

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

**Assessing the impact of chief executive officer financial education on  
organisational financial performance**

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Master of Business Administration.

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## ABSTRACT

*This research assessed whether the financial education of the Chief Executive Officer (“CEO”) of an organisation has a relationship with the profitability of that particular organisation. The purpose of the study was to explore whether a CEO with financial education is better equipped to enable an organisation to perform financially than a CEO without financial education.*

*The researcher made use of a quantitative study based on 40 of the largest listed organisations on the Johannesburg Stock Exchange. The initial research was based on the type of education of each CEO with a focus on whether or not the CEO had been financially educated.*

*Once this was completed the researcher then made use of the Du Pont Model relating to return on equity in order to assess each organisations’ relative performance. This assessment was concluded over a four year period. A direct comparison was then completed between the organisations managed by CEOs with financial education and those that were managed by CEOs without financial education.*

*There were clear differences in organisational performance between the CEOs with financial education as opposed to the CEOs without financial education. The findings, however, were not statistically significant and further research in this area was therefore recommended.*

## KEYWORDS

	<b>Keywords</b>	<b>Researcher Definition</b>
<b>i.</b>	CEO	The Chief Executive Officer is the primary executive leader of an organisation.
<b>ii.</b>	Financial Education	Formal tuition over a period of time that gives an individual an understanding of what factors need to be considered and how to make the correct financial decisions.
<b>iii.</b>	Profitability	The ability of an organisation, be it commercial or other, to generate a positive return on the capital employed within the organisation.

## 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 in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Signed:

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Neil Jankelowitz

Date:

9 November 2015

ABBREVIATIONS	FULL WORD OR PHRASE
CEO	Chief Executive Officer
ROE	Return on Equity
Du Pont Model	DPM
WFE	WFE
WOFE	WOFE
%	Percentage
Alsi	All Share Index

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## **1. INTRODUCTION TO THE RESEARCH PROBLEM**

In this chapter, the researcher introduces the background to the topic and defines the research problem that will be examined. The chapter then concludes with a statement of aims of the research which will be accomplished in subsequent chapters.

### **1.1 Research Title**

Assessing the Impact of Chief Executive Officer (CEO) financial education on organisational financial performance.

### **1.2. Introduction**

The research question, which this study seeks to answer is whether or not financial education of organisational leaders, namely CEOs, has an impact on the financial performance of an organisation.

### **1.3. The Research Problem**

Leadership is an essential component that drives the financial performance of an organisation (Custodio & Metzger, 2014). The primary leader of any organisation is the Chief Executive Officer (CEO) (Kaplan, Klebanov, & Sorensen, 2012). Bertrand & Schoar (2003), Adams, Heitor, & Ferreira (2005) and Bennedsen, Perez-Gonzalez, & Wolfenzon, (2008) confirmed the fact that the CEO is the primary leader of an organisation and in addition confirmed that CEOs matter to the success of an organisation.

Therefore, for the purposes of this paper, the researcher focused on the CEO as the leader of the organisation. There is a plethora of both academic research and commercial writing regarding the components of a leader, the different traits of a leader (Taylor, Martin, Hutchinson, & Jinks, 2007), the impact of experience of a leader (Melmendiar, Tage, & Yan, 2011) and the various styles of a leader that make him/her most effective (Kaplan, Klebanov, & Sorensen, 2012).

In our complex modern society, however, we need to understand more than just the traits, style and experience of a successful leader (Eitzen & Sartorius, 2012). The pace of change in our society and the demands of financial growth and organisational performance dictate that we understand what technical abilities a leader must have in order to be successful at driving profitability within an organisation (Dinh, Lord, Gardner, Meuser, & Liden, 2014).

One of the primary technical abilities of a CEO is his/ her level of financial education and his/ her ability to drive profitability based on this technical training and skill (Martelli & Ables, 2010). Financial education is the bedrock that provides an individual with the capacity to make astute financial decisions (Turnham, 2010). This foundation does not guarantee financial performance and success however coupled with an ability to lead an organisation financial education is a powerful tool that enables a leader to make sound and astute decisions (Fox, Bartholomae, & Lee, 2005).

There is limited published research on the financial education of the CEO relative to organisational profitability. There is a single focussed study on the impact of a Master of Business Administration on a CEO and organisational profitability within the Australian market (Lindorff & Jonson, 2013). Aside from this the researcher was unable to locate any further research that addresses the impact of the financial education of a CEO on the profitability of an organisation.

The researcher, therefore, has attempted to understand what impact the financial education or lack thereof of the CEO has on his/her ability to drive the financial performance of an organisation. The research focussed on financial performance as financial performance is the key indicator to assess both the relevance and the sustainability of an organisation (Custodio & Metzger, 2014).

There are various indicators and metrics relating to how to measure organisational financial performance and these are generally divided into accounting-based measures and market-based measures (Eriksson & Lausten, 2000). For the purposes of this paper the researcher focused on accounting-based measures. In particular the researcher will focus on the Du Pont Model (DPM).

The DPM focuses on analysing the Return on Equity (ROE) that an organisation is able to generate (Firer, Ross, Westerfield, & Jordan, 2012). In addition the DPM allowed the researcher to analyse if there is any specific level of performance within each

organisation relating to the three primary levers within the DPM. The details of the DPM are discussed in detail in Chapter 2.

### **1.3.2. Implications of the study for business**

If the researcher is able to establish that a relationship exists between CEO financial education and organisation financial performance, this may serve to motivate young aspiring entrepreneurs and organisational leaders to embrace and harness their level of financial education with an understanding that this may well ultimately influence career success and improved future profitability.

In addition this research may inspire further research to establish additional clarity on the question i.e. whether CEO's with financial education (WFE) indicates that a company will perform or whether the level of financial education of the CEO does not make a difference at all to organisational performance. If the finding is that a relationship exists this may have an impact on hiring decisions, student decisions around elected courses and perhaps most importantly investment decisions made by, for example, fund managers and private equity investors. Obviously investment decisions in this arena will not be made solely on the research in this paper however the findings may play a small part in this regard.

If, however, the researcher is unable to establish that a positive relationship exists between CEO financial education and organisational financial performance then perhaps a platform will be created to support the notion that financial education is not critical in order to succeed within a corporate environment in South Africa and is not crucial in being able to drive financial performance within an organisation.

In addition it is hoped that this research will be of relevance to the business community both within and beyond South Africa and that it will enhance the discussion as to whether or not financial education is a preferred requirement when seeking to appoint a CEO.

## 1.4. Research Objectives

The research study incorporates the following objectives:

- Objective 1
  - To analyse the make-up of the relevant sample set and understand the type of education, be it financial and/or other, that the CEOs of South Africa's largest listed entities possess.
  
- Objective 2
  - To determine whether financial education of the CEO has a direct relationship with the ability of the organisation to deliver an increase in Return on Equity (ROE) of the organisation. In addition the researcher aims to identify whether there is a statistically significant difference between the two groups of CEOs, those WFE and those without, in relation to a particular metric within Du Pont's ROE model (DPM) i.e. Margin, Efficiency, Gearing.
  
- Objective 3:
  - To enhance the discussion relating to the make-up of an effective leader by focusing on whether or not financial education, as a technical ability, has the capacity to improve the CEO's capacity to drive organisational financial performance.

## 1.5. Conclusion

This research initially concerns itself with understanding the definition of a leader. The researcher then investigates leadership and attains clarity on the various styles and types of leaders. This is a vast topic and the researcher focusses on assessing the content relevant to the topic. The research then concerns itself with understanding financial education and profitability and importantly the relationship between CEO financial education and its impact on organisational financial performance.

The relationship between these constructs is tested in the context of South Africa and more particularly large listed entities within this environment. It is hoped that the research will contribute to the existing published research relating to leadership, financial education of CEOs and its relationship with organisational financial performance. In addition it is hoped that the research will be of relevance to business in general as well as provide a level of understanding to both potential and existing CEOs around what financial education may or may not provide in terms of skills and an ability to drive performance and lead an organisation.

In the following chapter, a literature review of the research question is performed.

