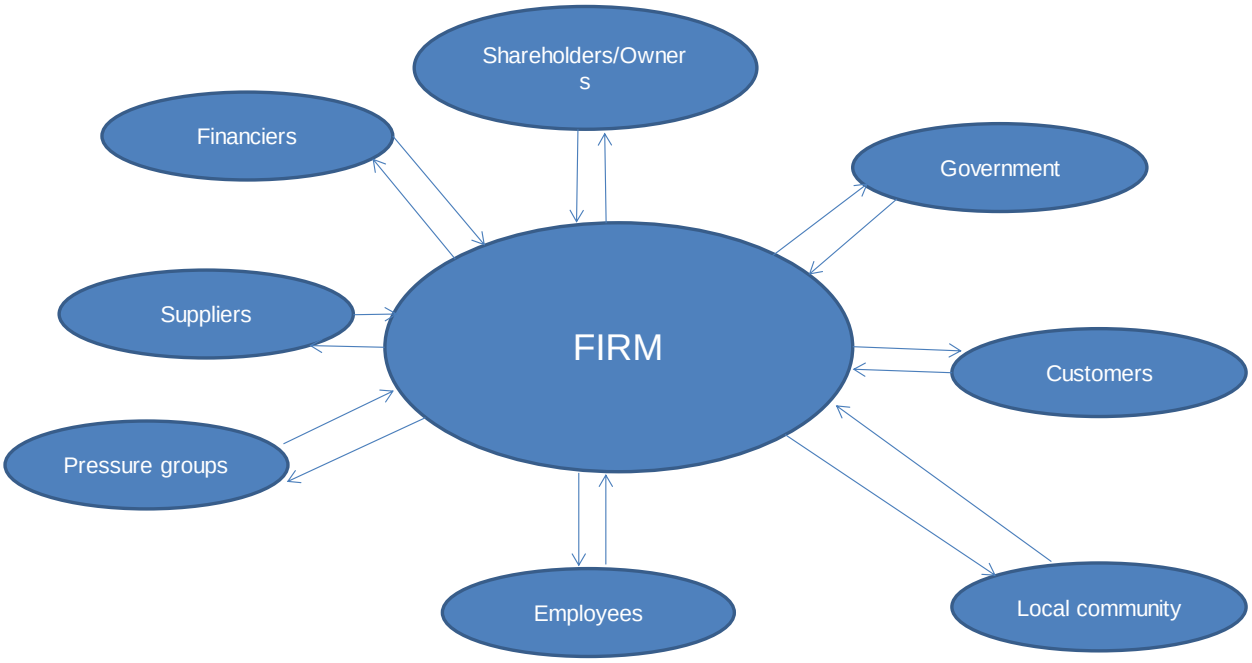

Figure 2.1: Freeman stakeholders map

Source: Key, S. (1999).

Kristoffersen, et al., 2005 note that although the stakeholder theory was developed independently of the CSR debate, it quickly found resonance with some CSR scholars such as Graves & Waddock

(1997) and Ruf et al., (2001) who developed important links between the theory and CSR. To this end, the stakeholder theory has emerged as a dominant approach in literature when examining and assessing the societal responsibilities of business organisations (Jones & Wood, 1995, Graves & Waddock, 1997; Kristoffersen et al., 2005; Peloza & Papania, 2008; Jamali, 2008; Crisóstomo et al.,2011; Arggarwal, 2013).

However, there have been some criticisms of the stakeholder theory advanced by some scholars such as Key (1999) and Kakabadadse, et al., (2005). Key (1999) criticized the stakeholder theory for its lack of a theoretical framework on which it is formulated as this has implication to its applicability in CSR construct. She argues that in developing the stakeholder theory, Freeman (1984), failed to elaborate the theoretical logic which explains the relationship between stakeholders and the firm. Second, she finds the theory not adequately addressing the environment in which the firm exists or operates. This limits the analysis of the nature of the relationships between the firm and its stakeholders as the firm's environment might play an influential role. Kakabadse et al., (2005) critiqued the stakeholder approach for its poor managerial practicality. They argued that despite that the stakeholder theory stresses the primacy of stakeholders' interests; it remains unclear on how managers could get help to deal with stakeholders.

The two theories discussed above, namely the theory of firm and stakeholder theory support the view that most firms' objectives are aligned with FP (theory of the firm) and with CSP (stakeholder theory).

2.6 The concept and measurement of firm financial performance (FP)

The concept of financial performance must be defined prior to measurement. This section will start with the definition of financial performance. Dallocchio & Salvi (2005) defined financial performance as a measure of how a firm is able to use its assets to generate revenue from its core business. This definition appears to be a narrow measure of performance because it considers 'revenue' as the only yardstick. A broader definition is given by many researchers, for instance,

Orlitzky et al., (2003) defines FP as the extent to which a company achieves its economic goals. Porter & Kramer (2006), support this definition because they conceive it to be broader than the former. They argue that economic and social goals are in-separable.

Another critical aspect to address is how the FP is measured. Margolis & Walsh (2002) analyzed one-hundred and twenty two researches that were conducted between 1971 and 2001, in which seventy different proxies were used to measure FP. The validity and reliability of some of the seventy measures could not be confirmed because there was no repeated use of them in further researches (Griffin & Mahon, 1997). According Orlitzky et al., (2003), the different measures of FP could be classified into three groups – market based, accounting based and survey measurements. These are discussed below as follows;

1. The market-based measures reflect the degree of satisfaction of the shareholders (primary stakeholders). These include stock performance, market return, Tobin's Q, price per share (EPS), market value to book value, among others (Hirschey & Wichern, 1984, Hall, Cummins, Laderman, & Mundy, 1988). The measures look at market performances, evaluate company's ability to generate future cash flows, and hence are forward looking (McGuire, et al., 1988). However, this market-based measurement system has been criticized for its limited focus on measuring shareholders expectations and evaluations, which is insufficient given the complex nature of firms.

2. The accounting measures consist of profitability measures, for instance, return on assets (ROA), return on equity (ROE), earning per share (EPS), asset utilization, assets turnover and so on. It captures an idea of the internal efficiency of a firm (Hirschey & Wichern, 1984, Hall et al., 1988; Boaventura et al., 2012). It should be noted that accounting measures are lag indicators and capture historical performance using tangible assets (Khim Ong, 2003). They often fail to adequately record performance from intangible assets such as customer relationships, employee satisfaction, innovation, investment in research and development and such other values which has become significant source of competitive advantage for firms in recent times (Mishra &

Suar, 2010). This weakness is corrected using non-financial performance, such as balanced scorecard (Kaplan & Norton, 2001).

3. The survey measurements which consist of asking survey respondents to provide subjective estimates. Examples of subjective estimates include the soundness of the firm's financial position, rational use of the firm's corporate assets, or how well it achieves financial goals as compared to its competitors (Orlitzky, Schmidt & Rynes, 2003).

The market and accounting measures are most used in research. For instance, in the one hundred and twenty two studies reviewed by Margolis & Walsh (2002), market based measures was used forty seven times, while accounting measures were used forty three times and both measures were used simultaneously twenty four times in these studies. On the other hand, survey measurements are subjective and not frequently used, hence will not be further discussed in this study. Therefore market and accounting measures will be used in this study.

2.7 The concept of corporate social performance and measurement

CSR, as defined earlier, does not easily subject itself to common measurement. The concept, responsibility, is a social variable, and does not lend itself easily to any quantitative measure. The corporate social performance (CSP) is defined by Wood (1991) as a business organization's configuration of principles of social responsibility, processes of social responsiveness, and policies, programmes and observable outcomes as they relate to the firm's societal relationships. Authors like Boaventura et al., (2012:234) support this definition and further elaborate that the concept of CSP is related to stakeholder theory since seeking maximization of CSP is linked to the objectives of meeting the stakeholder interest and expectation. CSP therefore makes CSR applicable for implementation (Van Beurden & Gossling, 2008:409) and possible to measure quantitatively (Ghelli, 2013). According to Wolmarans (2012), CSP is simply a term for measuring the CSR of companies. Having defined CSP, we now move to CSP measurement.

The problem of measuring CSP is a challenge in CSR research (Waddock & Graves, 1997; Crisóstomo et al., 2011) to the extent that Graves & Waddock (1994:1038) pronounced that the CSP variable "…is notoriously difficult to measure consistently…" This is largely due to the complexity of CSP, which according to Waddock & Graves (1997) constitutes a multidimensional construct that measures a wide range of organizational behavior inputs (such as investments in control pollution and other environmental strategies), internal behaviors or processes (for example, treatment of women and minorities or nature of products manufactured, relationships with customers), and outputs (e.g., relationships with community or philanthropic programs.

One approach to obtain objective measurement of CSP proffered by Boaventura et al., (2012), is to consider how the demands of the various stakeholders are met. This approach makes CSP an aggregate variable of an indirect observation (a proxy). However, this has shortcomings on two crucial facets, namely: which stakeholders should be evaluated and how to evaluate the fulfilment of demands? On this score, Boaventura et al., (2012) pointed out the lack of standardization to guide on which stakeholders to be considered as well as the definition of the variables to measure the fulfillment of each shareholder as limitations to empirical studies on CSP.

In spite of these limitations, researchers have attempted to measure CSP in a variety of ways (Waddock & Graves, 1994). Historically, various indices had been used to measure performance in CSR. Cochran & Wood (1984) reported the use of Moskowitz Reputation Index, while McGuire, et al., (1988) reported the use of the Fortune Reputation and Responsibility Index. Waddock & Graves (1994; 1997) also reported the use of the Kinder, Lydenberg Domini (KLD) rating system. Content analysis of documents, behavioral and perpetual measure and case study methodologies similar to social audits, are some of the most frequently used measures. In recent years, the most used metrics for measuring CSR include Fortune Reputation and Social Responsibility Index, KLD rating and the CSRHub's Sustainability Index (Aggarwal, 2013; Bouvain,Baumann & Lundmark, 2013; Bu, Liu, Wagner & Yu, 2013; Gidawani, 2013; Keig, 2013; Cruz, Larraza-Kintana, Garges-Galdeano & Berrone, 2014). These tools are described in greater detail in the next sub-section of this chapter.

2.7.1 Fortune

Fortune magazine publishes the corporate reputation survey called "The Most Admired" Firms every year (Wood & Jones 1995:238). In the surveys, senior executives, outside directors and financial analysts are required to rate the ten largest companies in their own industries based on the eight attributes of reputation, using a scale of zero [poor] to ten [excellent] (Fortune, 1994). The results of this process are summed up to create an overall reputation index. The eight attributes used in this evaluation are management quality, products and services quality, innovation, financial soundness, attracting and retaining talented people, social responsibility to community and environment, long term investment value and the wise use of corporate assets. Fortune ranking has been criticized as a measure of social performance, mainly because the ratings are based on executives' own assessments and also measures subjective attributes such as management quality, financial soundness, product quality, which brings into question the validity of the measurements (Wood &Jones, 1995).

2.7.2 Kinder, Lydenberg, Domini (KLD)

This index was developed in 1991 by the Kinder, Lydenberg, Domini & Co Research and Analytics Inc. They rate companies on the seven CSR – relevant dimensions considered significant for the different groups of stakeholders (Margolis, Elfenbein & Walsh, 2007). The Dimensions are corporate governance, community relations, diversity, employee relations, environment, human rights and product characteristics. Based on the information given the analysis of the dimensions, the Domini 400 Social Index is constructed. The index is criticized for lack of weighting for the different dimensions. Researchers believe that the dimensions are not of equal influence in every company and therefore some weights should be attached to them (Wood & Jones, 1995; Griffin & Mahon, 1997).

2.7.3 CSRHub's CSR and sustainability ratings

CSRHub is a web based database that provides access to employee, environment, community and governance ratings on most companies globally (Bouvain et al., 2013; Gidwani, 2013; Cruz, et al.,

2014). The database normalizes and aggregates information on environment, social, government, research firms and non-profit organization and provides access to more than 135 different industries for more than 7000 public firms with headquarters in 91 countries (Cruz, et al., 2014)This is unlike KLD or Fortune Magazine, most firms covered have their headquarters in the USA. Besides, the data used by the CSRHub includes those of the firms' branches wherever they are located. The CSRHub also has advantage in that it provides open public access to set of international firms CSP indices. Comparing with KLD which is a subscription based facility is only available to the well to dos (Keig, 2013). Finally, the database has an advantage in this research because it measures performance based on the stakeholders' groupings of employees, environment, community relations and governance (Bouvain et al., 2013), which agree exactly with the hypotheses this research plans to test. The main hypotheses of the research which answers the main research question could be sub-divided into sub-hypotheses which answer the research's sub-questions. These will be treated in the following sections.

2.8 The relationship between corporate social performance (CSP) and firm's financial performance (FP)

The relationship between CSP and FP is complex and inconclusive (Baurden & Gossling, 2008; Boaventura et al., 2012). However it is an area that has been widely researched. For instance, Margolis & Walsh (2003) reviewed 127 studies on CSR measuring empirically the relationship between CSP and FP. They reported that of the 127 studies, 60 were done in the 1990s, 63 were published between 1993-2002, and by 2007, the number of the studies had increased to 167 (Margolis et al., 2007).

Based on evidence from literature review, the relationship between CSP and FP is mixed showing positive, negative or neutral relationship (Fauzi, Boaventura et al., 2012). Some empirical studies review found positive relationships (Cochran & Wood, 1984; Waddock & Graves, 1997; McGuire, et al., 1988; Ruf et al., 2001; Wagner, 2001; Orlizky et al., 2003; Tsotsoura, 2004; Wu, 2006). A good number reported negative relationships (McGuire, et al., 1990; Orlitzky et al., 2003; Lys, et

al., 2013) and a few more research reported no significant relationships (McWilliams & Siegel, 2001; Margolis & Walsh, 2003; Aggarwal, 2013).

Those that argue in support of positive association base their argument from stakeholder theory perspective (Bird, Hall, Moment'e & Reggiani, 2007). For example, Alexander and Buchholz (1982) argue that organisations that support CSR activities perform better financially than other companies. Ruf et al., (2001), Peloza and Papania (2008) argue that improved CSR practices brings employee loyalty and increased productivity as well as customer goodwill which are drivers of economic prosperity for companies. Stakeholders and investors (stock and bondholders) may see firms that implement CSR as indicating good management skill. This, according to McGuire, et al., (1988), enhances firm's reputation which will allows it to exchange costly explicit claims for less costly implicit charges. Other researchers further note that companies that seek to reduce their implicit costs by engaging in irresponsible behavior risk having implicit contracts being transformed into costly explicit contracts (McGuire et al., 1988; Waddock & Graves, 1997; Tsoutsoura, 2004. Socially responsible companies have less risk of negative events, and are less likely to pay hefty fines and costly lawsuits for causing excessive pollution (Tsoutsoura, 2004).It is also suggested that better CSP arising from improved relations help companies to access cheaper sources of capital and other economic benefits that lower the cost of doing business and consequently improve financial performance of the companies (McGuire et al., 1988; Adams et al., 2012; Lourenço, et al., 2012; Trang & Yekin, 2014).

