



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

**Gordon Institute
of Business Science**
University of Pretoria

**CEO turnover and changes in corporate performance in
South Africa**

A research proposal submitted

By

James Wilkes

Student no.: 13418026

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

10 November 2014

Abstract

The role and responsibility of the CEO of an organisation is an extensively researched field. This research project investigates the drivers of CEO turnover and the factors affecting the resultant post turnover corporate performance.

An event study methodology, based on share price data from the JSE (Johannesburg Stock Exchange) was used to evaluate relative corporate performance. A pre event window of 250 trading days was used to establish corporate performance prior to the CEO turnover event, and a post event window of 500 trading days was used to evaluate the performance of the newly installed CEO. A sample of 143 CEO turnover events was examined, gathered during the period 1 April 2007 to 31 May 2012.

58% of the corporations undergoing CEO turnover were under performing their peers for one year prior to the turnover event, indicating that poor corporate performance was a major driver of CEO turnover. However, on further analysis, dissecting the data by corporation size yielded differing results, with 75% of small corporations undergoing CEO turnover in the ambit of under-performance, whereas in respect of large corporations, most CEO turnover was conducted in the circumstance of out-performance.

Overall, CEO turnover yielded a statistically relevant improvement of 13.6% in post event corporate performance. However, if a corporation was significantly underperforming its peers prior to the turnover event, the new CEO was likely to improve corporate results by 96%, whereas, if a new CEO took over a significantly out-performing corporation, the post turnover corporate performance would reduce by 66%. A statistically relevant linear equation was formulated, predicting the level of post event corporate performance in relation to the pre event corporate performance.

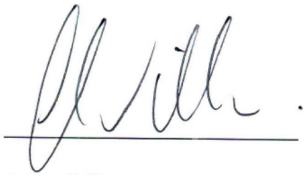
The variables of CEO tenure, CEO age, internal versus external CEO placements, and company size were also investigated, yielding interesting observations.

Keywords

CEO turnover, pre event corporate performance, post event corporate performance, internal placement, external placement, CEO age, CEO tenure, event study.

Declaration

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

A handwritten signature in black ink, appearing to read 'J. Wilkes', is written above a horizontal line.

James Wilkes

10 November 2014

Acknowledgements

The MBA journey at GIBS has been demanding and challenging, but above all, extremely rewarding. Exposure to such a pool of motivational academic excellence has been an honour. For this I thank all the staff at GIBS for a truly wonderful experience.

To Wanya Du Preez, my supervisor and guiding hand, thank you for your wisdom and patience.

To Professor Mike Ward and Chris Muller, many thanks for making your event study benchmark portfolios available to me, without which the scope of this research project would have been too extensive.

And finally, to my wife Pippa, for the unwavering love and support over a challenging two years. We made it together.

TABLE OF CONTENTS

Chapter 1	Introduction to the research problem	1
1.1	Introduction to the research problem and research motivation	1
1.2	Research objectives	2
1.3	Research scope	3
Chapter 2	Theory and literature review	5
2.1	The role and importance of the CEO	5
2.2	Internal versus external turnover factors	6
2.3	The relationship between poor corporate performance and CEO turnover	6
2.4	CEO age, tenure and firm performance.....	10
2.5	The new appointment, an internal versus external appointment.....	11
2.6	What effect does CEO change have on corporate results?	13
2.7	Research methodology and performance measures	14
2.8	Literature summary	15
Chapter 3	Research questions and hypotheses.....	19
Chapter 4	Research Methodology and Design	24
4.1	Research design	24
4.2	Population.....	28
4.3	Unit of analysis.....	28

4.4	Sampling	28
4.5	Data analysis	29
4.6	Research limitations.....	31
Chapter 5	Results.....	33
5.1	Sample description and normality testing	33
5.2	Research questions and hypotheses.....	37
5.2.1	Research question 1	38
5.2.2	Research question 2	40
5.2.3	Research question 3	45
5.2.4	Research question 4	52
Chapter 6	Discussion of the results	62
6.1	Sample size and sample characteristics.....	62
6.2	Research question 1	63
6.3	Research question 2	67
6.4	Research question 3	68
6.5	Research question 4	71
Chapter 7	Conclusion and recommendations	78
7.1	Conclusion: Sample and distribution	78
7.1.1	Conclusion: research question 1	78
7.1.3	Conclusion: research question 3	80

7.1.4	Conclusion: research question 4	82
7.1.4	Overall conclusion.....	84
7.2	Recommendations for stakeholders	84
7.3	Recommendations for future research	85
	Appendix 1: Data summary table.....	86
	References.....	89

List of Tables

Table 1 Normality Test - Pre-event CAR data set.....	34
Table 2 Normality Test - Post-event CAR data set	35
Table 3 Normality Test - CAR difference data set.....	36
Table 4 Summary of hypotheses, tests and tables	37
Table 5 Pre CEO turnover descriptive statistics.....	39
Table 6 CEO tenure and age in relation to pre event corporate performance	44
Table 7 GLM: pre event factors predicting post event CARs	46
Table 8 GLM: pre event factors predicting CAR differences	48
Table 9 GLM: pre event factors predicting CAR differences – modelled with only significant factors.	49
Table 10 One sample t-test	53
Table 11 Mann-Whitney U test for differences between pre and post event CARs	54
Table 12 CAR data set characteristics.....	55
Table 13 T-test of pre and post event CARs.....	55
Table 14 GLM: post event factors to predict post event CAR	57
Table 15 GLM: post- event factors to predict CAR differences	59
Table 16 Post turnover event descriptive statistics	60

List of figures

Figure 1 Illustration of pre and post event windows	27
Figure 2 Distribution of pre event CAR data	34
Figure 3 Distribution of post event CAR data.....	35
Figure 4 Distribution of CAR difference data.....	36
Figure 5 Test for correlation between departing CEO age and corporate performance	41
Figure 6 Test for correlation between departing CEO tenure and corporate performance	42
Figure 7 CHAID decision tree – significant factors in the pre-event corporate performance	43
Figure 8 CHAID decision tree model: pre event factors predicting CAR differences	49
Figure 9 Linear regression: Pre event CAR predicting CAR difference	50
Figure 10 Pre event CAR predicting CAR difference by corporation size.....	51
Figure 11 CHAID decision tree: post event factors to predict post event CAR.....	57

Chapter 1 Introduction to the research problem

1.1 Introduction to the research problem and research motivation

The capability and characteristics of a corporation's leadership, the effects that such characteristics have on a corporation's performance, and the necessity of corporate leadership change, is a field of extensive research. The research gives rise to the debates as to what characteristics are displayed by capable leaders (Ng & Sears, 2012; Wood & Vilkinas, 2007); the roles and responsibilities of the CEO (Coates & Kraakman, 2010); under what circumstances should leadership be changed (Amernic & Craig, 2013; Dikolli, Mayhew & Nanda 2014; Farrell & Whidbee, 2003; Ferrell & Ferrell, 2011; He & Sommer 2011); and how the corporation performs after the leadership change (Huson, Malatesta & Parrino, 2004; Karaevli, 2007; Rhim, Peluchette & Song, 2006; van Zyl, 2007).

"The CEO manages the company, glorifying in its successes and taking the blame for its failures", (Coates & Kraakman, 2010, p. 2). This statement concisely clarifies the position of the CEO as being the person ultimately responsible for the performance of a company, with the company's fortunes being inextricably intertwined with the capabilities of the CEO. It follows that any research conducted in respect of CEO performance and turnover is of importance to the attainment of excellence by corporations.

In the foreword to the book *Going Global* (Makura & The Gordon Institute of Business Science, 2012, p. 4), Professor Nick Binedell states that "very few countries with an economy of our size have incubated and developed global champions the way South Africa has". This statement imparts a uniqueness of global importance and impact on the South African corporate environment, making any study of CEO performance in a South African environment highly relevant.

Within the South African context, research conducted on CEO turnover and corporation performance is very limited, with only a single quantitative study found, which tracks share price movement (as quoted on the Johannesburg Stock Exchange) on the day of the CEO change announcement and three years thereafter (van Zyl, 2007). This research (van Zyl, 2007) did not consider the corporations performance prior to the CEO turnover event, with

the result that the post turnover performance analysis lacked any indication of an improvement or decline in the corporations performance relative to the pre turnover performance. Under such circumstances, no inferences as to whether the corporation benefited from the CEO change could be inferred.

Qualitative studies regarding CEO performance and CEO attributes in South Africa are equally scarce, with van den Steen (2007) investigating the characteristics of the turnaround CEO in South Africa and Mathura (2009) performing a case study on CEO performance within Ellerine Holdings.

Research referenced indicates conflicting results as to whether CEO change improves corporate results or not. Huson *et al* (2004) found a statistically relevant improvement in post CEO turnover corporate results; and Rhim *et al* (2006) found that, in some aspects of financial performance, significant improvements were noted, but these were not uniform. In contrast, van Zyl (2007) found no statistically relevant market out performance due to CEO turnover in South Africa. In noting the limitations of van Zyl's research, the opportunity exists for the research project to answer the question of how CEO turnover affects corporate performance from a South African perspective.

1.2 Research objectives

No research which includes an analysis covering the full spectrum of the circumstances surrounding the CEO turnover event, from pre succession constructs and performance, to the choice of new incumbent, and finally, the resultant post succession firm performance, was found. By shedding light on the complete process of CEO change, the researcher believes that the research findings would be of significant value to any board of directors or controlling shareholders, contemplating CEO change.

This research project examined corporate performance in relation to CEO turnover with due consideration of the following circumstances and aspects:

- Are incumbent CEO's held accountable for poor results, resulting in CEO turnover?

- Prior to the CEO turnover event, is corporate performance correlated with CEO tenure and/or age?
- Do pre CEO turnover constructs affect the post turnover corporate performance?
- Is company performance improved by CEO turnover?
- Is post CEO turnover corporate performance correlated with CEO age?
- Are corporate results, in the ambit of CEO turnover, affected by company size?
- Does the choice of an internal or external successor affect post turnover corporate performance?

1.3 Research scope

In order to address the research objectives, a quantitative research methodology was conducted, to test the CEO turnover/firm performance relationship as experienced by corporations listed on the South African Stock Exchange (JSE). A quantitative methodology was chosen in preference to a qualitative methodology as a qualitative study could not deliver the empirical evidence required to adequately address the research objectives proposed by the research project.

Key to the research project is the assessment of corporate performance. The research project adopted an Event Study Methodology where corporate performance is judged by the movement in a corporations share price relative to the share price movement of its immediate peers. The secondary data constitute publicly available JSE share price histories.

CEO turnover events on the JSE, as broadcast by SENS, were isolated for the period 1 April 2007 to 31 May 2012, and the share price movements of the corresponding corporation were analysed during the period 1 April 2006 to 31 May 2014, as applicable.

In respect of the departing CEO, tenure and age at departure were recorded, and in respect of the incoming CEO, age and internal placement versus external, were recorded. Where such information was not available in JSE information broadcasts (SENS), the Investor Relations or Human Resources departments of the respective corporations were contacted.

The research scope examined the relationship between firm performance and the variables of CEO age, tenure, corporation size and internal versus external placement, with consideration of both pre and post CEO turnover corporate performance. For the purpose of this research, leadership change was defined as a change in either the Chief Executive Officer (CEO) or Managing Director (MD).

In respect of corporate performance, the relationship between pre and post CEO turnover corporate performance was investigated. Pre turnover corporate performance was measured by the cumulative abnormal returns (CAR) of the share price for one year prior to the turnover event, and post turnover corporate performance was measured by the CAR for a two year period post the turnover event date. Using this methodology, the researcher introduced the concept of 'CAR difference', being the arithmetic value of the post event CAR less the arithmetic value of the pre event CAR. Using this methodology, deductions can be made as to whether the CEO turnover event actually improved the corporation's performance or not. This methodology adopted by the researcher is supported by Karaevli (2007), who found that pre-succession constructs (primarily financial performance) had the most significant effect on the post succession corporate performance. As this appears to represent fairly isolated research, this specific aspect of post CEO turnover corporate performance was investigated.

The following literature review attempts to summarise the existing body of knowledge in support of the research objectives.

Chapter 2 Theory and literature review

Chapter one outlined the research objectives of this research project. The literature review contained in this chapter two, investigates and attempts to concisely summarise the existing body of knowledge in support of the research objectives. Emphasis has been placed on the findings of recently published academic journals.

2.1 The role and importance of the CEO

Coates and Kraakman (2010) crystallise the role of the current CEO in the context of corporate life in the USA with their statement “The CEO manages the company, glorifying in its successes and taking the blame for its failures. In contrast, the company’s board of directors acts principally in a supportive role by advising and monitoring the CEO, and – inevitably – by replacing her when the time comes” (p. 2). The inference of this statement by Coates and Kraakman (2010) is that the CEO is wholly responsible for all outcomes of corporate performance, clearly delineating the distinction that the Board of Directors primarily fulfils the role of support and oversight, and is largely exempt from performance responsibility. Asthana and Balsam (2010), in their study on director turnover and corporate performance, support the view that the Boards of Directors are restricted to a supportive and oversight responsibility. Since the CEO plays such a vital role in the fortunes of a corporation, the replacement and appointment of a CEO is central to an organisation’s future (Karaevli, 2007; Rhim *et al*, 2006).

In more dated research, Khurana (1998) discussed the conflicting views of those researchers who see CEO change in an environment of declining performance as a positive action versus those that maintain that no one man can be held responsible for the performance of a corporation, and that consequently, CEO change has little effect on subsequent corporate performance. Khurana (1998) came out in support of the latter view.

Rhim *et al* (2006) support the view of Coates and Kraakman (2010) by maintaining that the CEO plays a key role in determining a firm’s strategy, design and corporate culture, thereby drawing a direct correlation between CEO capability and corporate performance.

The differential views taken by Coates and Kraakman (2010) and Rhim et al (2006) on the one hand and Khurana (1998) on the other, may reflect changing stakeholder perceptions of the role and responsibilities of the CEO over time, or additionally, there may be country or demographic differentials as to how CEO responsibility and accountability is judged.

The research project specifically addresses the issue of CEO turnover and improving corporate results. Should there be a statistical significance between pre and post CEO turnover firm performance; the researcher will argue that such statistical relevance will be in support the view of Coates and Kraakman (2010), Karaevli (2007) and Rhim et al (2006).

2.2 Internal versus external turnover factors

For the purpose of this research, it is necessary to distinguish between 'internal' and 'external' CEO turnover, with 'internal turnover' being driven by Boards of Directors, and 'external turnover' being departures arising from corporate activity (mergers, acquisitions, reorganisations, delistings and liquidations), ill health or normal retirement (Coates & Kraakman, 2010). Central to the objectives of this research project, is the relationship between firm performance and CEO turnover. As the external CEO turnover factors are unrelated to firm performance, CEO turnover events resulting from corporate activity are specifically eliminated from the data used to support the research findings.

2.3 The relationship between poor corporate performance and CEO turnover

In the ambit of poor corporate results, the question arises as to the necessity of a new CEO to rectify the performance. The literature studied seeks to shed light on the debate.

Dikolli *et al* (2014) state that "CEO survival is associated with superior firm performance" (p. 281); inferring that CEO's are only likely to remain employed if the corporation results are satisfactory. Further, their research shows that a CEO with four negative quarters

(negative performance versus analysts' projections) is between 89 and 222% more likely to be replaced than a CEO with four non-negative quarters. This strong negative correlation between corporate performance and CEO turnover is in support of the assertion that the CEO is held primarily responsible for the performance of the corporation. He and Sommer (2011) also found a strong negative correlation between CEO turnover and corporate performance in the US insurance industry. Farrell and Whidbee (2003) found that CEO turnover was more likely following a negative financial performance versus analysts' forecasts, rather than a dependency on the actual financial results.

Clapham, Schwenk and Caldwell (2005), in examining successful corporate turnarounds, found that replacement of the CEO is a common but not an essential element of a successful turnaround. This finding would indicate that a more cautious and careful analysis is required before replacing a CEO for poor corporate results.

Asthana and Balsam (2010) focused their study on directors in general, and found a strong negative correlation between firm performance and director turnover, with a stronger correlation existing between internal (executive) directors. They also found that executive directors tended to leave in advance of deteriorating performance, indicating a tendency to preserve wealth and reputation, facilitated by insider information (Asthana & Balsam, 2010).

It would appear that CEOs are also held accountable for poor results beyond their control, with Jenter and Kanaan (2011) finding that CEO turnover increased during periods of industry down turn and market shock.

In addition to financial performance, CEOs are responsible for the ethical conduct and legal compliance of their organisations (Ferrell & Ferrell, 2011). Ferrell and Ferrell (2011) based their research on the demise of Enron and the specific conduct of Ken Lay and Jeff Skilling (Chairman & CEO of Enron). Their view is supported by Amernic and Craig (2013) in their study of the Murdoch's and News Corporation where, in spite of acceptable financial results; the News of the World newspaper was closed due to unethical and illegal conduct within the organisation.

However, review of additional literature shows that the corporate performance / CEO turnover relationship does not reflect a simple or direct negative relationship, and there are many factors complicating the relationship.

The first such factor is the period of CEO tenure and the relative robustness of corporate governance within the organisation. The literature referenced next indicates that these two factors (tenure and corporate governance) appear to exhibit a close relationship to each other. Coates and Kraakman (2010), based on research conducted on the S&P 500, found that corporate performance and CEO turnover are strongly negatively correlated during the first four years of a CEO's tenure, and that poor performance after five years has less effect on CEO turnover. This would imply that after a five year period, a CEO can become more entrenched in an organisation with the support of political allies, making their removal for non-performance increasingly difficult (Coates & Kraakman, 2010). These findings are supported by Dikolli *et al* (2014), who found that "CEO-turnover sensitivity to firm performance declines over a CEO's tenure" (p. 282). Their explanation for the trend is that the CEO increases his power and influence over his tenure in an environment of weak governance mechanisms.

He and Sommer (2011), and Farrell and Whidbee (2000) find in support of Dikolli *et al* (2014) in the governance debate, concluding that external directors (non-executive directors) are more likely to remove a CEO for poor performance than internal (executive) directors. Further, Faleye (2007) reported that corporations with classified boards (boards where only a portion, usually one-third, of the directors come up for reappointment annually) are less likely to remove poor performing CEO's. Fisman, Khurana, Rhodes-Kropf and Yim (2014) found that the degree of corporate governance had a direct relationship to CEO turnover decisions. Larmou and Vafeas (2010) found that, the larger the Board, the stronger are the governance procedures, which in turn lead to increases in share prices.

Allgood and Farrell (2000) in their study on CEO tenure and corporate performance, found a statistically significant relationship between corporate performance and the likelihood of forced turnover, and add that "the effect of performance on the likelihood of forced turnover is two to three times greater for new and old CEOs relative to intermediate CEOs"(p. 375).

The second factor affecting the corporate performance / CEO turnover relationship is the degree of control that the incumbent CEO has over the vacancy of the CEO position.

Khurana (1998), and Coates and Kraakman (2010) found that the rate of CEO turnover is dependent on the degree of control that the incumbent CEO has over the vacancy of the CEO position. This degree of control is often related to an influential level of ownership in the organisation. If the CEO controls the decision to leave the job, the position is closed and the rate of CEO turnover is unaffected by declining corporate performance. Conversely, if the Board controls the vacancy of the CEO position, there is a strong correlation between declining results and CEO turnover.

An extreme example of the ownership effect on corporate performance and CEO turnover is that of founder led firms. Abebe and Alvarado (2013) found that founder led firms perform worse than those led by non-founder CEOs, reinforcing the proposition that significant CEO ownership in the organisation influences the CEO turnover decision. This finding may be influenced by firm size, with a greater proportion of smaller firms being founder led.

The last factor affecting the corporate performance / CEO turnover relationship is that of company size. Muller and Ward (2010) found that company size materially influenced the financial performance of corporations, following Black Economic Empowerment announcements. Further, founder led firms, usually being smaller, exhibited their own characteristics in respect of the corporate performance / CEO turnover relationship (Abebe & Alvarado, 2013).

In summary, the literature reviewed shows strong evidence in support of the removal of the CEO in circumstances of poor corporate performance; however, there is no simple or direct relationship between adverse corporate results and CEO turnover. In addition to poor corporate performance, CEO turnover is also influenced by:

- Adverse external factors
- The ethical and legal conduct of the organisation
- CEO tenure
- Corporation size
- The level of governance exercised at Board level

- CEO ownership of a portion of the organisation

2.4 CEO age, tenure and firm performance

The CEO shelf life debate is centred on the concepts of superannuation and the ability of a single person to continually lead and motivate innovation for an extended period of time.

Ou-Yan and Chuang Shuang-shii (2007) found a statistically relevant relationship between CEO age and CEO turnover. This supports the anticipated results of normal retirement, although Ou-Yan and Chuang Shuang-shii (2007) gave no details as to the actual age probabilities resulting in CEO retirement.

Arbogast and Mirabella (2014) found that there was an inverse relationship between CEO age and a company's percentage increase in revenue, supporting the CEO shelf life assumption. Further, the authors cited The Conference Board (2012) as stating that the average CEO tenure had decreased from ten years in 2000 to eight point four years by 2012 (Arbogast & Mirabella, 2014).

Vintila and Gherghina (2012) investigated CEO turnover characteristics and reported a statistically significant negative relationship between CEO age and a firm's price earnings ratio, indicating that in general, markets anticipate lower future growth from older CEO led corporations. In what may be interpreted as being a slightly contradictory finding, Vintila and Gherghina (2012) also reported that firms of longer CEO tenure had higher price earnings and return on asset ratios, indicating superior financial performance and market anticipation of increasing future corporate earnings. The degree of statistical significance was higher in respect of tenure than of age. The authors did not discuss or comment on the apparent contradiction.

Chen (2013) investigated the relationship between CEO tenure and corporate innovation, reporting a U-shaped relationship. The author found that in the initial years of tenure, CEOs are hesitant to adopt risky innovation strategies. Further into their tenure, they are more likely to commit the resources in pursuit of innovation, having acquired a knowledge base and power. In the latter stages of tenure, the investments in innovation decrease,

with the author postulating that the decrease in innovation is the result of an exhausted knowledge base and a degree of complacency arising from past successes (Chen, 2013).

Davidson III, Nemeč and Worrell (2006) investigated age at succession, finding that board members select CEOs of a similar age to their own. However, this correlation only pertains in the ambit of good corporate performance, with no age correlation evident in circumstances of poor corporate performance. Further, selecting a CEO of similar age had a slightly positive outcome on corporate performance.

As previously cited, Allgood and Farrell (2000), in their study on CEO tenure and corporate performance, found a statistically significant relationship between corporate performance and the likelihood of forced turnover, and add that “the effect of performance on the likelihood of forced turnover is two to three times greater for new and old CEOs relative to intermediate CEOs”(p. 375). The authors did not discuss the implications of the findings in any detail. Such findings are in conflict with those of Coates and Kraakman (2010) and Dikolli *et al* (2014), who found that “CEO-turnover sensitivity to firm performance declines over a CEOs tenure” (p. 282).