## 2. LITERATURE REVIEW

### 2.1. Introduction

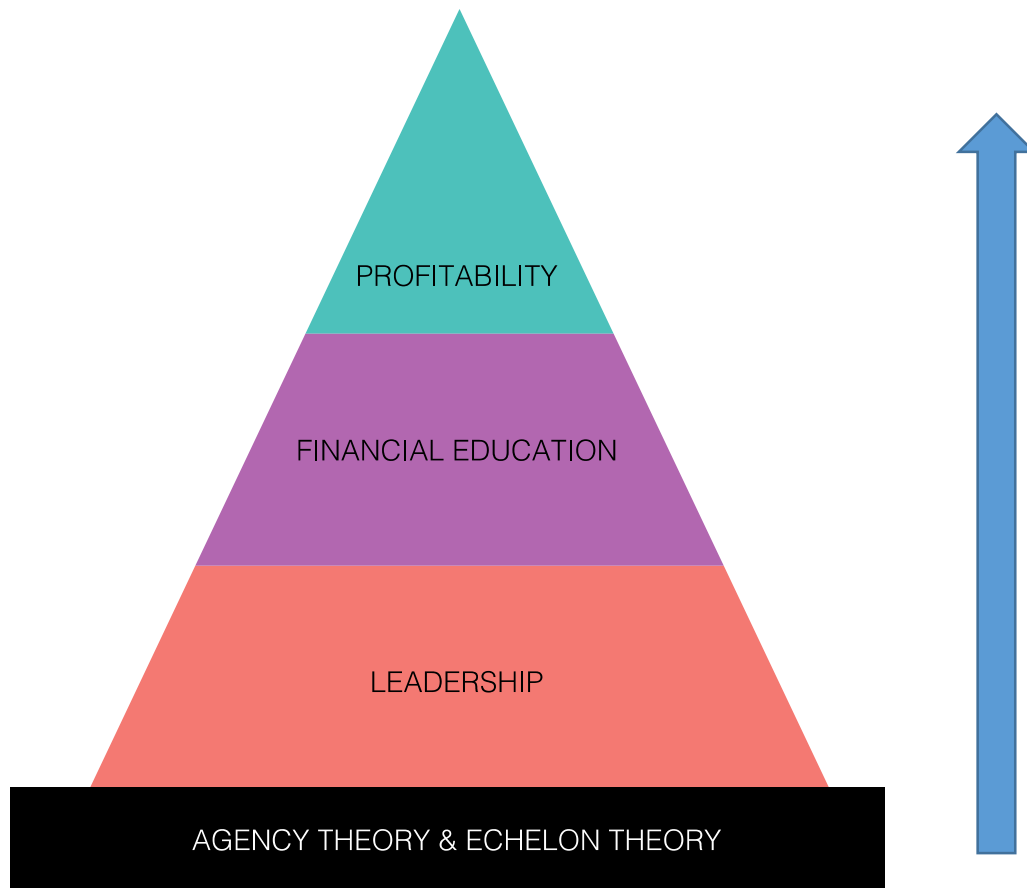
The theory reviewed in this chapter was broken into four sections:

1. Theoretical framework – The Echelon Theory and The Agency Theory;
2. Leadership;
3. Financial education; and
4. Profitability;

Initially the researcher analysed the two theories that are relevant to the question. The Echelon and The Agency Theories provided the researcher with a perspective of what influences and determines the decisions a leader will elect to make. These two theories provide a foundation as well as a lens through which to view the research question. In particular the theories provide a clear understanding that a leader is motivated to act based on his/her background and personal motivations. Once the researcher gained an understanding of what it is that motivates and influences a leader's decision-making capacity, the researcher then reviewed and explored the definition of leadership, what types of leadership exist, why we need leadership and finally why the CEO is the relevant leader in relation to the research question (Higgs & Rejchrt, 2014). The researcher then differentiated financial education from financial literacy and defined the content of financial education and what capacity it is known to provide to an individual. Finally the review clarified the notion of profitability. The review analyses what are the most effective metrics and ratios in order to measure the profitability of an organisation and highlights the different ratios that indicate organisational profitability and the measurement thereof.

Figure 1 below depicts the structure and interplay between the various components of the literature reviewed. Figure 1 highlights how The Echelon Theory and The Agency Theory provided the foundation to the research question. The Echelon Theory referred to the context and background of the CEO whilst The Agency Theory referred to the motivation and focus on personal interest of the CEO. With this foundation in mind the review shifted focus to the various relevant leadership topics and how and what formed the basis of both financial education and profitability.

All three of the aforementioned themes are discussed keeping in mind the theoretical framework underpinned by the foundational theories namely The Agency and the Echelon Theories.



**Figure 1: Literature Review Structure**

### 2.2.1. Introduction

There are 2 primary theories that provided the foundation of the research question namely, The Echelon Theory and The Agency Theory. These theories provided clarity on what influences a leader's decision-making ability. Both theories were relevant to the research as they provided the researcher with insight into what influences a leader's ability to make a decision. This confirmed that education, be it financial education or other, has an impact on the leader's ability to select a path and pursue a particular direction.

### 2.2.2. The Echelon Theory

Hambrick and Mason (1984) have been recognised as the key contributors to The Echelon Theory. This theory argued that strategic vision and organisational direction of an organisation are pursued and driven by the CEO (Hambrick & Mason, 1984). The Echelon Theory then suggested that in consolidating his/her strategy the CEO is guided by his/her understanding of the world (Hambrick, 2007).

Hambrick (2007) argued that CEO orientation, which is subject to his/her experience, educational background, functional background and other demographic factors, plays an instrumental role in the way problems are perceived and mental orientation deployed in the decision-making process.

The Echelon Theory hypothesised that it is difficult for top management to be drawn to all things happening around them (Hambrick, Humphrey, & Gupta, 2015). CEOs are more likely to address issues that are relevant to their past experience and tend to be guided by their educational background, age, other career experience and orientation of the world (Kinuu, Murgor, Walter, Nicholas, & Evans, 2012).

Hambrick (2007) advanced the theory that CEOs' decision and actions are anchored by their personalised interpretations of the situational and strategic challenges they face. These personalised interpretations are informed by the CEOs' backgrounds and values. Under this perception of control, organisational performance can be explained by looking at the managerial characteristics and backgrounds of the CEO (Hambrick, 2007).

Von den Driesch, da Costa, Flatten and Brettel (2015), all advocates of the Echelon Theory, agreed that CEOs are involved in strategic decision-making processes and choices that impact directly on the performance of the firm. Kinuu, Murgor, Walter, Nicholas and Evans (2012), maintain that CEOs' actions reshape organisational structures and make them adaptive to the environmental and economic challenges faced by their respective organisations. Drucker (1954) voiced his agreement with this theory stated "in a competitive economy, above all, the quality and performance of the managers determine the success of a business; indeed they determine its survival" (p. 5).



This theory was relevant to the research topic as it confirmed that CEOs' past experience, including education, will have an impact on their decision-making ability and the decisions they elect to pursue. Importantly, these decisions will have a direct effect on the performance of the organisation (Kinuu, Murgor, Walter, Nicholas, & Evans, 2012).

### **2.2.3. The Agency Theory**

Jensen and Meckling (1976) defined an agency relationship as “a contract under which one or more persons, the principal, engage another person, the agent, to perform some service on their behalf which involves delegating some decision-making authority to the agent” (p. 307). The theory exposed the challenge that arises when executives of organisations have personal goals that are conflicting with those of the relevant shareholders (Jensen & Meckling, 1976).

Agency Theory confirmed the fundamental assumption that, in the absence of a proper governance mechanisms to safeguard the interest of the owners, the human predisposition to egocentric and self-opportunistic behaviour resulted in the agents using their access to knowledge about the firm and the market to do whatever they could to exploit the owners to satisfy their (the agents') personal interest (Emirbayer & Mische, 1988). This principal/agent problem arises due to the existence of information asymmetry between well informed agents, for example the CEO, and more diverse and distant owners.

As a means to overcome this challenge, the agents are bound to exercise due diligence in their actions and initiatives to ensure that they promote the underlying interest of the principal (Emirbayer & Mische, 1988). The Agency Theory is an important aspect of the research problem in that it provided an alternative insight into the influences and motives potentially underpinning the actions of the CEO.

Access to and understanding of privileged information could, for example, influence the judgment of the executives. This would, in turn, cause them to pursue a strategy, prioritise certain objectives or make decisions that they would not have made in the absence of such privileged information. These strategic actions by the CEO may influence organisation performance both directly and indirectly.

This was relevant to the research question as it affirmed the fact that a CEO may elect to follow a specific path or strategy in order to fulfil his/her personal desires and objectives. If we extrapolate this theory a little further, it suggests that if, for example, a CEO has financial education, this will influence his/her view of the world and in turn, his/her motives and therefore his/her decisions.

#### **2.2.4. Conclusion**

The two theories provided clarity on what influences and drives a leader. Whilst the Echelon Theory is related to context and affirmed the fact that a leader makes decisions based on past experience, education and the like, the Agency Theory suggests that agents are bound to exercise due diligence in their actions and initiatives to ensure that they promote the underlying interest of the principal (Emirbayer & Mische, 1988) to avoid making decisions based on serving the CEO's own purpose. Financial education or the lack thereof will, therefore, according to both these theories, have a real impact on what types of decisions a leader will make. These theories were relevant to the topic as they enabled the researcher to understand what motivates a leader to make a decision and the influences thereof. Both these theories highlighted the importance of education on the leader's ability and inclination to make a decision.

### **2.3. Leadership**

#### **2.3.1. Introduction**

The scope of literature relating to leadership is vast and encompasses a variety of different types and styles of leaders of an organisation (Peterson, Smith, Martorana, & Owens, 2003). The review below sought to identify the primary elements relating to leadership that are relevant to the research question, namely: What is leadership; the relevant types of leaders - including why the researcher elected to focus on the CEO of the organisation - and finally why there is a need for leaders of an organisation (Higgs & Rejchrt, 2014).

### **2.3.2. What is Leadership?**

There is a relatively long history of leadership theory and research spanning more than a century (Avolio, Reichard, Hannah, Walumba, & Chan, 2009).

Taylor, Martin, Hutchinson and Jinks (2007), defined leadership as “an imperfect art practiced by those who lead in which the leader defines reality for his or her followers while creating and nurturing a vision of a new, better reality to come” (p. 402).

Ciulla (2002) confirmed that leadership is primarily about having the ability to engage and motivate a person in order to pursue an action that is in the common interest of all. Furthermore, Ciulla (2002) identified two areas that highlighted the differences in definition relating to leadership. The two primary differences related to how a leader is able to arouse their followers and who the leader is willing to engage with in order to establish the aims of the organisation (Ciulla, 2002). Antonakis & Day (2012) added to this definition and argued that leadership is an ability to influence process and resultant outcomes and this influence is exerted by the leader on the follower and is explained by a number of factors which include the leader’s dispositional characteristics, behaviour patterns and the context in which the influencing process takes place.