Those on negative relationship cite increased responsibility caused by improved CSR comes with additional costs compared to less socially responsible firms, thus putting such firms at competitive disadvantage (Orlitzky et al., 2003; Lys, et al., 2013; Aggarwal, 2013). In other words, those scholars inclined to this line of reasoning view few economic benefits arising from being socially responsible; arguing that the type of behavior lead to decreased financial performance (Friedman, 1970). Crisóstomo, et al., (2011:298) views CSR expenditure as a "misallocation of resources", which is value destructive. Moore (2001) argues that investment in CSR lead to increase in costs

which are unmatched with corresponding benefits, and thus hurting financial performance. Equally so, findings by Lys et al., (2013) also confirm that CSR destroy shareholder value and generate returns below company's cost of capital. Their main argument was that CSR investment merely impact on market perceptions, rather than influencing good financial performance. In other words, the view is that investors expect companies undertaking CSR investment to have excess cash to sustain the investment. Investors respond by bidding up for the company's share. The finding is that CSR initiatives have a signaling effect to the investors that such a company has better future performance, but does not improve economic performance of the company.

Finally, proponents of neutral association assume that the relationship between CSP and FP is non-existent or non-linear (Boaventura, et al., 2012). Cornell and Shapiro (1987), argue that the neutral association is a result of the additional investment (or cost) in CSR activities offsetting the likely benefit of CSR. Ullmann (1985) is of the view that problems associated with measurement of variables may cause the relationship between CSP and FP not to be detected.

Surrounding the CSP-FP relationship debate is the question of the time horizon over which CSR benefits are expected to be realized. Although many studies have found positive relationship between CSR and FP (Cochran & Wood, 1984; Waddock & Graves, 1997; McGuire, et al., 1988; Ruf et al., 2001; Wagner, 2001; Orlizky et al., 2003; Tsotsoura, 2004; Wu, 2006), few studies have examined the time varying relationship between CSP and FP. Horvàthovà (2012), notes that although many authors have stipulated that ENV (a sub-category of CSR) is beneficial, they do not explicitly clarify that the benefits are much realized in the long-term. Kim (2010:200) concurs by arguing that "…CSR is a long-term, rather than short-term, investment…", and suggested that CSR's impact on FP should be assessed over a wider timeframe. Empirical studies have found that investing in CSR initiatives improves FP in the long term (Waddock & Graves, 1997; Kim, 2010;Raiser and Earnhart, 2011; Horvàthovà, 2012). In particular, whilst Raiser and Earnhart (2011) noticed that improved CSR performance had a positive impact on financial performance in both short and long run (represented by 1.5 years lag), Horvàthovà's (2012) study instead found

negative financial performance in the short-run of 1 year lag and positive performance in the 2 year lag period (long run).Thus the benefits of investing in CSR are expected to be realized in the long-term goal rather than in the short-term (Waddock & Graves, 1997). The next sections will discuss how the different components of CSP relate to firm performance.

2.9 CSR towards community and FP

Business involvement with community is prevalent in social developmental areas such as education, health, income generation and also expressed through philanthropic or charitable giving, donation of goods and volunteerism of staff time (Wood& Jones, 1995; Suar, 2010).Although according to Berman, Wicks, Kotha and Jones (1999) the effects of community relations to financial performance are not very clear, however, recent studies report of positive relation between the two. For example, Husted (2003) reported that when firms focus their social actions on communities in and around their areas of operations, they reap the benefits of reputation as socially responsible organization amongst their employees, their families and the local communities. And this translates to increase in the sales of the companies' products. Sood & Arora (2006) give example of a company, Hindustan Lever Ltd, which launched an initiative called Project Shakti for the improvement of the livelihood of rural women in India. The consumption of its products increased in the range of 15 – 20% in the period reviewed. Other researchers also reported that investment in community development help companies to reduce cost of business through tax savings, decreased regulatory controls, and improved quality of labour from local community (Graves & Wood, 1997, Porter & Kramer, 2003).

2.10 CSR towards employees and FP

Researchers, for instance, Turban & Greening, (1997) have seen the connection between CSR towards employees and financial performance of the company. These CSR activities are in the form of policies and practices towards staff unions, staff participation in decision making, fair compensation and benefits, training and development, humane working conditions, and eradication

of forced and child labour. By adopting such standards, firms can satisfy employees, enhance their job performance that will improve the financial performance of the firm (Somavia, 2000). In addition, ethical reputation contributes to job satisfaction and lowers employees' turnover (Riordan et al., 1997).

2.11 CSR towards environment and FP

Studies link firms' CSR commitment towards environment with enhanced profitability and market value, especially in high growth industries (Klassen &McLaughlin, 1996; Russo & Fouts, 1997). Research findings show that there are significant negative abnormal returns when firms have adverse environmental news such as oils spills and positive returns when firms achieve environmental related awards (Klassen and McLaughlin, 1996). Similar studies by Jones and Rubin (2001) confirmed the link between negative environmental events and poor financial performance of firms. Arafat, et al., (2012) found that environmental performance has significantly influenced financial performance in Indonesian manufacturing firms. Porter (1991) views pollution as a sign of inefficiency and associates better environmental performance with firm performance. Tsoutsoura (2004) further argues that companies that take care of environmental issues have fewer risks of negative events which damage their reputation and avoid paying heavy fines for excessive pollution. In support of these views, Raiser and Earnhart (2011) found that lower emissions improve firm financial performance in the short and longer-term, but with more impact made in the latter. This is confirmed by Horvàthovà (2012) who concluded that whilst effects of environmental performance on financial performance were negative for environmental performance lagged by one year, it became positive for two years lag. Horvàthovà (2012) postulates that this may be caused by the high cost of both implementing and maintaining environmental management.

On the other hand, some authors refute the argument that a positive relationship between environmental performance and financial performance exists. Horvàthovà (2010) notes that researchers within the neo classical school argue that there is extra financial burden imposed on companies by environmental regulations which has the effect of reducing profitability. On the other

hand, some researchers such as McWilliams and Siegel (2001), project a neutral relationship between environmental performance and firm performance. They argue that firms that do not invest in environmental related CSR have lower costs, and resultantly charge lower prices for goods and services they provided. In contrast, firms that invest in environment have higher costs but will attract customers willing to pay higher prices. The researchers thus conceived that neither behavior of the two firms have benefit to them. Research has also maintained that findings on the above relationship are not conclusive (Christian, 2000). Environmental actions take the form of friendly products and processes, policy towards carbon emissions, clean air and water and soil pollution.

2.12 CSR towards governance and FP

Corporate governance variables do influence firm's performance (Amba, 2003). Governance variables include duality of CEO, Chairman of Audit Committee, Proportion of Non- Executive Directors, concentrated ownership structure, and institutional investors. Strong governance enables firms to attract funding because investors have confidence in firm with strong governance (Rajagopalan & Zhang, 2009). Firms with the luxury of funding can take advantage of business opportunities in its industry (Lourenço et al., 2012). This has impact on financial performance. Another researcher, Aggarwal (2013), also reports that governance rating has positive and significant impact on corporate financial performance.

2.13 Summary of the chapter

This chapter started with the review of literature on the evolution of the concept – CSR which was traced to the works of Berle and Dodd in the 1930s. Next was the definition and why firms engage in CSR. The stakeholder theory underpinning the theoretical basis of this research was discussed. The distinction between CSR and CSP was explained, with CSR being "the concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" and whilst CSP is the measurement of CSR activities of companies. This was followed by the examination of the relationship between CSP and

FP. A number of researchers reported observing significant positive correlation between CSP and FP, and some reported negative or no relationship between the variables. The weight of the argument was seen to be in favour of significant positive relationship between CSP and FP. Finally, the influence of the different components of CSP (representing stakeholder categories of community, employees, environment and governance) on firm performance was discussed.

The literature reviewed above is nonetheless exhaustive. It however demonstrates sufficiently that the relationship between CSR and FP has been explored in various contexts. In South Africa this relationship has not been sufficiently examined, especially in the light of the research questions posed in section 1.5. The next chapter discusses research methodology and data.

CHAPTER THREE – RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives the details on the methodology used to address the research questions and hypotheses, as well as the data sources used. It outlines the target research population, sampling method, sample size and selection, research design, data collection methods and procedures, as well as how data were managed and analysed. A regression specification model used for empirical analysis of the study will be discussed. In conclusion, the chapter will address issues of validity and reliability of research results.

3.2 Data and sampling

3.2.1 Population, study sample and sample selection

The population of the study comprised the companies listed on the Johannesburg Securities Exchange (JSE) between 1 January 2009 and 31 December 2012.The listed companies were chosen because audited financial information and market values can be obtained on them. The study sample was all JSE SRI Indexed firms listed in the CSRHub database between the period 1 January 2009 and 31 December 2012. This number was 151 at the time data was extracted. The specified period was chosen because the CSRHub only started to gather data for companies in 2008, and in that year only very limited CSR data for South African companies is available. The 31 December 2012 was the cut-off date for this study, because both the CSR performance and financial data for listed companies were up to date. The research could not be extended to 31 December 2013 because a number of companies' financial and CSR performance were not yet unavailable online by the time data gathering commenced in August 2014.

As the research is confined to South African listed companies, only the South African companies with complete data on both the OSIRIS and CSRHub data bases were selected. The companies missing large number of variables on either financial or CSP data were excluded from the study.

This bias is consistent with the approach of most researchers in similar studies, namely, Balabanis, et al., (1998), Crisóstomo et al., (2011) and Aggarwal, (2013) who purposefully restricted their sample to listed companies with CSR and financial data available in the databases they examined. Resultantly, a total of 46 companies remained in the sample.

3.2.2 Data collection

The data for this research were collected from two secondary sources, that is, the OSIRIS and from the CSRHub databases. From OSIRIS database, the following financial data were obtained: Return on Assets (ROA), Total Assets (proxy for firm size), company leverage (LEV); and growth in total assets (GTA). This information was downloaded directly from OSRIS and exported to Excel spread sheets for data clean up. Also obtained from this database were data for calculating the Tobin's Q ratio (proxy for market value of firm). The data from the two sources were merged to eliminate the companies missing both financial and CSR data. This matter is discussed further in this report (see section 3.4.2 below).

From CSRHub's database, the average rating of each of the categories of CSR namely, Community, Employees, Environment and Governance was obtained, as well as the overall CSR rating (CSRO) for each firm. The data were exported into Microsoft Excel sheets. This involved checking to see if all firms contained all the data of the variables under study, namely, the COM, EMP, ENV, GOV and CSRO ratings and for each year of study (2009 to 2012). The firms with data variables missing on over one year period were eliminated. After this process was done, the companies were matched with those on the list of firms with complete financial data. This process started in August 2014 until mid- November 2014.

3.2.3 Data management

The data collected from sources were cleaned up to eliminate chances of errors creeping into the process. The data were then arranged in a format that enabled uploading into the SPSS and STATA statistical packages for further analysis.

3.2.4 Data analysis

Data analysis was carried out as a process of summarising, rearranging, ordering or manipulating the data to make it easy to understand and interpret (Zikmund, 2003). A statistician at the University of Witwatersrand helped to conduct the statistical analysis using both SPSS and STATA statistical software packages. The statistical data analysis techniques which were deemed appropriate for this study included the descriptive statistics, correlation matrix and Multiple Regression Analysis (MRA).

3.2.3.1 Descriptive statistics

According to Zikmund (2003) and Wegner (2010), descriptive statistics describe and summarise information about the population or sample. These provided a visual picture of data. The main descriptive statistics that were calculated are the mean, standard deviation, minimum and maximum values. The mean (or average) values of the variables helped to check tendencies of outliers in the data and to make some inferences or predictions from the data analysed (Smith, 2012). The standard deviation, the level of variation or dispersion of the data from the mean was also visualised. Graphs such as pie charts, scatter graphs, histograms and interval plots also formed part of descriptive statistics. The histogram and the standard deviation showed the distribution of the data. The scatterplots which explore the relationship between the dependent and independent variables, direction and strengths of relationships also formed part of descriptive statistics. For the purpose of this research, it was assumed that all variables follow a normal distribution, that is, the data points are clustered even around their mean values. The SPSS Statistical software package was used to draw out descriptive statistics because it was found much easier to manipulate for this purpose than STATA which requires employment of rigorous commands.

3.2.3.2 Correlation matrix

Correlation matrix table was used to provide some insight into which of the independent variables is related to Tobin's Q ratio (TQ) and Return on Asset (ROA), as well as examine the strength of the identified association between variables. According to Torres-Reyna (2010), the Pearson correlation

coefficients run from -1 to 1. The value closer to 1 reflects strong correlation, whilst a negative value reflects an inverse relationship.

3.2.3.3 Regression results

To test the hypotheses, the most suitable regression method was selected after carrying the specification tests stipulated in section 3.5. The MRA was used to evaluate the relationships between companies' performance (firm value and financial accounting performance) and CSP (CSR overall), COM, EMP, ENV and GOV ratings). This was further aided by use of tables to analyse regression model results for the panel data.

3.3 Variable measurement

The variables used in this study are the Tobin's Q ratio (TQ), Return on Assets (ROA), CSR Overall Ratings (CSRO), Community relations, Employee relations, Environmental performance, Governance. These variables are discussed below.

3.3.1 Dependent variables

Whilst there are many measures of firm performance (FP) for example stakeholder satisfaction and intellectual capital (Clarkson, 1995), the researcher in this study followed the approach adopted by Crisóstomo, et al., (2011) by using two dependent variables of measurement of FP, namely the market- based measure using Tobin's Q ($^{TQ_{i,t}}$) variable and the accounting based measure using the return on assets ($^{ROA_{i,t}}$) variable. The financial measures of firm performance may be classified into two categories, namely, accounting based and market based measures (Hirschey & Wichern, 1984, Hall et al., 1988).

Accounting based measures of performance are historical and thus are considered to backward and inward looking focus. They are prone to biases which are not existent in market-based measures (Cochrane & Wood, 1984; Hall et al., 1988). The 'bias' arise from the fact that accounting based measures are susceptible to differential accounting procedures which are a projection of managerial

choices (Margolis & Walsh, 2002; McGuire et al., 2002; Tsoutsoura, 2004; Ahamed, Almafir & Al-Smadi 2014). Despite this, most CSR researchers use accounting based measures because the data is easy to obtain from companies' audited financial statement and annual reports and provide information not contained in market based measures (Hirschey & Wichern, 1984).