The literature reviewed would indicate that increasing CEO age, taken as an isolated variable is detrimental to firm results; however, findings in respect of corporate performance and CEO tenure are mixed.

2.5 The new appointment, an internal versus external appointment

The debates as to whether a new CEO should be appointed from within the ranks of the corporation or recruited externally, are driven by the assumptions of the advantages of business specific knowledge vesting in a current employee versus the need for ‘new blood’ to bring about exciting innovations or to rectify current poor performance.

Huson *et al* (2004) found that there was a statistically relevant improvement in a firm’s performance after CEO turnover, particularly if the appointment was from outside succession. However, Karaevli (2007) found that there was no statistically significant

difference in post succession firm performance between internal and external CEO placement.

The contrary view is expressed by Rhim *et al* (2006), who found that firms using internal succession produced superior results in respect of operations and profitability versus firms using outside succession. A limitation in the research of Huson *et al* (2004) and Rhim *et al* (2006) is that both studies ignored the pre-succession constructs, a factor found to be fundamental in post-succession firm success (Karaevli, 2007). This oversight may be responsible for the conflicting findings.

Farrell and Whidbee (2003) find that, in the circumstance of poor performance, external CEO placements are more likely. This view is supported by Lauterbach, Vu and Weisberg (1999) who add that smaller corporations are also more likely to make external CEO appointments, due to the lack of suitable internal candidates.

Naveen (2006) considered the debate of external versus internal placement from the perspective of corporation size and complexity, and postulated that “firms that are more complex incur greater costs to transferring firm-specific knowledge and expertise to an outsider, and should be more likely to groom an internal candidate for the CEO position”(p. 661). Naveen (2006) then found in support of the assertion, reporting that, the larger and more complex a firm is, the higher is the likelihood that the firm will have an entrenched CEO succession process, resulting in internal CEO succession. This research by Naveen (2006) is the only literature found which considers individual corporation dynamics in explaining the observed trends in internal and external CEO placement.

Balsmeier, Buchwald and Zimmerman (2013) found that the greater the number and influence of external directors (non-executive directors) on a Board, the greater is the propensity to appoint a new CEO from outside the company.

Elsaid, Wang, Davidson and Wallace (2011) focused their study on external CEO placements, and the distinction between appointing a new CEO who was a CEO prior to the appointment versus a new ‘first time’ CEO. The researchers reported a more favourable initial share price reaction should the new CEO also have held a prior CEO position. However, the study was restricted to a short term share price reaction and no inference could be deduced in respect of actual CEO performance and success.

In summary, the literature reviewed is fairly mixed in its findings regarding the preferences of internal versus external CEO succession. However, where corporate governance is strengthened by vigilant non – executive directors, there is a propensity to appoint externally.

2.6 What effect does CEO change have on corporate results?

Having endured the trauma of the appointment of a new CEO, the central question amongst all the stakeholders of a corporation will be ‘what is the likelihood of the corporation now enjoying improved results’?

Clayton, Hartzell, and Rosenberg (2005) used a sample of 872 CEO changes and found a significant increase in share price volatility following CEO turnover, particularly if the change was forced as opposed to voluntary. However, there was no conclusion as to whether there was any subsequent improvement in company performance.

He, Sommer and Xie (2011), in a study on the American insurance industry using cost efficiency and revenue efficiency as performance measures, found strong statistical support for CEO turnover improving corporate performance.

Huson *et al* (2004) found that there was a statistically relevant improvement in company performance after CEO turnover, particularly if the appointment was from outside succession. However, this improvement in corporate results is not supported by all research.

In contrast to the findings of Huson *et al* (2004), Karaevli (2007) found there to be no statistical difference between the post-succession firm performances of internal versus external CEO placements. Of fundamental importance, Karaevli (2007) found that the post-succession firm performance was highly dependent on the pre-succession constructs, primarily pre-succession firm performance.

In the only South African research on the topic, van Zyl (2007) found no statistically relevant market out performance due to CEO turnover in South Africa. However, in her study, van Zyl (2007) ignored any pre-succession constructs; therefore no conclusion could be drawn as to whether CEO turnover actually improved the corporation’s results.

The literature reviewed does not paint a clear picture as to whether CEO turnover improves company results, with most studies critically ignoring the pre-turnover constructs, which have a fundamental effect on post turnover corporate performance (Karaevli, 2007).

2.7 Research methodology and performance measures

As motivated in paragraph 1.1, a quantitative research approach will be adopted, analysing the pre and post CEO turnover corporate performance of companies listed on the JSE. Critical to the research conducted are the relevant measures and methodology of judging corporate performance.

In order to pass judgment on the performance of a corporation, access to a corporation's internal strategy documentation, budgets and targets would be preferable (Farrell & Whidbee, 2003). Such information would no doubt facilitate the optimal performance analysis methodologies. As this information is not public knowledge, the most applicable proxy measure for firm performance, in the context of CEO turnover, is required. The various performance measurement methodologies are discussed next.

Farrell and Whidbee (2003) used analyst's earnings forecasts as a proxy for judging firm performance, considering one and five year forecast periods. The performance rating was judged by the forecast error, being the difference between actual earnings and forecast earnings.

Dikolli *et al* (2014) adopted a similar methodology, using quarterly analyst earnings forecasts of corporation results in the USA as proxies for Board expectations and targets. These were then compared with actual performance to calculate a resultant forecast error.

In the South African context, de Wet and du Toit (2007) suggest that despite limitations, RoA (Return on Assets) and RoE (Return on Equity) are the preferred measures in order to judge financial performance. In contrast, Muller and Ward (2010) and van Zyl (2007) used company share price movement as a proxy for firm performance.

Neumann, Roberts and Cauvin (2011) refer to the "Holy Trinity" of performance measures as being earnings per share (EPS), dividends, and market price movements. Over a

period of time, share prices reflect the shareholder perceived value of both EPS and dividends.

The event study methodology had been widely used by researchers in investigating corporate performance following a change in corporate circumstance (Cheung, 2011; Corrado, 2011; da Graca & Mason, 2012; Hwang, 2013; Muller & Ward, 2010; van Zyl, 2007). The event study methodology uses share price performance as a proxy for corporate performance. The methodology calculates abnormal returns of stock i at time t , defined as the difference between the realised return and an estimate of its expected return in the absence of the event (Cheung, 2011). Cumulative abnormal returns (CARs) are calculated over a specific period or event window.

Chapter 4 motivates and defends the researcher's choice of using the event study methodology, and placing reliance on share price movements as the best available proxy for changes in corporate performance.

2.8 Literature summary

In respect of the first topic, discussing the role and importance of the CEO in an organisation (paragraph 2.1), the literature reviewed exposed two contradicting views; the first being that the capabilities of the CEO are of primary importance to the performance of the corporation (Coates & Kraakman 2010, Karaevli 2007, Rhim *et al* 2006) and the second being proposed by Khurana (1998), who maintained that no one man can be held responsible for the performance of an organization.

This contradiction is specifically addressed in the research project, by examining both the pre and post CEO turnover corporate performance. Should corporate performance be shown to have been improved by CEO turnover, a finding in support of the former view will be motivated.

The second topic in the literature review (paragraph 2.3) was centred on the debate as to whether CEOs are held accountable for poor corporate results with such accountability resulting in their removal (paragraph 2.3). All literature reviewed reported a strong negative

correlation between corporate performance and CEO removal (Dikolli *et al* 2014, He & Sommer 2011, Farrell & Whidbee, 2003). The research project will investigate these findings from a South African perspective, by investigating a possible relationship between pre turnover corporate performance and the performance of market peers over the same period.

However, further literature showed that the relationship between poor corporate performance and CEO turnover is not a direct relationship, and is affected by the following additional factors:

- Adverse external factors
- The ethical and legal conduct of the organisation
- CEO tenure
- Corporation size
- The level of governance exercised at Board level
- CEO ownership of a portion of the organisation

Of these additional factors, the research project will investigate the influences of CEO tenure and Corporation size, with the remaining additional factors being excluded from the scope of the research due to the additional methodologies that would have been required to enable their analysis.

The third topic (paragraph 2.4) explored the effect that the variables CEO age and tenure had on CEO turnover and corporate performance, introducing the concept of whether CEOs are subject to a shelf life. The literature reviewed was generally in agreement that there was a negative correlation between CEO age and corporate performance, whereas increased CEO tenure was positively correlated to firm performance.

The research project attempts to cast some light on this fairly muddled picture from a South African perspective, by comparing CEO age and tenure to corporate performance.

The fourth topic covered in the literature review (paragraph 2.5) examined post turnover corporate performance in the context of an internal versus external placement. On this topic, the literature found evidence in favour of superior corporate performance in respect of both internal and external placements. However, Naveen (2006) explored individual

corporation dynamics, in particular corporation size and complexity, finding that the larger and more complex a corporation is, the more likely it will possess an entrenched succession plan, leading to internal placement. The conclusion of Naveen (2006) is that the choice of internal versus external CEO placement was strongly influenced by corporation size and complexity. The research project examines the corporate performance arising from both internal and external placements, shedding light on these contradictory view points from a South African perspective.

The final topic presented in the literature review (paragraph 2.6) covers the most important topic of the research project – whether CEO change actually improves corporate results. The literature concerning research conducted in the USA on the topic indicates fairly strong support for corporate results improving post CEO turnover. However, in the only South African research on the topic, van Zyl (2007) found no improvement in post CEO turnover company performance relative to market peers. As van Zyl (2007) did not consider pre turnover firm performance, no deduction of whether the actual company performance was improved by the turnover event, could be made.

The research project compares pre and post turnover company performance to answer this question from a South African perspective.

The literature covers many of the factors concerning CEO turnover, including the events leading up to the turnover event, factors influencing the choice of incumbent and the post succession firm performance. No research which covers the full spectrum of the events from pre succession constructs, to the placement of new incumbent and finally the resultant post succession firm performance, was found. This research project attempted to 'pull it all together' and 'try to show the complete picture', rather than focus on a single element driving the CEO turnover process.

The following aspects covered in the literature were not investigated in this research project; however, these aspects add to the richness of debate and may assist in interpretations and motivations for additional research:

- The role of the CEO
- External environmental factors affecting CEO turnover (economic cycles, industry specific constraints and geo-political changes)

- The non-compliance with ethical and legal requirements
- The degree of governance exerted by external (non-executive) directors
- CEO ownership in the firm and the ability to exert undue influence
- Demographic differentials relating to country and sector specific attitudes to CEO responsibilities.

It is not anticipated that the topics ignored by the research project will dilute the validity or applicability of the research findings in any material manner.

The literature review briefly summarised the existing body of knowledge raised by the research objectives, and highlighted possible gaps and contradictions within existing academic research on the topics. The following chapter, sets out the research questions that were raised by the research objectives and the literature review.

Chapter 3 Research questions and hypotheses

The literature review discussed the many aspects surrounding the circumstance of CEO turnover and the resultant corporate performance. In many respects the literature contained contradictory or inconclusive findings, and reflected a deficiency in research on the topics from a South African context. The following research questions explore the contradictory or inconclusive findings and also seek to validate established research findings from a South African perspective.

The event study methodology, using JSE share price data is the primary tool used in addressing the research questions, supported where possible with descriptive statistics.

The event study methodology compares the share price movement of a target corporation which is subject to CEO change to the relative share price movement of a reference portfolio of shares. Should the target corporation price outperform the reference portfolio, a positive 'abnormal return' is recorded. Conversely, an underperformance of the target corporation versus the reference portfolio yields a negative 'abnormal return'. The announcement of the CEO change by SENS establishes the date of the event. The pre event window to judge corporate performance prior to the event is a period of 250 trading days on the JSE, and the post event window to judge corporate performance post the event is a period of 500 days. The sum of abnormal returns for the event windows are called the Cumulative Abnormal Returns, abbreviated CARs. A positive CAR therefore reflects a corporation that has outperformed the reference portfolio over the period of the event window, and a corporation with a negative CAR has underperformed the reference portfolio over the period of the event window.

The event study methodology yielded two populations of data, being pre CEO turnover CARs and post CEO turnover CARs. Further, in order to determine whether the corporation results were improved or not by the event, the researcher introduced the concept of CAR difference, being the post event CAR less the pre event CAR. CAR difference yields a third set of data for analysis. In respect of the hypotheses listed below, any reference to 'significant' refers to significance at the 5% level. Arising from the Literature Review and research objectives, the following research questions are investigated:

Research Question 1: To what extent are CEO turnover events in South Africa triggered by adverse financial results?

The question is addressed by descriptive statistics, analysing the proportion of CEO turnover events corresponding to a pre event negative CAR. The variables of departing CEO tenure, corporation size and the age of the departing CEO are investigated in search of further possible insights in respect of the triggers causing CEO turnover.

Due to the nature of the research design, no hypothesis test is possible in respect of this research question as it would amount to testing the dependent variable of the pre event CAR data set.

Research Question 2: Are the departing CEO characteristics of age and tenure correlated to pre event corporate performance?

Hypothesis 2a: The null hypothesis states that pre event CARs are not correlated with departing CEO age. The alternate hypothesis states that pre event CARs are correlated with departing CEO age.

Hypothesis 2b: The null hypothesis states that pre event CARs are not correlated with departing CEO tenure. The alternate hypothesis states that pre event CARs are correlated with departing CEO tenure.

Where applicable, research question 2 is supported by descriptive statistics.

Research Question 3

Do pre event corporate circumstances have a statistically significant effect on post event corporate performance?

Hypothesis 3a: The null hypothesis states that no significant relationship exists between the pre event CAR and the post event CAR. The alternate hypothesis therefore states that a significant relationship exists between the pre event CAR and the post event CAR.

Hypothesis 3b: The null hypothesis states that the age of the outgoing CEO has no significant effect on the post event CAR. The alternate hypothesis therefore states that the age of the outgoing CEO has a significant effect on the post event CAR.

Hypothesis 3c: The null hypothesis states that the tenure of the outgoing CEO has no significant effect on the post event CAR. The alternate hypothesis therefore states that the tenure of the outgoing CEO has a significant effect on the post event CAR.

Hypothesis 3d: The null hypothesis states that the corporation size has no significant effect on the post event CAR. The alternate hypothesis therefore states that corporation size has a significant effect on the post event CAR.

Hypothesis 3e: The null hypothesis states that no significant relationship exists between the pre event CAR and the CAR difference. The alternate hypothesis therefore states that a significant relationship exists between the pre event CAR and the CAR difference.

Hypothesis 3f: The null hypothesis states that the age of the outgoing CEO has no significant effect on the CAR difference. The alternate hypothesis therefore states that the age of the outgoing CEO has a significant effect on the CAR difference.

Hypothesis 3g: The null hypothesis states that the tenure of the outgoing CEO has no significant effect on the CAR difference. The alternate hypothesis therefore states that the tenure of the outgoing CEO has a significant effect on the CAR difference.

Hypothesis 3h: The null hypothesis states that the corporation size has no significant effect on the CAR difference. The alternate hypothesis therefore states that corporation size has a significant effect on the CAR difference.

Where applicable, research question 3 is supported by descriptive statistics.

Research Question 4: Are corporation results improved by CEO turnover?

Hypothesis 4a: The null hypothesis states that no significant cumulative abnormal returns post CEO turnover exist. The alternate hypothesis therefore states that there are significant cumulative abnormal returns post CEO turnover.

Hypothesis 4b: The null hypothesis states that there is no significant improvement from the pre event CAR to the post event CAR. The alternate hypothesis therefore states that there is significant improvement from the pre event CAR to the post event CAR.

Hypothesis 4c: The null hypothesis states that the age of the incoming CEO has no significant effect on the post event CAR. The alternate hypothesis therefore states that the age of the incoming CEO has a significant effect on the post event CAR.

Hypothesis 4d: The null hypothesis states that there is no significant difference between the post event CARs of those companies making internal appointments versus those appointing externally. The alternate hypothesis therefore states that there is a significant difference between the post event CARs of those companies making internal appointments versus those appointing externally.

Hypothesis 4e: The null hypothesis states that the corporation size has no significant effect on the post event CAR. The alternate hypothesis therefore states that corporation size has a significant effect on the post event CAR.

Hypothesis 4f: The null hypothesis states that the age of the incoming CEO has no significant effect on the CAR difference. The alternate hypothesis therefore states that the age of the incoming CEO has a significant effect on the CAR difference.

Hypothesis 4g: The null hypothesis states that there is no significant difference between the CAR difference of those corporations making internal appointments versus those appointing externally. The alternate hypothesis therefore states that there is a significant difference between the CAR difference of those corporations making internal appointments versus those appointing externally.

Hypothesis 4h: The null hypothesis states that the corporation size has no significant effect on the CAR difference. The alternate hypothesis therefore states that corporation size has a significant effect on the CAR difference.

Where applicable, research question 4 is supported by descriptive statistics.

Due to the extent of the research questions and hypotheses, the following table 4 in paragraph 5.2 attempts to summarise questions and hypotheses in the interests of clarity.

The research questions contained in chapter 3 attempt to address the topics raised by the research objectives and the literature review. The following chapter 4 details the research

design and methodologies employed in investigating and finding answers to the research questions raised.

Chapter 4 Research methodology and design

The preceding chapter 3 contained the research questions raised by the research objectives and the literature review. This chapter 4 discusses the research design and methodologies used in order to arrive at conclusions and observations in respect the research questions raised.

4.1 Research design

As motivated in paragraph 1.1, a quantitative research approach was adopted, analysing the pre and post CEO turnover corporate performance of companies listed on the JSE.

With due regard to the research questions proposed in this research project, a quantitative approach was chosen in order to obtain large samples from secondary data, to provide adequate empirical evidence for statistical analysis within acceptable levels of confidence. Should a qualitative approach have been attempted via interview and/or questionnaire, the researcher submits that within the context of the research questions, the inherent non-probability sampling method combined with limited sample sizes would have yielded results of unacceptably low statistical validity.

The literature review in paragraph 2.7 lists the various corporate performance measures encountered, however, the dominant methodology in determining relative corporate performance following a change in corporate circumstance involves the use of event study methodology. Binder (1998) credits Fama, Fisher, Jensen and Roll (1969) with the pioneering of the methodology which has since been widely used and refined in financial analysis and economic studies. da Graca and Mason (2012) maintain that “there are more than 500 event studies in the top finance journals”(p.166).Hwang (2013) summarised the event study methodology as “captures the natural experiment that occurs in stock returns due to new information, and more accurately accounts for financial performance than changes in stock prices alone” (p. 2).The use of event study methodology in the circumstances of this research project is supported by Cheung (2011), Corrado (2011), da Graca and Mason (2012), Hwang (2013), and Muller and Ward (2010).

Arising from the literature review, the event study methodology is considered to be the most appropriate methodology in respect of this research project, and on that basis it was adopted.

Short term event studies are used to assess the reaction of market participants to new information over a period of days or months. Long term event studies are employed to assess the impact of changes in firm organisation, financial structure and performance over a period of years, ranging from one to five (Bremer, Buchanan & English, 2011). This research project therefore occupies the position of a long term event study. In long term event studies, the choice of the benchmarks against which abnormal returns are calculated is of particular importance (Muller & Ward, 2010; Cheung, 2011).

Hwang (2013) adopted the market portfolio approach, using the S&P 500 index as benchmark. Both Muller and Ward (2010) and Cheung (2011) see this approach as being problematic because it ignores company size. Further, Muller and Ward (2010) emphasize the necessity of a resource stock versus non resource stock distinction as being a benchmark requirement in the South African context. The use of the JSE market index as a benchmark is therefore rejected for the purposes of the research project.

van Zyl (2007) used the sector index as the performance benchmark, making no adjustment for corporate size. The researcher considers this approach problematic in the South African context, as some sectors have a limited number of participants, implying that a large corporation selected in the sample, could materially influence the performance of the sector benchmark, thereby removing the independence of the benchmark. On this basis, sector performance is excluded as a possible benchmark.

Muller and Ward (2010), in their event study entitled "The long-term share price reaction to Black Economic Empowerment announcements on the Johannesburg Securities Exchange" developed "twelve control portfolios of shares representing the cross-sectional factors of size, growth/value and resource/non-resource." (p.30). The control portfolios are rebalanced each quarter. Within the South African context, the researcher considers the benchmark portfolios as constructed by Muller and Ward (2010) to be the most relevant benchmarks available, and these same benchmark portfolios, subsequently updated by Muller and Ward have been used as benchmark for the purposes of this research project.

In respect of the event study methodology applied, the event date is taken as the day of the announcement of CEO turnover as broadcast by SENS (the Johannesburg Stock Exchange information service). For the pre event window, the share price data for a period of 250 trading days (approximating one calendar year) is analysed. No detailed references were found in the literature review indicating the appropriate length of the pre event window, as by definition, most event studies are forward looking, examining performance after an event. Muller and Ward (2010) looked back 20 days to test for insider trading. Dikolli et al (2014) found that a CEO with four negative quarterly results was between 89% and 222% more likely to be replaced than a CEO without negative quarterly results (negative versus analyst forecasts). The researcher submits that, based on the significance of four quarters of performance as found by Dikolli et al (2014), 250 trading days of share price data is an adequate period to support conclusions regarding pre event corporate performance.

In respect of the post event window, a period of 500 trading days of share price data is taken into account (approximating two calendar years). The post event window asks the question of whether the new CEO has improved company performance following appointment. Muller and Ward (2010) used one year to judge corporate performance and van Zyl (2007) used three years. Dikolli et al (2014) and Coates and Kraakman (2010) found that the CEO turnover/corporate performance relationship drops significantly after year four, which indicates that the post event window must be shorter than four years.

It follows that there is a trade-off between giving the new CEO enough time to effect change, and the four year barrier. The one year used by Muller and Ward (2010) is rejected as being too short a period for a CEO to effect change in an organisation. Further, the longer the event window, the greater will be the chance that the corporation's performance falls in line with general market performance, diluting the impact of the CEO change. The 500 day trading period, approximating two calendar years was therefore selected as the optimal period for the analysis of post event corporate performance. Figure 1 illustrates the event windows.