Furthermore Shaari, Areni, Grant, and Miller (2014) characterized leadership as “a person’s ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate changes that will create a viable future for the organisation” (p. 246).

### **2.3.3. The different types of leaders**

There is a considerable amount of literature available on the various types of leaders (Shaari, Areni, Grant, & Miller, 2014). The researcher elected to focus on two primary types of leaders that are relevant to the research question and that provided clarity on why the CEO was selected as the relevant leader to focus on in this research paper.

### **2.3.3.1. Leaders of an organisation**

Leadership studies, specifically in organisations, often refer to organisational leadership, which has two possible connotations: leadership in organisations and leadership of organisations (Shaari, Areni, Grant, & Miller, 2014). Leadership in organisations represents the lower-level leadership in the organisational hierarchy, whereas leadership of organisations refers to the strategic leadership that has the ability and capacity to make substantial decisions that go beyond the individual and have the ability to impact the entire organisation (Shaari, Areni, Grant, & Miller, 2014). Finkelstein (1992) highlighted the power and influence of top management and in particular the CEO of an organisation. For the purposes of this study the researcher elected to focus on the primary leader of the organisation. The individual who has the power and decision-making ability to influence both the strategic and operational aspects of the organisation. The CEO has this capacity and with the above in mind, the CEO was therefore selected as the leader to focus on in this research paper (Finkelstein, 1992).

### **2.3.3.2. Strategic Leaders**

The highest ranking corporate officers, such as CEOs or managing directors, compared to leaders at the lower rank (i.e. managers and supervisors), are associated with strategic leadership, and are in charge of the management of organisations whilst enacting the most visible leadership role for an organisation (Shaari et al., 2014). Strategic theories of leadership are concerned with leadership of the organisation as a whole, including its continuously changing aims and capabilities while focusing on the people who have overall responsibility for the organisation (Boal & Hooijberg, 2011).

In line with both the Echelon Theory and the Agency Theory, Colbert, Kristof-Brown and Bradley's (2008) strategic leadership theory suggested that the values, experiences, and knowledge of leaders in the upper echelons of organisations impact the strategic decisions made by these leaders, ultimately influencing organisational performance. Strategic leaders were therefore the focus of this research and the above confirmed the need to focus on the CEO of an organisation when considering the leadership of the organisation.

## 2.3.4. Leadership Styles

### 2.3.4.1. Transactional and Transformational Leaders

There are many different styles of leadership. These include *inter alia*; transactional, transformational, charismatic, authentic, autocratic and participative leadership styles. The literature published on these styles of leadership is comprehensive and to a large extent fell outside the scope of this research paper. The researcher elected to focus on transactional and transformational leadership styles as they highlighted both a shift in the notion of leadership styles towards a more engaging form of leadership as well as the fact that over the past century, leadership has become increasingly relevant to organisational outcome.

Ciulla (2002) emphasised that at the beginning of the twentieth century leaders largely assumed their power from their position and their superior knowledge based on their position. In addition their capacity to reward and punish those below them gave them the capacity to rule and lead an organisation (Ciulla, 2002). At the same time employees of an organisation were excluded from all forms of strategic planning and decision-making. This form of leadership was identified and discussed as transactional leadership (Ciulla, 2002).

According to Hamstra, Van Yperen, Wisse, and Sassenberg (2011), transactional leadership gave followers an understanding of exactly what was expected of them and the rules and criteria that were in place in order to protect the status quo. In addition this form of leadership meant that the leader was acutely aware of any errors made by their followers and the leader would take immediate action in order to ensure success in the short-term (Hamstra et al., 2011).

Hamstra et al. (2011) asserted that there was a shift in the manner and style of leadership towards the end of the twentieth century. Based on the fact that organisations were now competing for talent i.e. human capital it was not enough for the leader to simply dominate his/her employee. In this regard leadership had shifted to a more influence based relationship rather than simply a control relationship. Employee engagement, leading to a fully involved and committed employee, had become a required resource in order to succeed as a leader (Hamstra et al., 2011).

Flowing from this shift in leadership style, a host of leadership theories emerged. One of the most popular was transformational leadership, which, according to Hamstra et al. (2011), “stimulates an idealistic, optimistic outlook on the future, communicates high expectations, focuses followers’ attention on an abstract, long-term vision, facilitates change, and encourages new ways of working” (Hamstra et. al, 2011, p. 187).

As alluded to earlier in this chapter, there are numerous other leadership styles and definitions available (Miska, Hilbe, & Mayer, 2014) (Freeman & Auster, 2011) (Pless & Maak, 2011). At their core these definitions indicated that leadership relates to organisations achieving their objectives through their employees, with the ultimate vision and direction being driven by organisational leaders, most often, the CEO (Boal & Hooijberg, 2011). The above is relevant to the research problem as it provided an understanding of the evolution of the types of leaders and what it is that a CEO is able and expected to achieve as a leader of that organisation.

### **2.3.5. Why is there a need for leadership?**

A key role of all business leaders is defining strategic goals for their organisations and aligning the efforts of all organisation members with these goals (Colbert, Kristof-Brown, & Bradley, 2008). Studies by Freud, which date as far back as 1927, maintained that groups of individuals need leaders to provide them with an identity and sense of purpose (Higgs, 2002).

Modern business pressures have changed over time and organisations are faced with dynamic challenges that require profit maximisation, internal waste optimisation and radical change implementation that meet the demands of consumer behaviour whilst staying ahead of the competition. Research shows that in the face of such pressures, people still look for leaders of character and integrity to provide direction and help them find meaning in their work (Gardner, Avolio, Luthans, May, & Walumba, 2005).

The importance of leadership can be enhanced when reviewing critical issues facing organisations, such as:

- Changes in Societal Values. Changes in societal values over the years, combined with significant economic and organisational developments, have led to the emergence of “talent wars” and the underlying need to engage employees in a different way in order to secure effective commitment (Higgs, 2002);

- Changes in Investor Focus. For many years, the indicators of CEO's success were focused on their delivery of increases in shareholder value, but recent research with investors has shown that their decisions are increasingly influenced by "intangibles" which include, the quality and depth of leadership in an organisation (Higgs, 2002);
- Challenges in Implementing Organisational Change. As organisations operate in more complex, competitive and volatile environments, so their need to change strategies, structures and processes in order to respond to the business challenges more effectively increases (Higgs, 2002);
- Awareness of the Impact of Stress on Employees. With the increasingly volatile, competitive and complex business environment have come increasing pressures on individuals within organisations to work harder and deliver continuous improvements in performance (Higgs, 2002).

Furthermore, leadership plays a crucial role in innovation within organisations. While continuous innovation in products and services are important and necessary, the organisations that innovate in the structure of their businesses, particularly in defining their relationships with customers, become the leaders (Morris, 2013). Leaders, who are effective business model innovators, view the market as something different to the others - possibilities that others have overlooked that can be transformed into competitive advantages and profits (Morris, 2013).

### **2.3.6. Conclusion**

Leadership plays a pivotal role in the success, capacity and performance ability of any organisation. The review above provides clarity on what leadership entails, the relevant types and styles of leadership and finally why there is a need for leadership within a modern organisation. Importantly, the review highlighted the notion of a strategic leader and a leader of an organisation as opposed to a leader in an organisation. The clarity gained relating to these types of leaders affirmed the need to focus on the CEO as the relevant individual pertaining to this research question.

## **2.4. Financial Education:**

### **2.4.1. Introduction**

Financial education, financial literacy and financial knowledge are three closely related terms – all of which are similar and yet fundamentally different. The terms are often used interchangeably in previous literature but few scholars have attempted to define or differentiate these terms as there are currently no standardised instruments to measure financial literacy (Schmeiser & Seligman, 2013).

Typically, financial literacy and/or financial knowledge indicators are used as inputs to determine the need for financial education and explain variations in financial outcomes such as savings, investing and debt behavior, but very few studies specifically emphasise the measurement of financial literacy as an objective (Marcolin & Abraham, 2006).

The research problem addressed financial education, which is distinguishable from financial literacy and financial knowledge. The variances between these concepts are discussed below in order to clarify the scope of financial education.

### **2.4.2. Financial Education**

Financial education includes all programmes, certifications, qualifications and skills-development courses that enhance an individual's financial knowledge or understanding of financial policies and economic changes, to enable effective, long term financial decision-making, or financial literacy (Turnham , 2010).

Hung, Parker and Yoong (2009) defined financial education as “the process by which people improve their understanding of financial products, services and concepts, so they are empowered to make informed choices, avoid pitfalls, know where to go for help and take other actions to improve their present and long-term financial well-being” (Hung, Parker, & Yoong, 2009, p. 4).

Hung, Parker and Yoong (2009) further explained financial education as a process whereby the users of financial services improve their understanding of financial products, notions and risks and on the basis of this information:



- Develop the skills and confidence about financial risks and occasions;
- Make decisions on the bases of good information;
- Are au fait with where to find help and take other effective measures for improving their wealth and the profitability of an organisation they may work for.

Similarly, according to The Consumer Financial Protection Bureau (2015) the goal of financial education from both a personal and business perspective is financial wellbeing. They further defined financial wellbeing as having a four-fold outcome:

- Having control over day-to-day, month-to-month finances;
- Having the capacity to absorb a financial shock;
- Being on track to meet financial goals;
- Having the financial freedom to make the choices that allows one to enjoy life (CFPB, 2015).