$ROA_{i,t}$ is an accounting based measure which is widely used in CSR literature as proxy for firm's financial performance (Waddock & Graves, 1997; Pava & Krausz, 1996; Tsoutsoura, 2004; Wu, 2006; Crisóstomo, et al., 2011; Aggarwal, 2013); Ghelli, 2013; Ahamed et al., 2014). It is defined as the measure of profitability of operations relative to the investments (assets) in place (Pava & Krausz, 1996). It measures how efficiently management uses its assets to generate profit (Ghelli, 2013).The beauty of this indicator is that it helps the users of accounting information to see how many dollars/Rand of earnings can be obtained from each dollar/Rand of assets owned by the firm. The higher the ratio, the better. Although ROA can be calculated using the formula:

$$ROA = \frac{\text{Profit before Tax}}{Total\ \ assets} x100$$

, the data on firm's ROAs was directly downloaded from the OSRIS financial database.

As regards to the market based measures of firm's financial performance, these relate to the value ascribed by the market to the firm ((Hirschey & Wichern, 1984, Hall et al., 1988; Comincioli et al., 2012). According to literature, the market based measures reflect the expected future earnings of the company and, hence are considered to be forward looking, and focus on market performance. They are less susceptible to different accounting procedures (McGuire, Sundgren & Schneeweis1988); Tsoutsoura; 2004). The TQ ratio belongs to this category and is the most favoured amongst the market based measures (Hirschey & Wichern, 1984; Hall et al., 1988; Lo & Sheu, 2008). The attractiveness of this indicator is that, it is a risk-adjusted capital-market measure of performance both current and anticipated profitability. Theoretically, it measures the value added by

management, for which the market is prepared to pay a premium for the given portfolio of assets (Huseid, Jackson & Schuler1997).

In this study, the Tobin's Q was calculated according to Allayanis, Lel and Miller (2007) as:

$$TQ = \frac{\text{Book Value of Assets- Book Value of Equity + Market Value of Equity}}{\textit{Book Value of the Assets}}$$

Since the Tobin's Q measure is not obtainable directly from OSIRIS database, the values for $TQ_{i,t}$ were calculated manually on Excel spreadsheets, using data of elements of the formula which were downloaded from the financial database. The data exported into Excel for the calculation $Q_{i,t}$ were:

-the Book Values of assets for firm i, at time t

-the Book Value of Equity for firm i, at time t

-the Market Value of Equity for firm i, at time t

The calculated values of $TQ_{i,t}$ were then importing into STATA for analysis.

3.3.2Independent

The CSP measured via $CSRO_{i,t}$ and its four component ratings or stakeholder dimensions of $COM_{i,t}$, $EMP_{i,t}$, $ENV_{i,t}$ and $GOV_{i,t}$ for firm i at time t are used in this study as independent variables. The CSP measurements are not well developed hence qualify to be independent variables (Tilakasiri, 2012). CSRO is the Corporate Social Responsibility Overall Rating obtained from the CSRHub's social responsibility database. It is an interval scale numeric score (0 to 100) which reflects overall social responsibility rating for each firm. It encompasses four social responsibility dimensions or categories, namely, community relations (COM), employee relations (EMP), environmental performance (ENV) and governance (GOV). In other words, the rating represents the aggregate effects of all four dimensions CSR.

Bouvain et al., (2012) and Cruz et al., (2014), briefly explained how the CSRHub compiles the CSR ratings. The COM rating measures firm's commitment and effectiveness within local, national and global community in which it does business. It focuses on how the firm excels in areas such as community development, philanthropy, human rights, supply chain management and product safety, among others. It has a weighting scale of 2.56 out of twelve CSR sub-categories. The data is then converted to a score out of 100 (100 being the highest attainable score) to give a rating. The EMP rating measures firm's commitment and performance in labour relations and labour rights, fair compensation and benefits, diversity, employee training and health and safety compliance. This dimension has a weighting scale of 2.82 out of twelve CSR sub-categories. The data is converted to a score out of 100 to give a rating. That of the ENV rating or score assesses company's interaction with the environment at large. The category evaluates firm's environmental performance, and compliance with environmental regulations and other environmental initiatives such as addressing climate change, energy-efficient operation, development of renewable energy, use of alternative environmental technologies. This category is assigned a weighting of 3.69 out of twelve CSR sub-categories, and is converted to a score out of 100 to get the desired rating or score. Finally, the GOV rating measures the company's commitment and performance in board independency and diversity, executive compensation disclosures, attention to stakeholder concerns and evaluation of a company's culture of ethical leadership, transparency and compliance. A weighting of 2.93 out of twelve CSR sub-categories is assigned to this category and converted to a score out of 100.

Included in all the ten models stated above are the additional lagged independent variables, namely the, $CSRO_{i,t-1}$, $COM_{i,t-1}$, $EMP_{i,t-1}$, $EMP_{i,t-1}$ and $GOV_{i,t-1}$. The lagged variables were included to take into account the possibility of delayed influence of CSR on firm value and financial performance. Crisóstomo, et al., (2011) support this approach by arguing that investment in CSR in the preceding period will only have effect in period t.

Furthermore, the CRSHub's CSR ratings are considered valid CSP measurements, as the database was in recent years successfully used by Aggarwal (2013), Bouvain, et al., (2013); Bu, et al.,

(2013), Cruz, et al.,(2014) and other researchers in similar studies. It is important to note that the terms ‘CSR overall’, ‘CSP’ or ‘CSRO’ are used in this report interchangeably.

3. 3.3 Control variables

Statistical predictions can often be improved by using more than one independent variables (Van Staden, 1998). The use of control variables in addition to independent variables thus will increase the predictive values of the multiple regression models. The control variables included in the regression models are the firm size ($^{SIZE_{i,t}}$), leverage of companies ($^{LEV_{i,t}}$), growth in total assets ($^{GTA_{i,t}}$) and sector dummy (^{SD_i}). Firm size is an important control variable because it influences the capacity to undertake CSR action-with larger companies having bigger influence than the smaller companies (Tsoutsoura, 2004; Crisóstomo, et al., 2011; Aggarwal, 2013,). In this study, the natural logarithm of total assets wasused as proxy for firm’s size (Tsoutsoura, 2004; Crisóstomo, et al., 2011; Aggarwal, 2013).

The firm’s leverage is a measure of its approximate risk. Theoretical and empirical studies show that there is a link between leverage and corporate performance; hence LEV is an important control variable which may affect firm value and financial performance (Mock, Yeung, Han & Li, 2007; Sheu & Lo, 2007; Weill, 2008). It is measured as the firm’s indebtedness (leverage).The natural logarithm of the firms’ leverage was used as a measure of LEV.

The sector dummy variable (SD) is the industry or sector classification. The industry effects are controlled because industries with significant and more visible impact on the physical environment attract more public scrutiny and pressure. Thus, they are likely to feel more pressure to improve their CSR rating (Balabanis, et al., 1998; Crisóstomo et al., 2011). The seven sectors/industries identified for this research are: communication, mining, manufacturing, financial services, construction, retail and other services. The sector ‘other services’ represent minor sectors such as health care, hotel and restaurants, diversified holding companies, among others.

Finally, GTA is a measure of total asset growth rate. The variable is controlled, because there is a correlation between total asset growth and firms' future profitability and which thus affects TQ and ROA(Cooper, Gullen & Schill, 2008; Lipson, Mortal & Schill, 2009; Cao,2011, Watanabe, Xu, Yao &Yu, 2013). It is also further noted that, high growth firms have propensity to take up new CSR initiatives. Conversely low growth firms are heavily invested in existing assets and are not likely to take up new projects requiring extra CSR related assets (van Hardeveld, 2013). GTA was measured by subtracting prior total asset value from current total asset value divided by prior value of total assets.

3.4 Estimation techniques

3.4.1 Panel data techniques

The data set used was of two dimensions (the firm dimension (i) and time dimension (t) of 2009 to 2012. This made it to be a panel data set. The basic estimation strategy applied on the panel data was to pool the observations across firms and time variants and apply the Ordinary Least Squares (OLS) estimates on the pooled sample. Previous studies exploring CSP-FP relationships validate this panel data modeling approach as appropriate estimation strategy (Waddock &Graves, 1997; Tsoutsoura, 2004; Lo & Sheu, 2007; Crisóstomo et al., 2011; Bovain et al., 2013).The attractiveness of the panel data modelling lies in its ability to capture dynamic (time series) as well as cross section aspects of the problem under investigation. The panel data technique allows researchers to answer questions not possible with pure time series or pure cross-sectional regression analysis (Gujurati, 2003).

The other merit is that panel data increases precision of regression estimates, since it usually consists of many observations. Thus, panel data models give more informative data, since sample size will be NT (N-dimension of space and T-time dimension). Consequently panels give more variability, less collinearity among variables, more degrees of freedom and more efficiency (Torres-Reyna (2007).

3.4.2 Regression model specification

Statistical analysis used in this research to study the relationship between CSP and FP is the multiple regression analysis. The following is the general regression model specification adopted for the empirical analysis:

$$Performane(FP)_{i,t} = f(CSRO + COM + EMP + ENV + GOV + Z_{i.t} + Dum_i) + \varepsilon_{i,t}$$

Where:

FP = Firm performance (or Financial performance). Two proxies for firm performance $(FP)_{i,t}$ used are Tobin's Q ($TQ_{i,t}$) and return on assets ($\mathrm{ROA}_{\mathrm{i,t}}$)

CSRO = CSR Overall Rating (proxy for CSP or CSR performance)

COM = Community relations ratings

EMP = Employee relationship ratings

ENV = Environmental performance ratings

GOV = Governance ratings

Z = Control variables for firm's leverage ($LEV_{i,t}$),firm size ($SIZE_{i,t}$) and firm growth ($GTA_{i,t}$)

Dum = Dummy for industry or sector

ε = Error term

Now, I will singularly state the equations for each hypothesis tested.

(a) The equations to test the first hypothesis (Ho1) are:

$$TQ_{i,t} = \alpha + \beta_1 CSRO_{i,t} + \beta_2 CSRO_{i,t-1} + \beta_3 LEV_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 SD_i + \beta_6 GTA_{i,t} + \varepsilon_{i,t} \quad (1.1)$$

$$\mathrm{ROA}_{\mathrm{i,t}} = \alpha + \phi_1 CSRO_{i,t} + \phi_2 CSRO_{i,t-1} + \phi_3 LEV_{i,t} + \phi_4 SIZE_i + \phi_5 SD_i + \phi_6 GTA + \varepsilon_{i,t} \quad (1.2)$$

where $TQ_{i,t}$ is Tobin's Q ratio (proxy for firm value), $ROA_{i,t}$ is return on assets (proxy for financial accounting performance), $CSRO_{i,t}$ is Corporate Social Responsibility Overall (proxy for CSP), $LEV_{i,t}$ is leverage (firm indebtedness), $SIZE_{i,t}$ is the firm size, $GTA_{i,t}$ is the growth represented by total asset growth, SD_i is sector dummy, and $\varepsilon_{i,t}$ is the error term.

(b) The equations to test the second hypothesis (Ho2) are:

$$TQ_{i,t} = \alpha + \eta_1 COM_{i,t} + \eta_2 COM_{i,t-1} + \eta_3 LEV_{i,t} + \eta_4 SIZE_{i,t} + \eta_5 GTA_{i,t} + \eta_6 SD_i + \varepsilon_{i,t} \quad (2.1)$$

$$ROA_{i,t} = \alpha + \eta_1 COM_{i,t} + \eta_2 COM_{i,t-1} + \eta_3 LEV_{i,t} + \eta_4 SIZE_{i,t} + \eta_5 GTA_{i,t} + \eta_6 SD_i + \varepsilon_{i,t} \quad (2.2)$$

Where COM represent the CSRHub's ratings for community relations. All other variables are as explained above.

(c) The equations to test the second hypothesis (Ho3) are:

$$TQ_{i,t} = \alpha + \eta_1 EMP_{i,t} + \eta_2 EMP_{i,t-1} + \eta_3 LEV_{i,t} + \eta_4 SIZE_{i,t} + \eta_5 GTA_{i,t} + \eta_6 SD_i + \varepsilon_{i,t} \quad (3.1)$$

$$ROA_{i,t} = \alpha + \eta_1 EMP_{i,t} + \eta_2 EMP_{i,t-1} + \eta_3 LEV_{i,t} + \eta_4 SIZE_{i,t} + \eta_5 GTA_{i,t} + \eta_6 SD_i + \varepsilon_{i,t} \quad (3.2)$$

Where EMP represent the CSRHub's ratings for employee relations. All other variables are as explained above.

(d) The equations to test the second hypothesis (Ho4) are:

$$TQ_{i,t} = \alpha + \eta_1 ENV_{i,t} + \eta_2 ENV_{i,t-1} + \eta_3 LEV_{i,t} + \eta_4 SIZE_{i,t} + \eta_5 GTA_{i,t} + \eta_6 SD_i + \varepsilon_{i,t} \quad (4.1)$$

$$ROA_{i,t} = \alpha + \eta_1 \ ENV_{i,t} + \eta_2 ENV_{i,t-1} + \eta_3 LEV_{i,t} + \eta_4 SIZE_{i,t} + \eta_5 GTA_{i,t} + \eta_6 SD_i + \varepsilon_{i,t} \quad (4.2)$$

Where ENV represent the CSRHub's ratings for environmental performance. All other variables are as explained above.

(e) The equations to test the second hypothesis (Ho5) are:

$$TQ_{i,t} = \alpha + \eta_1 \ GOV_{i,t} + \eta_2 GOV_{i,t-1} + \eta_3 LEV_{i,t} + \eta_4 SIZE_{i,t} + \eta_5 GTA_{i,t} + \eta_6 SD_i + \varepsilon_{i,t} \quad (5.1)$$

$$ROA_{i,t} = \alpha + \eta_1 \ GOV_{i,t} + \eta_2 GOV_{i,t-1} + \eta_3 LEV_{i,t} + \eta_4 SIZE_{i,t} + \eta_5 GTA_{i,t} + \eta_6 SD_i + \varepsilon_{i,t} \quad (5.2)$$

Where GOV represent the CSRHub's ratings for governance. All other variables are as explained above.

3.5 Specification tests

The specification tests that were used to identify the best model are the Lagrange multiplier (LM) test and the Hausman test. These tests are discussed below.