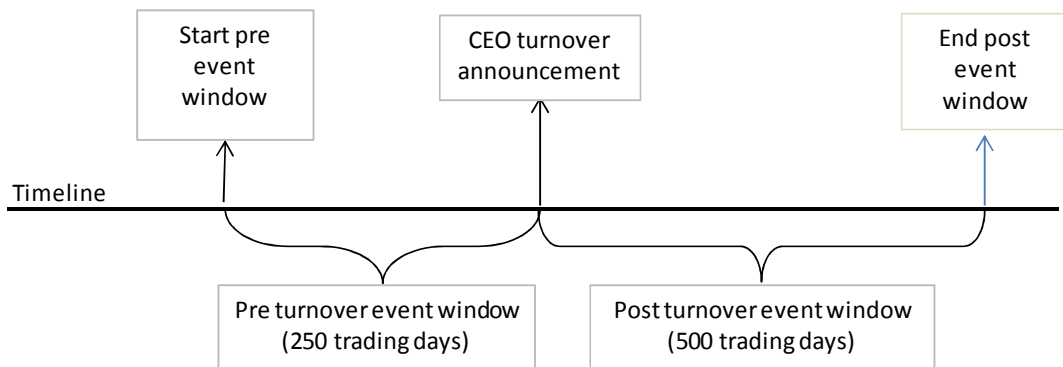


Figure 1 Illustration of pre and post event windows

In respect of each CEO turnover event, a pre event cumulative abnormal return (CAR) and a post event CAR is calculated. If the corporations share price outperformed the control portfolios over the same event window, the CAR will be positive. Conversely, should the corporations share price have underperformed the respective control portfolio, the CAR will be negative. In order to conclude whether a corporations performance has been improved by the CEO turnover event, CAR difference is calculated, being post event CAR less the pre event CAR. If the CAR difference is positive, corporate performance improved as a result of CEO change, and if the CAR difference is negative, corporate performance deteriorated.

In addition to the calculation of pre event CARs, post event CARs and CAR difference, the following variables are also recorded:

- Departing CEO tenure
- Departing CEO age
- Incoming CEO age
- Incoming CEO – internal or external placement
- Corporation size, categorised as follows:
 - Small (Corporations with a market capitalization of less than one billion Rand and all companies listed on the ALTX)
 - Medium (Corporations with a market capitalization of between one and ten billion Rand).
 - Large (Corporations with a market capitalization of greater than ten billion Rand).

The corporation size divisions are judgemental and resulted in fairly equal populations within the three size categories.

The possible effects of the variables on pre and post CARs and CAR difference are investigated.

4.2 Population

The population will consist of the share price data of all corporations listed on Johannesburg Stock Exchange. Share price data and SENS announcements for the period 1 April 2006 to 31 May 2014 are taken into consideration. The Sharenet data base is used to isolated SENS broadcasts in respect of CEO turnover announcements.

An inherent assumption of the event study methodology is the existence of efficient capital markets (Muller & Ward, 2010; Hwang, 2013). Illiquid stocks are therefore normally removed from the population (Muller & Ward, 2010; Hwang, 2013). However, due to the unusually long event windows chosen by the researcher, illiquid stocks were retained on the assumption that the corporations CAR over a two year period is a good indicator of fair value, even in the case of illiquid shares.

4.3 Unit of analysis

The unit of analysis is the announcement of a CEO turnover event, as announced by The Stock Exchange News Service (SENS).

4.4 Sampling

The sample consists of all CEO change announcements broadcast by SENS during the period 1 April 2007 to 31 May 2012, a period of just over five years. The Sharenet SENS data base is used to isolate all announcements regarding CEO turnover. For the purposes of drawing the sample, the search contained both CEO and MD (managing director) turnover information, where the title of managing director was used in the absence of the position of CEO. The sampling process commenced on 31 May 2012, working backwards through the SENS data base and recording each CEO turnover event as it occurred.

The sample of all CEO turnover events from 1 April 2007 to 31 May 2012 was then filtered to exclude the following:

- All samples where the CEOs did not maintain their position for a minimum period of two years following the announcement on SENS. This is performed to ensure a minimum post event performance evaluation period of two years.
- All samples where the corporation underwent corporate change during the two year post event window.
- All samples where the organisation was not listed on the JSE for a minimum of 12 months prior to the CEO turnover announcement.

4.5 Data analysis

The event study methodology compares actual share price returns to expected returns. The methodology employed by Muller and Ward (2010) of using control portfolio returns as a proxy for expected returns is used for the purposes of this research project. Further, Muller and Ward (2010) made their updated control portfolio data base available to the researcher, which the researcher used in the analysis and for the calculation of CARs. The updated control portfolio data base made available to the researcher by Muller and Ward (2010) calculated the required CARs using the following logics.

Daily equal-weighted indices were constructed for each of the twelve control portfolios using log returns (Formula 1).

$$R_{it} = \log(P_{it}/P_{it-1}) \quad (\text{Formula 1}) \text{ (Muller \& Ward, 2010)}$$

where:

R_{it} = the equal weighted share return for portfolio i for day t

P_{it} = the equal weighted share value of portfolio i at the end of day t

The expected return $E(R_{it})$ for the share is calculated using formula 2.

$$E(R_{it}) = \alpha_{it} + \beta_{i,1} \text{SGN}_t + \beta_{i,2} \text{SGR} \dots \beta_{i,12} \text{LVR}_t \quad (\text{Formula 2}) \text{ (Muller \& Ward, 2010)}$$

where:

$E(R_{it})$ = the expected return on security i on day t

$\alpha_{i,t}$ = the alpha intercept term of security on day t

$\beta_{i,1} \dots \beta_{i,12}$ = the beta coefficients on each control portfolio return

$SGN_t \dots SGR_t$ = the log-function share price returns on each of the twelve control portfolios on day t.

The abnormal returns (ARs) are therefore the differential between actual returns (R_{it}) and expected returns $E(R_{it})$, calculated by formula 3.

$$AR_{it} = R_{it} - E(R_{it}) \quad (\text{Formula 3}) \text{ (Muller \& Ward, 2010)}$$

The abnormal returns over any event window are accumulated to give the cumulative abnormal return (CAR).

In respect of each CEO turnover event, a pre and post event CAR is calculated, using the updated control portfolios as supplied by Muller and Ward (2010). As the length of the pre event window is one year in length versus a post event window of two years, an adjustment is made to the post event CAR to make the returns of differing periods comparable. The year two CARs are adjusted by the formula 4:

$$i = (e^{\sum_i^n x_i})^{0.5} - 1 \quad (\text{Formula 4})$$

The three data sets of pre event CAR, post event CAR and CAR difference are tested for normality.

Where the data is normally distributed, hypothesis testing made use of the t-test to test significance, as it is most commonly used (Muller & Ward, 2010). Where the data is not normally distributed, significance will be verified by the Chi-Square, Mann Whitney and other non-parametric tests (Salkind, 2013).

The non-parametric tests for statistical significance include the Mann-Whitney U test (Salkind, 2013), the CHAID (Chi-Square Automatic Interaction Detector) decision tree algorithm (Chien-Yi & Lin, 2013; and Koyuncugil & Ozgulbas, 2010) and the Generalised Linear Models (GLM) tests (Glosup, 2005). The SPSS Modeller statistical software package was used to analyse the data, utilizing the Mann-Whitney U test, the CHAID decision tree and the Generalised Linear Models (GLM) functionality within the SPSS Modeller.

Koyuncugil and Ozgulbas (2010) cite Berson, Smith and Thearling (2000) as describing the CHAID decision tree as “a predictive model that, as its name implies, can be viewed as a tree. Specifically, each branch of the tree is a classification question” (p. 510). Only criteria (classification questions) meeting selected significance levels are displayed as branches of the tree.

Glosup (2005) discusses and describes the applications of GLM regression techniques in conjunction with the SPSS Modeller. Hypothesis tests applied to GLMs do not require normality of the response variable. Therefore GLM’s can be used when response variables follow distributions other than the normal distribution, and when variances are not constant.

In instances where there was a correlation between two populations, linear regression was used as predictive tool to calculate linear regression equations (Salkind, 2013).

Hypothesis testing is conducted at a 5% significance level.

4.6 Research limitations

The choice and appropriateness of the selected method is seen as conveying the highest risk to the validity of the research results. da Graca and Mason (2012) compared the same event study using different methodologies, and obtained differing results. da Graca and Mason (2012) state further that “the traditional models, which typically ignore heteroscedasticity have a bias towards rejecting the null hypothesis” (p. 167).

In determining poor or satisfactory firm performance, the company’s share price was chosen as the most relevant proxy of firm performance (Cheung, 2011; Corrado, 2011; da Graca & Mason, 2012; du Toit, 2007; Hwang, 2013; and Muller & Ward, 2010). The use of the measures of Return on Assets or Return on Equity may yield different results. Further, in the calculation of abnormal returns, the choice of benchmark is of primary importance (Muller & Ward, 2010). The research project made use of the updated control portfolios as used in Muller and Ward (2010), in the belief that such control portfolios represent the most appropriate benchmarks available. The pros and cons of such a choice are debated in paragraph 4.1. The use of a market or sectorial index as benchmark may yield differing results.

The event study methodology is also dependent on the operation of the efficient market hypothesis (Muller & Ward, 2010). The event studies referenced in the literature review mostly excluded illiquid shares in an attempt to satisfy the efficient market hypothesis. This research project did not eliminate illiquid shares, on the grounds that, due to the relatively long post event window period of two years, a CAR calculated over a two year period is a fair reflection of the shares value. The exclusion of illiquid shares may have altered the findings of the research project.

The final sample contained 143 CEO turnover events, collected for the period 1 April 2007 to 31 May 2012. A larger sample size may have increased the statistical relevance of some of the tests conducted. However, the variables of CEO tenure and age became increasingly difficult to discover in the years prior to 2007.

The study is restricted to corporations listed on the JSE, and therefore no direct conclusions can be drawn in respect of non-listed South African companies or non-South African companies.

Chapter 4 detailed the research design and methodology used in order to gather empirical evidence in support of the research questions raised. The following chapter 5 contains the results of the tests conducted.

Chapter 5 Results

The preceding chapter 4 outlined the research design and methodologies to be deployed in order to address the research questions raised. Chapter 5 contains the results of the tests conducted and an analysis of the descriptive statistics gathered.

5.1 Sample description and normality testing

A search of all SENS broadcasts for the period 1 April 2007 to 31 May 2012 yielded a total of 214 CEO turnover events. The sample was then filtered to exclude:

- Any CEO turnover event where the corporation was subject to corporate action (merger, acquisition, delisting, restructure or liquidation) during either of the pre or post event windows;
- Any CEO turnover event where the new CEO did not successfully hold the position for a minimum of two years;
- Any CEO turnover event where the corporation was not listed on the JSE for a minimum period of one year prior to the CEO turnover event.

Such filtering reduced the final sample to 143 CEO turnover events. In respect of two CEO turnover events, the age of the departing CEO was not determinable, and the average age of the remaining departing CEO's was substituted in both cases.

Cumulative abnormal returns (CARs) in respect of the pre and post CEO turnover event windows were calculated for each corporation in the final sample of 143. Further CAR difference, being the post event CAR less the pre event CAR was calculated. This yielded three separate data sets for analysis; being pre event CARs, post event CARs and CAR difference.

These three data sets were then tested for normality. The results are as follows:

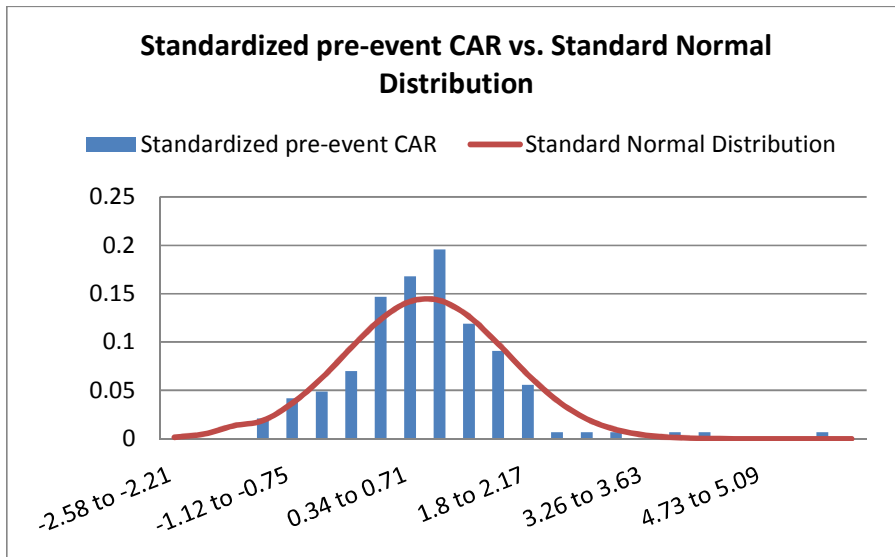


Figure 2 Distribution of pre event CAR data

Table 1 Normality Test - Pre-event CAR data set

Test Stat	7,231.39
Chi Squared Critical Value at 5%	30.14
Null Hypothesis: Data are normally distributed	
if test stat > Critical value - Reject null hypothesis => data are not normally distributed	
Conclusion: Reject the Null Hypothesis	

As can be seen from Table 1, the pre event CAR population failed the normality test, with the consequence that any significance testing in respect of the population is restricted to non-parametric test methods (Salkind, 2013).

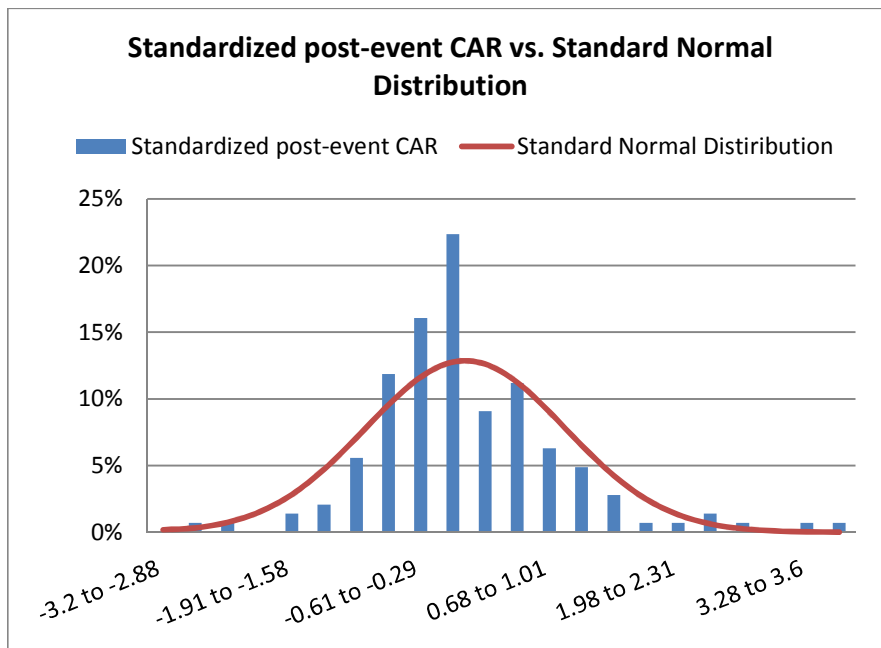


Figure 3 Distribution of post event CAR data

Table 2 Normality Test - Post-event CAR data set

Test Stat	105.01
Chi Squared Critical Value at 5%	30.14
Null Hypothesis: Data are normally distributed	
if test stat > Critical value - Reject null hypothesis => data are not normally distributed	
Conclusion: Reject Null Hypothesis	

As can be seen from Table 2, the post event CAR population failed the normality test, with the consequence that any significance testing in respect of the population is restricted to non-parametric test methods (Salkind, 2013).

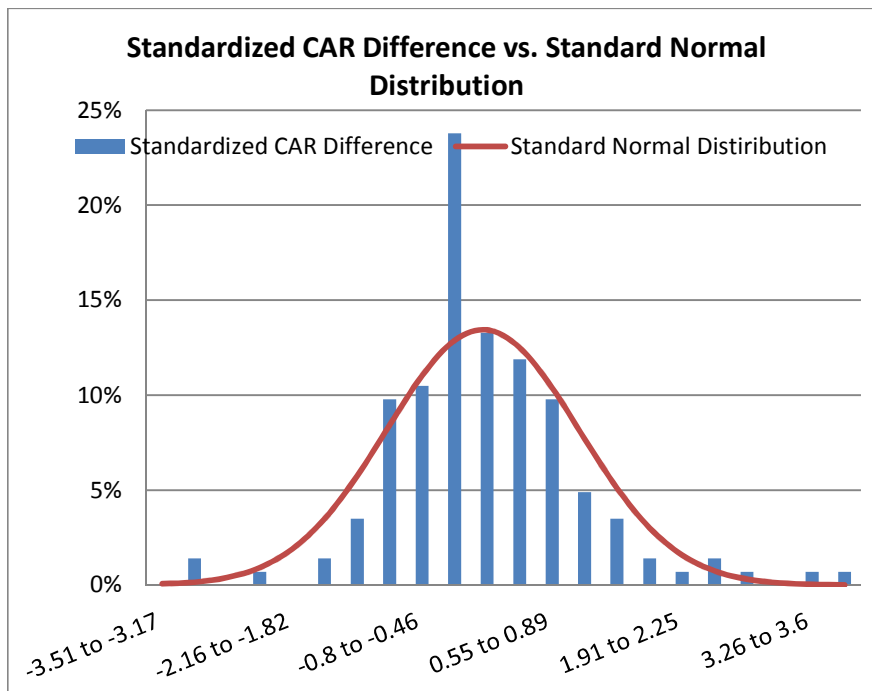


Figure 4 Distribution of CAR difference data

Table 3 Normality Test - CAR difference data set

Test Stat	113.83
Chi Squared Critical Value at 5%	30.14
Null Hypothesis: Data are normally distributed	
if test stat > Critical value - Reject null hypothesis => data are not normally distributed	
Conclusion: Reject Null Hypothesis	

As can be seen from Table 3, the CAR difference population failed the normality test, with the consequence that any significance testing in respect of the population is restricted to non-parametric test methods (Salkind, 2013).

As all three of the data sets of pre-event CAR, post event CAR and CAR difference failed the normality test, significance testing in respect of the three data sets was conducted using non-parametric tests (Salkind, 2013). The non-parametric tests for statistical significance used in the research project include the Mann-Whitney U test (Salkind, 2013), the CHAID (Chi-Square Automatic Interaction Detector) decision tree algorithm (Chien-Yi & Lin, 2013; and Koyuncugil & Ozgulbas, 2010) and the Generalised Linear Models (GLM) tests (Glosup, 2005). The SPSS Modeller statistical software package was used to analyse the data, utilizing the Mann-Whitney U test, the CHAID decision tree and the Generalised Linear Models (GLM) functionality within the SPSS Modeller.

5.2 Research questions and Hypotheses

The research questions give rise to 18 hypotheses and descriptive analysis. For the sake of clarity and ease of reference, table 4 is included, tabulating a summary of research questions, hypotheses, statistical tests and tables and figures.

Table 4 Summary of hypotheses, tests and tables

Summary of hypotheses, tests and tables			
Research question	Hypothesis	Test / analysis	Figure/table
1	N/A	Descriptive Stats	Table 5
2	2a	Correlation	Figure 5
		Descriptive Stats	Table 5
	2b	Correlation	Figure 6
		CHAID	Figure 7
		Descriptive Stats	Table 6
3	3a to 3d	GLM	Table 7
	3e to 3h	GLM	Table 8
		GLM	Table 9
		CHAID	Figure 8
4	4a	t-test	Table 10
	4b	Mann-Whitney U	Table 11
		Descriptive Stats	Table 12
		t-test	Table 13
	4c to 4e	GLM	Table 14
		CHAID	Figure 9
		Descriptive Stats	Table 16
		4f to 4h	GLM
Descriptive Stats	Table 16		

5.2.1 Research question 1

The research question asks to what extent CEOs are held responsible for poor corporate performance which results in CEO turnover. The way the data sets are structured, no hypothesis testing can be performed, as it would amount to testing the dependent variable of the pre event data set. A further data set including all companies, whether they had a change in CEO or not, would be needed to formally test whether poor performance results in CEO turnover. The research project did not compile this additional data set but used descriptive statistics in respect of the pre event CAR data set to shed some light on the subject. The results are listed per Table 5.

Table 5 Pre CEO turnover descriptive statistics

Table 5.1: Corporate performance at CEO turnover		
Pre event CARs	Underperform (negative CAR)	Over-perform (positive CAR)
Count	85	58
Percentage	58%	41%

Observation: 58% all corporations undergoing CEO change were underperforming (having a negative CAR) prior to CEO turnover.

Table 5.2: Company size & performance prior to CEO turnover			
Company size	Count	Underperform (negative CAR)	Over-perform (positive CAR)
Small	51	75%	25%
Medium	47	54%	46%
Large	45	48%	52%

Observation: 75% of all small corporations were underperforming at CEO change, whereas 54% of mid-sized corporations were underperforming, versus 48% of large corporations underperforming at CEO change

Table 5.3: CAR Data set characteristics			
	Mean	Median	Skewness
Pre event CAR	-7.0%	-7.4%	1.15
Post event CAR	6.5%	1.5%	0.91
CAR difference	13.6%	4.0%	0.58

Observation: the pre event CAR has a mean of -7%, indicating that, prior to CEO turnover, corporations were underperforming their peers by 7%.

Table 5.4: CEO Tenure at departure		
Average departing CEO tenure	Underperform (negative CAR)	Over-perform (positive CAR)
Count	85	58
Number of years	7.26	7.43

Observation: there is very little difference between the average CEO tenure of underperforming corporations and over performing corporations.

Table 5.1 shows that, of all the corporations undergoing CEO turnover, 58% of the corporations were underperforming their peers in the year prior to the turnover event. The observation drawn is that poor corporate performance is a major contributing factor to CEO turnover.

Table 5.2 then tests to see whether corporation size has an effect on pre event corporate performance. 75% of small corporations undergoing CEO turnover were underperforming their peers in the year immediately prior to the turnover event. This result indicates that poor corporate performance in small corporations is a dominant driver of CEO turnover. 54% of medium sized corporations were underperforming their peers immediately prior to the CEO turnover event, indicating that, in medium sized corporations, poor corporate performance is still (although marginally) the major trigger for CEO turnover. In respect of large corporations, only 48% were underperforming their peers at CEO turnover, indicating that for large corporations, corporate performance is not the dominant cause of CEO turnover.

Table 5.3 shows the data set characteristics of pre event CAR population. The mean of the pre event CAR data set is negative 7%, indicating that on average, corporations undergoing CEO turnover were under performing their peers by 7%.

Table 5.4 shows the average CEO tenures of both underperforming and over performing corporations. Underperforming CEOs have an average tenure of 7.26 years, whereas the average CEO tenures of over performing corporations is 7.43 years. The conclusion drawn is that there is very little difference between the average tenures of underperforming and over performing CEOs.

In summary, the characteristics of the total prevent CAR data set showed that on average, corporations undergoing CEO change were underperforming their peers; however, a very different picture is painted when dissecting the same data by corporation size. Poor performance is the dominant driver of CEO turnover in small corporations, but not in large corporations.

5.2.2 Research question 2

Research question 2 asks the question of a possible relationship between departing CEO age and/or tenure and pre event corporation performance. The question addresses the CEO shelf life debate and whether CEO age and tenure has an effect on corporate performance.

Hypothesis 2a: The null hypothesis states that pre event CARs are not correlated with departing CEO age. The alternate hypothesis states that pre event CARs are correlated with departing CEO's age.