Therefore financial education includes all programmes, certifications, qualifications and skills development courses that enhance an individual's financial knowledge (or understanding of financial policies and economic changes), to enable effective, long term financial decision-making, or financial literacy (Turnham , 2010).

### **2.4.3. Financial Literacy**

The definition of general literacy is a person's ability to read and write (Zarcadoolas, Pleasant, & Greer, 2006). Huston (2010) suggested that "literacy in the broadest sense consists of understanding and use of materials related to prose (written information), document and quantitative information" (p. 306)

Following on from this definition financial literacy focuses on the application of financial knowledge which has been gained from a form of financial education.

According to the United States Government Accountability Office, financial literacy can be described as "the ability to make informed judgments and to take effective actions regarding the current and future use and management of money - it includes the ability to understand financial choices, plan for the future, spend wisely, and manage the challenges associated with life events such as a job loss, saving for retirement, or paying for a child's education" (Dawes, 2013, p. 467).

Huston (2010) contended that whilst there is no universally accepted meaning or definition of financial literacy a reasonable definition of financial literacy could equate to “measuring how well an individual can understand and use personal finance-related information” (p. 306)

Whilst many definitions often refer to financial literacy from a personal perspective, the same principle applies to the leaders responsible for the financial health and well-being of organisations (Hung, Parker, & Yoong, 2009).

Financial literacy can be conceptualised as having two dimensions: understanding (finance knowledge) and use (finance application) (Huston, 2010). Financial knowledge is an integral dimension of, but not equivalent to, financial literacy. Financial literacy has an additional application dimension which implies that an individual must have the ability and confidence to use his/her financial knowledge to make financial decisions (Huston, 2010).

Huston (2010) provided a diagrammatic depiction of the components of financial literacy that can be seen in Figure 1 below. This effectively indicated both the knowledge versus application dimension between the two terms as well as the existing co-dependence. Individuals require financial knowledge (acquired through financial education) before they are able to apply financial concepts in order to be considered financially literate.

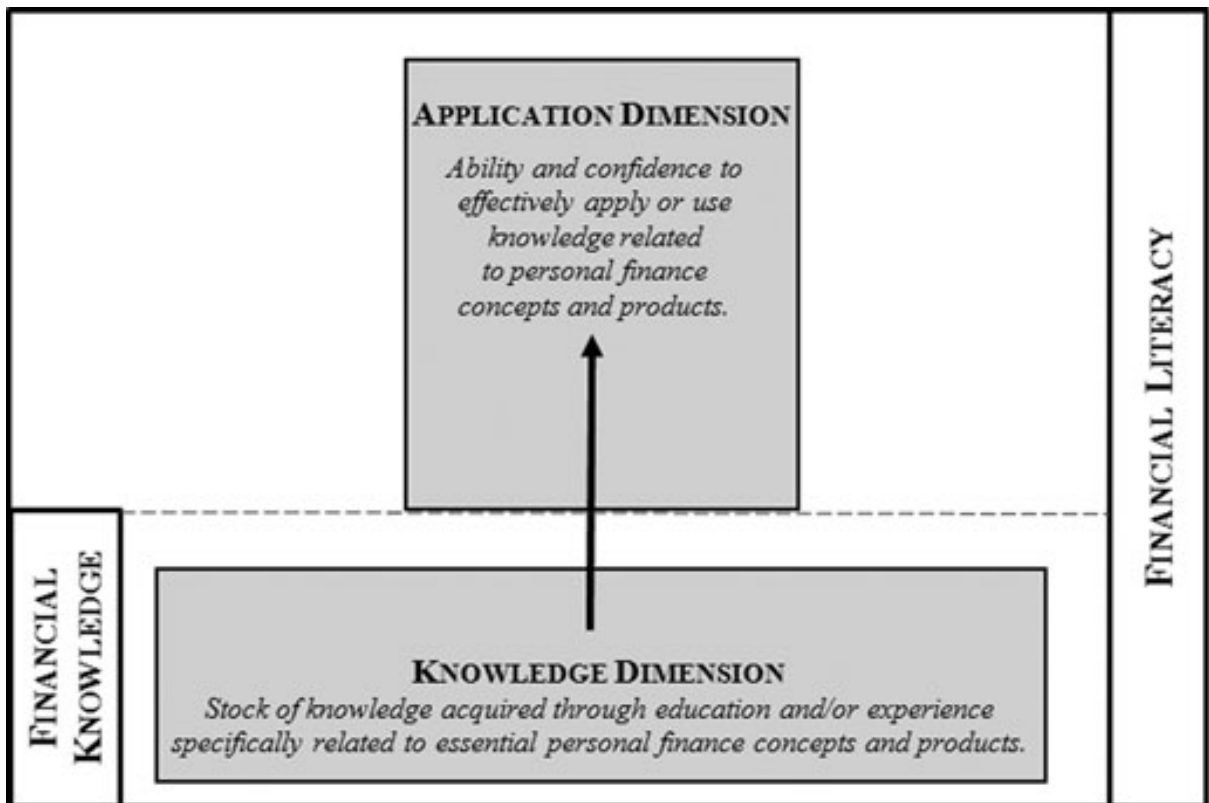


Figure 2: Concept of Financial Literacy (Huston, 2010)

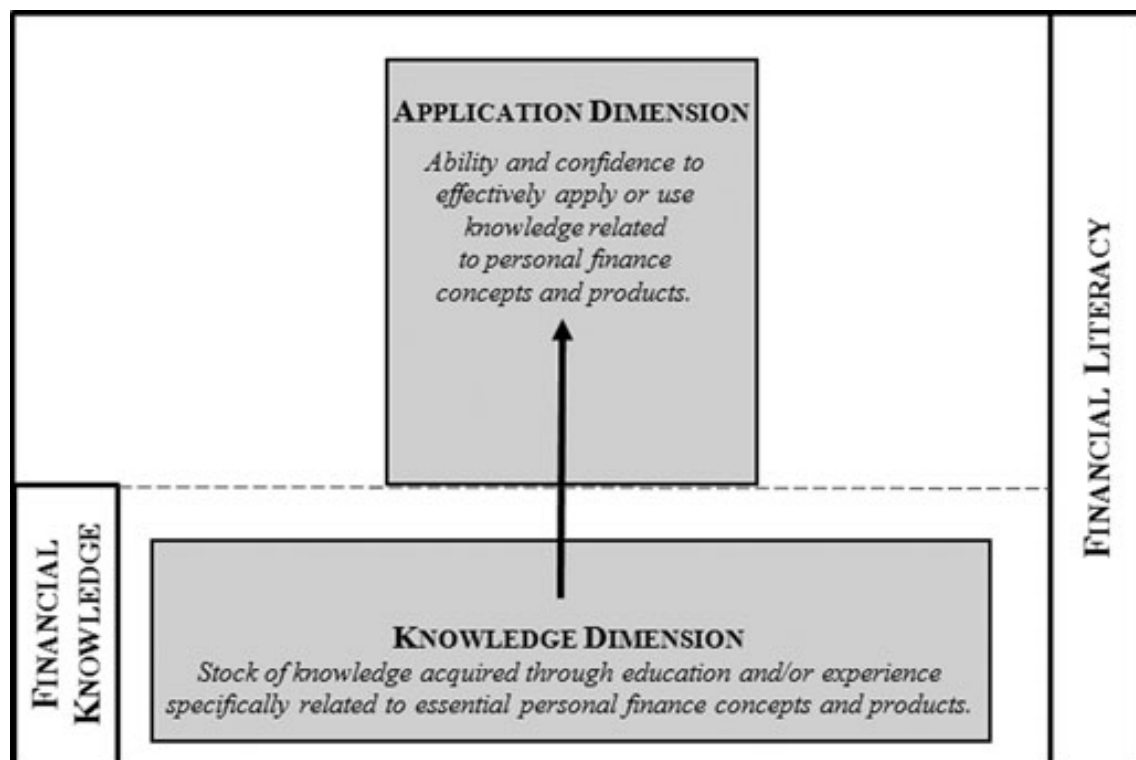
Hastings, Madrian, and Skimmyhorn (2012) provided similar definitions which further affirms that financial education forms the basis of financial knowledge, which, once applied, can be termed financial literacy.

#### 2.4.3. A Consolidated Perspective of Financial Education and Financial Literacy

Financial education, included all programs that address the acquisition of knowledge, attitude, and/or behaviour of individuals toward financial topics and concepts (Turnham, 2010) whereas financial literacy denoted one's understanding and knowledge of financial concepts that are crucial for effective financial decision-making (Fox, Bartholomae, & Lee, 2005).

Furthermore, Fox Bartholomae and Lee (2005) stated that “programmes that educate individuals to improve their financial literacy provide individuals with the knowledge, aptitude and skills base necessary to become questioning and informed consumers of financial services and manage their finances effectively” (p. 197).

Figure 2, as depicted by Huston (2010) shows the relationship between financial knowledge, education, literacy, behaviour and well-being. Financial literacy consisted of both knowledge and application of human capital and the overall attained human capital subsequently influences a person’s level of financial literacy (Huston, 2010).



**Figure 3: Relationship between Financial Literacy, Knowledge, Education, Behaviour and Well-being** (Huston, 2010)

The researched concluded that financial literacy is an element of human capital that can be used in financial activities to increase expected lifetime utility from consumption however Huston (2010) explained that other influences such as behavioural/cognitive biases, self-control problems, family, peer, economic, community and institutional can also affect financial behaviours and financial well-being.

This literature is aligned to the Echelon and Agency theories mentioned previously in that although CEOs may have similar financial education backgrounds, various other factors and personal inclinations may influence their actions and impact organisational profitability.