3.5.1 LM test-whether to pool or not

The LM test was used to decide between a random effects regression and a simple OLS regression. According to Park (2005), the null hypothesis assumes that there are no random effects (REM). If null hypothesis is rejected, REM is then accepted over the pooled OLS model.

3.5.2 Hausman test: fixed effects model (FEM) or REM

The Hausman specification test compares the FEM and REM to determine which is preferable. The null hypothesis indicates that the random effect is the preferred model over the alternative FEM. If null hypothesis is rejected, the FEM is preferred (Park, 2005; Greene, 2008).

3.6 Diagnostic tests

To ensure reliability and validity of multiple regression models it is essential to carry out some diagnostic tests prior to analysing the panel data (Gujarati, 2003; Stock & Watson, 2007; Sheather, 2009). The purpose is to ensure that the models do not violate the assumptions of the regression analysis as well as to evaluate the data for possible outliers and influential cases.

Accordingly, tests for linearity, multicollinearity, heteroskedasticity, cross-sectional dependency and serial correlation were performed to check how the data meets the assumptions of the multiple linear regression (MLR) and to detect any problems associated with use of panel data

3.6.1 Test for linearity

The OLS regression model assumes that there must be a linear relationship between the dependent variable/s $(Y_{1...n})$ and the independent variable/s $(X_{1...n})$. The checking for the linear relationship between dependent (TQ and ROA) and the independent variables (namely, CSRoverall, COM, EMP, ENV and GOV) was done using the scatter plots.

3.6.2 Test for multicollinearity.

Multicollinearity is an issue that was tested using the Spearman rank test to detect the degree and direction of association between independent variables. The concerns around multicollinearity according to Gujarati, 2003 are that if perfect collinearity exists among independent variables (X's) their regression coefficients are indeterminate, and their standard errors are not defined. Also, if collinearity is high but not perfect, estimation of regression coefficients is possible although their standard errors tend to be large. Consequently, this affects the population value of coefficients which cannot be estimated precisely, thus resulting producing confusing and misleading results.

One clearest way of detecting multicollinearity according to literature is to check for r after computing correlations between pairs of predicators. If some r is close to 1 or -1, one of the two

correlated independent variables are removed from the model. The other way is to compute the variance inflation factors (VIF) for each independent variable X_j:

$VIF_j = \frac{1}{1 - R_j^2}$, where $R^2{}_j$ is the coefficient of determination of the regression model that includes all independent variables with the exception of the jth variable. If, $VIF_j \geq 10$, it reflects a problem of multicollinearity which requires fixing (Gujarati, 2003).

3.6.3 Test for heteroskedasticity

One of main assumption of the OLS regression model is the homogeneity of variance of residuals. If the model is well fitted, there should be no pattern to the residual plotted against the fitted values. If the variances of the residuals are non-constant then the residual variance is said to be "heteroskedastic." All models were tested for robustness to heteroskedasticity by using the Breusch-Pagan test. According to Stock and Watson (2007), the null hypothesis reflects that residuals are homoskedastic (which means are constant). Rejection of the null hypothesis concludes that residuals are heteroskedastic.

3.6.4 Test for cross-sectional dependence

Substantial cross-sectional dependence in the errors are often exhibited in panel-data sets; which arise from presence of common shocks and unobserved components which become part of the error term (Baltagi, 2005; De Hoyos & Sarafidis, 2006). Cross-sectional dependence tests are done to test whether error terms are correlated across sectors/industries. Cross-sectional dependence can cause bias in test results. The Pasaran CD (cross-sectional dependence) test was applied. The null hypothesis is an indication that the residuals are not correlated, and hence will not produce biased results. Torres-Reyna (2010) notes that cross-sectional dependency is a problem in macro panels (time-series of 20-30 years) and not in micro panels with time series of few years.

3.6.5 Test for serial correlation

One of the issues to be addressed when analysing data is that of avoiding the possibility of generating bias estimators (Baltagi, 2005; Wooldridge, 2009). Serial correlation is one of such issues. There is serial correlation if one variable is influenced by its own value in the previous time period (Kennedy, 2008; Schults, 2014). For example, if current value of a variable is dependent on previous year's value, it suggests that the values are not independent but rather are correlated with previous years. Drukker (2003) argues that serial correlation results in biased standard errors and produce results that are less efficient. The Woodridge test was applied to panels to test for serial correlation; with the expectation that a high probability would indicate that there is serial correlation in the panel data. Serial correlation causes standard errors of coefficients to be smaller than they should and R-squared to be higher (Torres-Reyna, 2010). The author further argues that serial correlation tests does not apply to micro panels, with few years, but rather to macro panels with long series of over 20-30 years.

3.6 Validity and Reliability

3.6.1 Validity

Validity encompasses both external and internal validity (Leedy, et al., (2013). Validity is a way of measuring whether the researcher is observing, identifying, or measuring the data coinciding with what he/she should do (Bryman, et al., 2007). It is an important process in research as validity is concerned with the integrity of the conclusions that are generated from the study. Regarding this study, the researcher mainly focused on measurement validity in terms of using different control variables, and examined whether each control variable can reflect an association with firm performance. Furthermore, our internal reliability was reflected in our correlation test between different variables and tries to examine the relationship between them. The various regression diagnostic including a test for multicollinearity, heteroskedasticity, panel root and cross-sectional dependency were carried out to enhance internal validity of the regression model. The researcher is

therefore of the opinion that the data are of validity. All the data used were extracted from credible data sources that have high credibility and accountability.

3.6.2 Reliability

Defined, reliability is ascertaining whether the results of a study are repeatable. This is a standard procedure with quantitative research (Bryman & Bell 2007). All the data were collected from reputable data sources, and the regression model used had been tested by prior researchers, with success. The use of a combination of SSPS and STATA statistical software package ensured the processing of the data was accurate, controllable and reliable.

3.7 Assumptions and delimitations

3.7.1 Assumptions

In this study, the following assumptions were made: (1) the financial data obtained from OSIRIS financial database was accurate and truthful; and (2) the CSRHub's CSR ratings were accurate and truthful. False data would have had detrimental effect on the study results

3.7.2 Delimitations

The study used public listed companies on the Johannesburg Stock Exchange only and focused on the CSRHub CSR ratings for South African companies. Thus, any other information unrelated to the area of study, for example budgets, financial forecasts of firms were not discussed.

3.8 Summary of the chapter

The objective of this research study was to establish the relationship between CSR and firm performance. This chapter described the research methodology, research design, data collection methods, sample selection procedure and data analysis. The process of using statistical approach to predict and/or explain the dependent variable, which is the firm performance, from a set of independent variables (CSR performance variables) and some control factors was discussed. The specification and diagnostic tests carried to ensure validity and reliability of results were also

discussed. The information generated from the regression analysis allowed the aims and objectives of the research study to be achieved. The next chapter discusses the results of MLR models selected. This is followed by the last chapter of summary and conclusion of the research study.

CHAPTER FOUR – RESULTS AND DISCUSSION

4.1 Introduction

This chapter examines the data collected and also presents the results of the regression diagnostics and analysis. The chapter is structured as follows: Section 4.2 discusses descriptive statistics while section 4.3 discusses results of the regression diagnostics. Section 4.4reports on the specification test results and section 4.5 discusses the correlation matrix results. The results of the random effects GLS regression for the 5 models are presented and discussed in section 4.6 of this chapter. Section 4.7 reviews the hypotheses in the context of the regression analysis results. The chapter ends with section 4.8 which is the chapter summary.

4.2 Descriptive statistics.

According to Zikmund (2003) and Wagner (2010), descriptive statistics are used to summarise information about a population by conveying precise information about the behaviour of the random variables (that is, the mean and the median)and dispersion (standard deviation and range).These measures reduce huge volumes of data to a simpler format to facilitate understanding of a population sample. Table 4.1 below shows the descriptive statistics of the raw data of sample companies before conversion to variables.

Table 4.1: Descriptive statistics of the sample companies

	TQ	ROA	CSROVERALL	COM	EMP	ENV	GOV	LSIZE	LLEV	GTA	Sector
N Valid	153.00	181.00	144.00	161.00	166.00	176.00	177.00	181.00	157.00	142.00	184.00
Missing	31.00	3.00	40.00	23.00	18.00	8.00	7.00	3.00	27.00	42.00	-
Mean	2.00	13.21	53.23	53.57	55.60	53.62	54.33	17.38	16.34	15.02	3.93
Median	1.61	9.37	53.73	52.94	55.29	54.44	54.67	17.32	16.29	10.62	4.00
Std. Deviation	1.12	14.81	6.49	9.89	9.20	9.87	7.72	1.27	1.02	17.99	2.19
Skewness	1.69	2.91	(0.62)	(0.01)	(0.43)	0.11	(0.31)	0.98	(0.27)	3.94	(0.03)
Std. Error of Skewness	0.20	0.18	0.20	0.19	0.19	0.18	0.18	0.18	0.19	0.20	0.18
Kurtosis	2.96	11.09	0.66	1.15	0.10	0.38	0.87	0.96	(0.17)	21.39	(1.39)
Std. Error of Kurtosis	0.39	0.36	0.40	0.38	0.37	0.36	0.36	0.36	0.38	0.40	0.36
Minimum	0.66	0.23	33.00	23.04	28.14	28.72	28.74	15.32	13.75	0.01	1.00
Maximum	6.10	93.16	70.29	82.08	77.47	82.00	80.61	21.16	18.30	144.53	7.00

The mean value for sample companies are: (1) TQ ratio is 2.0 and return on assets is 13.21%. The statistics show that the companies that engage in CSR activities have relatively low market and financial accounting performances. The average CSR ratings or score for companies are CSR overall 53.2%, COM 52.9%, EMP 55.6%, ENV 53.6% and GOV 54.3%. The results show that the South African companies engaging in CSR score above average ratings on all categories of CSR. The components that receive greater attention are respectively, employee relations (EMP), corporate governance (GOV),Environmental performance (ENV), and lastly COMM. The average ratings further indicate the need for corporates to take steps to improve CSR performance.

Table 4.1 also shows that the average of total assets (proxy for “firm size”) is R17.4billion, leverage is R16.3 billion and total asset growth is 15%. We consider these values to be within standard limits since there are no standards given for these variables.

Figure 4.1 below shows the sector classification of companies in the study sample.

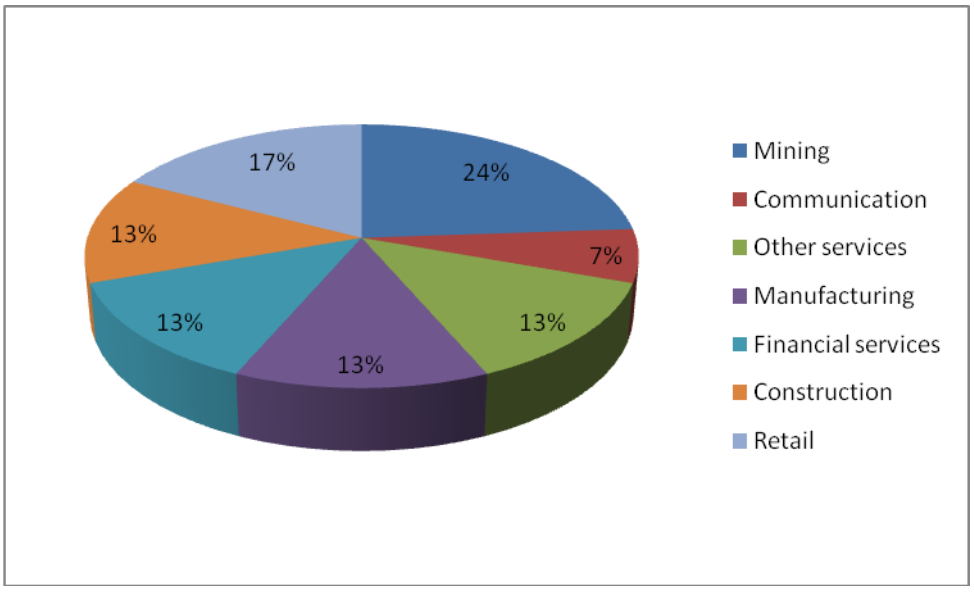

Figure 4.1: Sector classification of sample companies

It can be observed that the majority of JSE listed companies that engage in CSR activities are in the Mining Sector, taking up 24%. This shows the significant influence these companies have on the South African economy. This is followed by the Retail sector at17%. The Manufacturing, Financial services, Construction and other services are next at 13% respectively. The Communication sector has the least representation at 7%. Sectors classified as "Other services" includes Health Care, Hotel & Restaurants, Diversified Holding Companies, among others. The Sector with most profitable firms is Communications with average ROA at 24.25%, followed by Retail at 18.59%. See Appendix 2.The findings of the descriptive statistics also show that data of the sample was normally distributed as depicted by histograms and normality curves on the Appendix 1.

4.3 Results of the regression diagnostics

The sub-sections below discuss the results of the regression diagnostic tests. The diagnostic tests were performed to ensure that the results of the regression models are not invalidated through any violation of the key assumptions of multiple regression analysis.

4.3.1 Scatterplots

The assumption of MLR is that there is linearity between dependent variables and independent variables (Sheather (2009). The scatter plots depict the relationship between two variables. The

scatter plot is used to visualise the overall pattern of the data and for striking deviations from the pattern. The overall pattern show the form, direction and strength of the relationship of the variables, whilst importantly, the kind of deviation to check for are outliers (individual values that fall outside the overall pattern of the relationship. According to Moore and Notz (2008), two variables are positively associated when above mean values of one variable tend to accompany above mean values of the other and below mean values tend to occur together. Such a scatter plot slopes upwards as one moves from the left to right. On the other hand, negatively associated scatterplots tend to accompany below-average values of the other and vice-versa, with the scatterplot slopping downwards from left to right.

Figure 4.2 and Figure 4.3 below, show the scatterplots of the dependent variables and CSR overall ratings which are discussed below.

4.3.1.1 Tobin's Q versus CSR Overall Rating

There is a positive association between firm value (TQ) and CSR overall rating measure, which represents CSP. Firm performance is positively trending with CSR rating as shown in figure 4.2.

There are a couple of outliers below and above the trend line. This is confirmed by the value of R^2=0.008, which reflects that the linear association of TQ is explained by 0.8% of CSR overall ratings. This depicts a very weak degree of association.