Hypothesis 2a is addressed by Figure 5.

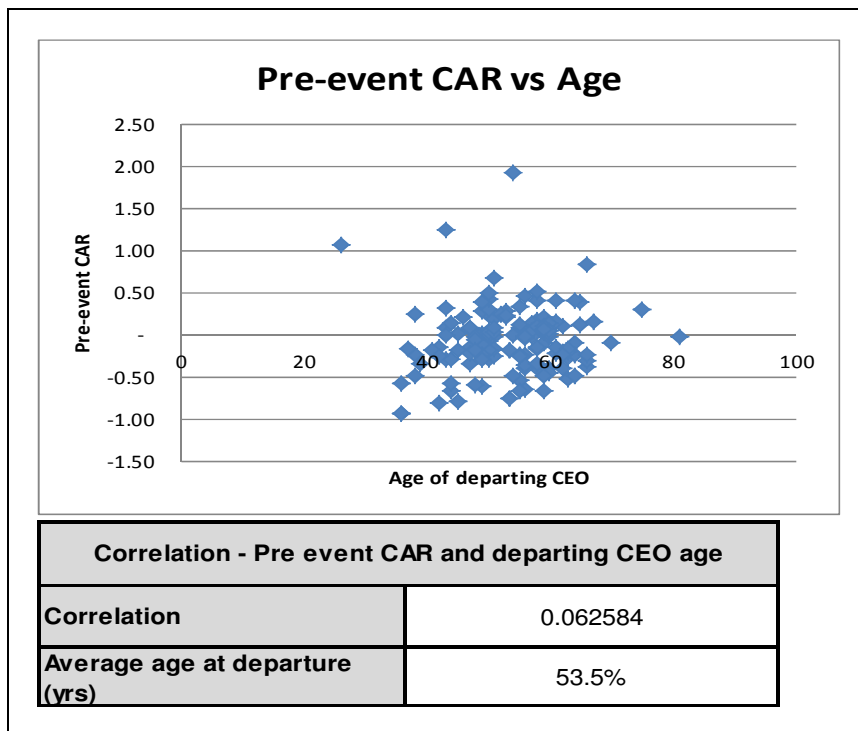


Figure 5 Test for correlation between departing CEO age and corporate performance

Figure 5 illustrates the scatterplot of the pre event CAR versus age, showing no distinct pattern or trend, Further, a correlation of less than 0.2 shows a very weak or no relationship (Salkind, 2013), therefore one can conclude that there is no relationship between departing CEO age and pre event corporate performance, resulting in a failure to reject the null hypothesis in respect of hypothesis 2a.

Hypothesis 2b: The null hypothesis states that pre event CARs are not correlated with departing CEO tenure. The alternate hypothesis states that pre event CARs are correlated with departing CEO tenure.

Hypothesis 2b investigates a possible relationship between departing CEO tenure and pre event corporate performance, and is addressed by Figure 6.

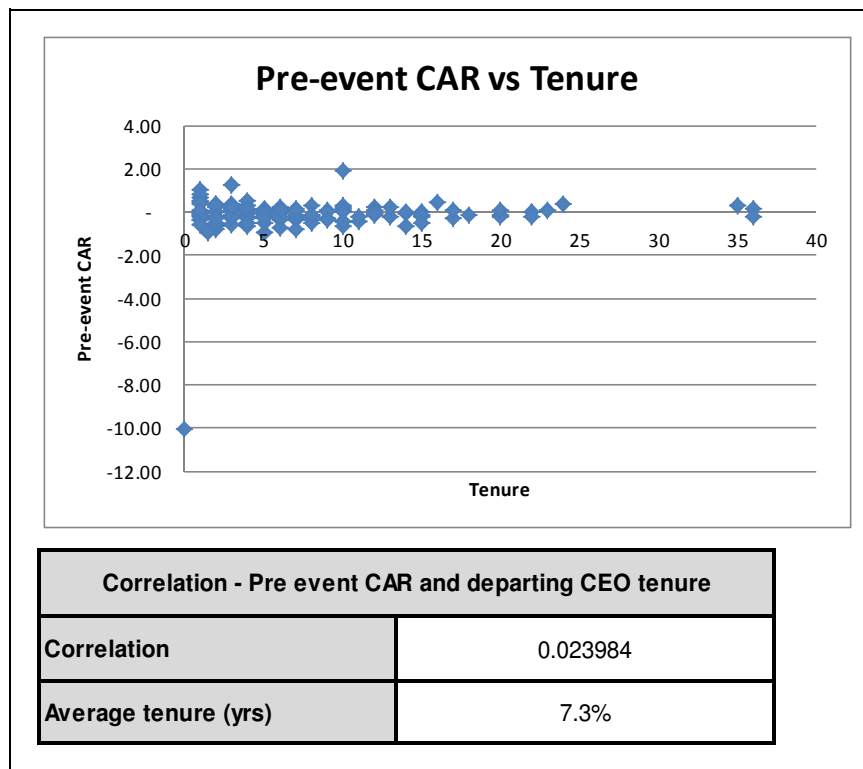


Figure 6 Test for correlation between departing CEO tenure and corporate performance

Figure 6 illustrates the scatterplot of pre event CAR versus CEO tenure showing no distinct pattern or trend, Further, a correlation of less thanr 0.2 shows a very weak or no relationship (Salkind, 2013), therefore one can conclude that there is a very weak to no relationship between departing CEO tenure and pre event corporate performance, resulting in a failure to reject the null hypothesis in respect of hypothesis 2b.

The above correlations are in respect of CEO age and tenure in relation to corporate performance was conducted on the full pre event CAR data set. Of interest, was the test to see whether the variable of company size could shed any further light on the matter of age and tenure in relation to corporate performance.

A CHAID decision tree, suitable for non-normal data was used (Figure 7).

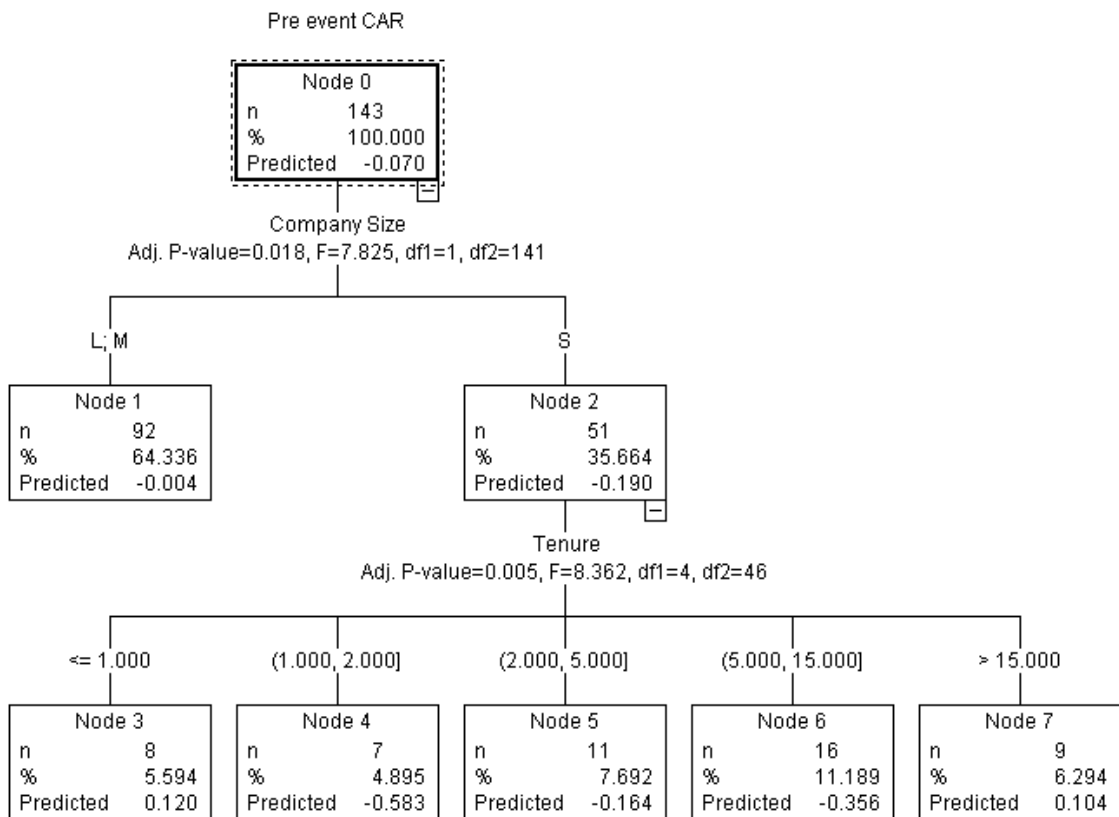


Figure 7 CHAID decision tree – significant factors in the pre-event corporate performance

Figure 7 finds corporation size as a significant predictor of pre event CAR (significance set at 5%, P-value of 0.018). Within small companies tenure was a significant predictor (P-value of 0.005). CEOs with tenure of one to two years predicted the worst pre event performance, and tenures of one year and more than 15 years predicted the best performance.

Table 6 investigates CEO tenure and age in respect of corporate performance.

Table 6 CEO tenure and age in relation to pre event corporate performance

Table 6.1: CEO Tenure at departure		
Average departing CEO tenure	Underperform (negative CAR)	Over-perform (positive CAR)
Count	85	58
Number of years	7.26	7.43

Observation: there is very little difference between the average CEO tenure of underperforming corporations and over performing corporations.

Table 6.2: Average CEO age at departure		
Average departing CEO age	Underperform (negative CAR)	Over-perform (positive CAR)
Count	85	58
Number of years	53.21	53.95

Observation: there is very little difference between the departing CEO average age of underperforming corporations and over performing corporations.

Table 6.1 illustrates that there is very little difference between the average CEO tenures of underperforming (7.26 years) and over performing corporations (7.43 years), indicating that CEO tenure has little or no effect on corporation performance.

Similarly, table 6.2 illustrates that there is very little difference between the average CEO age of underperforming (53,21 years) and over performing corporations (53.95 years), indicating that CEO age has little or no effect on corporate performance.

In summary in respect of research question 2, analysis of the total pre event CAR data set finds that there is no correlation between corporation performance and the variables of CEO age and tenure. Further, the average CEO ages and tenures of underperforming corporations are very similar to those of over- performing corporations, indicating that age and tenure have no effect on corporate performance. Therefore no evidence is found in support of the assertion that CEO's are subject to a shelf life.

However, dissecting the data by corporation size once again illustrates a different picture (figure 7), with CEO tenure being shown to be a significant factor (significant at the 5% significance level, with a P-value of 0.005) in small corporations. Further, in small corporations, tenure in excess of 15 years (figure 7) yields a positive predicted corporation performance, offering evidence contrary to the CEO shelf life assertion in small corporations.

5.2.3 Research Question 3

Research question 3 investigates whether the pre event circumstances (pre event CAR and pre event variables) have a significant effect on the post event corporate performance. The pre event circumstances are compared to both post event CAR and CAR difference data sets. The variables of departing CEO age, departing CEO tenure and company size are investigated in search of further insights.

Hypothesis's 3a to 3d

Hypothesis 3a:

The null hypothesis states that no significant relationship exists between the pre event CAR and the post event CAR. The alternate hypothesis therefore states that a significant relationship exists between the pre event CAR and the post event CAR.

Hypothesis 3b:

The null hypothesis states that the age of the outgoing CEO has no significant effect on the post event CAR. The alternate hypothesis therefore states that the age of the outgoing CEO has a significant effect on the post event CAR.

Hypothesis 3c:

The null hypothesis states that the tenure of the outgoing CEO has no significant effect on the post event CAR. The alternate hypothesis therefore states that the tenure of the outgoing CEO has a significant effect on the post event CAR.

Hypothesis 3d:

The null hypothesis states that the corporation size has no significant effect on the post event CAR. The alternate hypothesis therefore states that corporation size has a significant effect on the post event CAR.

Hypothesis 3a investigates the relationship between pre and post event CARs and Hypotheses 3b to 3d are answered by the use of multifactor models to explore the possible effects that the pre event variables of departing CEO age, tenure and company size have on post event CAR. The GLM and CHAID models are both predictive models. Predictive models highlight which factors are significant in predicting the outcome measurement.

Table 7 investigates a possible relationship between the pre event CAR variables of corporate performance, departing CEO tenure, age and corporation size in respect of post event corporate performance.

Table 7 GLM: pre event factors predicting post event CARs

Tests of Model Effects			
Source	Type III		
	Wald Chi-Square	df	Sig.
(Intercept)	0.632	1	0.426
Pre event CAR	1.124	1	0.289
Tenure	0.031	1	0.86
Age_Departing	0.329	1	0.566
Company Size	1.333	2	0.514
Pre-event under/over performance	0.109	1	0.741
CAR_AdjModel: (Intercept), Pre event CAR,			

The GLM model per Table 7 finds that there are no significant pre-event factors (at a 5 % significance level) to predict post event CARs. Further, modelling the same factors using a CHAID decision tree found significance only at the 20% level for pre event circumstances predicting post event CAR performance.

In respect of hypotheses 3a to 3d, the conclusion is fail to reject the null hypothesis.

Hypothesis's 3e to 3h

These hypotheses are a repeat of hypotheses 3a to 3d, with the exception of using CAR difference data set in place of post event CAR.

Hypothesis 3e:

The null hypothesis states that no significant relationship exists between the pre event CAR and the CAR difference. The alternate hypothesis therefore states that a significant relationship exists between the pre event CAR and the CAR difference.

Hypothesis 3f:

The null hypothesis states that the age of the outgoing CEO has no significant effect on the CAR difference. The alternate hypothesis therefore states that the age of the outgoing CEO has a significant effect on the CAR difference.

Hypothesis 3g:

The null hypothesis states that the tenure of the outgoing CEO has no significant effect on the CAR difference. The alternate hypothesis therefore states that the tenure of the outgoing CEO has a significant effect on the CAR difference.

Hypothesis 3h:

The null hypothesis states that the corporation size has no significant effect on the CAR difference. The alternate hypothesis therefore states that corporation size has a significant effect on the CAR difference.

Hypothesis 3e investigates the relationship between pre event CAR and CAR difference and Hypotheses 3f to 3h are answered by the use of multifactor models to explore the possible effects that the pre event variables of departing CEO age, tenure and company size have on CAR difference.

Table 8 investigates a possible relationship between the pre event CAR variables of corporate performance, departing CEO tenure, age and corporation size in respect of CAR difference.

Table 8 GLM: pre event factors predicting CAR differences

Source	Type III			
	Wald Chi-Square	df	Sig.	
(Intercept)	5.187	1	0.023	
Pre event CAR	79.893	1	0	TRUE
Tenure	0	1	0.993	
Age_Departing	4.532	1	0.033	TRUE
Company Size	0.948	2	0.623	
Pre-event under/over performance	0.059	1	0.809	
(Intercept), Pre event CAR, Tenure , Age_Departing				

The GLM of Table 8 finds that pre event CAR and age of the departing CEO are significant factors in predicting CAR differences, at a 5% significance level.

The model was re-fitted with only the significant factors showing the significance strengthening (Table 9).

Table 9 GLM: pre event factors predicting CAR differences – modelled with only significant factors.

Tests of Model Effects			
Source	Type III		
	Wald Chi-Square	df	Sig.
(Intercept)	5.482	1	0.019
Pre event CAR	164.569	1	0
Age_Departing	5.099	1	0.024
(Intercept), Pre event CAR, Age_Departing , AGE			

TRUE
TRUE

The reduced variable GLM confirmed the pre event CAR and departing CEO age as being significant predictors of CAR differences.

A CHAID decision tree model was also fitted with pre event factors to predict CAR differences, for further validation. The results are illustrated in Figure 8.

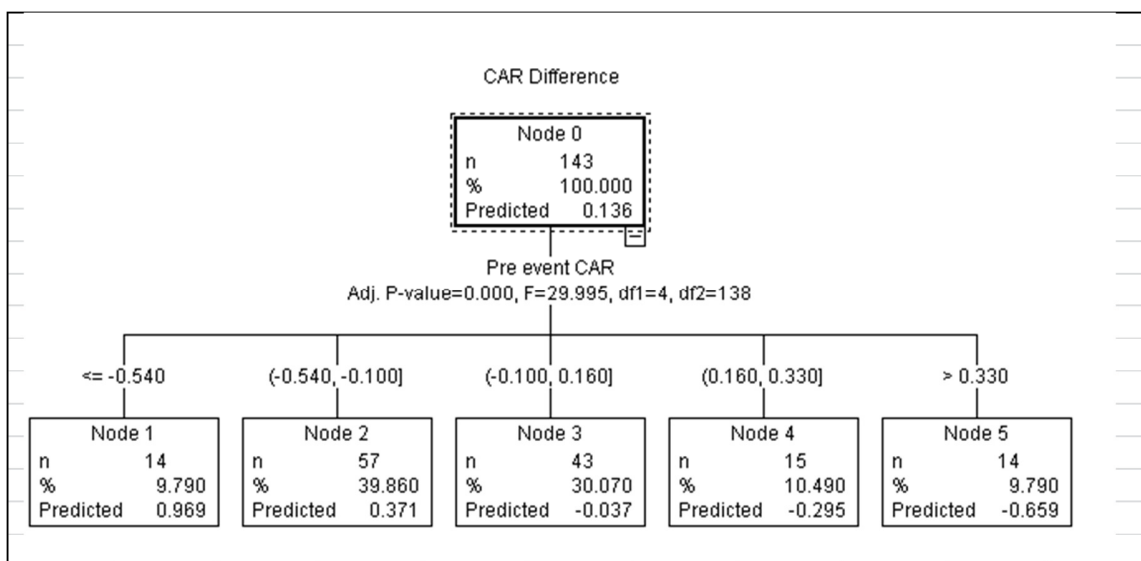


Figure 8 CHAID decision tree model: pre event factors predicting CAR differences

In respect of the CHAID decision tree model (Figure 8), the pre event CAR was the only significant factor found to predict CAR difference (P-value of 0). Further, the worse the pre event CAR, the larger is the CAR difference. If the pre event CAR was negative 54% or worse, the predicted improvement in corporate performance post the turnover event is

97%. Conversely, if the pre event corporate performance was positive 33% or better, the predicted deterioration in corporate performance post the turnover event negative 66%.

The relationship between pre event CAR and CAR difference was further explored using linear regression (Salkind, 2013) per figure 9.

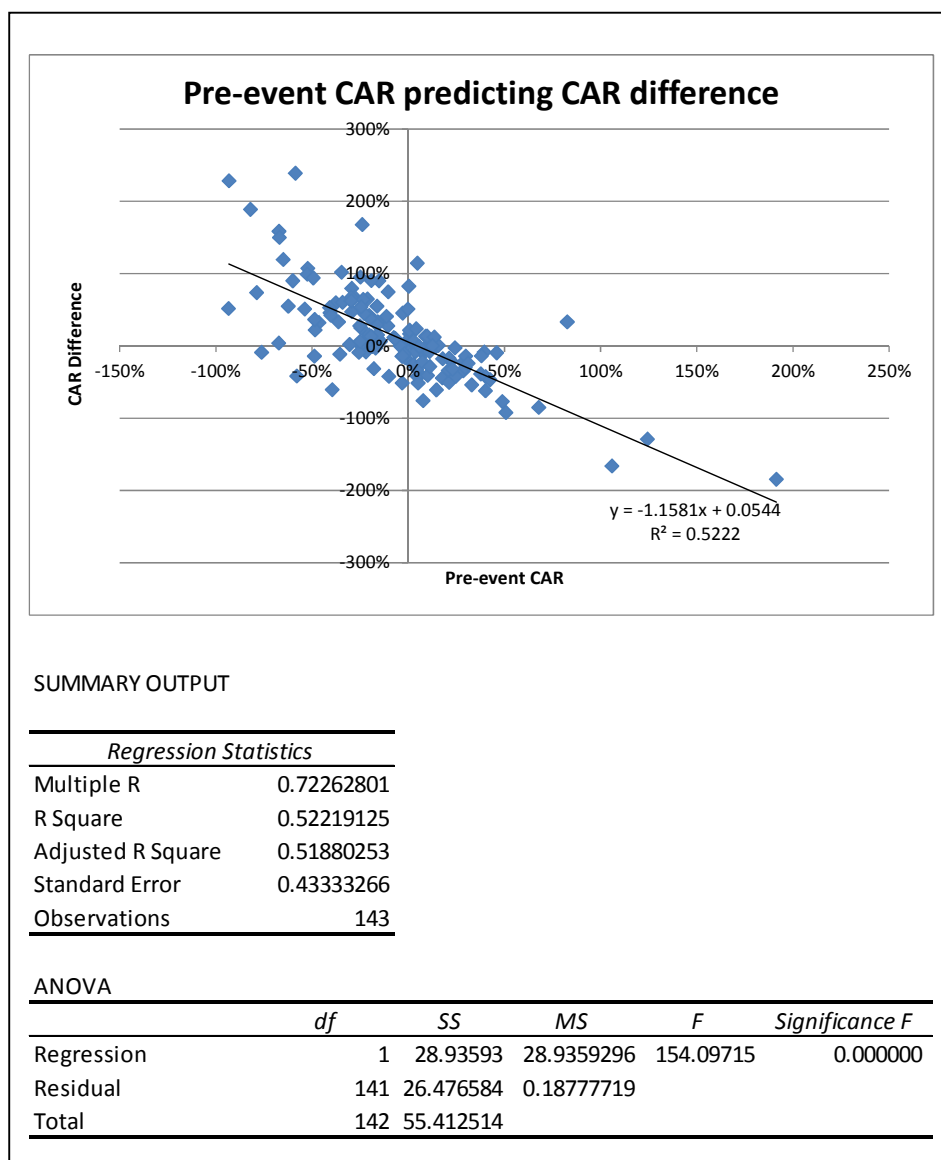


Figure 9 Linear regression: Pre event CAR predicting CAR difference

The scatterplot per figure 9 yields the linear regression line of

$$\text{CAR difference} = -1.1581\text{Pre CAR} + 0.0544 \quad (\text{Formula 5})$$

Further, the calculated R^2 of 0.522 shows a moderate relationship (Salkind, 2013) between pre event CAR and CAR difference.

The strength of the relationship between pre event CAR and CAR difference was further explored by use of the F -test, being “a robust test of the difference two or more sample means” (Salkind, 2013, p. 337). The significance of the F -test was zero (figure 9), indicating a very strong relationship between pre event CAR and CAR difference.

Table 5.2 showed corporation size to be an important factor in determining the relationship between pre event corporate performance and CEO turnover. Figure 10 investigated whether the regression equation of Formula 5 was affected by corporation size.