Related research documents a positive correlation between numeracy or more general cognitive abilities and financial outcomes: individuals with higher general cognitive abilities or greater fluency with numbers and numerical calculations tend to have higher levels of financial literacy (Hastings, Madrian, & Skimmyhorn, 2012).

Financial education is thus an input intended to increase a person's human capital, specifically financial knowledge and/or application i.e. their financial literacy (Marcolin & Abraham, 2006). Therefore literacy is the possession of knowledge or competence, and education is the means through which to build that capacity (McMormick, 2009).

#### **2.4.4. Financial Education Programmes**

Human capital is defined as employees' expertise, experience, knowledge, and skills and other acquired traits that contribute to the organisation's production and business processes and can increase through education and experience (Hutchinson & Russell, 2013). Furthermore, Hutchinson and Russell (2013) stated that human capital is vitally important for organisational success and CEOs in particular represent important assets to the firm to the extent that they represent valuable human capital that can enhance firm performance (Hutchinson & Russell, 2013). In entrepreneurial firms particularly, human capital attributes – including education, experience, knowledge, and skills – have long been argued to be a critical resource for success (Unger, Rauch, Frese, & Rosenbusch, 2011).

As a consequence of economic uncertainty and globalisation, CEOs have become increasingly focused on external influences, involving sophisticated corporate and marketing strategies that require proficiency in economics, management science, accounting, finance, and other disciplines (Hutchinson & Russell, 2013).

Subsequently, there has been a change in importance from firm-specific human capital (expertise derived from the skills and knowledge gained in the position which increases the future marginal product of the firm) to general human capital (includes managerial skills critical in leading a complex modern corporation, but not specific to any organisation) (Hutchinson & Russell, 2013).

These managerial skills are often developed in part through educational programmes undertaken by the individual – most often at their own expense, hence their value to the organisation. In most countries, university and/or business school financial programmes that form the basis of financial education can be summarised into five groups:

- Undergraduate degrees (e.g. Bachelor of Commerce, financial management, investment management, finance and accounting);
- Honours degrees relating to finance and accounting;
- Post Graduate research degrees related to finance and accounting (e.g. Masters Degree, PhD);
- Master of Business Administration (MBA);
- Chartered Financial Analyst qualification;
- Short courses including Certificates and Diplomas specialising in finance and financial management (Hutchinson & Russell, 2013).

For the purposes of this paper, all of the above qualifications - provided that they are financially orientated- were considered as financial education (Lindorff & Jonson, 2013).

#### **2.4.5. Conclusion**

The research focussed on the CEO and his/her ability to have an impact on organisational financial performance. From this literature review it was clear that whilst financial literacy focused on the application of the knowledge gained through the aforementioned programmes, financial education was the foundation and basis that provided both financial knowledge and literacy. This research paper therefore retained its focus on the financial education of CEOs and whether this influenced overall organisational performance.

## 2.5. Profitability

### 2.5.1. Introduction

“The overall goal of most organisations is to maximise profits” (Baye & Prince, 2013, p. 16). There are numerous different types of measures of profitability for example gross profit, net profit before tax, net profit after tax, earnings before interest tax and depreciation, return on assets and return on equity (Fama & French, 2006). Previous studies made use of a number of different ratios in order to assess profitability (Novy-Marx, 2013). These measures include *inter alia*:

Profit margin

- Asset use efficiency or Return on Assets (“ROA”);
- Gearing / Financial leverage; and
- Return on equity (“ROE”)

It was Szymanski’s (1993) view that ROI and ROA could be viewed collectively. Whilst the above measures were accepted as both reliable and sufficient measures of profitability they were all based on accounting information and thus did not take into consideration time value of money or opportunity costs or risk of investment by shareholders (Baye & Prince, 2013). These deliberations are relevant and should be taken into consideration when assessing the performance of an investment. However, the researcher elected to focus on the aforementioned measures of profitability in order to manage the scope of the research. With this in mind, the researcher reviewed the aforementioned ratios and derive at a conclusion as to the most efficient way for this study to measure profitability.

### 2.5.2. Profit Margin

The most effective way to measure operational efficiency is to analyse the net margin an organisation is able to secure (Graham, Winfield, & Miller, 2010). This ratio reviews the net profit as a percentage of the revenue generated. It incorporates what gross profit the organisation is able to achieve as well as how efficient the organisation is in terms of operational expenses.

The higher the net margin ratio the more efficient the organisation is at securing both margin and managing costs (Firer, Ross, Westerfield, & Jordan, 2012). The calculation for net margin/profit percentage is:

$$(\text{Net Profit/Revenue}) \times 100$$

### **2.5.3. Return on Assets (ROA) or Efficiency**

Industries have different areas of focus based on respective requirements. Manufacturing businesses, for example, are capital intensive and therefore hold a large amount of assets in order to generate revenue.

In this regard ROA is a critical measure of profitability as it measures what value of revenue the organisation is able to generate for each asset that it owns (Rothschild, 2006). The challenge with ROA is that it is an “after the fact” measure and is unable to assist with day-to-day management decisions and practices (Mutshinyani, 2009).

The calculation for ROA percentage:

$$(\text{Revenue/Assets}) \times 100$$

### **2.5.4. Gearing or Financial leverage**

Financial leverage measures the capital structure of an organisation and measures the mix between debt and equity in this regard (Prasad, Puri, & Jain, 2015). If an organisation is able to make use of debt in order to drive growth and additional profits then this will lead to additional profitability and growth. Financial leverage seeks to understand the amount of debt that is being made use of within an organisation in order to finance its assets and drive profitability (Graham, Winfield, & Miller, 2010).

The calculation to measure financial leverage:

$$(\text{Total Assets/Total Equity}) \times 100$$



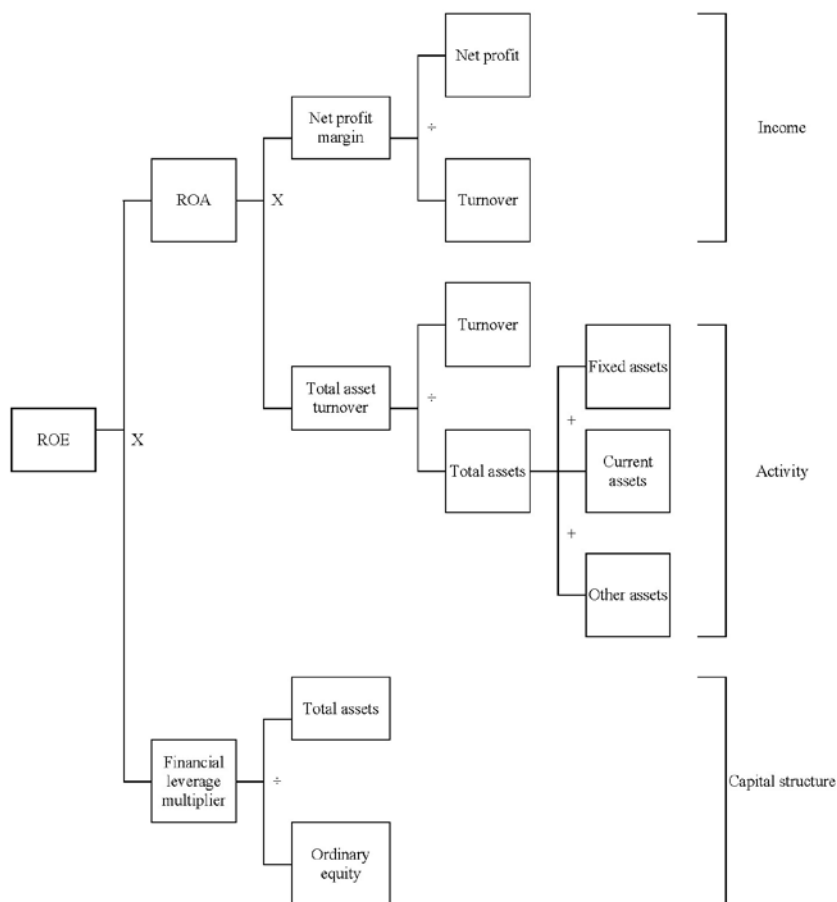
### 2.5.5. Return on Equity (ROE) the Du Pont Model

Return on equity is the best accounting ratio to measure shareholder performance and organisation profitability (Graham, Winfield, & Miller, 2010). The most effective form of measuring ROE is the Du Pont model (DPM) (Ward & Price, 2006). The DPM takes into account the most relevant areas of a business and consolidates all three of the aforementioned ratios in order to assess the return generated from the investment made by the shareholders.

It measures profitability from a holistic perspective and takes into account the three primary levers of an organisation namely, profitability, efficiency and leverage (Graham, Winfield, & Miller, 2010). The DPM of ROE is calculated as follows:

$$\text{ROE} = (\text{Profit/Revenue}) \times (\text{Sales/Assets}) \times (\text{Total Assets/Total Equity})$$

Below is a visual summary of the DPM which illustrates the various components of the DPM as well as how they contribute to the final calculation of ROE.



**Figure 4: Du Pont Analysis – Starting with ROE** (Correia, Flynn, Uliana, & Wormald, 2003)

### **2.5.6. Conclusion**

There are many different metrics used in order to measure organisational performance (Graham, Winfield, & Miller, 2010). Each different metric highlights a specific component and/or performance level of the organisation.

It is, however, not possible to review the entire performance of an organisation from a single metric (Graham, Winfield, & Miller, 2010). The researcher therefore elected to make use of the DPM as it focuses on three key components that essentially make up organisational performance and profitability analysis (Graham, Winfield, & Miller, 2010).