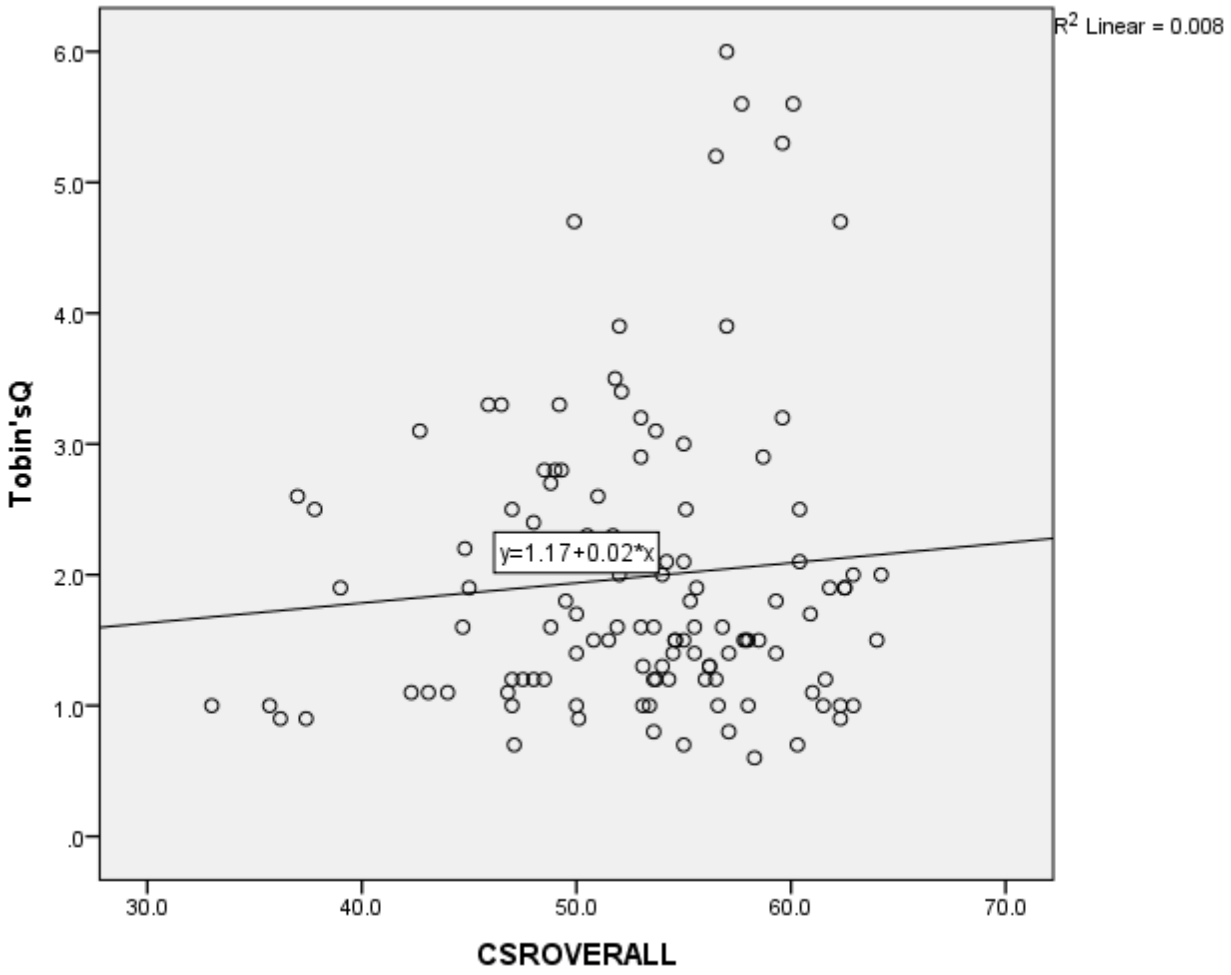

Figure 4.2: Scatterplot of firm value and CSR overall

4.3.1.2 Return on assets versus CSR Overall

Figure 4.3 below shows that there is a weak positive association between ROA and CSR Overall rating for the sample of 46 JSE Listed firms. The presence of a couple of outliers confirms this weak linear association between the two variables. The low value R^2=0.008 further confirms the existence of the weak association.

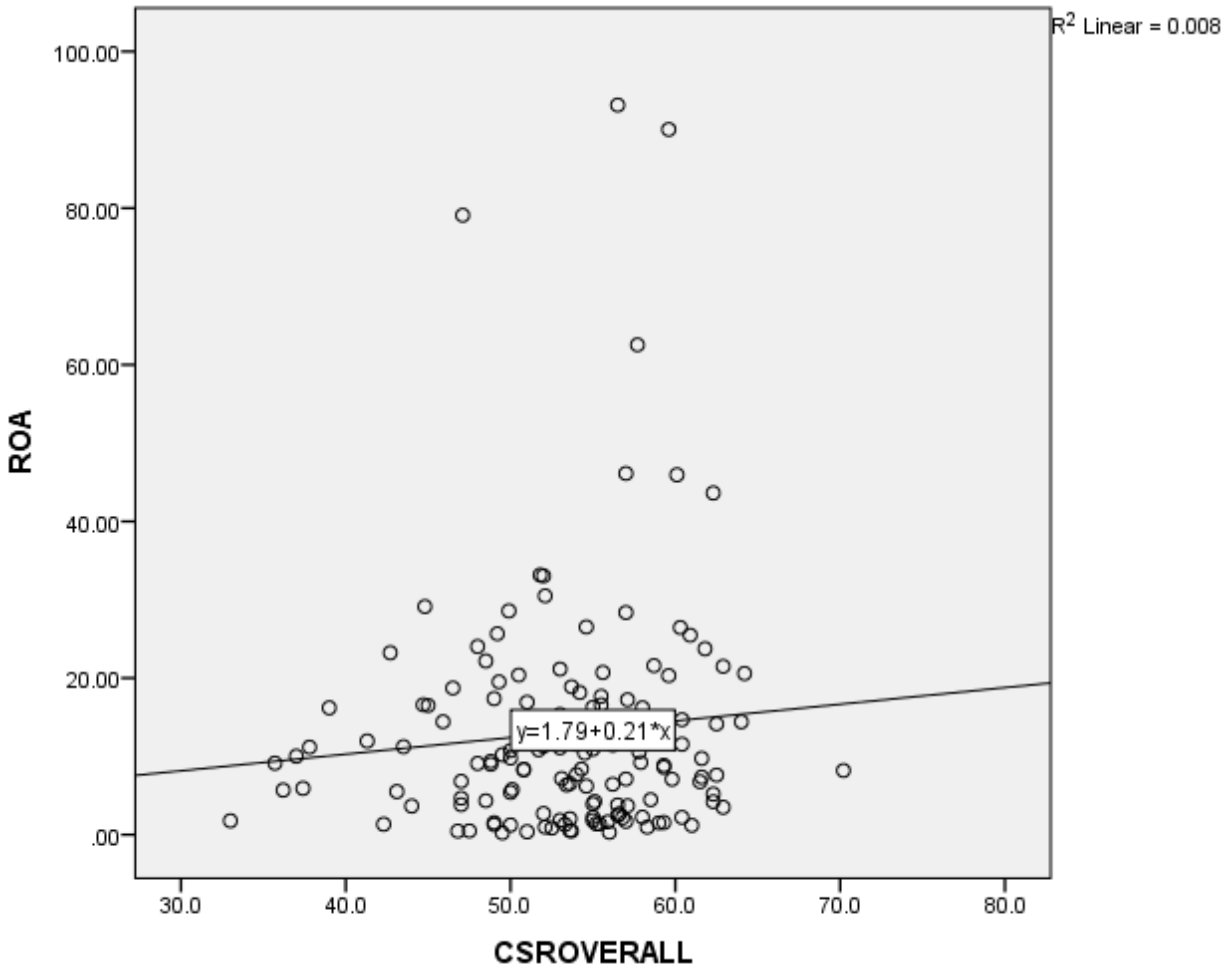

Figure 4.3: Scatterplot of ROA and CSR overall

Despite the weak association between the variables, scatterplot of the two firm performance variables (TQ and ROA) showed no discernible pattern in values plotted, thus demonstrating that the data did not violate the assumption of linearity on MRA. Further scatterplots of firm performance variables and remainder of independent variables not discussed in this section are attached as Appendix 1.

4.3.2 Multicollinearity test results

Multicollinearity is an aspect that was tested using the Spearman rank test (Table 4.2) to detect the degree and direction of association between independent variables. The correlation between leverage, firm size, sector, growth in total assets (GTA), CSR overall, community and, employee relations, ratings for governance and environmental performance is low. Since the degree of correlation amongst the control variables and measurement of corporate social responsibility (other

explanatory variables) is less 60%, there is no problem of multicollinearity in the sample used. But the correlation between CSR overall and sub-components is high, significant and positive.

This prima facie entails a problem of multicollinearity exists. To avert this problem, five separate regressions were run thereby introducing each measure of CSR separately. Further to confirm absence of multicollinearity for the regression models, variance inflating factor (VIF) tests were done. The mean of VIF for all 10 models were below 10 which means the explanatory variables in those models do not suffer from multicollinearity problem (see the VIF results in Appendix3).

4.3.3 Heteroskedasticity check results

Heteroskedasticity occurs when there is a presence of unequal error in the model (Gujarati, 2003). Standard deviation of residuals tends to increase as explanatory variables increase. To meet the assumptions of the test, the error of variance should be homoskedastic (Torres-Reyna, 2007). To test for heteroskedasticity, the Wald test was done for fixed effects model. The results shown in Appendix 3 confirmed the presence of heteroskedasticity in all models. To correct this problem, the fixed-effect and random-effect models were run with inclusion of robustness.

It was also found sensible to test panel data for cross-sectional dependency. However, due to insufficient observations across panels, the Pasaran CD was not admissible. This is expected because cross-sectional dependence is a problem of macro panels and not for micro panels with few years (Torres-Reyna, 2010).

4.3.4 Serial correlation test results

The Wooldridge serial correlation tests on Appendix 3 confirmed that the data does not have first-order autocorrelation. This is because the result presented high probability values on most of the models. It means that the standard error has the right value and the R-squared is not exaggerated. The result is consistent with the panel data used in this study, which is micro panel with very few years. According to Torres-Reyna (2010), serial correlation applies to macro panels with time series of 20 to 30 years.

4.4 Specification test results

4.4.1 LM test (Pooled or Random-effect)

The LM test helps to decide between a random effects regression and a simple OLS regression (Torres-Reyna, 2010). The Breusch-Pagan LM test for random effect was applied. The null hypothesis in the LM test is that variances across entities are zero. The null hypothesis assumes there are no random effects. If the null hypothesis is rejected then the random group effect model is more accepted than the pooled OLS model. The results in appendix 3 indicate there are panel effects in our sample indicating that REM is appropriate. See Appendix 3 for results of Breush-Pagan test for all the 10 regression models.

4.4.2 The Hausman test: FEM or REM

The Hausman specification test compares the FEM and REM to determine which better model to use. Torres-Reyna (2010) states that the null hypothesis confirms that the random effects is the preferred model compared to the alternative fixed effects. The results of the Hausman test shown on Appendix 3 confirms that REM is the preferred model since Prob>Chi2 is ordinarily larger than 0.5. It is for this reason that all regressions were run as random effects GLS.

4.5 Correlation matrix

Correlation analysis examines the strength of the identified association between variables (Wegner, 2010). Table 4.2 below shows correlation matrices between all variables for years 2009 to 2012. It illustrates the degree of correlation between firm performance and variable of interest in the model. In this analysis, the logarithm of total assets was used as proxy for firm size, while the logarithm of debt was used as proxy for leverage. These control variables are presented in the matrix table as “Lsize” and “Llev” respectively.

Table 4.2: Spearman rank correlation matrix

	tobinsq	roa	csroverall	Llev	Lsize	sector	gta	llev	com	emp	env	gov	lcsroverall	lcom	lemp	lenv
tobinsq	1															
roa	0.6942*	1														
csroverall	-0.0278	0.141	1													
Llev	-0.069	0.1142	-0.0587	1												
Lsize	-0.1677	-0.138	0.0426	0.8211*	1											
sector	0.0746	-0.0755	-0.3580*	-0.3053*	-0.5249*	1										
gta	0.2228	0.2034	-0.0113	0.1174	-0.0598	0.1846	1									
llev	-0.0829	-0.0597	0.1481	0.9837*	0.8247*	-0.3440*	0.0296	1								
com	-0.0894	-0.0115	0.0141	0.0319	-0.0824	0.2418*	0.2246	-0.0195	1							
emp	0.073	0.2357*	0.7705*	-0.0008	-0.1072	-0.2836*	0.0249	0.0089	0.1046	1						
env	-0.1218	0.0065	0.8758*	0.1851	0.128	-0.4033*	-0.1201	0.2312	-0.0922	0.4886*	1					
gov	0.0455	0.0738	0.8818*	0.0868	0.0459	-0.3340*	-0.0191	0.1126	-0.0669	0.6262*	0.7698*	1				
lcsroverall	0.0468	0.2477*	0.8331*	0.0904	-0.0349	-0.2715*	0.0712	0.0985	0.0291	0.7187*	0.6968*	0.7554*	1			
lcom	-0.2264	-0.1997	0.0575	0.2458*	0.1471	0.0407	0.1352	0.2492*	0.5677*	0.0128	0.0331	-0.0073	-0.068	1		
lemp	0.0802	0.2471*	0.5984*	0.049	-0.1321	-0.1266	0.0776	0.0376	0.2238	0.7846*	0.3684*	0.4763*	0.8074*	-0.0369	1	
lenv	-0.1215	0.0741	0.8047*	0.0933	0.0183	-0.3700*	-0.0593	0.1023	-0.0319	0.5972*	0.8175*	0.7016*	0.8726*	-0.0765	0.5976*	1
lgov	0.0287	0.1201	0.6561*	0.0362	-0.0823	-0.1607	0.0229	0.0247	0.0053	0.5998*	0.4652*	0.7759*	0.7455*	-0.0799	0.6037*	0.5777*

The results of Table 4.2 above depicts that the correlation between Return to assets and Tobin's Q are significant and positive. This is because both variables represent FP and are the dependent variables used in the study. ROA appears to be more closely related to CSR overall than TQ. There is a positive correlation between ROA and CSR overall and a negative correlation between TQ and CSR overall. This could be a result of some missing values of TQ (i.e. 31missing values) compared to 3 missing values in ROA.

The results also show that GTA is positively correlated with both TQ and ROA. This reflects the fact that GTA, like TQ and ROA, are measures of financial performance. There is a significant positive correlation between firm size and firm leverage. This indicates that larger firms have capacity to borrow than smaller firms.

Both firm size and leverage have negative and insignificant correlation with TQ. This demonstrates that firms with greater size and debt have less firm value. On the other hand, whilst firm size is negatively correlated with ROA, leverage is positively correlated with ROA. The inference is that firm size has a negative impact on firm value whilst debt improves firm's financial accounting

performance. The correlation matrix also confirms that firm size and leverage are significantly correlated, because bigger firms have capacity to borrow than smaller firms.