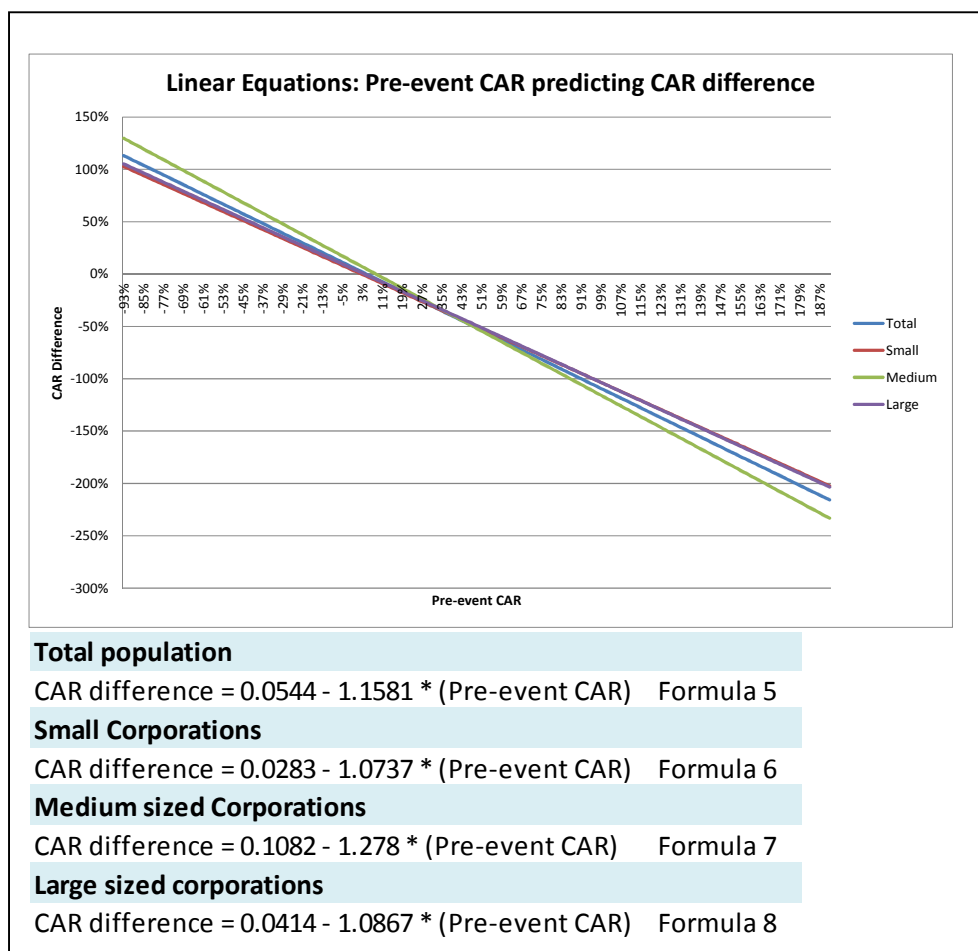


Figure 10 Pre event CAR predicting CAR differences by corporation size

Figure 10 shows the regression equations in respect of small corporations (Formula 6), Medium corporations (Formula 7) and large corporations (Formula 8). However the graphical presentation of Figure 10 shows there to be very little difference in the regression equations calculated by corporation size.

The data have yielded linear regression equations (formulas 5 to 8) predicting post CEO turnover corporate performance based on the level of pre event corporate performance. The relationship is statistically relevant (the F-test of figure 9 showing strong significance) and the R^2 of Figure 9 showing a moderate relationship. The researcher submits that the formulas 5 to 8 have sufficient statistical relevance to serve as useful predictors of post CEO turnover corporate performance, taking into account pre CEO turnover corporate performance.

In summary, the conclusion to hypothesis 3e is therefore to reject the null hypothesis; there being a statistically significant relationship (at the 5% significance level) between the pre event CAR and CAR difference.

The conclusion in respect of hypothesis 3f is unclear with the GLM finding age of the departing CEO to be significant, but the CAID decision tree finding no such significance at the 5% significance level. The researcher suggests that the finding of the CHAID model to be more likely as there is no obvious intuitive link between age of the departing CEO and the post event corporate performance. The most likely conclusion to hypothesis 3f is therefore fail to reject the null hypothesis.

The conclusion in respect of hypotheses 3g and 3h is fail to reject the null hypothesis, with there being no relationship between post event corporate performance and the variables of departing CEO tenure and corporation size.

5.2.4 Research question 4

Question 4 covers the most important question of this research project– are company results improved by CEO turnover?

The first test conducted in exploring answers to research question 4 is a repeat of van Zyl (2007)'s test (hypothesis 4a), conducted from a curiosity perspective to investigate whether similar results are found in the ambit of vastly differing data sets.

Hypothesis 4a: The null hypothesis states that no significant cumulative abnormal returns post CEO turnover exist. The alternate hypothesis therefore states that there are significant cumulative abnormal returns post CEO turnover.

The van Zyl (2007) post event window was three years, versus two years used for the purposes of this research project. Although the post event CAR data set was shown to be non-normal, a t-test was done to replicate van Zyl (2007)'s test.

Table 10: One sample t-test

One Sample T-Test	
H0: Post-event CAR = 0%	
Count	143
Mean	6.55%
SD	0.436181034
Std Error	0.03647529
Hypothesised Mean	0
alpha	5.00%
number tails	2
degrees of freedom	142
T STAT	1.794561958
p-value	7.485%
Critical Value	1.976810994
Significance	No. Do not reject the null hypothesis The mean is not significantly different from 0

The result of the replication of van Zyl (2007)'s test fails to reject the null hypothesis, the same result as reported by van Zyl (2007).

Hypothesis 4b: The null hypothesis states that there is no significant improvement from the pre event CAR to the post event CAR. The alternate hypothesis therefore states that there is significant improvement from the pre event CAR to the post event CAR.

Hypothesis 4b asks the question; whether there was a significant improvement from the pre event CAR to the post event CAR, or more simply, was company performance improved by the CEO turnover event.

To compare two non-normal independent samples, the preferable test to use is the Mann-Whitney U test (Salkind, 2013).

The Mann-Whitney U test is a non-parametric test that can be used to test the null hypothesis that two populations are the same. Table 11 contains the results of the Mann-Whitney U test.

Table 11: Mann-Whitney U test for differences between pre and post event CARs

<p><u>Z, U and P Values</u></p> <p>Z score- 2.7727</p> <p><i>By Meta Numerics</i></p> <p>U-value: 12246</p> <p>P-value (left probability): 0.9981</p> <p>P-value (right probability): 0.0019</p> <p><i>By ALGLIB</i></p> <p>P-value (combined): 0.0054</p>
--

Table 11 finds that there is a significant difference between the data sets of pre event CAR and post event CAR (P-value of 0.0054), leading to the conclusion in respect of hypothesis 4b of reject the null hypothesis.

Once significance is established, it is important to establish in which direction the difference between the two data sets lies. The question is answered by the data set's summary statistics shown in Table 5.3 and repeated in table 12.

Table 12 CAR data set characteristics

	Mean	Median	Skewness
Pre event CAR	-7.0%	-7.4%	1.15
Post event CAR	6.5%	1.5%	0.91
CAR difference	13.6%	4%	0.58

The overall improvement in corporate performance due to CEO turnover is given by the CAR difference average, showing an average improvement of 13.6%.

For validation purposes, hypothesis 4b is also tested using a t-test, in the knowledge that the two data sets are not normally distributed (Table 13).

Table 13: T-test of pre and post event CARs

t-Test: Paired Two Sample for Means		
	<i>Pre event CAR</i>	<i>Post event CAR</i>
Mean	-0.07007192	0.065457169
Variance	0.151925993	0.190253894
Observations	143	143
Pearson Correlation	-0.1413098	
Hypothesized Mean Difference	0	
df	142	
t Stat	-2.59442293	
P(T<=t) one-tail	0.005234366	
t Critical one-tail	1.655655173	
P(T<=t) two-tail	0.010468733	
t Critical two-tail	1.976810963	
Ho: Mean CAR pre-event = mean CAR post-event		
P-value <0.05	TRUE	
Therefore,	Reject null hypothesis	

The t-test, shown in Table 13, is in agreement with the findings of the Mann-Whitney U test in respect of the significance of the difference between the data sets of pre and post event CARs.

The conclusive result of hypothesis 4b is therefore to reject the null hypothesis, there being a statistically significant difference (significance set at the 5% level) between the pre event and post event CARs. On average, CEO turnover improved corporation results by 13.6%.

Hypothesis's 4c to 4e: These hypotheses test the relationship between the post event corporate performance and the variables of incoming CEO age, internal or external CEO placement and corporate size.

Hypothesis 4c:

The null hypothesis states that the age of the incoming CEO has no significant effect on the post event CAR. The alternate hypothesis therefore states that the age of the incoming CEO has a significant effect on the post event CAR.

Hypothesis 4d:

The null hypothesis states that there is no significant difference between the post event CARs of those companies making internal appointments versus those appointing externally. The alternate hypothesis therefore states that there is a significant difference between the post event CARs of those companies making internal appointments versus those appointing externally.

Hypothesis 4e:

The null hypothesis states that the corporation size has no significant effect on the post event CAR. The alternate hypothesis therefore states that corporation size has a significant effect on the post event CAR.

Table 14 uses GLM to test the relationship between post event corporate performance and the variables of incoming CEO age, internal versus external CEO placement and corporation size.

Table 14 GLM: post event factors to predict post event CAR

Tests of Model Effects			
Source	Wald Chi-Square	Type III df	Sig.
(Intercept)	5.985	1	0.014
Age_Incoming	4.31	1	0.038
Internal / External	0.902	2	0.637
Company Size	0.426	2	0.808
AGE Difference	0.002	1	0.964
AGE Up / Down	0.778	1	0.378

Dependent Variable: Post event CAR_AdjModel: TRUE

Table 14 shows age of the incoming CEO is shown to be a significant predictor of post-event CAR, with no significance found in respect of internal/external CEO placement or corporation size.

The same factors are modelled using the CHAID decision tree methodology (Figure 11).

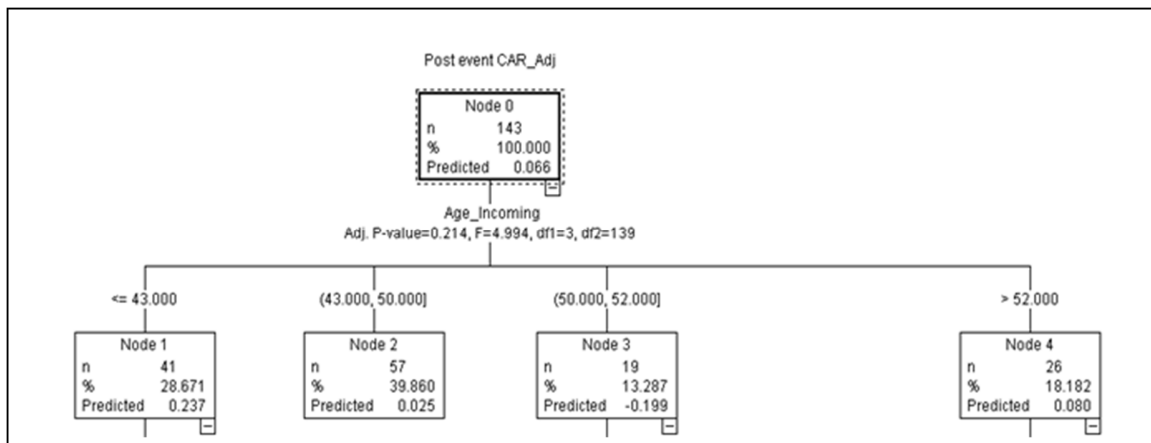


Figure 11 CHAID decision tree: post event factors to predict post event CAR

In contrast to the GLM test, the CHAID decision tree does not find any of the variables to be significant at the 5% level. However, after relaxing the significance criteria to 25%, it finds the age of the incoming CEO to be the most important of the variables.

Should the GLM test be correct in respect of significance, the CHAID decision tree test gives insight into which age groups yield the best post event CARs. The pre-43-year-olds are predicted to give the highest post event CAR, followed by the age group 43 to 50 years. The 50 to 52 year age group are predicted to have the worst post event CAR.

The conclusion in respect of hypothesis 4c is to reject the null hypothesis (in accordance with the GLM test), whereas the conclusion for hypotheses 4d and 4e is to fail to reject the null hypothesis.

Hypothesis's 4f to 4h: Hypothesis's 4f to 4h repeat questions of hypothesis's 4c to 4e, except that the variables are tested versus CAR difference, and not post event CAR.

Hypothesis 4f:

The null hypothesis states that the age of the incoming CEO has no significant effect on the CAR difference. The alternate hypothesis therefore states that the age of the incoming CEO has a significant effect on the CAR difference.

Hypothesis 4g:

The null hypothesis states that there is no significant difference between CAR difference, of those companies making internal appointments versus those appointing externally. The alternate hypothesis therefore states that there is a significant difference between the CAR difference of those companies making internal appointments versus those appointing externally.

Hypothesis 4h:

The null hypothesis states that the corporation size has no significant effect on the CAR difference. The alternate hypothesis therefore states that corporation size has a significant effect on the CAR difference.

Hypothesis's 4f to 4h repeat questions of hypothesis's 4c to 4e, except that the variables are tested versus CAR difference, and not post event CAR. The results are as follows in Table 15.

Table 15 GLM: post- event factors to predict CAR differences

Tests of Model Effects			
Source	Type III		
	Wald Chi-Square	df	Sig.
(Intercept)	3.732	1	0.053
Age_Incoming	1.483	1	0.223
Internal / External	1.815	2	0.403
Company Size	1.847	2	0.397
Age_Incoming , Internal / External, Company Size, AGE			

No significance predictors are found in respect of age of the incoming CEO, internal versus CEO placement or company size. The corresponding CHAID decision tree, modelling the same factors, also found no significant predictors in respect of CAR difference. The conclusion in respect of hypotheses 4f to 4h is fail to reject the null hypothesis.

In respect of Hypotheses 4c to 4h, only the age of the incoming CEO was found to be a significant predictor by the GLM in terms of post event CAR. However, descriptive statistics regarding the same questions yielded some interesting insights. These are contained in the Table 16.

Table 16 Post turnover event descriptive statistics

16.1: External/Internal placement and company size			
	% external placements	% internal placements	Total
Large	16%	84%	100%
Medium	27%	73%	100%
Small	26%	75%	100%

Observation: All sized companies show a propensity for internal placement, and in particular large companies.

16.2: Internal/external placement, company size and improved corporate performance		
	% external placements	% internal placements
Large	-1%	4%
Medium	15%	12%
Small	24%	23%
Total	15%	13%

Observation: In large corporations, external placements cause a 1% decline in performance, versus internal placements giving a 4% performance improvement. For medium corporations, external placements improved results by 15%, whereas internal placements improved performance by 12%. For small corporations, external placements gave a 24% performance improvement, whereas internal placements yielded a 23% improvement in results

Table 16.3: Age, company size and improved corporate performance		
	Age Down (younger new CEO)	Age Up (older new CEO)
Large	6%	-6%
Medium	-5%	68%
Small	31%	-4%
Total	11%	20%

Observation: In large corporations, younger CEO's gave a 6% improvement in results, versus a decrease in results of 6% yielded by older CEOs. In medium corporations, younger CEOs decreased performance by 5%, whereas older CEOs improved performance by 68%. In small corporations, younger CEOs improved results by 31%, whereas older CEOs reduced performance by 4%.

Table 16.4: Age, internal/external placement and improved corporate performance		
	Age Down (younger new CEO)	Age Up (older new CEO)
External placement	1%	48%
Internal placement	14%	9%
Total	11%	20%

Observation: Young external placements give a 1% improvement in results, whereas an older external placement improves results by 48%. Young internal placements improve results by 14%, versus older internal placements who increase results by 9%.

Table 16.1 illustrates the propensity of all sizes of corporation to promote a new CEO internally. This tendency is most dominant in large corporations where 84% of all new CEO placements are from internal.

Table 16.2 illustrates the effect on corporate performance by the new CEO, across the variables of internal/external placement and company size. In large corporations, external placements cause a 1% decline in corporate performance, versus a 4% performance improvement achieved by internal placements. In medium sized corporations, external

placements yield a 15% performance improvement, versus an improvement of 12% achieved by internal placements. In respect of small corporations, external placements give a 24% improvement in corporate performance versus a 23% improvement achieved by internal placements. Overall, external placements give a 15% improvement in corporate performance versus a 13% achieved by internal placements.

Table 16.3 illustrates the effect on corporate performance by the new CEO, across the variables of age and company size. In large corporations, younger CEOs give a 6% improvement in corporate results, versus a decline in performance of 6% achieved by older placements. In medium sized corporations, younger CEOs yield a 5% performance reduction, versus an improvement of 68% achieved by older CEOs. In respect of small corporations, younger CEOs give a 31% improvement in corporate performance versus a 4% performance reduction achieved by older placements. Overall, younger CEO placements gave an 11% improvement in corporate performance versus a 20% improvement achieved by older CEOs.

Table 16.4 illustrates the effect on corporate performance by the new CEO, across the variables of age and internal/external placement. Younger external placements gave a 1% improvement in corporate performance, versus a 48% improvement yielded by older external placements. Younger internal placements gave a 14% performance improvement versus a 9% improvement achieved by older internal placements.

In summary, some interesting findings have been revealed by the tests and analysis conducted in chapter 5. In the following chapter 6, the findings of chapter 5 are contrasted with the literature reviewed in chapter 2, with the issues of supportive, contradictory or additional new evidence being highlighted and discussed.

Chapter 6 Discussion of the results

Chapter 5 performed the tests and analysis on the data sets as prescribed by the research design and research questions, tabulating and briefly discussing the findings. This chapter 6 discusses the findings in detail, contrasting the findings to the literature review and highlighting any new additional insights surrendered by the data sets.

6.1 Sample size and sample characteristics

As discussed in paragraph 5.1, the final sample yielded 143 CEO turnover events recorded by SENS for the period from 1 April 2007 to 31 May 2012. van Zyl (2007), in her study of share price movements on the JSE post CEO turnover, recorded a sample 74 CEO turnover events over the three year period for the years 2001 to 2003. The sample of 74 was reduced to only 28 CEOs who had maintained their positions three years after appointment. van Zyl (2007)'s final sample of 28 is significantly smaller than that of this research project for the following reasons:

- van Zyl (2007) considered a three year post-event window whereas this research project has a post event window of two years. Of van Zyl (2007)'s initial sample of 74 CEO turnover events, 44 were no longer in office three years after appointment. It is to be expected that a two year event window will have a lower CEO attrition rate than a three year event window.
- van Zyl (2007) excluded those corporations which were thinly traded, due mainly to some of the event windows being recorded in days. This is in accordance with the assumption implicit in the event study methodology, that the efficient market hypothesis is in operation (Muller & Ward, 2010; Hwang 2013). As this research project only has a single post event window of two years, a CAR accumulated over the two year period, the researcher considered it to be an adequate period of time to reflect a corporation's true value, and no thinly traded shares were excluded from the sample.
- van Zyl (2007) considered a three year period of SENS broadcasts, whereas this research considered a five year period.

In the only other referenced event study conducted on the JSE, Muller and Ward (2010) produced a final sample of 140 observations gathered over an eight year period. With reference to the general guideline of a sample of 30 observations required to support any particular assertion (Saunders & Lewis, 2012) and the sample sizes of other event studies conducted on the JSE (Muller & Ward, 2010 and van Zyl, 2007) it is submitted that the final sample of 143 CEO turnover events used as a basis for this research project is large enough to support the statistical findings of the research project.

The calculated data sets of pre event CAR, post event CAR and CAR difference are not normally distributed, and therefore significance testing is conducted by using non-parametric tests (Salkind, 2013).

6.2 Research question 1

Research question 1 investigates the extent that CEO turnover events in South Africa are triggered by adverse financial results, or phrased slightly differently, are CEOs held accountable for poor corporate performance which results in their removal from office.

Due to the design of the research project utilising CEO turnover announcements to gather the sample, no hypothesis testing is possible in respect of pre event corporate performance and CEO turnover because it would amount to testing the dependent variable. However, descriptive statistics yielded by the research design offered many interesting insights on the topic.

The first illustrative statistic is drawn from the characteristics of the pre event CAR data set, that the mean of the data set of pre event CAR is negative 7%. This indicates that on average, corporations undergoing CEO change on the JSE were underperforming their market peers by 7% (refer table 5.4). Further, of the sample of 143 CEO turnover events in the study, 85 of the corporations were underperforming their peers prior to CEO turnover and 58 were over-performing. Therefore, 59% of the companies undergoing CEO change were underperforming their peers prior to CEO turnover (refer table 5.1).

These results are in support of the findings of Dikolli *et al* (2014), He and Sommer (2011), and Farrell and Whidbee (2003), who all reported a very strong negative correlation between poor corporate results and CEO turnover.

The results of the research project are therefore also in contradiction with the views expressed by Khurana (1998), who maintained that no one man can be held responsible for the performance of the corporation. As the majority of corporations undergoing CEO change were underperforming (table 5.1), the research project presents persuasive evidence that, in respect of South African listed corporations, CEOs are held accountable for poor corporate performance, which in the majority of instances, results in their removal from office.

The above findings of the research project are based on the analysis of the pre event data set as a whole. However, the analysis that follows, shows that the underperformance (negative pre event CAR) is abnormally influenced by small companies.

Although the majority of the studies referenced in the literature review offered strong evidence in support of the removal of the CEO in the circumstance of poor corporate performance (Dikolli *et al*, 2014; He & Sommer, 2011 and Farrell & Whidbee, 2003), additional literature indicated that the relationship between poor corporate performance and CEO turnover was not a direct simple relationship, and that the relationship was influenced by additional factors. These additional factors included economic downturn and market shock (Jenter & Kanaan, 2011), legal and statutory compliance (Ferrell & Ferrell, 2011 and Amernic & Craig, 2013), CEO tenure (Coates & Kraakman, 2010; Dikolli *et al*, 2014), the strength of corporate governance within the corporation (Dikolli *et al*, 2014; He & Sommer, 2011; Farrell & Whidbee, 2003; Faleye, 2007; Fisman *et al* 2014 and Larmou & Vafeas, 2010), the level of CEO ownership in the corporation (Coates & Kraakman, 2010 and Abebe & Alvarado) and company size (Muller & Ward, 2010 and Cheung, 2011).

Of these additional influencing factors, the research project investigated the influence of CEO tenure and company size, with the balance of the additional factors referred to previously being beyond the scope of the research project. Coates and Kraakman (2010) found that corporate performance and CEO turnover are strongly negatively correlated during the first four years of a CEOs tenure, and that poor performance after five years has less effect on CEO turnover. Further, Dikolli *et al* (2014), who found that “CEO-turnover sensitivity to firm performance declines over a CEO’s tenure” (p. 282). Both Coates and Kraakman (2010) and Dikolli *et al* (2014) ascribed this declining relationship between CEO turnover and poor corporate results to the CEO being able to build a power base within the

corporate structures over time, making his removal for poor performance increasingly difficult.