### **2.6. Literature Review Conclusion**

The purpose of this literature review was to provide the context of the research question and establish the key components thereof. In this regard the researcher initially identified two key theoretical positions that provide the framework for the research question namely, The Echelon Theory and Agency Theory. These theories gave the researcher clarity on what influences a leader in his/her decision-making process and what motivates him / her to make a specific decision. Both theories interplay with all three additional components of the literature review.

The review then defined what leadership is and which type and style of leader is relevant to the research question. The researcher then highlighted how the leader's decisions are influenced and what motivates him / her to make decisions in a specific fashion.

The review then shifted focus to assess what makes up financial education and ultimately highlighted which financial programmes are relevant and need to be considered as financial education for the purposes of this research paper.

Finally the review provided clarity on understanding organisational profitability and the relevant components that allow us to assess the profitability of an organisation.

Figure 4 above is a visual construct developed by the researcher in order to portray the structure and content of the literature review. With the above literature review in mind Chapter 3 highlights the various hypotheses that are relevant to the research question.

### **3. RESEARCH HYPOTHESES**

#### **3.1. Introduction**

In order to explore whether or not the level of financial education of the CEO has an impact on the financial performance of an organisation, the research objectives were considered and combined with the literature review with the purpose of proposing the underlying research hypotheses. The specific hypotheses - investigated in order to achieve the above - were as follows (where H0 denotes a null hypothesis and H1 denotes an alternate hypothesis):

#### **3.2. Hypothesis 1**

H0: There is no mean difference in ROE between financially and non-financially educated CEOs.

H1: There is a mean difference in ROE between financially and non-financially educated CEOs.

#### **3.2. Hypothesis 2**

H0: There is no mean difference in increase of ROE between financially and non-financially educated CEOs.

H1: There is a mean difference in increase of ROE between financially and non-financially educated CEOs.

### **3.3. Hypothesis 3**

H0: There is no mean difference in net profit margin between financially and non-financially educated CEOs.

H1: There is a mean difference in net profit margin between financially and non-financially educated CEOs.

### **3.4. Hypothesis 4**

H0: There is no mean difference in the level of efficiency between financially and non-financially educated CEOs.

H1: There is a mean difference in the level of efficiency between financially and non-financially educated CEOs.

### **3.5. Hypothesis 5**

H0: There is no mean difference in the level of gearing between financially and non-financially educated CEOs.

H1: There is a mean difference on the level of gearing between financially and non-financially educated CEOs.

### **3.6. Conclusion**

Results from the testing of these hypotheses and the subsequent discussion thereof are presented in Chapters 5 and 6 respectively. Chapter 4 follows and clarifies the research methodology and design relevant to the research question.

## **4. RESEARCH METHODOLOGY AND DESIGN**

### **4.1. Introduction**

In this chapter the researcher described the research design, including the unit of analysis and population, the sample, sampling method and sample size. Furthermore, the data collection and data cleaning processes, and design and implementation of the research instrument was presented. Finally the method of data analysis and the variables were offered.

### **4.2. Research Philosophy**

In order to achieve the research objectives a pragmatic philosophy was used to consider what will be possible to achieve in this research project as well as how and where to gain access to suitable data (Saunders & Lewis, 2012). Pragmatism may imply that a mixed methodology between both quantitative and qualitative research could be used. However, in this research paper, the researcher made use of a quantitative study (Flick, 2015).

### **4.3. Research Design**

The researcher made use of the research design known as Deduction when approaching the research question. Saunders and Lewis described this approach as “an approach that involves the testing of a theoretical proposition by using a research strategy designed to perform this test” (Saunders & Lewis, 2012, p. 108).

This approach allowed the researcher to test the aforementioned theoretical proposition by relating the level of financial education of the CEO to the financial performance of the organisation (Saunders & Lewis, 2012) (Flick, 2015).

Descriptive statistics were used in order to distinguish the difference between certain variables in each group and importantly to understand whether a relationship existed between the variables. It is important to note that the research did not focus on trying to understand whether one variable was the cause of another, i.e. whether CEO financial education is the reason the organisation performs or not.

The focus of the research was whether or not there is a statistically significant relationship between the variables in each group. However, it is exceptionally difficult to prove causation in a study of this nature (Flick, 2015).

A Quantitative analysis making use of continuous data was performed (Saunders & Lewis, 2012). A desktop review of all data was concluded and it was decided to utilise quantitative analysis in order to make use of the most accessible data available to understand whether a significant relationship existed between a number of variables available within the set of data (Saunders & Lewis, 2012). The researcher kept in mind the importance of both validity and reliability of the research findings throughout the research project (Saunders & Lewis, 2012).

#### **4.4. Population**

The population from which the sample was drawn comprised of all CEOs of commercial organisations in the world. This population was selected as the researcher felt that the relevance of financial education as well as organisational performance and importantly a possible relationship between these two variables would be important for everyone involved in commercial activities around the world.

#### **4.5. Unit of Analysis**

The unit of analysis for the research was the organisational performance of the 40 selected organisations over a 4-year period in relation to the qualifications of the CEO of each of the selected companies.

#### **4.6. Sampling method and size**

The Johannesburg Stock Exchange (JSE) is made up of 328 organisations and is the nineteenth largest stock exchange in the world (Jacobs, 2015). On 16 July 2008, the JSE created an index known as the All Share Index of Companies (Alsi 40) (Jacobs, 2015). The Alsi 40 is made up of the 40 largest companies, by market capitalisation, listed on the JSE at any given point in time. The Alsi 40 make up between and 80 and 90 percent of the total market capitalization of the JSE (Jacobs, 2015).

Based on the immense contribution to the overall size of the JSE, the researcher elected to make use of the Alsi 40 as the relevant sample for this research study. The research was initiated in early June 2015 and the sample of the Alsi 40 was selected on 12 June 2015.

The organisations cover a wide variety of industries including inter alia; mining, financial services, healthcare and retail. The researcher focused the study on the financial performance of the Alsi 40 over the selected time frame as well as their respective CEOs' level of financial education.

Based on the above the sampling methodology selected was non-probability purposive sampling. This methodology indicates that that there is no random element to the selected sample (Flick, 2015). These selected organisations made up the relevant sample (Saunders & Lewis, 2012). It is important to note that there are disadvantages to making use of a somewhat small and localised sample. Whilst many of the organisations trade outside of South Africa the majority of the CEOs are based in one country and the primary trading environment is South Africa (Flick, 2015).

#### **4.7. Research Measurement Instrument**

The Research Measurement Instrument selected was an extensive excel spreadsheet which consolidated all the necessary information relating to both CEO education and organisational financial performance (Appendix A). This consolidated sheet summarised all the relevant CEO information including their personal details such as age, nationality and importantly the educational background. In addition, the consolidated spreadsheet drew financial information on each of the sample set of organisations from each company's analysis sheet.

#### **4.8. Data gathering process**

A two phase approach was executed. Phase 1 of the research focused on the establishment of a suitable data set as well as the collection of all the relevant primary data. Phase 2 analysed the data in order to seek to understand the variables and interpret the results.

#### **4.8.1. Phase 1 – Data Collection analysis and variables**

Step 1: The researcher employed the assistance of a research assistant in completing the tasks outlined in phase 1 below. The research assistant is currently completing his honours degree in accounting at a reputable South African university and was therefore familiar with and capable to complete the required tasks.

Step 2: As the Alsi 40 is an index and the qualifying organisations change on a regular basis the researcher elected to make use of the Alsi 40 list of organisations at 12 June 2015.

Step 3: The researcher then accessed the previous four years of the relevant companies' annual reports and made use of financial information from the four previous years of financial information. All of the annual reports were available online on each of the respective companies' websites.

Step 4: This meant that the entire financial period reviewed for the sample was from 1 January 2011 to 31 December 2014.

Step 5: A 4-year period enabled the researcher to analyse the change (increase/decrease) in ROE for three financial periods.

Step 6: In relation to CEO selection, the researcher elected to make use of 31 December 2014 as the date to qualify a CEO to form part of the sample. This date was elected as the CEO selection date in order to align the CEO selection sample to the financial data collected.



Step 7: The researcher created and then populated a worksheet per organisation analysing the financial performance of each organisation within the sample over the specified four year period. An example of one of the organisation spreadsheets is depicted below.

<b>SHOPRITE HOLDINGS LTD</b>					
<b>CEO : WHITEY BASSON</b>					
<b>CEO GROUP : WFE</b>					
<b>YEAR END : JUNE</b>					
<b>YEAR</b>	<b>MARGIN</b>	<b>EFFICIENCY</b>	<b>LEVERAGE</b>	<b>ROE</b>	<b>INCREASE IN ROE</b>
2014	4%	252%	235%	21.64%	-2.06%
2013	4%	276%	220%	23.70%	-0.06%
2012	4%	268%	241%	23.76%	-11.65%
2011	3%	349%	290%	35.41%	

**Table 1: Example of organisation analysis sheet**

Step 8: The researcher then created a consolidated worksheet that incorporated all the necessary data relating to each CEO of the AlsI 40 organisations (Appendix A). This worksheet incorporated the following information onto one sheet:

1. Organisation Name;
2. Industry Grouping;
3. CEO Name, Age and Gender;
4. CEO education including undergraduate, graduate, masters and doctorate;
5. Organisation financial performance for the relevant 4-year period.