4.6 Random-effects GLS regression results

Using the Hausman test, the random-effects was selected as the best suitable model for the dataset as opposed to the fixed-effects model. The research results have shown the variables in the model to be linear in relationship as shown by scatter plots. There was neither multicollinearity in the dataset, nor serial correlation in the data. Heteroskedasticity present was corrected for robustness. Results from Table 4.2 shows high and significant level of correlation between COM, EMP, GOV, ENV and CSR overall. Consequently, this has led to five regression models for each of the two dependent variables being run separately to avoid the negative impact of the highly correlated independent variables. Tables 4.3 and 4.4 show the random effects GLS results of all the five models detailed in section 3.4.2.

Other control variables included in the regression model were the firm size, sector, leverage and growth to total assets as guided by literature (Van Staden, 1998; Tsoutsoura, 2004; Sheu & Lo, 2007; Weill, 2008, Crisóstomo, et al., 2011; Aggarwal, 2013; Wanatabe, et al., 2013). It is important to note that the independent variables for corporate social responsibility presented in Table 4.3-4.4 are a mixture of the current variables (t) and lagged ($t-1$). The lagged variables are prefixed with letter "L". Table 4.3 below presents the results of the relationship between TQ (firm value) and the corporate social responsibility variables.

4.6.1 Analysis of Firm Value and Corporate Social Responsibility

Table 4.3: Random –Effects GLS regression results for Firm Value and Corporate Social Responsibility

Random-effects GLS regression results-Tobin's Q					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Variable					
CSR overall	0.04				
	(0.04)**				
LCSR overall	-0.03				
	(0.06)*				
Leverage	-0.17	-0.22	-0.19	-0.19	-0.20
	(0.77)	(0.69)	(0.76)	(0.72)	(0.73)
Firm size	-0.15	0.01	-0.15	-0.15	-0.009
	(0.80)	(0.99)	(0.81)	(0.77)	(0.99)
Sector	0.04	0.002	0.06	0.03	0.05
	(0.82)	(0.99)	(0.97)	(0.84)	(0.71)
Growth Total Assets	-0.000	0.0008	-0.0009	-0.001	0.0002
	(0.94)	(0.67)	(0.68)	(0.54)	(0.93)
Community relations		0.003			
		(0.78)			
L Community relations		-0.003			
		(0.72)			
Employee relations			0.0003		
			(0.98)		
L Employee relations			-0.005		
			(0.52)		
Environmental performance				0.03	
				(0.01)**	
L Environmental performance				-0.02	
				(0.01)**	
Governance					0.006
					(0.71)
L Governance					-0.01
					(0.37)
R-squared	0.05	0.06	0.10	0.07	0.07
N	74	95	93	100	101
Note: the p-values are the ones contained in brackets under the coefficient of each independent variable, ***p<0.1; **p<0.05 *p<0.01					

The results in Table 4.3 above relate to the interaction between the dependent variable TQ representing firm value and all independent and control variables. In Table 4.3 above, CSR overall,

lagged CSR overall, ENV and lagged ENV are the only significant variables at 10% or less level of significance. These results are significant on models 1 and 4, discussed below.

4.6.1.1 Model 1 results

Model1 looks at the relationship between CSR overall and firm value. CSR overall represents the aggregated effect of CSR dimensions on firm values. The regression results illustrate that CSR overall activities of firms in South Africa are positively related to firm value with coefficient of 0.04, which is significant at $p<0.05$. The result imply that on average effects of CSR overall on firm value is 4%. When CSR overall increases by one unit on average, firm value will increase by 4%. This suggests that CSR initiatives are value adding to the firm. The positive association of firm value and CSR overall is supported by findings from past empirical studies that infer that through its effects on stakeholders, CSR affects firm performance (McGuire, et al.,1988; Waddock & Graves, 1997; Ruf et al., 2001; Kemp & Osthoff, 2007). In addition to this, Alexander and Buchholz (1982), argue that firms that support CSR activities perform better financially than other firms. Peloza and Papania (2008) believe that this is so because improved CSR practices generates employee loyalty and increased productivity as well as customer loyalty, which are the drivers of economic prosperity.

Evidence from past empirical studies also suggest that firms which integrate CSR in their business models have less risk and have access to cheaper sources of capital. This lowers the cost of doing business leading to better financial performance than their peers who are not socially responsible (McGuire et al., 1988; Adams et al., 2012; Lourenço, et al., 2012; Trang & Yekin, 2014). Furthermore, evidence by Lys, et al., (2013) suggests that CSR expenditures provide signaling information to investors about the future prospects of the firm. They argue that a firm, which invests in CSR, provides a signal to the market that it has excessive cash resources and this information is reflected in the increase of the company's share price due to its demand. Consequently, this generates a positive association between CSR overall and TQ (market value), which according to

the authors may have no direct connection with financial performance. This argument has relevance to the interpretation of the result discussed below.

The results in table 4.3 above also suggested that the lagged CSR overall activities negatively affect the firm value of South African firms at 10% significance level. The beta coefficient was measured at -0.03. The result imply that a unit of past investment in CSR will lead to 3% decrease in firm value in the current period, thus showing the negative effects of past CSR on current firm value. Conversely, what this informs is that current CSR performance impact negatively on future firm value. This result is consistent with findings by Lys, et al., (2013) that CSR destroys shareholder value. They argue that CSR does not create value for business, but only serve as mechanism for signaling business's future financial prospects. The implication of this view is that past CSR performance cannot influence market perception on company' on the firm value, but has opposite impact reflected in destroying shareholder value.

Similarly, Crisóstomo et al.,'s (2011) findings on Brazilian firms, also confirms that CSR is value destroying. This could also have been influenced by the lagged effects of CSR since in their study, the authors incorporated the lagged independent variables. Interestingly, , this contradicts the findings of Raiser and Earnhart (2011) on the lagged effects of CSR on financial performance. The authors found that CSR have positive impact on firm performance both in short run (1 year lag) and long run (1.5 year lag).Similarly, Kim's (2010) study results also showed a positive impact of CSR on firm value within a 1-or 2-year time lag. The effect of CSR takes time to have effect on firm performance.

On the other hand, the results of this study is consistent with the findings of Horvàthovà, (2012), whose study confirmed that CSR lagged by one year had negative effect on firm performance. This might be caused in the high cost of implementing and management of the CSR system. The overall implication of these findings is that past CSR performance has cumulative negative effect on firm performance. This requires SA firms to continuously invest in CSR initiatives in order to have sustainable FP.

4.6.1.2 Model 4 results

Model 4 looks at the relationship between ENV-related performance (a dimension of CSR) and firm performance. The results show that environmental related performance of South African firms are positively related to firm value with beta coefficient of 0.03 at 5% significance level. On average a unit increase in environmental related performance will result in 3% increase in firm's value. There are possible reasons why firm's environmental related performance is positively related to ROA. Firstly, it is possible that customers reward firms that show adherence to good environmental standards. There could be a high demand for environmentally-friendly products offered by companies. Most customers nowadays want to be associated with companies that implement policies and strategies towards low carbon emissions, clean air and reduction of water and soil pollution. Secondly, the increase in ROA could emanate from the supply side. Firms that adhere to environmental standards are able to achieve lower costs and therefore increase profitability (Klassen & McLaughlin, 1996; McWilliams and Siegel 2000).The results also confirm findings of empirical studies by and Russo & Fouts, (1997) that link firms' CSR commitment towards environment with enhanced profitability.

Conversely, the results show that effects of past environmental related performance (lagged ENV) has a 2% negative impact on firm value at 5% significant level. On average a unit increase in environmental related performance will result in 3% decrease in firm's value. In other words, past investment in ENV is value destroying. The study results are consistent with the findings of Horvàthovà (2012) who confirmed that if CSR lagged by one year (t-1) it had a negative effect on firm performance. Porter (1991) in Horvàthovà (2012) postulates that it takes time for firms to restructure and implement new environmental regulations. Most environmental related initiatives such as ISO 1401 certification, air pollution reduction measures, and renewable energy development are costly and time consuming to implement.

To sum up, the empirical results from random effects GLS regression of the models 1 and 4 in relation to TQ show that CSR overall and ENV are value adding. The intuition from this result

entails that investment in CSR activities will increase the firm value particularly if investment is in environmental related CSR. This is supported by past empirical studies (Klassen & McLaughlin, 1996; Russo & Fouts, 1997; Tsoutsora, 2004; Arafat, Warokka & Dewi, 2012). The findings of the study also support the Stakeholder theory, which suggests that the dominant stakeholder group, which are the shareholders, benefit financially when the management meets the demands of multiple stakeholders (Ruf, et al., 2001).

The contribution of CSR overall and ENV is adding value to shareholders. This is confirmation that management of SA firms are meeting the demands of the dominant stakeholders, which in this case are mainly the environmentalists and consumers of environmentally-friendly products and services.. It could only be inferred that ENV is the main driver of the CSP since the results did not show any link between firm value and other CSR components, namely COM, EMP and GOV. However, the results of the study further confirm that past investment in both CSR overall and ENV are value destroying. This is confirmed in the studies conducted by Crisóstomo et al., (2011) and Horvàthovà (2012) who revealed that a significant negative impact of lagged CSR activities on firm value. Lys, et al., (2013) also concur.

4.6.2 Analysis of Accounting Performance and Corporate Social Responsibility

Table 4.4: Random-Effects GLS regression results for Accounting performance and Corporate social responsibility.

Random-effects GLS regression results-ROA					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Variable					
CSR overall	-0.02				
	(0.91)				
LCSR overall	0.29				
	(0.21)				
Leverage	-0.58	-0.73	-2.97	-1.74	-1.80
	(0.74)	(0.87)	(0.53)	(0.71)	(0.70)
Firm size	-4.56	-6.57	-4.69	-5.28	-5.01
	(0.40)	(0.25)	(0.44)	(0.36)	(0.39)
Sector	-0.94	-2.64	-2.40	-2.04	-0.98
	(0.25)	(0.13)	(0.17)	(0.21)	(0.24)
Growth Total Assets	0.15	0.09	0.10	0.08	0.08
	(0.06)*	(0.07)*	(0.09)*	(0.14)	(0.10)*
Community relations		-0.07			
		(0.50)			
L Community relations		0.02			
		(0.81)			
Employee relations			0.09		
			(0.55)		
L Employee relations			-0.004		
			(0.96)		
Environmental performance				-0.17	
				(0.37)	
L Environmental performance				-0.06	
				(0.55)	
Governance					0.09
					(0.46)
L Governance					-0.03
					(0.78)
R-squared	0.10	0.08	0.13	0.09	0.08
N	75	96	95	102	103
Note: the p-values are the ones contained in brackets under the coefficient of each independent variable, ***p<0.1; **p<0.05 *p<0.01					

The results in Table 4.4 above relate to the dependent variable ROA representing firm financial accounting performance. In the table 4.4, GTA is the only variable that has a significant relationship with ROA at 10% or less level of significance. These results are relevant to models 1, 2, 3 and 5; and are discussed below.

Models 1, 2,3 and 5 look at the relationship between CSR overall and ROA, COM and ROA, EMP and ROA, and GOV and ROA respectively, subject to control variables of firm size, firm leverage, sector dummy and growth represented by GTA. Although the results of MRA show insignificant relationship between the stated independent variables and ROA, the results rather show the following relationships. Firstly, in regard to model 1,GTA on average has a 15% effect on ROA at 10% significance level. There is a positive relationship between GTA and ROA with beta coefficient of 0.15 at $p>0.1$. On average a unit increase in GTA will result in 15% increase in ROA. Secondly, in model 2, the control variable GTA has on average a 9% effect on ROA at 10% significance level. There is a positive relationship between GTA and ROA with beta coefficient of 0.09 at $p>0.1$. On average a unit increase in GTA will result in 9% increase in ROA.

Thirdly, in model 3, GTA on average has an 8% effect on ROA at 10% significance level. There is a positive relationship between GTA and ROA with beta coefficient of 0.08 at $p>0.1$. On average a unit increase in GTA will result in 15% increase in ROA. Finally, in respect to model 5, GTA has also on average an 8% effect on ROA at 10% significance level. There is a positive relationship between GTA and ROA with beta coefficient of 0.08 at $p>0.1$. This means that on average a unit increase in GTA will result in 15% increase in ROA. As discussed above, the direction of the relationship between company growth and ROA can be explained by the fact that companies that are profitable also invest in assets, which they use to generate more profit. The finding of positive relationship between growth and ROA is consistent with the ones of in past empirical studies (Aggarwal, 2013, Van Hardeveld (2013)).

To recap, the regressions on models 1, 2, 3 and 5 show that in South Africa, GTA is a control variable that is significantly and positively related to ROA because it is a growth factor that impacts

on firm profitability. There is no correlation between ROA and any independent variables. This reflects that CSR has no influence on the financial accounting performance of firms. In other words, the accounting based measures of firm performance are not influenced by CSR performance. This is consistent with the results of empirical studies of Bouventura, et al., (2012), Cornell and Shapiro (2012); Crisóstomo, et al., (2011); and Aggarwal, (2013), who found no significant association between CSR and financial accounting performance. The results are also contrary to the prediction of stakeholder theory. The results imply that there is no financial accounting benefit in CSR performance.

4.7 The results of MRA versus Hypotheses

The study was guided by the research hypotheses that were formulated and tested by the regression analysis. Some of the significant results already discussed in previous sections will be recapped in a summary of conclusions on the five hypotheses to indicate whether they were proven or disproved by the results. On the first hypothesis (Ho1) which hypothesized that CSR performance had no significant impact on firm performance within the South African market, the results of the regression analysis did not support the null hypothesis since CSR overall significantly and positively related to firm value with coefficient of 0.04 at 5% significance level. The alternative hypothesis was therefore accepted.

The second hypothesis (Ho2)had proposed that there was no significant relationship between companies' COM rating and firm performance. The statistical results confirmed that there is no significant relationship between COM-related performance and FP. The null hypothesis was therefore accepted. With regard the third hypothesis (Ho3), it was postulated that there was no significant relationship between companies' EMP rating and firm performance. The statistical results confirmed non-existence of significant relationship between the two variables. The null hypothesis was accepted. On the fourth hypothesis (Ho4), it was stated that there was no significant relationship between companies' ENV rating and firm performance. The statistical results showed a significant and positive relationship between ENV and firm at 10% significant level. The null

hypothesis was therefore rejected and alternative accepted. Finally, the fifth hypothesis (Ho5) postulated that there was no significant relationship between companies' GOV rating and firm performance. The null hypothesis was accepted since the statistical results showed no significant relation between GOV rating and FP. The next chapter summarises the research study and concludes the study.