The research project addresses the issue of CEO tenure and corporation performance by comparing the average length of departing CEO tenure of underperforming companies (a negative pre event CAR) versus the average departing CEO tenure of over-performing companies (a positive post event CAR) (Table 5.4). The average departing CEO tenure of underperforming corporations listed on the JSE was found to be 7.26 years, in comparison to an average departing CEO tenure of 7.43 years in respect of over-performing companies (Table 5.4). As the length of tenure of underperforming departing CEOs is so similar to that of over-performing departing CEOs, the inference can be drawn that no specific action is taken in respect of underperforming CEOs. This finding supports the assertions made by Coates and Kraakman (2010) and Dikolli *et al* (2014), that as CEO tenure increases, CEOs are held less accountable for poor results.

Of interest is the statistic of average departing CEO tenure. The average for the JSE is 7.3 years from data collected in the period 2007 to 2012 (Table 5.4), whereas Arbogast and Mirabella (2014) reported that in corporate USA, the average CEO tenure had decreased from ten years in the year 2000 to 8.4 years in 2012. The average CEO tenure in South Africa is therefore slightly shorter than that in the USA.

The final variable explored by the research project in respect of pre event corporate performance and CEO turnover was that of corporation size, investigating whether corporations of differing size approached poor corporate performance and CEO turnover differently. The CHAID decision tree model per Figure 7 showed corporate size to be a significant predictive factor of pre event corporate performance. This is supported by both Muller and Ward (2010) and Cheung (2011) who found materially differing results with differing corporation size. Table 5.2 illustrates the results of company size versus pre event corporate performance (pre event CAR).

Table 5.2 shows that, in respect of small corporations, 75% were underperforming (negative pre event CAR) prior to undergoing CEO change. This indicates that small corporations have a strong tendency to only undergo CEO change when corporate performance is poor, and the observation is in support of the statement by Dikolli *et al* (2014) that “CEO survival is associated with superior firm performance” (p. 281).

Of the medium sized companies undergoing CEO turnover, 54% were underperforming (a negative pre event CAR) and 46% were out-performing (a positive pre event CAR) (Table 5.2). This indicates that, in contrast to small companies, CEO turnover in medium sized companies is not driven primarily by poor corporate performance, indicating the probable introduction of the concepts of succession planning and an approach to periodical CEO turnover. Apart from Muller and Ward (2010) and Cheung (2011) who found that corporate size significantly affected the findings of event studies; no literature was found that investigated the relative performance of different sized corporations prior to CEO turnover.

Large corporations showed the opposite tendency to small corporations, with 48% underperforming at CEO turnover and 52% out-performing (table 5.2). The concept that in large corporations, most CEO turnover is conducted in the ambit of out-performance is counter intuitive and questions the statement made by Dikolli *et al* (2014) that “CEO survival is associated with superior firm performance” (p. 281). However, the finding of the research project is supported by Naveen (2006) who found that, the larger and more complex a firm is, the higher is the likelihood that the firm will have an entrenched CEO succession process, resulting in internal CEO succession. Naveen (2006) accordingly found that an entrenched CEO succession process was the primary driver of CEO turnover in large complex corporations. By deduction, in large corporations, corporate performance is not the dominant factor giving rise to CEO turnover.

The finding of the research project is also in support of the assertion that in ‘large’ corporate South Africa, corporate governance procedures are well developed, with a strong focus on succession planning, exhibiting a resistance to allowing CEOs to become entrenched in their positions. Both Coates and Kraakman (2010) and Dikolli *et al* (2014) found that, in the ambit of weak corporate governance, CEOs entrench their positions after four years of tenure, significantly diluting the correlation between poor corporate performance CEO turnover. The researcher submits that this particular finding is in support of a culture of solid corporate governance within the larger corporations in South Africa.

In summary, in respect of research question 1, the finding that most corporations undergoing CEO change was underperforming their peers (Table 5.4) supports the assertion that the CEO is held accountable for poor corporate performance resulting in CEO turnover. However, this support is based on the analysis of the pre event CAR data

set as a whole. Once the pre event CAR data set is dissected by corporation size (Table 5.2), it is evident that the result is skewed by the effect of small corporations, where 75% of CEO turnover related to pre event underperformance. In contrast, large corporations undergoing CEO turnover had a small majority of CEO turnover events taking place in the ambit of over-performance. Further, the tenure of underperforming CEOs was shown to be similar to that of over-performing CEOs, indicating that underperforming CEOs were not treated all that differently to over-performing CEOs. Therefore, with the exception of small companies, there was little evidence that CEOs of JSE listed companies are held accountable for poor corporate results.

6.3 Research question 2

Research question 2 investigates the relationship between departing CEO age and tenure and corporate performance, addressing the issue of whether the CEO is subject to a shelf life. The CEO shelf life debate is centred on the concept that any single person possesses a given portion of knowledge and originality (Chen, 2013), and it is unlikely that an individual can lead and motivate innovation for any extended period of time (Chen, 2013). Superannuation and an individual's declining mental capacity with age is the second leg to the shelf life debate (Arbogast & Mirabella, 2014 and Vintila & Gherghina, 2012).

Hypothesis 2a

Hypothesis 2a: the null hypothesis states that the pre event CARs are not correlated with departing CEO age. A correlation between these two variables (Figure 5) found the degree of correlation to be 6.2%, which is very low (Salkind, 2013), therefore, the conclusion of the test is to fail to reject the null hypothesis; there being no relationship between departing CEO age and pre event corporate performance. Further, Table 6 shows the average age of underperforming departing CEOs to be 53.2 years, and the average age over-performing departing CEOs to be 53.9 years; with there being no significant difference between the departing ages of underperforming and over-performing CEOs. As a consequence, the research project finds no evidence in support of increasing CEO age leading to decreasing corporate performance. In contrast, Arbogast and Mirabella (2014) and Vintila and Gherghina (2012) both found that increasing CEO age significantly

adversely affected corporate performance. The researcher offers no possible explanation to this contradiction in findings.

Hypothesis 2b

Hypothesis 2b: the null hypothesis states that the pre event CARs are not correlated with departing CEO tenure. Figure 6 shows a scatterplot of the two variables and finds the degree of correlation to be 2%. Due to the very low correlation (Salkind, 2013), the conclusion of the test is to fail to reject the null hypothesis; there being no relationship between departing CEO tenure and pre event corporate performance. However, this correlation was calculated on the entire data set of pre event CAR. The CHAID decision tree per Figure 7 shows company size to be a significant predictor in respect of pre event CAR. Then, within small companies, tenure of the departing CEO is shown to be significant, with a P-value of 0.005. Interestingly, CEOs of tenures of one year and more than 15 years predicted the best performance, but CEOs of between one and two years tenure predicted the worst performance. Further, Table 6 shows the average tenure of underperforming departing CEOs to be 7.2 years, and the average tenure of over-performing departing CEOs to be 7.4 years; with there being no material difference between the tenures of underperforming and over-performing CEOs. Vintila and Gherghina (2012) found that increased CEO tenure, in contrast to age, showed improved corporate performance. The finding of the research project that, within small companies, tenure of more than 15 years improves corporate performance supports the finding of Vintila and Gherghina (2012), but only in the circumstance of small corporations.

In summary, in respect of research question 2, no evidence is found in support of the concept that CEOs are subject to a shelf life. Only departing CEO tenure in small companies was shown to be significant in relation to pre event corporate performance, and within these small companies, CEOs of more than 15 years tenure showed improved corporate performance.

6.4 Research question 3

Research question 3 investigates whether the pre event circumstances (pre event CAR and pre event variables) have a significant effect on the post event corporate performance. The research question arises from the work of Karaevli (2007), who found it necessary to

consider both pre and post CEO turnover contextual factors in evaluating the performance of a new CEO. To best address the question, the research project compares the pre event circumstances to both the post event CAR and CAR difference data sets. The variables of departing CEO age, departing CEO tenure and company size are also investigated.

Hypotheses 3a to 3d

Hypotheses 3a to 3d investigate whether the pre event constructs of pre event CAR, departing CEO age, departing CEO tenure and company size have an effect on post event CAR. Table 7 contains the results of Hypothesis tests 3a to 3d, showing none to be significant at a 5% significance level. Therefore, the result of all the hypotheses 3a to 3d is to fail to reject the null hypothesis. These results do not find in support of Karaevli (2007), who found the pre event corporate constructs to be fundamental in the evaluation of post event corporate performance.

However, the central theme of the research project is whether CEO turnover improves corporate results. Improvement in result has to be with reference to the pre event result, yielding CAR difference (being post event CAR less pre event CAR) as the best measure for the concept of performance improvement.

Hypotheses 3e to 3h

Hypotheses 3e to 3h repeat the experiment of hypotheses 3a to 3d by investigating the same pre event constructs of pre event CAR, departing CEO age, departing CEO tenure and company size, but relating them to CAR difference instead of post event CAR. Table 8 contains the results of hypothesis tests 3e to 3h using the GLM model. Pre event CAR and age of the departing CEO were found to be significant at the 5% level. Therefore, the result of hypotheses 3e and 3f is to reject the null hypothesis, and conversely, the result of hypotheses 3g and 3h is to fail to reject the null hypothesis. This result is therefore in strong support of the findings of Karaevli (2007), who maintained that pre event constructs were imperative in judging post event CEO performance.

The same hypotheses 3e to 3h were then tested using the CHAID decision tree (Figure 8), with only the pre event CAR being shown as being significant at a 5% level. In contrast to the GLM analysis, age of the departing CEO was shown not to be significant. The

conclusion in respect of hypothesis 3f is unclear with the GLM finding age of the departing CEO to be significant, but the CAID decision tree finding no such significance at the 5% significance level. The researcher suggests that the finding of the CHAID model to be more likely as there is no obvious intuitive link between age of the departing CEO and the post event corporate performance. The most likely conclusion to hypothesis 3f is therefore fail to reject the null hypothesis.

Of interest, is the capability of the CHAID decision tree to give predictive values for CAR difference with differing pre event CARs levels. The worst performing pre event corporations, with CARs of lower than -54%, showed the highest predicted CAR difference, projecting an improvement over pre event CAR of 97% (Figure 8). Conversely, the best performing pre event corporations, with pre event CARs in excess of 33%, showed the lowest predicted CAR difference, projecting a decline over pre event CAR of 66%.

Linear regression then was used to explore the relationship between pre event CAR and CAR difference further. Table 9 showed the calculated regression equation of:

$$\text{CAR difference} = -1.1581\text{Pre CAR} + 0.0544 \quad (\text{Formula 5})$$

Formula 5 had an R^2 of 0.522 , showing a moderate relationship (Salkind, 2013) and the F-test showed a strong level statistical significance (Figure 9).

As table 5.2 found that corporation size had a major effect on the CEO turnover decision of corporations, the possible effect of corporation size in respect of Formula 5 was tested. Figure 10 calculated the equivalent regression equations for small, medium and large corporations respectively, yielding the following regression equations:

$$\text{CAR difference}_{\text{small}} = -1.0737\text{Pre CAR}_{\text{small}} + 0.0283 \quad (\text{Formula 6})$$

$$\text{CAR difference}_{\text{medium}} = -1.2780\text{Pre CAR}_{\text{medium}} + 0.1082 \quad (\text{Formula 7})$$

$$\text{CAR difference}_{\text{large}} = -1.0867\text{Pre CAR}_{\text{large}} + 0.0414 \quad (\text{Formula 8})$$

However the graphical depiction in Figure 10 showed there to be very little difference between regression equations calculated by corporation size.

Figures 9 and 10 yielded linear regression equations (formulas 5 to 8) predicting post CEO turnover corporate performance based on the level of pre event corporate performance. The relationship is statistically relevant (the F-test of figure 9 showing strong significance) and the R^2 of Figure 9 showing a moderate relationship (Salkind, 2013). The researcher submits that the formulas 5 to 8 have sufficient statistical relevance to serve as useful predictors of post CEO turnover corporate performance, taking into account pre CEO turnover corporate performance.

This finding of the research project is both intuitive and powerful, and in its simplicity, it can be summarized as: An incoming CEO of an underperforming corporation is likely to significantly improve the performance of a corporation, whereas, an incoming CEO of an over-performing corporation is likely to significantly reduce the corporation's performance. The research finding indicates that being appointed as a new CEO of an over-performing company is comparable to being served a poison chalice. Of all the literature reviewed in this research project, only Karaevli (2007) emphasized the effect that pre CEO turnover event constructs had on post event corporate performance. However Karaevli (2007) did not investigate the effects that pre event under/over performance may have on post event corporate performance.

In summary, using the concept of CAR difference as being the most appropriate measure for improved corporate performance, the pre CEO turnover event construct of pre event corporate performance has a statistically significant effect on post event corporate performance. The act of CEO turnover is likely to improve the performance of those companies that were previously underperforming, and conversely, a new CEO is likely to reduce the performance of those companies that were previously out-performing.

6.5 Research question 4

Research question 4 asks whether company results are improved by CEO turnover. Research question 3 inadvertently wandered into the territory of question 4 by discovering that a new CEO of a previously underperforming corporation was likely to improve a corporation's performance, whereas a new CEO of a previously over performing corporation was likely reduce the corporation's future performance.

Question 4 starts with a replication of van Zyl (2007)'s test, exploring whether, in isolation positive CARs exist post CEO turnover (hypothesis 4a). It then examines the two populations of pre and post event CARs to test for significant difference, and explores the direction of the significant difference (hypothesis 4b). Finally, the variables of the age of the incoming CEO, whether the appointment is internal or external, and the possible effect of company size are tested for possible significance (hypotheses 4c to 4h).

Hypothesis 4a

Hypothesis 4a: The null hypothesis states that no significant cumulative abnormal returns post CEO turnover exist. Although the post event CAR data set has been shown to be non-normal, a t-test is done to replicate the test of van Zyl (2007). Table 10 tabulates the result of the t-test, finding a similar result to that of van Zyl (2007); fail to reject the null hypothesis. However, the interpretation of the result is different in terms of this research project. Positive cumulative abnormal returns (CARs) will exist if the companies that underwent CEO change out-performed their market peers in the post event window. Such a test can therefore make no conclusion as to whether corporate results have been improved by CEO turnover. Any judgment in respect of improvement has to relate to the corporations performance prior to the turnover event. However, having found the same result as that of van Zyl (2007), additional credibility is added to the findings of the research project.

Hypothesis 4b

Hypothesis 4b: The null hypothesis states that there is no significant improvement from the pre event CAR to the post event CAR. The hypothesis is answered in two steps, firstly using the Mann-Whitney U test to test the means of two populations (pre event CAR data set and the post event CAR data set). Should significance be found, the direction of the significance is determined by descriptive statistics. Table 11 contains the result of the Mann-Whitney U test, showing the two data sets to be significantly different at a 5% significance level. Table 12 contains the CAR data set characteristics showing the mean of the pre event CAR to be -7% and the mean of the post event CAR to be 6.5%, therefore the difference in the means is 13.6%. The conclusion is therefore that the two populations are significantly different and that on average, CEO turnover improves corporation results

(CAR difference) by 13.6%. The null hypothesis 4b is therefore rejected, as the two populations are not the same.

For purposes of interest and possible validation, hypothesis test 4b is repeated using a t-test, in the knowledge that the data sets of pre and post event CAR are not normal. Table 13 contains the results of the t-test, yielding the same result as the Mann-Whitney U test. Therefore additional comfort is added to the correctness of the result.

The result of Hypothesis 4b is in support of the findings of He, Sommer and Xie (2011), Huson *et al* (2004) and Karaevli (2007), who all reported that significant improvements in corporation results were found post CEO turnover.

In concluding on the test conducted in respect of hypothesis 4b, one must take note of the findings of the results obtained in relation to hypothesis 3e. In general, the research results of hypothesis 4b show a 13.6% improvement in post event corporate performance (CAR difference) due to CEO turnover. However, following a more detailed analysis (as shown by the tests in respect of hypothesis 3e), those companies with large negative pre event CARs showed large improvements in post event corporate performance, but those companies that were out-performing in the pre event window, showed a significant decline in post event corporate performance.

Hypotheses 4c to 4e

Hypotheses 4c to 4e: The hypotheses consider the possible effects that variables of the age of the incoming CEO, the new CEO being an internal or external placement, company size and finally the age of the incoming CEO in relation to the age of the departing CEO have on post event CAR. Table 14 contains the results of the GLM model constructed in respect of hypotheses 4c to 4e. Of the variables tested, only the age of the incoming CEO was shown to be significant at a 5% level. The same tests were repeated using a CHAID decision tree (Figure 9), which also found incoming CEO age to be the only significant factor (at a 5% significance level). The CHAID decision tree (Figure 9) gave the predicted post event CAR performance by age group of the incoming CEO. The best performing CEOs were younger than 43 years, followed in decreasing performance order by the age groups of over 52, 43 to 50 years, and lastly, the 50 to 52 year age group. The 50 to 52 age group was the only age group to predict a decrease in post event CAR. These results

need to be interpreted in conjunction with Table 16.3, which show younger CEOs being instrumental in achieving good results in small corporations. Therefore, it is highly likely that the good results achieved by the 43 and younger CEO age group pertain to small companies.

Hypotheses 4f to 4h

Hypotheses 4f to 4h: Hypotheses 4f to 4h repeat the experiment of hypotheses 4c to 4e by investigating the same post event variables of the age of the incoming CEO, the new CEO being an internal or external placement, company size and finally the age of the incoming CEO in relation to the age of the departing CEO, and the effect they have on CAR difference, as opposed to post event CAR. Table 15 contains the results of the GLN model test conducted. None of the variables were found to be significant in relation to CAR difference. The conclusion in respect of hypotheses 4f to 4h is therefore: fail to reject the null hypothesis.

Hypotheses 4c to 4e and 4f to 4h considered the same set of variables, with the differential being that Hypotheses 4c to 4e tested the variables versus post event CAR and hypotheses 4f to 4h tested the variables versus CAR difference. The researcher submits that, in respect of post event variables, post event CAR represents the more relevant data set, and therefore the significance of the age of the incoming CEO in relation to post event CAR is noted.

Before passing a final conclusion in respect of hypotheses 4b to 4h, it is necessary to review the associated descriptive statistics. Table 16 refers:

The first variable analysed in Table 16 is that of internal versus CEO external placement and the effect on post event corporate performance (Table 16.2). The literature reviewed proposed three different and conflicting views as to whether internal or external CEO placements gave the best post event corporate performance. Huson et al (2004) found a statistically significant improvement in post event corporate performance, particularly if the appointee was from outside succession. In the contrary view, Rhim et al (2006) found that internal appointments led to superior corporate performance, and Karaevli (2007), found no difference in corporate performance between internal and external placement. The GLM model built in respect of hypothesis 4d found no significant relationship between

internal and external placement (Table 14). However, the descriptive statistics do add further insights.

Table 16.1 shows the very strong propensity of all sizes of corporation to appoint CEOs internally. 84% of large corporations appointed internally versus 73% and 75% for medium and small corporations respectively. Once again, this points to strong succession planning within large corporations in South Africa, which is supported by Naveen (2006), who reported that the larger and more complex an organisation is, the more likely it is to appoint internally following established succession plans.

Table 16.2 shows the post event corporate performance of internal and external placements across the various company sizes. In respect of large corporations, external placements caused a decrease of 1% in post event performance, whereas internal placements caused a 4% increase in post event corporate performance. For medium sized corporations, external placements caused a 15% increase in post event corporate performance, whereas internal placements achieved a 12% increase in corporate performance. And lastly, in small companies, external placements achieved a 24% increase in corporate performance versus an increase of 23% for internal appointments. Therefore the conflicting points of view in the literature can be explained by corporation size. Rhim et al (2006) are correct in terms of large corporations where internal appointments return superior results; Huson et al (2004) are correct in respect of medium corporations showing superior results with external placements, and Karaevli (2007) is correct in terms of small corporations, where there is no material difference between the post event corporate performance achieved by either internal or external placements.

Tables 16.3 and 16.4 considered the effects of the age of the incoming CEO and post event corporate performance, across the variables of company size and internal versus external placement. When interpreting the results of tables 16.3 and 16.4, one must bear in mind the results of the CHAID decision tree of Figure 9 which showed the age of the incoming CEO to be significant at the 21% significance level, and illustrated which age groups yielded the best performance.

Table 16.3 considers incoming CEO age and company size in relation to post event corporate performance. In large corporations, a younger CEO achieved a 6% increase in post event corporate performance, versus a decrease in post event corporate performance

of 6% in respect of an older CEO. In medium sized corporations, younger CEOs caused a 5% fall in post event corporate performance, whereas older CEOs gave a 68% increase in post event corporate performance. Small companies once again yielded surprising results, with younger CEOs achieving a 31% increase in pre event corporate performance versus a 4% decrease achieved by older appointees. No literature was found which analysed incoming CEO age and company size in relation to post event corporate performance, leaving the researcher to propose explanations for the trends in isolation.

In respect of large corporations, the picture presented by the data (Table 16.3) show a stable structured environment where a younger, internal placement groomed by succession planning, is able to increase post event corporate performance by 6%. The negative 6% achieved by older CEOs probably corresponds to the instances of external placements, where external placements have a poor performance record in large corporations (refer to Table 16.2).

In respect of medium sized corporations, older CEOs improve post event corporate performance by 68%, versus younger CEOs who contribute a negative 5% (Table 16.3). The only possible explanation for this circumstance is the requirement of increased experience in order to effect positive change in a medium sized organization.

In respect of small corporations, younger CEO appointees have a significant positive effect of 31% on post event corporate performance, whereas the appointment of older CEOs in small corporations are on average, detrimental to the corporation (Table 16.3). In the absence of specific literature on the topic, the researcher proposes that the following factors may offer an explanation of the observed trends. By nature, smaller companies tend to be younger and more entrepreneurial in nature, with high energy younger CEOs being more effective in such an environment. A further possible contributing deduction is that highly capable older CEOs are unlikely to take positions in small companies due to lower remuneration and higher risk, leaving the not so capable older CEOs to take the positions in smaller corporations.

Table 16.4 considers incoming CEO age and internal versus external placement in relation to post event corporate performance. Younger external placements contribute a mere 1% to improved post event corporate performance, versus a 48% performance improvement achieved by older external placements. In the absence of specific literature on the topic,

the researcher offers the possible explanation of the trend being that, in order to be effective in an organisation that is totally new, a new CEO must be in possession of extensive experience. Younger external placements without the same level of experience do not perform as well as their more experienced counterparts.

The descriptive statistics of Table 16 cover the variables of the age of the incoming CEO, company size and internal versus external placement in the context of post event corporate performance. In the literature review, CEO age was discussed by Ou-Yan and Chuang Shuang-shii (2007), Arbogast and Mirabella (2014) and Vintila and Gherghina (2012); the importance of isolating company size in event studies was emphasised by Muller and Ward (2010) and Cheung (2011), and the internal / external CEO appointee debate was discussed by Rhim et al (2006), Huson et al (2004) and Karaevli (2007). No literature was found which covered the interaction of the above variables, which the researcher submits as a major contribution of the research project. However, in the absence of supportive literature, the findings of the research project stand unsubstantiated by third parties.