Step 9: Once these respective sheets had been completed, the researcher enlisted the services of a senior lecturer at a large tertiary institution who has a Masters in Accounting to randomly test five of the relevant worksheets of the sample organisations as well as review the CEO Summary Page. Subsequent to the aforementioned testing it was found that one area of the sample needed to be reviewed and re-submitted. This related to the treatment of revenue for the banking institutions. Initially the researcher made use of only non-interest income as part of revenue for the banking institutions. This was incorrect and upon re-submission the researcher made use of both interest income and non-interest income in order to assess the revenue of banking institutions. Once this review and re-submission had been completed it was confirmed by the reviewing party that the information had been collected and collated accurately and efficiently.

Step 10: Once the above step was complete, the researcher then separated the organisation into 2 groups:

Group 1: Organisations with CEOs WFE

Group 2: Organisations with CEOs WOFE

The researcher found that each group had an adequate number of organisations within each of the subsets listed above. Group 1 had a total of 27 CEOs whilst Group 2 had a total of 9 CEOs within this group. This meant that it was not necessary to expand the sample in order to ensure that there were enough organisations in each group and to provide enough data per group to be analysed (Flick, 2015). The process above concluded Phase 1 of the data collection process. The study advanced to Phase 2 of the data process, which allowed for the analysis of the relevant data and this is explained below.

#### 4.8.2. Phase 2 - Data Analysis Process

Step 1: As an initial method of analysis the researcher made use of Microsoft Excel and Excel pivot tables in order to assess the real numerical difference in the relevant DPM metrics between the two groups. This gave the researcher insight into the numerical differences between the two groups. Although this did not test statistical significance, this exercise gave the researcher an understanding of where any / all relevant differences lay between the two groups. Once this process was complete the researcher made use of quantitative statistics in order to test the stated hypothesis.

Step 2: The researcher enlisted the assistance of a data analyst who specialises in analysing quantitative data in order to assist in executing the statistical tests.

Step 3: The researcher elected to run an Independent Sample T-Test for each of the hypotheses. This allowed the researcher to identify any particular significant difference in between the means of the groups, in any of the 4 years of the data analysed.

Step 4: The P-value of 0.05 was then selected as the minimum value reflecting significance. The P-value confirmed the probability that the pattern of data in the sample could be produced by random data and therefore wherever the P-value was 0.05 or less this would indicate a statistically significant difference between the means of each group.

Step 5: Based on the P-values obtained the null hypotheses were either rejected or not rejected in favour of the alternative hypotheses.

#### 4.9. Research Limitations

The limitations of this research were as follows:

1. The primary limitation of the research was the scope and scale of the study. The number of organisations and CEOs around the world were substantially more than those selected as the sample. The parameters and scope of the organisations selected limited the research in a number of ways. Whilst many of the organisations may trade in other regions of the world this limits both the context and environment of the selected companies. In addition the size of the organisations selected was limited due to their geographic location as well as the size of the domestic market.
2. The research did not review state-owned, private, family or small to medium-sized enterprises. This means that the research did not take into account whether or not financial education of CEOs of these entities had an effect on the success of those organisations or not.
3. The make-up of an effective leader is complex and the research focused on isolating one primary asset of the leader, namely his/her financial education. While there are many other aspects of an effective leader, this study did not take these alternate attributes and skills into account.
4. There are many different methods of measuring organisational financial performance. Depending on what approach is taken, this may yield different findings and a different set of results depending on the definition of organisational financial performance.
5. Albeit that statistical methods were used to isolate the influences in the data the research did not consider any macro-economic or industry specific factors during the period under review.

There may well be a number of local and global economic factors that have had an impact on the sample organisations and these have not been taken into account for the purposes of this paper.

6. In order to attain alignment between financial data and CEO position the researcher elected to make use of the CEO in his/her position at 31 December 2014. There were instances where the CEO had only been in his/her position for a limited period of time. This would indicate that perhaps the CEO had not been in his/her position for an extended period of time and therefore his/her ability to have an impact on financial performance may have been limited.
  
6. The groupings of CEOs were not proportionate. The group made up of CEOs WFE was more than double the size of the group made up of CEOs WOFE. In addition the size of the group of CEOs WOFE was limited and a total of 9 organisations was a small group within a sample set.
  
7. Finally, whilst the CEO has been classified as the leader of the organisation, there are, however, many other forms of leaders and influencers of an organisation. These leaders and influencers may well have an impact on decisions relating to the financial performance of an organisation. For example, the Chairman of the Board, the Chief Financial Officer and the Board itself. All of these various stakeholders may play a formidable role in shaping the success of and organisation and these parties were not considered in this study.

#### **4.10. Conclusion**

The researcher designed a comprehensive and thorough research methodology and employed a quantitative research design. Primary data was obtained on the entire sample online from each of the respective organisation's annual report for the relevant years. The organisations covered a wide variety of industries and were all based in South Africa.

This ensured a well-defined sample of the relevant population. The sample size totalled 40 JSE-listed organisations. Once the data had been collated, the relevant Independent T-Tests were concluded on the data in order to assess whether or not The P-values relating to each hypothesis allowed for statistical significance or not. If statistical significance was confirmed this would have allowed the researcher to confirm the finding applied to both the sample as well as the population. Based on these results the null hypotheses were either rejected or not rejected in favour of the alternative hypotheses.

In the next chapter, the results of the aforementioned methodology as well as hypotheses tests are recorded.

## 5. RESULTS

### 5.1. Introduction

In order to outline the results within this chapter, the researcher initially focused on the education of each of the respective CEOs. In line with the methodology outlined in Chapter 4 above the researcher then outlined the numerical results relating to each of the stated hypotheses. Finally the researcher reviewed the statistical findings relating to each hypotheses. Below is a list of all the CEOs that formed part of the sample as well as their respective organisation and the industry within which the organisation operates.

ORGANISATION NAME	INDUSTRY GROUPING	CEO NAME
ANGLO AMERICAN	MINING	MARK CUTIFANI
ANGLO GOLD ASHANTI	MINING	SRINIVASAN VENKATAKRISHNAN
ASPEN PHARMACARE	HEALTHCARE	STEPHEN SAAD
ABSA BANK / BARCLAYS	FINANCIAL SERVICES	MARIA RAMOS
BRITISH AMERICAN TABACCO	OTHER	NICANDRO DURANTE
BHP BILLITON	MINING	ANDREW MACKENZIE
BIDVEST GROUP	OTHER	BRIAN JOFFE
CAPITAL AND COUNTIES PROP	PROPERTY	DAVID R LUKES
DISCOVERY HEALTTH	FINANCIAL SERVICES	ADRIAN GORE
FIRSTRAND GROUP	FINANCIAL SERVICES	SIZWE NXASANA
GROWTHPOINT PROPERTIES	PROPERTY	NORBERT SASSE
IMPALA PLAT HOLDINGS	MINING	TERENCE GOODLACE
IMPERIAL HOLDINGS	OTHER	MARK LAMBERTI
INTU PROPERTIES	PROPERTY	DAVID FISCHER
INVESTEC LTD	FINANCIAL SERVICES	STEPHEN KOSSEFF
INVESTEC PLC	FINANCIAL SERVICES	STEPHEN KOSSEFF
KUMBA IRON ORE	MINING	NORMAN MBAZIMA

LIFE HEALTHCARE GROUP	HEALTHCARE	ANDRE MEYER
MEDICLINIC INTERNATIONAL	HEALTHCARE	DANIE MEINTJES
MONDI PLC	OTHER	DAVID HATHORN
MONDI LTD	OTHER	DAVID HATHORN
MR PRICE GROUP	RETAIL	STUART I BIRD
MTN GROUP	OTHER	SIFISO DABENGWA
NASPERS	OTHER	BOB VAN DIJK
NEDCOR	FINANCIAL SERVICES	MICHAEL BROWN
OLD MUTUAL	FINANCIAL SERVICES	BRUCE HEMPILL
RAND MERCHANT INSURANCE HOLDING	FINANCIAL SERVICES	HERMANUS BOSMAN
REMGRO	FINANCIAL SERVICES	JJ DU RANDT
RICHEMONT	OTHER	JOHANN RUPERT
RMB HOLDINGS	FINANCIAL SERVICES	HERMANUS BOSMAN
SABMILLER	OTHER	ALAN CLARK
SANLAM	FINANCIAL SERVICES	JOHAN VAN ZYL
SASOL	OTHER	DAVID CONSTABLE
SHOPRITE	RETAIL	WHITEY BASSON
STANDARD BANK	FINANCIAL SERVICES	BEN KRUGER
STEINHOFF	RETAIL	MARKUS JOOSTE
TIGER BRANDS	OTHER	PETER MATLARE
VODACOM GROUP	OTHER	MOHAMED JOOSAB
WOOLWORTHS	RETAIL	IAN MOIR

**Table 2: CEOs investigated using their organisation financial data for the years 2011-2014**



## 5.2. Education of CEOs

The sample of organisations selected comprised of the Alsi 40 organisations listed of the JSE on the 12 June 2015. Within the Alsi 40 organisations, there were two organisations that had dual listings, namely Investec and Mondi. Both of the dual listings were in South Africa and The United Kingdom. Although the CEOs of these organisations were the same person, both the PLC and the LTD were included in the sample as the financial data for each entity was different. In addition two of the listed entities had the same CEO namely, Rand Merchant Bank Holdings Ltd and Rand Merchant Insurance Holdings Ltd. One organisation, namely Netcare Ltd, was excluded from all calculations. The reason for this was due to the 2012 gearing value, which showed an anomaly driven by a large negative non-controlling interest value that impacted both the gearing and the ROE for that year, as well as the change in ROE for the years on either side. To eliminate the effect of this outlier, Netcare Ltd was excluded from the organisational financial performance analysis. Based on the above and in order to achieve consistent data between CEO educational analysis and organisational financial performance the CEO of Netcare and his respective education was excluded from the research on CEO education as outlined in 5.2 below. With the above in mind the total number of CEOs analysed was thirty six i.e.  $40 - 1$  (Netcare Ltd)  $- 1$  (RMB Holdings Ltd and RMI Holdings Ltd)  $- 2$  (Investec Ltd and Mondi Ltd) = 36.