4.8 Chapter summary

The chapter examined the data that was collected, presented and discussed the results of the regression models. The descriptive statistics in respect of the variables applied were presented and discussed. The data was found to be normally distributed with no striking deviations from the mean. This was followed by the presentation and discussion of regression diagnostics results. The diagnostic results confirmed that there was no multicollinearity in the dataset, no serial correlation and heteroskedasticity present was corrected for robustness.

The specification tests results which followed, confirmed that the random effects was the best model for the dataset. The empirical results of the multiple regressions then followed and are discussed in the light of hypotheses and literature reviewed by the study. The results showed that CSR and ENV are positively related to firm value, and that lagged CSR and ENV were value destroying. No significant relationship between the other independent variables and FP was found. The last section reviewed the hypotheses to determine their acceptance or rejection.

CHAPTER FIVE- CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The purpose of this study was to examine the relationship between CSR performance and firm performance of South African firms listed on the Johannesburg Stock Exchange from 2009 to 2012 using the CSRHub ratings as proxy for CSR performance. The study followed similar research conducted by Crisóstomo, at al., (2011) in Brazil. Chapter1 introduced the research and chapter 2 contained a review of relevant literature with the chapter discussing the origins of the evolution of CSR and its definitions from various perspectives. Then next was the reason why firms engage in CSR. The theoretical framework of CSR underpinning this research, namely the theory of firm and the stakeholder theory was discussed. This was followed by a discussion on concepts and measurements of FP and CSR performance. It was highlighted thatresearchers are using a number of indices to measure CSR performance including that of the CSRHub used for this study. Next was the examination of literature on the relationships between CSR performance and firm performance.

Chapter 3 discussed the research methodology applied in the study. It outlined the population of the study, sample selection method used, the sources of data and method of collection, management and analysis. The five independent variable of interest were defined; these are the CSR Overall (or CSP)ratings and COM, EMP, ENV and GOV ratings -all which were obtained from the CSRHub database. The dependant variables were parameters for firm performance, namely TQ (proxy for firm value) and ROA (proxy for financial accounting performance).

Chapter 3 also discussed the regression model, the specification and diagnostic tests used as assurance for validity and reliability of research results. The study was limited to firms listed on JSE in the period 2009 to 2012. The size of the sample for this research was 46 firms over a four year period. Chapter 4 discussed the research results including the explanation of the descriptive statistics, the specification and regression diagnostic tests, and the results of the random-effects GLS regression models. Finally, Chapter 5 gives the conclusions and recommendations.

5.2 Conclusion

This study examined the relationship between CSR performance and firm performance in South African companies using CSR and financial data of 46 firms listed on the JSE between the periods 2009-2012. The CSR data used were obtained from the CSRHub's Sustainability Index. The study showed a positive relationship between CSP and FP, which indicates that CSR initiatives are value-adding to companies.

Among the four component variables of CSR, only ENV was positively associated with FP. This could be due to a combination of demand and supply factors. Firstly on the demand side, customers reward companies that show adherence to good environmental standards and/or sell environmentally-friendly products and services. Secondly, the supply argument is that companies that are environmentally conscious have efficient operations which reduce input cost on their products and services, and are more profitable than environmentally-unfriendly companies.

The other three variables, namely, COM, EMP and GOV had no significant relationship with FP. This indicates that customers are indifferent to companies that promote good community relations, employee relations and governance. The study further revealed startling evidence that both lagged CSP and lagged ENV were negatively associated with FP, implying that they destroy the value of firms. The overall implication of this finding is that past CSR investments have a cumulative negative effect on firm performance.

The study confirms that market based performance measures appear to be better than accounting based measures as they produced results that show correlation between CSR and TQ. However, market returns reflect perceptions of investors on CSR. The study does not fully support any of the CSR theories because of the mixed results obtained. The theory of the firm establishes 'profit maximization' as its goal. As long as CSR is contributing to maximization of long-term market value, the applicable theory of the firm is supported. However, the result of the negative association of lagged CSR and ENV with FP is inconsistent with the goal of profit maximizations espoused by this theory because of its value-destructive nature.

Similarly, the stakeholder theory was not fully supported by this study. This is because; the results of the study had no significant relationship with the COM and EMP, which are dimensions of CSR representing key stakeholders of firms. It implies that these key stakeholders do not adequately influence firm performance. It was also concluded that investments in CSR particularly those supporting environmental performance are value adding, whilst such past investments are value destroying.

Finally, it is concluded that CSR is an area that continues to draw the attention of many scholars. This is because the numerous studies conducted in some countries over the last half century are inconclusive on the link between CSR and firm performance. Prior research studies have found a mixture of results of CSR positively related to firm performance, CSR negatively linked to FP and of neutral relationship between the two variables. To obtain a uniform and standard measurement of CSP remain a major challenge for researchers because of the various indices used by researchers to measure performance in CSR.

5.3 Recommendations and areas of further research

This research therefore recommends the following:

1) That a standard measure of CSR be explored in order to conclusively investigate the relationship between CSP and FP.

2) That in the context of South Africa, firms should deploy resources towards CSR initiatives to enhance finance performance. However, because the results have further established that not all dimensions of CSR have positive impact on FP, management should channel CSR investments towards actions that are create value for firms, such as the environment.

3) That investment in CSR should be a continuous process, in order to achieve a sustainable performance of firms, and avoid reliance on past CSR investment in CSR which have been established to be value destroying.

4) That future studies on this area should explore the following:

4.1 Extend the period of the study beyond 2012 and use larger samples of companies as more data becomes available.

4.2 Broaden the scope of study to include cross-country analysis of SA and other fast growing developing countries such as Brazil, Russia, India and China. These countries are making great contributions to CSR, and would be good to benchmark SA against its fellow developing countries.

4.3 Examine the CSP-FP relationship using non-financial variables, such as customer satisfaction, market share, and shareholder satisfaction, among others, as proxy for firm performance.

4.5 Use data with longer time horizon to establish the lagged effects of CSR and its components on firm performance.

5.4 Limitation of the study

The purpose of this research was achieved with the use of literature and econometric methods applied to examine the relationship between CSP and firm performance of South African listed companies. However, the study had certain limitations worthy acknowledging. Firstly, the sample size was relatively small. The CSRHub was established in 2008. At inception, only a limited number of SA companies were listed on the CSRHub database. Although by the time the data for this study were retrieved from the CSRHub database in August 2014 there were 151 JSE listed companies was on the database, only 46 out of the 151 companies had adequate CSR data to merge with the financial data for further processing and analysis. Secondly, the sample companies had few missing data on one or two of the variables. Finally, the period of the study was restricted to period between 2009 and 2012 due to CSR data limitation. The study findings might be different if bigger sample size and longer time-period data are examined.

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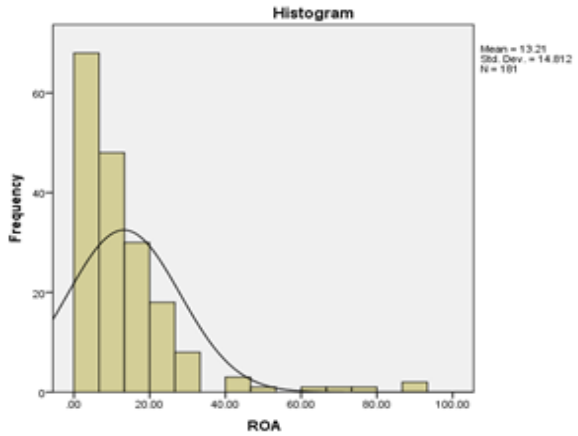
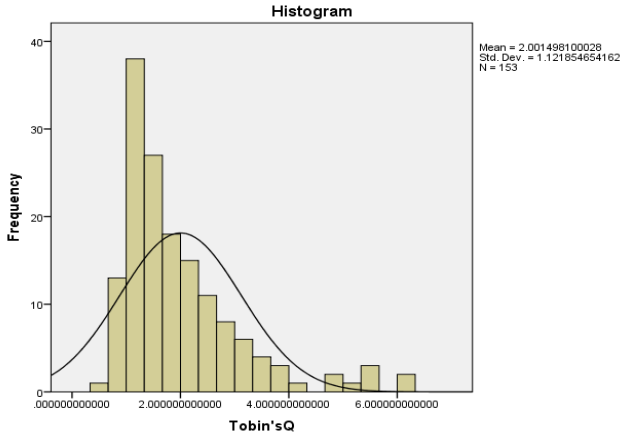
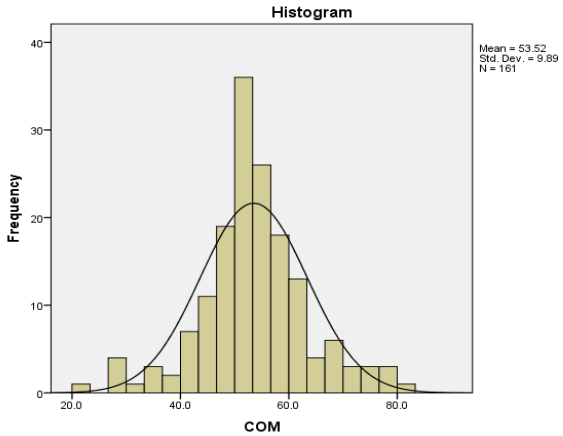
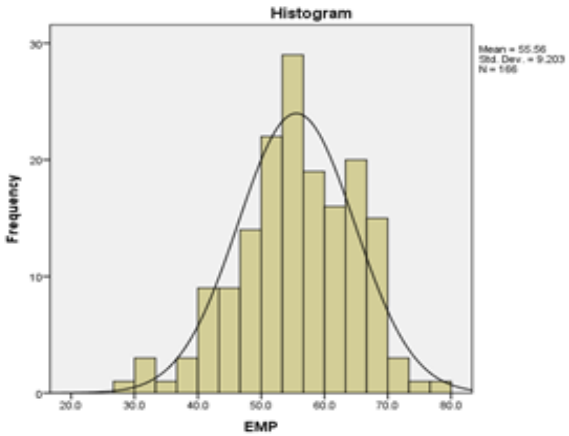
APPENDICES

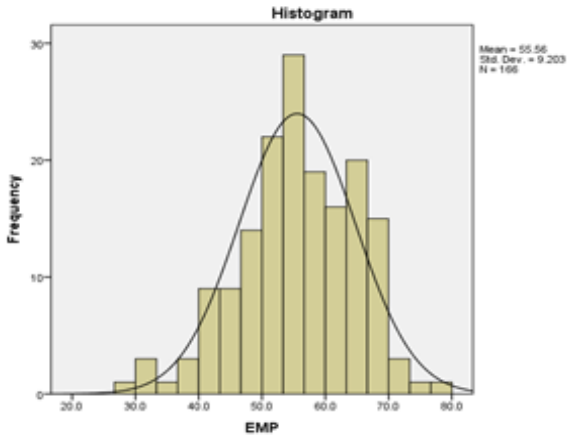
Appendix1: Histograms, P-P plots and Scatterplots

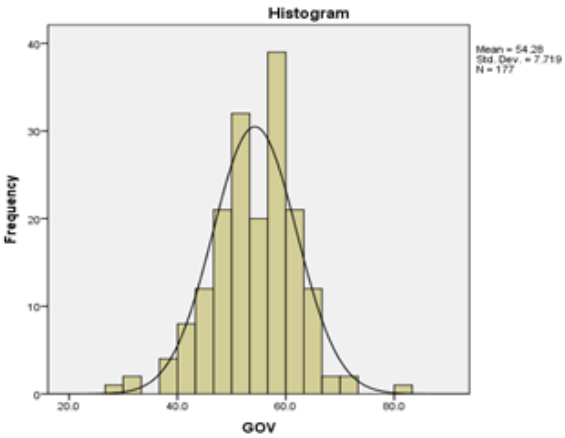


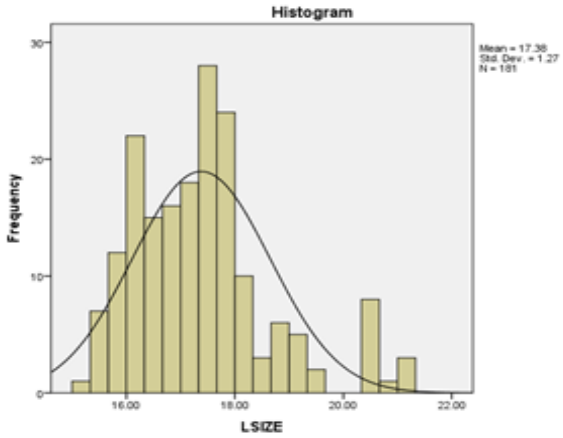


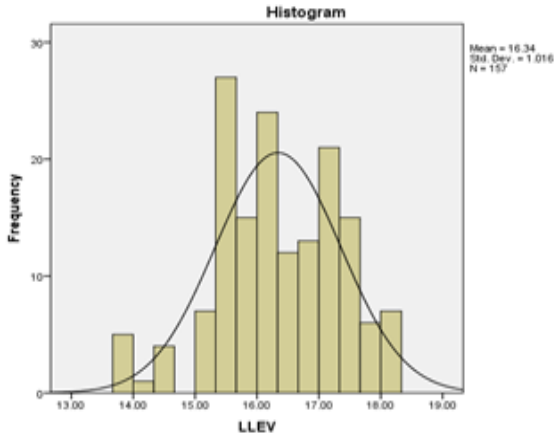









Histogram
Mean = 17.38
Std. Dev. = 1.27
N = 181
Frequency
LSIZE


Histogram
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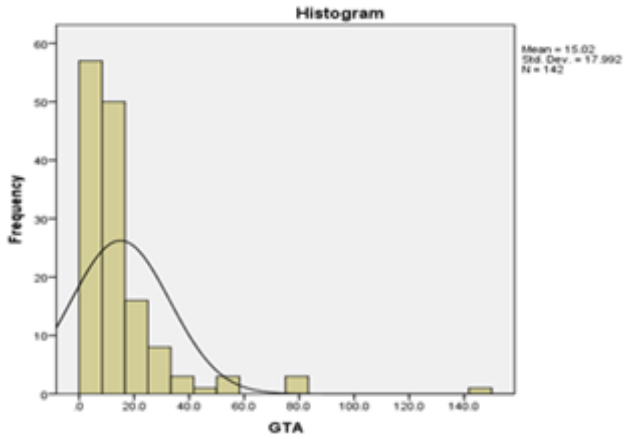
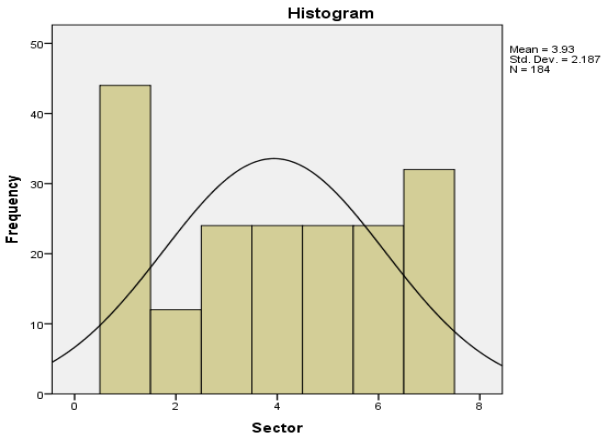
N = 157
Frequency
LLEV