In summary, research question 4 yields some conflicting results and some new interesting insights when the post event CAR and CAR difference data sets were dissected by the variables of company size, age of the new CEO and internal versus external placement. The lack of literature in support of the observations deduced from the variable data dissections is a point of concern.

On review of the entire chapter 6, the researcher can conclude that persuasive evidence has been found to address each of the research objectives and research questions raised. In addition, the detailed comparison of both pre and post CEO turnover constructs and the dissection of the data sets by corporation size have yielded additional insights.

This chapter 6 discussed the research findings in detail, comparing the findings to the literature reviewed and highlighted additional findings. In chapter 7 following, the main findings of the research project are concisely summarised, including recommendations to stakeholders and future research.

Chapter 7 Conclusion and recommendations

Chapter 7 attempts to concisely summarise the findings of chapter 6 and to make recommendations to stakeholders and additional research.

7.1 Conclusion: Sample and distribution

The research project considered all CEO turnover events on the JSE for the period 1 April 2007 to 31 May 2012, which yielded an initial sample of 214 CEO turnover events. The sample was then reduced to 143 events following the exclusion of:

- Any CEO turnover event where the corporation was subject to corporate action (merger, acquisition, delisting, restructure or liquidation) during either of the pre or post event windows;
- Any CEO turnover event where the new CEO did not successfully hold the position for a minimum of two years;
- Any CEO turnover event where the corporation was not listed on the JSE for a minimum period of one year prior to the CEO turnover event.

The calculated CAR data sets of pre event CAR, post event CAR and CAR difference were shown to be non-normal, necessitating the use of non-parametric tests for significance (Salkind, 2013). The researcher submits that the sample of 143 CEO turnover events is sufficient to support the statistical findings of the research report.

7.1.1 Conclusion: research question 1

Research question 1 investigated whether CEOs are held accountable for poor corporate performance, resulting in their removal from office. Due to the research design, reliance was placed on descriptive statistics to address the question. Table 5.3 showed that the mean of the pre event CAR population was negative 7%, indicating that, of the corporations undergoing CEO turnover, the majority were underperforming their peers by 7%. Further, Table 5.1 showed that 58% of corporations undergoing CEO turnover were underperforming. These initial results demonstrate a fair degree of support for the assertion that CEOs are held accountable for poor corporate results, and are in agreement with the findings of Dikolli *et al* (2014), He and Sommer (2011) and Farrell and Whidbee

(2003), who all reported a very strong negative correlation between poor corporate results and CEO turnover.

However, further analysis shows this initial picture to be misleading. Table 5.4 compares the average tenure of under and over performing CEOs. The average tenure of both categories is virtually identical at 7.26 years and 7.43 years respectively. This finding indicates that non-performing CEOs are treated in a very similar manner to performing CEOs. The most significant discrepancy is illustrated by dissecting the data by corporation size (Table 5.2). In respect of small corporations, 75% of those undergoing CEO turnover were underperforming, indicating a strong correlation between poor performance and CEO turnover. In medium sized corporations, 54% were underperforming at CEO change, showing a significant dilution of the poor performance/CEO turnover relationship. For large corporations, the majority (52%) of CEO change was conducted in an environment of over performance, indicating that performance is not the dominant determinant of CEO turnover in large corporations.

In conclusion to research question 1, the research project found evidence that only small corporations showed a strong relationship between poor corporate performance and CEO turnover. The researcher submits that in respect of large corporations, the main drivers of CEO turnover are more likely to be succession planning and good corporate governance. This view is supported by Naveen (2006) who reported that the larger and more complex an organisation is, the more likely it is to have an entrenched CEO succession process.

7.1.2 Conclusion: research question 2

Research question 2 attempts to shed light on the CEO shelf life debate, which is centred on the concepts of superannuation and the ability of a single person to continually lead and motivate innovation for an extended period of time.

The research project addressed the question by investigating the degree of correlation between CEO age, tenure and corporate performance. Using the data set of pre event CAR, Figure 5 and Figure 6 show no correlation in respect of age, and very weak correlation in respect of tenure, in relation to corporate performance. However, dissecting the data by corporate size once again yields additional insights, with Figure 7 showing

tenure to be significant (at the 5% level) in respect of small corporations, with CEOs of tenure exceeding 15 years showing the best performance.

The literature in respect of age (Arbogast & Mirabella, 2014 and Vintila & Gherghina, 2012) finds that increasing CEO age adversely affects corporate performance. This is not supported by the research project where no evidence is found that increasing CEO age adversely affects corporate performance.

Vintila and Gherghina (2012) found that increasing CEO tenure improved corporate performance, with the research project finding in support of Vintila and Gherghina (2012) in respect of small corporations only. The researcher submits that the observed positive relationship between tenure and corporate performance in small corporations is a manifestation of survivor bias, whereby the tenure of performing CEOs will in most likelihood exceed the tenure of underperforming CEOs.

Chen (2013) found that both increasing CEO age and tenure had adverse implications for innovation and consequential corporate performance. The research project finds no evidence in support of Chen (2013).

In conclusion to research question 2, the research project found no evidence in support of the assertion that CEOs are subject to a shelf life, where increasing age and tenure adversely affect corporate performance.

7.1.3 Conclusion: research question 3

Research question 3 investigates whether the pre event circumstances (pre event CAR and pre event variables) have a significant effect on the post event corporate performance. The only literature reviewed which noted the importance pre event constructs had on post event corporate performance, was the work of Karaevli (2007).

Using the data set of CAR difference, Table 8 shows that both pre event CAR and the age of the departing CEO to be significant (at the 5% level). The same test was repeated using the CHAID decision tree model (Figure 8), which found only pre event CAR to be significant at the 5% level. The conclusion in respect of age of the departing CEO is therefore unclear with the GLM finding age of the departing CEO to be significant, but the

CAID decision tree finding no such significance at the 5% significance level. The researcher suggests that the finding of the CHAID model to be more likely as there is no obvious intuitive link between age of the departing CEO and the post event corporate performance.

Of utmost interest, is the predictive post event corporate performance highlighted in Figure 8. At the two corporate performance extremes, a pre event CAR of negative 54% or less predicted a post event improvement in corporation results over pre event CAR of 97%, and conversely, a pre event CAR in excess of positive 33% predicted a post event decline in performance of 66%.

The relationship between pre event CAR and CAR difference was explored further using linear regression, yielding the following regression equations:

$$\text{CAR difference} = -1.1581\text{Pre CAR} + 0.0544 \quad (\text{Formula 5})$$

$$\text{CAR difference}_{\text{small}} = -1.0737\text{Pre CAR}_{\text{small}} + 0.0283 \quad (\text{Formula 6})$$

$$\text{CAR difference}_{\text{medium}} = -1.2780\text{Pre CAR}_{\text{medium}} + 0.1082 \quad (\text{Formula 7})$$

$$\text{CAR difference}_{\text{large}} = -1.0867\text{Pre CAR}_{\text{large}} + 0.0414 \quad (\text{Formula 8})$$

Formula 5 was calculated for complete data sets, whereas formulas 6, 7 and 8 were calculated for small, medium and large corporations respectively. The graphical presentation in Figure 10 showed there to be very little difference between the regression equations applicable to the various corporation sizes. Formulas 5 to 8 predict post CEO turnover corporate performance based on the level of pre event corporate performance. The relationship is statistically relevant (the F-test of figure 9 showing strong significance) and the R² of Figure 9 showing a moderate relationship (Salkind, 2013). The researcher submits that the formulas 5 to 8 have sufficient statistical relevance to serve as useful predictors of post CEO turnover corporate performance, taking into account pre CEO turnover corporate performance.

In simplicity, the findings of the research project show that a new CEO of a previously underperforming corporation is most likely to materially improve the corporation's performance, whereas the new CEO of a previously over-performing corporation is most likely to significantly reduce the subsequent corporate performance. The observation is drawn that taking over as CEO of an over-performing corporation is tantamount to being handed a poison chalice.

In conclusion to research question 3, the research project found strong evidence in support of Karaevli (2007); that pre event corporate circumstances are vital in predicting and evaluating post event corporate performance.

7.1.4 Conclusion: research question 4

Research question 4 asks whether company results are improved by CEO turnover. Research question 3 inadvertently wandered into the territory of question 4 by discovering that a new CEO of a previously underperforming corporation was likely to improve a corporation's performance, whereas a new CEO of a previously over-performing corporation was likely to reduce the corporation's future performance.

Table 11 compared the two populations of pre event CAR and post event CAR, finding the two populations to be significantly different at a 5% significance level. Table 12 shows the two means of the populations to differ by 13.6%. The conclusion in respect of these two populations is therefore that CEO turnover significantly improves post turnover corporate performance to the extent of an average of 13.6%. This finding of the research project is supported by He, Sommer and Xie (2011), Huson *et al* (2004) and Karaevli (2007), who all reported that significant improvements in corporation results were found post CEO turnover.

The research project then investigated the effects of the variables of the age of the incoming CEO, whether the CEO placement was internal or external and corporation size. Of the variables, Table 14 showed only age of the incoming CEO to be significant at the 5% level. The CHAID decision tree (Figure 11) could only find incoming CEO age significant at a 21% significance level. Assuming the findings of Table 14 to be correct, the CHAID decision tree predicts that the highest performing CEO age group is the younger than 43 group, followed by the older than 52's. However, Table 16.3 shows that younger

over-performing CEOs are most likely to be in small corporations. The literature reviewed did not consider age and post turnover corporate performance.

Utilising descriptive statistics, Table 16 gives additional insights into post turnover corporate performance. The major observations of interest are:

- In excess of 75% of all CEO placements are internal, with large corporations having an internal placement preference of 84%.
- External placements are detrimental to large corporations however; external placements yield superior results (versus internal placements) for both medium and small corporations.
- Younger CEOs improve corporate results of small companies by 31%, however; younger CEOs are detrimental to medium sized corporations. Large corporations have a marginal improvement with younger CEOs.
- External placements need to be older, with older external placements materially improving corporate results (by 48%) versus the 1% improvement achieved by younger external placements.

In conclusion to research question 4, the research project found strong evidence in support of CEO turnover yielding improved corporate results. However, this conclusion is based on the CAR data sets as a whole. By drilling down into the variables one finds contradictions to this assertion of improved corporate performance, namely:

- New CEOs placed in previously over-performing corporations are most likely to deliver reduced post turnover corporate performance (Figure 8)
- New CEO appointments in the age group 50-52 years are most likely to deliver reduced post turnover corporate performance (Figure 9)
- External CEO appointments in large corporations are most likely to deliver reduced post turnover corporate performance (Table 16.2)
- Younger CEO appointments in medium sized corporations are most likely to deliver reduced post turnover corporate performance (Table 16.3)
- Older CEO appointments in small sized corporations are most likely to deliver reduced post turnover corporate performance (Table 16.3).

7.1.4 Overall conclusion

The research project attempted to investigate the major influential circumstances surrounding the entire CEO turnover event, from the triggers of CEO turnover to the resultant post event corporate performance. Many of the findings of the research project are supported by literature of non-South African origin, showing that the drivers of CEO turnover and the post turnover corporate performance experienced by Corporate South Africa are not dissimilar to the global corporate experiences. Unique to this research project are the contradictory findings across corporate size, and the circumstance of the poison chalice being handed to new CEOs of previously over performing corporations.

In summary, the research project has found sufficient empirical evidence to support conclusions and observations in respect of all of the research objectives of the research project as outlined in paragraph 1.2, and the resultant research questions raised by the literature review of Chapter 3.

7.2 Recommendations for stakeholders

The overall findings of this research project have reinforced the concept that the capabilities of the CEO are paramount in determining the future performance of the corporation. This association is particularly dominant in small corporations, and becomes more diluted in large corporations where strong governance environments limit the detrimental effects of an underperforming CEO.

Any Board considering CEO change, should take note of the findings of this research project, but at best, the findings and literature reviewed represent generalisations. Of utmost importance will be individual characteristics and capabilities of the CEO, and ignoring chance, the success of a corporation will depend on a Boards' ability to select the best CEO for the job.

7.3 Recommendations for future research

The design of the research project precluded significance testing in respect of poor corporate performance giving rise to CEO turnover (research question 1). To accomplish this test, a new data set of the CARs of all corporations listed on the JSE would be required, not just those undergoing CEO change as considered by this research project. Such research would yield a far clearer picture as to whether CEOs of underperforming corporations are held to account, resulting in their removal from office.

The scope of this research project also excluded the following CEO turnover factors which could add further insights into the triggers of the CEO turnover, namely:

- The role of the CEO
- External environmental factors affecting CEO turnover (economic cycles, industry specific constraints and geo-political changes)
- The non-compliance with ethical and legal requirements
- The degree of governance exerted by external (non-executive) directors
- CEO ownership in the firm and the ability to exert undue influence
- Demographic differentials relating to country and sector specific attitudes to CEO responsibilities.

The basic research design of this project could be repeated for equities listed on other stock exchanges, and in particular, investigating the influences of corporation size and the effects of pre event corporate performance on post event corporate performance.

Appendix 1: Data summary table

Count	Company Name	Short code	Event Date	Relative Share Performance			Departing CEO		Incoming CEO		Company Size
				Pre event CAR	Post event CAR	Post event CAR_Adj	Tenure	Age_Departing	Age_Incoming	Internal / External	
1	Astrapak Limited	APK	30-May-12	-21.1%	105.8%	43.5%	4	50	53	Ex	S
2	MERAFE RESOURCES LIMITED	MRF	29-May-12	-29.3%	39.1%	17.9%	2	50	48	Int	M
3	Remgro Limited	REM	07-May-12	9.8%	51.9%	23.2%	12	58	45	Int	L
4	KAP INTERNATIONAL HOLDINGS LIMITED	KAP	25-Apr-12	-2.1%	-9.1%	-4.7%	9	57	63	Ex	M
5	PICK n PAY STORES LIMITED	PIK	18-Apr-12	2.7%	19.7%	9.4%	5	51	52	Ex	L
6	Gooderson Leisure Corporation Limited	GDN	30-Mar-12	29.9%	33.5%	15.5%	35	75	40	Int	S
7	Kibo Mining Plc	KBO	30-Mar-12	5.2%	-71.2%	-46.3%	3	50	49	Int	S
8	Tawana Resources NL	TAW	29-Mar-12	-24.5%	67.2%	29.3%	11	62	38	Int	S
9	MASONITE (AFRICA) LIMITED	MAS	29-Mar-12	-23.3%	-34.9%	-19.3%	13	64	44	Ex	S
10	RARE HOLDINGS LIMITED	RAR	27-Mar-12	46.0%	85.8%	36.3%	16	56	58	Int	S
11	Sephaku Holdings	SEP	26-Mar-12	-49.3%	109.0%	44.6%	4	54	56	Int	M
12	Zurich	ZSA	01-Mar-12	5.7%	9.8%	4.8%	1	59	47	Ex	M
13	WG WEARNE LIMITED	WEA	01-Mar-12	38.1%	53.8%	24.0%	1	49	42	Int	S
14	South Ocean Holdings	SOH	28-Feb-12	-48.6%	-23.1%	-12.3%	4	64	51	Int	S
15	Sun International Limited	SUI	27-Feb-12	-6.6%	7.1%	3.5%	5	48	63	Int	L
16	Grand Parade Investments Limited	GPL	27-Feb-12	-29.5%	89.3%	37.6%	3	44	44	Ex	M
17	African Rainbow Minerals Limited	ARI	27-Feb-12	-20.2%	47.9%	21.6%	8	62	50	Int	L
18	African Oxygen Limited	AFX	23-Feb-12	18.0%	-0.2%	-0.1%	5	51	50	Int	M
19	CADIZ HOLDINGS LIMITED	CDZ	21-Feb-12	-24.5%	-43.0%	-24.5%	7	55	52	Int	S
20	Coronation Fund Managers Limited	CML	17-Feb-12	8.0%	-4.7%	-2.4%	6	43	44	Int	L
21	Impela Platinum Holdings Limited	IMP	31-Jan-12	-7.4%	7.9%	3.9%	6	50	53	Int	L
22	Reinet Investments S.C.A. Depositary Receipts	REI	26-Jan-12	15.7%	34.6%	16.0%	3	61	60	Int	L
23	COMAIR LIMITED	COM	01-Dec-11	-15.2%	205.2%	74.7%	5	42	41	Int	M
24	QUANTUM PROPERTY GROUP LIMITED	QPG	30-Nov-11	-57.9%	-100.0%	-100.0%	1	36	48	Int	S
25	Kelly Group Limited	KEL	22-Nov-11	4.5%	-48.7%	-28.4%	6	57	51	Ex	S
26	ABSA Group Limited/ ABSA Bank Limited	ASA	21-Nov-11	6.30%	-55.90%	-33.6%	5	47	50	Int	L
27	Witwatersrand Consolidated Gold Resources Lir	WGR	18-Oct-11	-35.5%	-72.1%	-47.2%	9	58	51	Ex	S
28	Sovereign Food Investments Limited	SOV	03-Oct-11	-11.2%	67.7%	29.5%	8	49	46	Int	S
29	John Daniel Holdings Limited	JDH	30-Sep-11	-76.1%	-97.8%	-85.2%	6	54	52	Int	S
30	Wesizwe Platinum Ltd	WEZ	29-Sep-11	49.0%	-48.3%	-28.1%	1	50	48	Int	M
31	Putprop Limited	PPR	23-Sep-11	-2.0%	-25.1%	-13.5%	22	81	55	Int	S
32	Reunert Limited	RLO	21-Sep-11	-2.8%	-30.7%	-16.8%	1	56	62	Int	L
33	IPSA GROUP PLC	IPS	08-Sep-11	-36.2%	-6.4%	-3.3%	6	56	52	Int	S
34	Protech Khuthele Holdings Limited	PKH	08-Sep-11	-22.7%	48.5%	21.9%	3	47	50	Ex	S
35	Sasol Limited	SOL	01-Jul-11	12.7%	27.3%	12.8%	6	60	49	Ex	L
36	Chemical Specialities Limited	CSP	23-Jun-11	-59.9%	69.5%	30.2%	3	48	37	Int	S
37	Vukile Property Fund Limited	VKE	26-May-11	7.4%	-27.5%	-14.9%	7	51	40	Ex	M
38	ROCKWELL DIAMONDS INCORPORATED	RDI	11-May-11	50.9%	-65.6%	-41.3%	4	58	46	Ex	M
39	JASCO ELECTRONICS HOLDINGS LIMITED	JSC	05-May-11	-15.9%	37.2%	17.1%	5	50	51	Ex	S
40	Evraz Highveld Steel and Vanadium Limited	EHS	05-Apr-11	-17.0%	-19.3%	-10.2%	1	58	47	Ex	S
41	Murray & Roberts Holdings	MUR	31-Mar-11	-40.2%	3.9%	1.9%	11	62	50	Int	L
42	JSE Limited	JSE	15-Mar-11	-22.0%	-51.5%	-30.4%	15	61	46	Int	M
43	Bowler Metcalf Limited	BCF	09-Mar-11	37.8%	-2.6%	-1.3%	24	65	48	Int	S
44	MERAFE RESOURCES LIMITED	MRF	01-Mar-11	-25.6%	-57.3%	-34.7%	7	55	48	Int	M
45	British American Tobacco p.l.c	BTI	24-Feb-11	14.4%	27.3%	12.8%	7	57	55	Int	L
46	Hyprop Investments Limited	HYP	21-Feb-11	0.8%	37.8%	17.4%	2	49	46	Int	L
47	Italtile Limited	ITE	17-Feb-11	-1.1%	8.7%	4.3%	5	43	65	Int	M
48	LABAT AFRICA LIMITED	LAB	27-Jan-11	106.0%	-84.3%	-60.4%	1	26	52	Int	S
49	Uranium One Inc	UUU	27-Jan-11	124.4%	-9.4%	-4.8%	3	43	36	Int	L
50	MTN Group Limited	MTN	20-Dec-10	-24.9%	-34.2%	-18.9%	3	51	53	Int	L

Appendix 1 (cont)

Count	Company Name	Short code	Event Date	Relative Share Performance			Departing CEO		Incoming CEO		Company Size
				Pre event CAR	Post event CAR	Post event CAR_Adj	Tenure	Age_Departing	Age_Incoming	Internal / External	
51	Buildmax Limited	BDM	19-Nov-10	-81.9%	327.3%	106.7%	2	42	49	Int	M
52	Coal of Africa Limited	CZA	01-Oct-10	-67.2%	-86.6%	-63.4%	10	59	52	Ex	S
53	Mr Price Group Limited	MPC	26-Aug-10	24.4%	48.1%	21.7%	13	52	50	Int	L
54	FirstRand/Metropolitan Holdings /Momentum Gr	FSR	26-Aug-10	8.7%	10.2%	5.0%	3	47	41	Int	L
55	Blue Financial Services Limited	BFS	12-Aug-10	-93.1%	452.8%	135.1%	5	36	42	Int	M
56	Peregrine Holdings Limited	PGR	03-Aug-10	-18.6%	-35.2%	-19.5%	1	41	34	Int	M
57	Jubilee Platinum Plc	JBL	27-Jul-10	-30.4%	-48.9%	-28.5%	4	66	39	Int	M
58	PSG Group Limited	PSG	15-Jul-10	-4.1%	-8.8%	-4.5%	14	56	34	Int	L
59	Total Client Services Limited	TCS	30-Jun-10	-25.1%	5.0%	2.5%	2	42	46	Int	S
60	PALABORA MINING COMPANY LIMITED	PAM	30-Jun-10	31.2%	14.4%	7.0%	2	43	50	Int	M
61	Racec Group Limited	RAC	23-Jun-10	-52.2%	140.2%	55.0%	8	63	38	int	S
62	Central Rand Gold Limited	CRD	07-Jun-10	-58.6%	683.8%	180.0%	2	44	38	Int	S
63	Winhold Limited	WNH	02-Jun-10	11.3%	-32.2%	-17.7%	17	65	54	Int	S
64	Erbacon Investment Holdings Limited	ERB	01-Jun-10	4.9%	-61.1%	-37.6%	23	56	50	Ex	S
65	Hulamin Limited	HLM	19-May-10	3.8%	-9.3%	-4.8%	3	60	44	Int	M
66	Sanyati Holdings Limited	SAN	18-May-10	-53.7%	-5.7%	-2.9%	15	55	53	Ex	S
67	MoneyWeb Holdings Limited	MNY	04-May-10	-15.9%	-11.5%	-5.9%	12	50	57	Int	S
68	IQuad Group Limited	IQG	16-Apr-10	-2.8%	103.3%	42.6%	5	48	42	Int	S
69	Medi-Clinic Corporation Limited	MDC	31-Mar-10	9.1%	48.9%	22.0%	10	62	54	Int	L
70	Andulela Investment Holdings Limited	AND	29-Mar-10	-10.3%	169.7%	64.2%	1	59	48	Int	S
71	AFRICAN BRICK CENTRE LIMITED	ABK	22-Feb-10	67.9%	-31.8%	-17.4%	1	51	53	Int	S
72	A.B.E. Construction Chemicals	ABU	03-Feb-10	-23.8%	494.4%	143.8%	8	56	46	Ex	S
73	SEARDEL INVESTMENT CORPORATION LIMIT	SER	03-Dec-09	82.7%	365.0%	115.6%	1	66	37	Int	M
74	SEKUNJALO INVESTMENTS LIMITED	SKJ	19-Nov-09	-66.9%	235.2%	83.1%	2	55	44	Int	S
75	AG INDUSTRIES LIMITED	AGI	14-Oct-09	-39.4%	-100.0%	-100.0%	7	58	52	Int	S
76	Raubex Group Limited	RBX	02-Oct-09	14.8%	-71.0%	-46.1%	36	67	45	Int	M
77	Lewis Group Limited	LEW	01-Oct-09	-10.5%	36.7%	16.9%	18	64	35	Int	M
78	FirstRand Limited	FSR	15-Sep-09	-40.8%	25.1%	11.8%	10	60	52	Int	L
79	AFGRI LIMITED	AFR	02-Sep-09	22.3%	3.1%	1.5%	6	50	40	Int	M
80	Woolworths Holdings Limited	WHL	26-Aug-09	4.2%	62.7%	27.6%	10	60	51	Int	L
81	Workforce Holdings Limited	WKF	26-Aug-09	-24.8%	189.8%	70.2%	36	66	40	Int	S
82	NEDBANK GROUP LIMITED	NED	05-Aug-09	-15.9%	-1.8%	-0.9%	7	61	43	Int	L
83	Super Group Limited	SPG	30-Jul-09	-23.4%	97.3%	40.5%	22	49	49	Int	M
84	Infrasans Holdings Limited	IRA	30-Jul-09	-93.3%	-66.3%	-41.9%	2	36	51	Ex	S
85	SA Corporate Real Estate Fund	SAC	26-Jun-09	42.6%	-8.7%	-4.4%	1	50	36	Int	M
86	BSI Steel Limited	BSS	22-Jun-09	-62.3%	-14.4%	-7.5%	14	49	45	Int	S
87	HUGE GROUP LIMITED	HUG	29-May-09	-34.1%	58.2%	25.8%	1	39	37	Int	S
88	Pretoria Portland Cement Company Limited	PPC	26-May-09	-16.9%	-35.9%	-19.9%	15	63	52	Int	L
89	Richemont	CFR	14-May-09	-52.4%	114.9%	46.6%	5	63	60	Int	L
90	ASTRAL FOODS LIMITED	ARL	16-Apr-09	28.7%	-11.6%	-6.0%	8	53	49	Int	M
91	The York Timber Organisation Limited	YRK	09-Apr-09	-78.7%	-10.1%	-5.2%	7	45	46	Ex	M
92	OCEANA GROUP LIMITED	OCE	02-Apr-09	191.4%	13.8%	6.7%	10	54	41	Ex	M
93	Cullinan Holdings Limited	CUL	18-Mar-09	40.4%	-4.7%	-2.4%	2	58	48	Int	M
94	METOREX LIMITED	MTX	25-Mar-09	-64.9%	138.0%	54.3%	4	56	50	Ex	M
95	DRDGOLD LIMITED	DRD	06-Feb-09	39.6%	70.8%	30.7%	2	64	42	Int	M
96	ARB HOLDINGS LIMITED	ARH	04-Feb-09	-29.3%	125.5%	50.2%	17	43	51	Ex	M
97	CALGRO M3 HOLDINGS LIMITED	CGR	02-Feb-09	-67.1%	265.6%	91.2%	2	44	43	Int	S
98	NAMPAK LIMITED	NPK	21-Nov-08	-19.9%	39.1%	17.9%	6	63	54	Ex	L
99	Sycom Property Fund	SYC	06-Nov-08	23.2%	-17.4%	-9.1%	3	53	44	Int	M
100	Buildmax Limited	BDM	30-Oct-08	7.8%	-89.9%	-68.2%	5	47	40	Int	M

Appendix 1 (cont)

Count	Company Name	Short code	Event Date	Relative Share Performance			Departing CEO		Incoming CEO		Company Size
				Pre event CAR	Post event CAR	Post event CAR Adj	Tenure	Age_Dep arting	Age_Inco ming	Internal / External	
101	Lonmin Plc	LON	29-Sep-08	11.1%	6.3%	3.1%	4	55	47	Int	L
102	Glenrand MIB Limited	GMB	29-Sep-08	-15.4%	37.7%	17.3%	1	58	44	Int	M
103	Old Mutual Plc	OML	10-Sep-08	-16.2%	92.2%	38.6%	8	51	51	Int	L
104	Makalani Holdings	MKL	03-Sep-08	-16.2%	27.4%	12.9%	3	37	40	Ex	M
105	Iliad Africa Limited	ILA	01-Sep-08	-40.5%	10.4%	5.1%	10	56	41	Ex	M
106	Howden Africa Holdings Limited	HWN	29-Aug-08	-46.3%	-26.7%	-14.4%	10	60	45	Int	M
107	Bonatlá Property Holdings Limited	BNT	29-Aug-08	-10.0%	-77.3%	-52.4%	4	70	55	Int	S
108	CHROMETCO LIMITED	CMO	29-Aug-08	-18.6%	-13.0%	-6.7%	3	54	43	Int	S
109	Alexander Forbes Equity Holdings	AFP	19-Aug-08	0.4%	233.8%	82.7%	1	45	58	Int	M
110	Uranium One Inc	UUU	13-Aug-08	-29.7%	74.7%	32.2%	5	49	40	Int	L
111	Telkom SA Limited	TKG	11-Jul-08	-3.1%	-79.4%	-54.6%	12	56	45	Int	L
112	Randgold & Exploration Company Limited	RNG	11-Jul-08	40.2%	-39.5%	-22.2%	3	61	36	Int	S
113	Phumelela Gaming & Leisure Limited	PHM	27-Jun-08	-2.4%	-30.4%	-16.6%	9	60	47	Ex	M
114	SENTULA MINING LIMITED	SNU	27-Jun-08	-48.7%	-86.4%	-63.1%	2	59	43	Int	S
115	Wilson Bayly Holmes Ovcon Limited	WBO	19-Jun-08	10.2%	-51.9%	-30.6%	6	59	47	Int	M
116	Astrapak Limited	APK	06-Jun-08	-27.8%	93.4%	39.1%	9	63	46	Int	S
117	Kumba Iron Ore Limited	KIO	28-May-08	-0.1%	127.1%	50.7%	2	50	43	Int	L
118	JD Group Limited	JDG	26-May-08	-2.1%	-1.0%	-0.5%	15	56	44	Int	M
119	AVENG LIMITED	AEG	13-May-08	17.8%	-46.6%	-26.9%	10	58	42	Int	M
120	ADAPTIT HOLDINGS LIMITED	ADI	08-May-08	-24.4%	0.1%	0.0%	5	38	35	Int	S
121	Datacentrix Holdings	DCT	15-Apr-08	-14.3%	-15.9%	-8.3%	20	47	56	Int	S
122	Gold Fields Limited	GFI	31-Mar-08	-1.4%	-33.0%	-18.1%	6	54	50	Int	L
123	Amalgamated Appliance Holdings	AMA	12-Mar-08	-34.6%	179.9%	67.3%	1	47	53	Ex	M
124	Pangbourne Properties Limited	PAP	29-Feb-08	24.8%	-32.1%	-17.6%	3	38	51	Int	M
125	TIGER BRANDS LIMITED	TBS	19-Feb-08	0.77%	49.55%	22.3%	14	60	48	Ex	L
126	PALABORA MINING COMPANY LIMITED	PAM	13-Feb-08	-19.1%	193.0%	71.2%	4	50	41	Int	M
127	ArcelorMittal South Africa Limited	ACL	13-Feb-08	21.3%	8.4%	4.1%	2	53	48	Ex	L
128	SPESCOM LIMITED	SPS	22-Nov-07	4.8%	379.9%	119.1%	20	59	36	Int	S
129	Coronation Fund Managers Limited	CML	25-Oct-07	29.7%	-0.8%	-0.4%	10	50	37	Int	L
130	SALLIES LIMITED	SAL	03-Oct-07	-48.3%	-46.1%	-26.6%	2	38	57	Int	S
131	Anglo Platinum Limited	AMS	11-Oct-07	-3.2%	-32.6%	-17.9%	4	51	48	Int	L
132	Lonrho Plc	LAF	08-Oct-07	-17.8%	-74.7%	-49.7%	2	45	46	Int	L
133	Bhp Billiton Plc	BIL	26-Sep-07	28.6%	12.0%	5.8%	4	49	44	Int	L
134	AngloGold Ashanti Limited	ANG	18-Sep-07	9.0%	11.3%	5.5%	9	55	49	Int	L
135	Exxaro Resources Limited	EXX	05-Sep-07	3.4%	7.0%	3.4%	1	59	53	Ex	L
136	Group Five	GRF	13-Aug-07	21.3%	-50.6%	-29.7%	10	59	52	Int	M
137	HARMONY GOLD MINING COMPANY LIMITED	HAR	06-Aug-07	20.9%	-24.9%	-13.3%	12	46	55	Int	L
138	Imperial Holdings Limited	IPL	04-Jul-07	-20.2%	-10.5%	-5.4%	20	63	43	Int	L
139	SANTAM LIMITED	SNT	15-Jun-07	13.6%	57.6%	25.5%	4	44	49	Int	L
140	Business Connexion Group Limited	BCX	14-May-07	-37.50%	48.9%	22.0%	8	66	34	Int	M
141	Pamodzi Gold Limited	PZG	14-May-07	2.8%	-40.8%	-23.1%	1	50	40	Ex	S
142	Sappi Limited	SAP	14-May-07	33.0%	-37.8%	-21.1%	3	55	45	Ex	L
143	Telkom SA Limited	TKG	05-Apr-07	-19.2%	-12.3%	-6.4%	2	48	50	Int	L

References

- Abebe, M., & Alvarado, D. A. (2013). Founder-CEO status and firm performance: An exploratory study of alternative perspectives. *Journal of Strategy and Management*, 6(4), 343-357. doi:<http://dx.doi.org/10.1108/JSMA-03-2013-0014>. Accessed on 21 April 2014.
- Allgood, S., & Farrell, K. A. (2000). The effect of CEO tenure on the relation between firm performance and turnover. *Journal of Financial Research*, 23(3), 373-390.
- Amernic, J., & Craig, R. (2013). Leadership discourse, culture, and corporate ethics: CEO-speak at news corporation. *Journal of Business Ethics*, 118(2), 379-394. doi:<http://dx.doi.org/10.1007/s10551-012-1506-0>. Accessed on 20 April 2014.
- Arbogast, G., & Mirabella, J. (2014). Predicting firm performance as a function of CEO and economic factors. *Journal of American Academy of Business, Cambridge*, 19(2), 96-101. Retrieved from <http://search.proquest.com/docview/1464957389?accountid=14717>. Accessed on 20 April 2014.
- Asthana, S., & Balsam, S. (2010). The impact of changes in firm performance and on director turnover. *Review of Accounting & Finance*, 9(3), 244-263. doi:<http://dx.doi.org/10.1108/14757701011068057>. Accessed on 19 April 2014.
- Balsmeier, B., Buchwald, A., & Zimmermann, S. (2013). The influence of top management corporate networks on CEO succession. *Review of Managerial Science*, 7(3), 191-221. doi:<http://dx.doi.org/10.1007/s11846-011-0073-6>. Accessed on 21 April 2014.
- Berson, A., Smith, S., and Thearling, K (2000) *Building data mining applications for CRM*. McGraw-Hill.
- Binder, J. J. (1998). The event study methodology since 1969. *Review of Quantitative Finance and Accounting*, 11(2), 111-137. Retrieved from <http://search.proquest.com/docview/56774904?accountid=14717>. Accessed on 18 April 2014.

- Bremer, R., Buchanan, B. G., & English, P. C. (2011). The advantages of using quarterly returns for long-term event studies. *Review of Quantitative Finance and Accounting*, 36(4), 491-516. doi:<http://dx.doi.org/10.1007/s11156-010-0191-2>. Accessed on 21 April 2014.
- Chen, H. (2013). CEO tenure, independent directors and corporate innovation. *Journal of Applied Finance and Banking*, 3(5), 187-197. Retrieved from <http://search.proquest.com/docview/1449444930?accountid=14717>. Accessed on 19 April 2014
- Cheung ,A. W. K. (2011). Do stock investors value corporate sustainability? Evidence from an event study. *Journal of Business Ethics*, 99(2), 145-165. doi:<http://dx.doi.org/10.1007/s10551-010-0646-3>. Accessed on 12 April 2014.
- Chien-Yi, H., & Lin, Y. (2013). Applying CHAID algorithms to investigate critical attributes of void formation in QFN assembly. *Soldering & Surface Mount Technology*, 25(2), 117-127. doi:<http://dx.doi.org/10.1108/09540911311309086>. Accessed on 10 August 2014.
- Clayton, M. C., Hartzell, J. C., & Rosenberg, J. (2005). The impact of CEO turnover on equity volatility. *The Journal of Business*, 78(5), 1779-1808. Retrieved from <http://search.proquest.com/docview/236373027?accountid=14717>. Accessed on 21 April 2014.
- Clapham, S. E., Schwenk, C. R., & Caldwell, C. (2005). CEO perceptions and corporate turnaround. *Journal of Change Management*, 5(4), 407-428. Retrieved from <http://search.proquest.com/docview/194779575?accountid=14717>. Accessed on 19 April 2014.
- Coates, J. C., & Kraakman, R. H. (2010). CEO tenure, performance and turnover in S&P 500 companies. *Rochester: Social Science Research Network*. doi:<http://dx.doi.org/10.2139/ssrn.925532>. Accessed on 20 April 2014.

- Corrado, C. J. (2011). Event studies: A methodology review. *Accounting and Finance*, 51(1), 207. Retrieved from <http://search.proquest.com/docview/856652011?accountid=14717>. Accessed on 19 April 2014.
- da Graca, T., & Masson, R. (2012). More power to you: Properties of a more powerful event study methodology. *Review of Accounting & Finance*, 11(2), 166-183. doi:<http://dx.doi.org/10.1108/14757701211228200>. Accessed on 12 April 2014.
- Davidson III, W. N., Nemec, C., & Worrell, D. L. (2006). Determinants of CEO age at succession. *Journal of Management & Governance*, 10(1), 35-57. doi:<http://dx.doi.org/10.1007/s10997-005-3548-5>. Accessed on 12 April 2014.
- de Wet, J. H. V. H., & du Toit, E. (2007). Return on equity: a popular, but flawed measure of corporate financial performance. *South African Journal of Business Management*, 38(1), 59-71.
- Dikolli, S. S., Mayew, W. J., & Nanda, D. (2014). CEO tenure and the performance-turnover relation. *Review of Accounting Studies*, 19(1), 281-327. doi:<http://dx.doi.org/10.1007/s11142-013-9247-6>. Accessed on 12 April 2014.
- Elsaid, E., Wang, X., & Davidson III, W. N., (2011). Does experience matter? CEO successions by former CEOs. *Managerial Finance*, 37(10), 915-939. doi:<http://dx.doi.org/10.1108/03074351111161583>. Accessed on 10 August 2014.
- Faleye, O. (2007). The entrenching powers of a classified Board. *Corporate Finance Review*, 12(1), 5-17. Retrieved from <http://search.proquest.com/docview/198833888?accountid=14717>. Accessed on 9 August 2014.
- Farrell, K. A., & Whidbee, D. A. (2000). The consequences of forced CEO succession for outside directors. *The Journal of Business*, 73(4), 597-627. Retrieved from <http://search.proquest.com/docview/236379801?accountid=14717>. Accessed on 19 April 2014.

Farrell, K. A., & Whidbee, D. A. (2003). Impact of firm performance expectations on CEO turnover and replacement decisions. *Journal of Accounting and Economics*, 36(1-3), 165-196. doi:<http://dx.doi.org/10.1016/j.jacceco.2003.09.001>. Accessed on 20 April 2014.

Ferrell, O. C., & Ferrell, L. (2011). The responsibility and accountability of CEOs: The last interview with Ken Lay. *Journal of Business Ethics*, 100(2), 209-219. doi:<http://dx.doi.org/10.1007/s10551-010-0675-y>. Accessed on 19 April 2014.

Fisman, R. J., Khurana, R., Rhodes-Kropf, M., & Yim, S. (2014). Governance and CEO turnover: Do something or do the right thing? *Management Science*, 60(2), 319-337. Retrieved from <http://search.proquest.com/docview/1503663817?accountid=14717>. Accessed on 9 August 2014.

Glosup, J. (2005). Generalized linear models: An applied approach. *Technometrics*, 47(2), 232. Retrieved from <http://search.proquest.com/docview/213714844?accountid=14717>. Accessed on 10 August 2014.

He, E., & Sommer, D. W. (2011). CEO turnover and ownership structure: evidence from the U.S. property-liability insurance industry. *Journal of Risk and Insurance*, 78(3), 673-701. Retrieved from <http://search.proquest.com/docview/893672374?accountid=14717>. Accessed on 20 April 2014.

He, E., Sommer, D. W., & Xie, X. (2011). The impact of CEO turnover on property-liability insurer performance. *Journal of Risk and Insurance*, 78(3), 583-608. Retrieved from <http://search.proquest.com/docview/893672427?accountid=14717>. Accessed on 9 August 2014.

Huson, M.R., Malatesta, P.H., & Parrino, R.,(2004). Managerial succession and firm performance. *Journal of Financial Economics* 74:273–75. Accessed on 4 May 2014.

- Hwang, T. J. (2013). Stock market returns and clinical trial results of investigational compounds: An event study analysis of large biopharmaceutical companies. *PLoS One*, 8(8) doi:<http://dx.doi.org/10.1371/journal.pone.0071966>, Accessed on 20 April 2014.
- Jenter, D., & Kanaan, F. (2011). CEO turnover and relative performance evaluation.: *Social Science Research Network*. doi:<http://dx.doi.org/10.2139/ssrn.885531>. Accessed on 19 April 2014.
- Karaevli, A. (2007). Performance consequences of new CEO 'outsiderness': Moderating effects of pre- and post-succession contexts. *Strategic Management Journal*, 28(7), 681-706. doi:<http://dx.doi.org/10.1002/smj.589>. Accessed on 12 April 2014.
- Khurana, R. (1998). The changing of the guard: Causes, process and consequences of CEO turnover. (Order No. 9832414, Harvard University). *ProQuest Dissertations and Theses*, 178-178 p. Retrieved from <http://search.proquest.com/docview/304434918?accountid=14717>. (304434918). Accessed on 12 April 2014.
- Koyuncugil, A. S., & Ozgulbas, N. (2010). Detecting road maps for capacity utilization decisions by clustering analysis and CHAID decision tress. *Journal of Medical Systems*, 34(4), 459-69. doi:<http://dx.doi.org/10.1007/s10916-009-9258-9>. Accessed on 10 August 2014.
- Larmou, S., & Vafeas, N. (2010). The relation between board size and firm performance in firms with a history of poor operating performance. *Journal of Management & Governance*, 14(1), 61-85. doi:<http://dx.doi.org/10.1007/s10997-009-9091-z>. Accessed 9 August 2014.
- Lauterbach, B., Vu, J. & Weisberg, J. (1999), Internal vs. external successions and their effect on Firm performance, *Human Relations*, vol. 52, no. 12, pp. 1485-1504.
- Makura, M., & The Gordon Institute of Business Science. (2012). *Going Global*. Johannesburg, South Africa. MME Media .

- Mathura, V. (2009), *The influence of strategic leadership in an organization. A case study: Ellerines Holdings Limited*, MBA dissertation, Rhodes University, Grahamstown.
- Muller, C., & Ward, M. (2010). The long-term share price reaction to Black Economic Empowerment announcements on the JSE. *Investments Analysts Journal*, 71, 27-36
- Naveen, L. (2006). Organisational complexity and succession planning. *Journal of finance and quantitative analysis*, Vol. 41, No.3, 661-683. Retrieved from <http://0-www.jstore.org.innopac.up.ac.za/stable/27647265>. Accessed on 23 October 2014.
- Neumann, B. R., Roberts, M. L., & Cauvin, E. (2011). Stakeholder value disclosures: Anchoring on primacy and importance of financial and nonfinancial performance measures. *Review of Managerial Science*, 5(2-3), 195-212.
doi:<http://dx.doi.org/10.1007/s11846-010-0054-1>. Accessed on 20 April 2014.
- Ng, E. S., & Sears, G. J. (2012). CEO leadership styles and the implementation of organizational diversity practices: Moderating effects of social values and age. *Journal of Business Ethics*, 105(1), 41-52. doi:<http://dx.doi.org/10.1007/s10551-011-0933-7>. Accessed on 12 April 2014.
- Ou-Yan, H. & Chuang Shuang-shii (2007), CEO Turnover, Board Chairman Turnover, the Key Determinants: Empirical Study on Taiwan Listed Company, *The Business Review, Cambridge*, vol. 7, no. 2, pp. 129-135. Accessed on 21 April 2014.
- Rhim, J. C., Peluchette, J. V., & Song, I. (2006). Stock market reactions and firm performance surrounding CEO succession: Antecedents of succession and successor origin. *Mid - American Journal of Business*, 21(1), 21-30. Retrieved from <http://search.proquest.com/docview/214180220?accountid=14717>. Accessed on 20 April 2014.
- Salkind, N (2013) *Statistics for people who think they hate statistics*. 3rd Ed. Thousand Oaks: Sage.
- Saunders, M & Lewis, P (2012). *Doing Research in Business and Management*. Pearson: Edinburgh Gate.

- van den Steen, P. (2007), *Attributes of the turnaround CEO in South Africa*, MBA dissertation, University of Pretoria, Pretoria, viewed 14 April 2014.
- van Zyl, C. (2007), *The impact of CEO turnover on the share price performance of South African listed companies*, MBA dissertation, University of Pretoria, Pretoria, <http://upetd.up.ac.za/thesis/available/etd-03282010-115504/>. Accessed on 12 April 2014.
- Vintila, G., & Gherghina, S. C. (2012). An empirical investigation of the relationship between corporate governance mechanisms, CEO characteristics and listed companies' performance. *International Business Research*, 5(10), 175-191. Retrieved from <http://search.proquest.com/docview/1081783259?accountid=14717>
- Wood, J., & Vilkinas, T. (2007). Characteristics associated with CEO success: Perceptions of CEOs and their staff. *The Journal of Management Development*, 26(3), 213-227. doi:<http://dx.doi.org/10.1108/02621710710732128>. Accessed on 20 April 2014.