Histogram
Mean = 15.02
Std. Dev. = 17.992
N = 142
Frequency
GTA


Histogram
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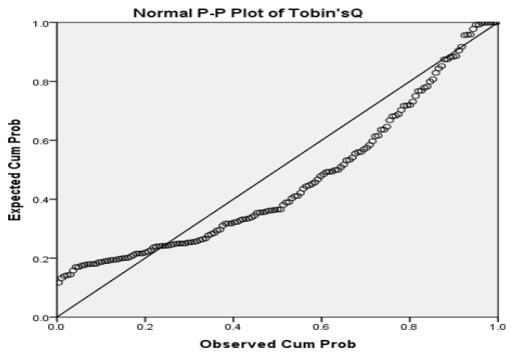
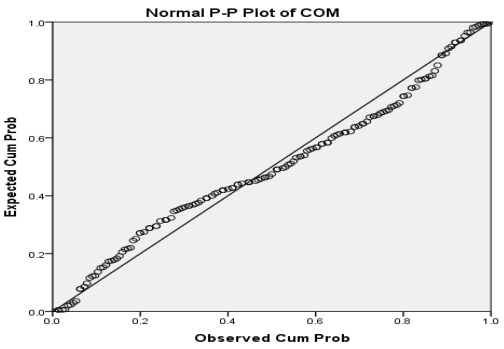
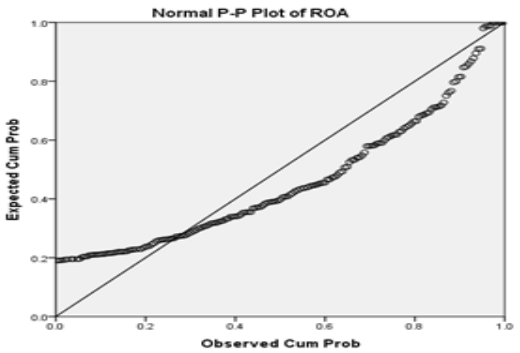
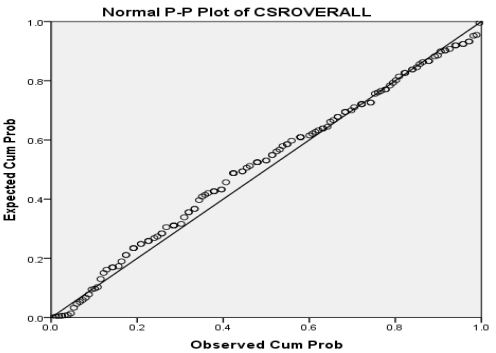
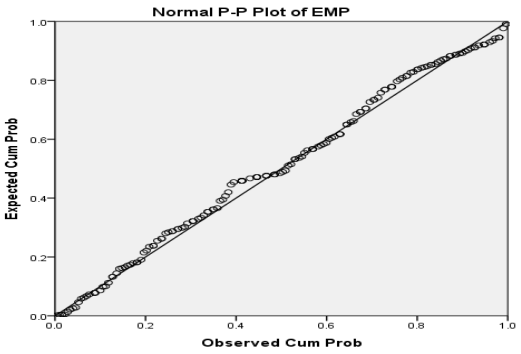
Std. Dev. = 2.187
N = 184
Frequency
Sector

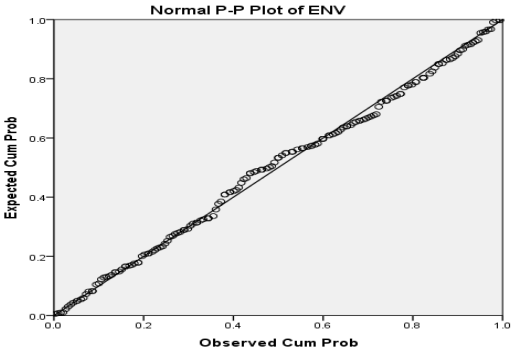

Normal P-P Plot of Tobin'sQ
Expected Cum Prob
Observed Cum Prob

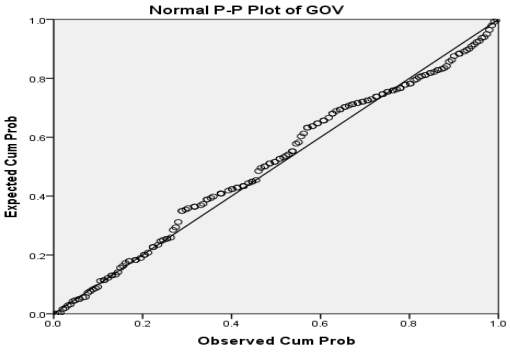

Normal P-P Plot of COM
Expected Cum Prob
Observed Cum Prob

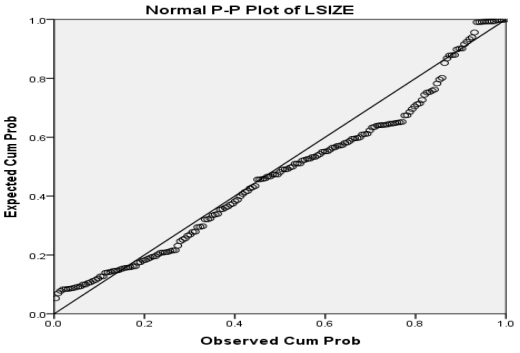

Normal P-P Plot of ROA
Expected Cum Prob
Observed Cum Prob

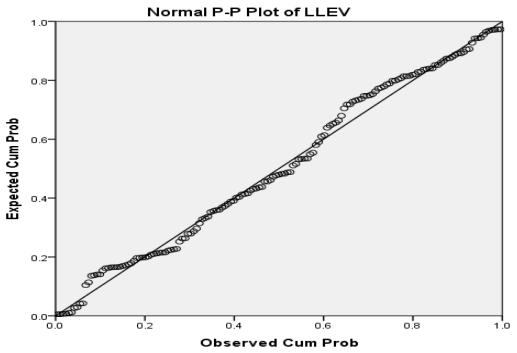

Normal P-P Plot of CSROVERALL
Expected Cum Prob
Observed Cum Prob

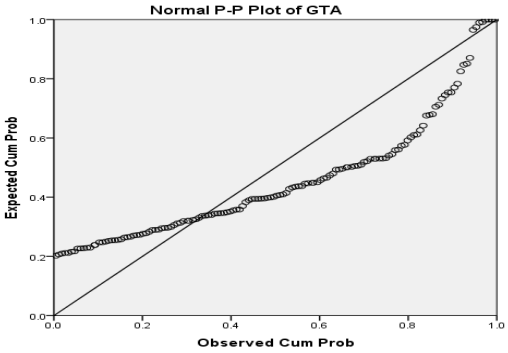

Normal P-P Plot of EMP
Expected Cum Prob
Observed Cum Prob

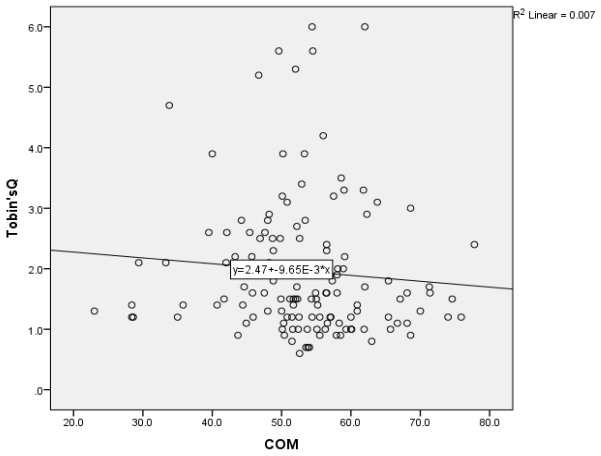

Normal P-P Plot of ENV
Expected Cum Prob
Observed Cum Prob

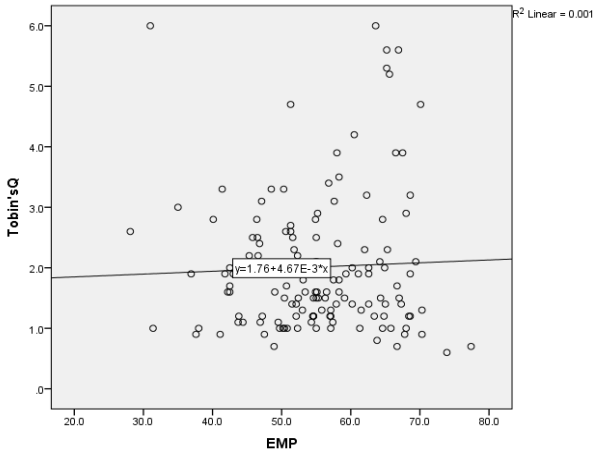

Normal P-P Plot of GOV
Expected Cum Prob
Observed Cum Prob


Normal P-P Plot of LSIZE
Expected Cum Prob
Observed Cum Prob


Normal P-P Plot of LLEV
Expected Cum Prob
Observed Cum Prob


Normal P-P Plot of GTA
Expected Cum Prob
Observed Cum Prob


R² Linear = 0.007
Tobin'sQ
COM
y=2.47+-9.65E-3*x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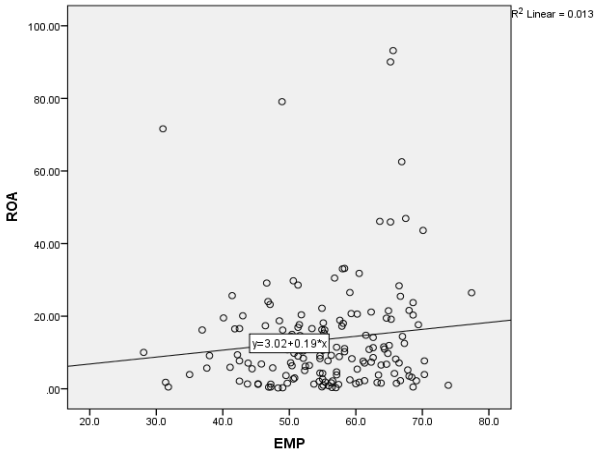
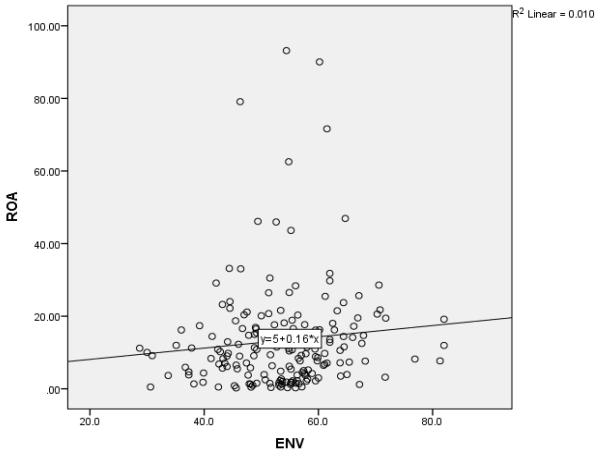
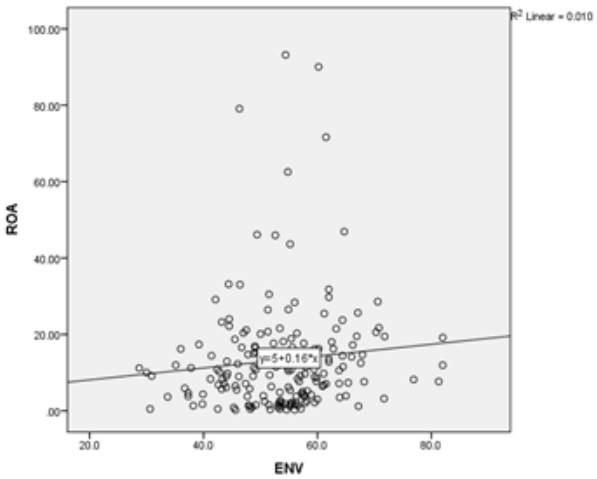
Tobin'sQ
EMP
y=1.76+4.67E-3*x


R² Linear = 0.013
ROA
EMP
y=3.02+0.19*x


R² Linear = 0.010
ROA
ENV
y=5+0.16*x


R² Linear = 0.010
ROA
ENV
y=5+0.16*x

Appendix 2: ROA by Sector

		ROA (%)			
Sector	Observation	Mean	Std. Dev.	Min	Max
Communication	8	24.25	6.86	17	33
Mining	47	17.72	22.88	0	93
Other Services	24	7.58	5.29	1	27
Manufacturing	24	12.45	8.78	1	30
Financial Services	24	4.13	3.77	1	12
Construction	22	8.59	9.53	0	32
Retail	32	18.59	12.04	5	47

Appendix 3: Specification and diagnostic tests

Breusch-Pagan LM test for random effects

	Tobin's Q					ROA				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Chisqbar	26.40	23.35	78.37	79.92	60.36	71.57	75.03	83.81	72.11	84.46
Prob>Chibar	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hausman test

	Tobin's Q					ROA				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Chis2 (5)	3.89	2.38	2.90	5.51	1.30	6.30	4.21	5.51	5.54	2.88
Prob>Chi2	0.5651	0.7944	0.7148	0.3574	0.9352	0.2781	0.5201	0.3574	0.3533	0.7182

VIF tests

	Tobin's Q					ROA				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Mean VIF	4.12	2.90	3.28	3.17	3.27	4.12	2.85	3.15	3.03	3.17

Modified Wald test for groupwise heteroskedasticity

	Tobin's Q					ROA				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Chi2	2.00E+33	1.30E+35	3.30E+33	1.20E+06	1.50E+32	2460.60	31085.35	5489.76	10325.80	17447.59
Prob>Chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Wooldridge test for autocorrelation in panel data

	Tobin's Q					ROA				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
F(1, 6)	0.01	0.38	0.38	0.18	14.35	0.23	20.74	0.13	0.30	0.001
Prob>F	-0.9138	0.5628	0.5628	0.6767	0.0012	0.6389	0.0001	0.7174	0.5871	0.9781