Based on the criteria outlined in chapter 4 above the CEOs were split into two groups namely those WFE and those WOFE. Keeping the above in mind this meant that the sample included a total of 36 CEOs. The group WFE consisted of 27 CEOs whilst those WOFE had 9 CEOs within the group. This means that a small sample size, despite representing a huge asset value, and caution should be exercised before drawing definitive conclusions.

In line with the first objective of the paper, the researcher had to establish the type of education the sample set of CEOs had. Tables 3, 4, 5, 6, 7 and 8 below state the type of undergraduate, Honours, Masters, Doctorate and Other education each CEO attained.

Undergraduate Degree	Frequency	Percentage	Financial education Yes / No
0	2	6%	No
Bachelor of Commerce	21	58%	Yes
Bachelor of Arts	1	3%	No
Bachelor of Personnel Leadership	1	3%	Yes
Bachelor of Environment and Design	1	3%	No
Bachelor of Finance	1	3%	Yes
Bachelor of Political Science	1	3%	No
Bachelor Quantity Surveying	1	3%	No
Bachelor of Science	6	17%	No
Bachelor of Law	1	3%	No
<b>Total</b>	<b>36</b>	<b>100</b>	
Summary			
CEOs without any undergraduate degree	2	6%	
CEOs WFE - undergraduate degree	24	67%	
CEOs WOFE - undergraduate degree	11	31%	

**Table 3: Undergraduate Degree Summary**

Table 4, 5 and 6 below analyse the post-graduate education of the sample set of CEOs. The researcher highlights the following areas of post-graduate education; Honours degree (Table 4), Masters degree (Table 5), Doctorates (Table 6) and Other types of education (Table 7).

Honours Degree	Frequency	Percentage	Financial education Yes / No
0	17	47%	No
Bachelor of Accounting	17	47%	Yes
Bachelor of Economics	1	3%	Yes
Bachelor of Personnel Leadership	1	3%	No
<b>Total</b>	<b>36</b>	<b>100</b>	
Summary			
CEOs without any Honours degree	17	47%	
CEOs WFE - Honours degree	17	47%	
CEOs WOFE - Honours degree	2	6%	

**Table 4: Honours Degree Summary**

Masters Degree	Frequency	Percentage	Financial education Yes / No
0	25	69%	No
Master of Business Administration	6	17%	Yes
Master of Law	1	3%	No
Master of Psychology	1	3%	No
Master of Real Estate	1	3%	No
Master of Southern African Studies	1	3%	No
Master of Science	1	3%	No
<b>Total</b>	<b>36</b>	<b>100%</b>	
Summary			
CEOs without any Masters degree	25	69%	
CEOs WFE - Masters degree	6	17%	
CEOs WOFE - Masters degree	5	14%	

**Table 5: Masters Degree Summary**

Doctorate Degree Qualification	Frequency	Percentage	Financial education Yes / No
0	31	86%	No
Doctor of Science and Philosophy	1	3%	No
Honourary Doctorate of Economics	1	3%	No
Honourary Doctorate of Commerce	1	3%	No
Doctor of Organic Chemistry	1	3%	No
Doctor of Philosophy	1	3%	No
<b>Total</b>	<b>36</b>	<b>100</b>	
<b>Summary</b>			
CEOs without any Doctorate	31	86%	
CEOs WFE - Doctorate (Not applicable see commentary below)	2	6%	
CEOs WOFE - Doctorate	3	8%	

**Table 6: Doctorate Degree Summary**

It is noteworthy that two of the CEOs have received honorary doctorates. These doctorates are listed above. Both doctorates would have qualified as financial education. However for the purposes of this paper these doctorates have not been included from the research as the doctorates do not qualify for financial education according to the literature review discussed in Chapter 2 above (Fox, Bartholomae, & Lee, 2005).

Other Education	Frequency	Percentage	Financial education Yes / No
0	27	75%	
Chartered Financial Analyst	4	11%	YES
Advanced Management Programme	2	6%	YES
Advanced IR Programme	1	3%	NO
NHD Metalliferous Mining	1	3%	NO
Public Policy Leadership Program	1	3%	NO
<b>Total</b>	<b>36</b>	<b>100%</b>	
Summary			
CEOs without education indicated as other	27	75%	
CEOs WFE (other education)	6	17%	
CEOs WOFE (other education)	3	8%	

**Table 7: Other Education Summary**

Education	Frequency	Percentage
CEOs WFE	27	75%
CEOs WOFE	9	25%
Total	36	100%

**Table 8: CEO Education Summary**

### 5.2.1. Financial Education Summary

As previously stated, the researcher analysed 36 CEOs. The researcher categorised education into five different categories of education namely undergraduate, Honours, Masters, Doctorate and other.

The researcher found that a total of 98 percent (%) of the sample had completed an undergraduate degree and within this subset 67 % were financially educated at undergraduate level. At honours level a total of 94% had completed an honours degree and within this category a total of 47% were financially based. At masters level a total of 31 % had completed a masters degree. 17% had completed an MBA and a total of 14% had completed a masters degree that did not qualify as financial education. At doctorate level a total of 14% of the CEOs had attained a doctorate. As mentioned earlier in this chapter two of the CEOs had attained honorary doctorates. Although the doctorates would have qualified as financial education for the purposes of this study these were excluded. This meant that only three CEOs were considered as having achieved a doctorate and all of these did not qualify as financial education. There were two formal “Other” programmes that qualified as financial education namely the Chartered Financial Analyst qualification and the Advanced Management Programme (Hung, Parker, & Yoong, 2009). In this regard a total of 17% of the CEOs have attained financial education in either of the aforementioned programmes.

When consolidating the above information a total of 75% of the CEOs have attained financial education leaving a total of 25 % of the CEOs in the WOFE grouping.

### 5.3. Numerical Results

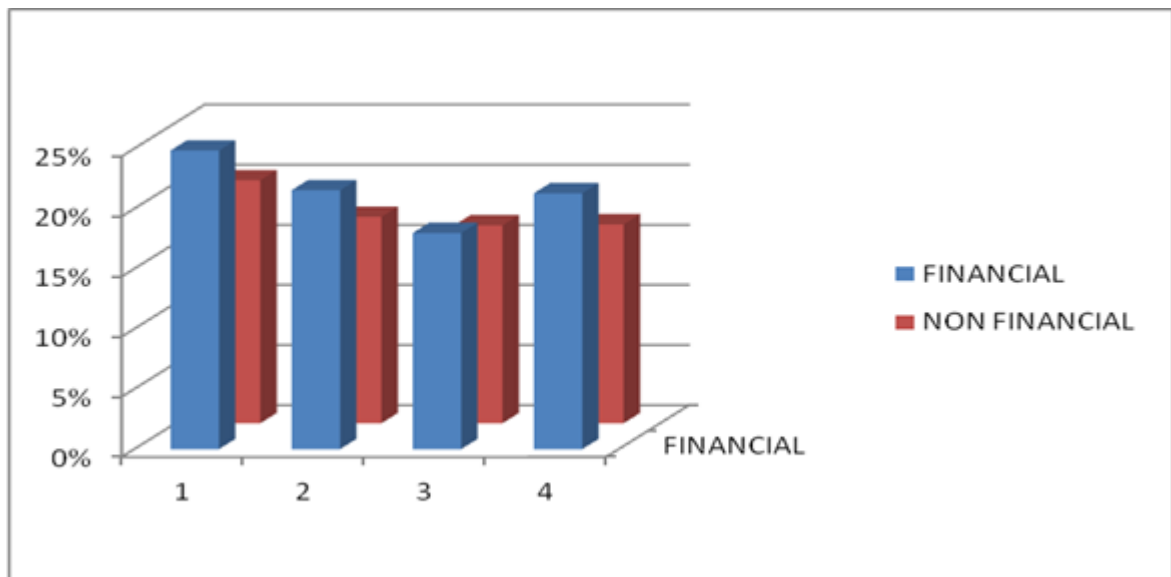
#### 5.3.1. ROE

Type of Education	Average ROE 2011	Average ROE 2012	Average ROE 2013	Average ROE 2014
CEOs WFE	25%	22%	18%	21%
CEOs WOFE	20%	17%	16%	17%
<b>Differential</b>	<b>5%</b>	<b>4%</b>	<b>2%</b>	<b>5%</b>

**Table 9: ROE Summary**

The difference in ROE between the two groups is limited. The organisations with CEOs WFE perform better each year. The average ROE for organisations with CEOs WFE is on average between 2% to 5% higher than the ROE of organisations with CEOs WOFE.

Although the differences appear quite minor, as a fraction of the actual ROE they can in fact be material. Below is a diagrammatical summary of the difference between the CEOs WFE versus the CEOs WOFE as discussed above.



**Figure 5: Difference in ROE between organisations lead by CEOs WFE and those organisations lead by CEOs WOFE**

### 5.3.2. Increase in ROE

The results of the comparison of the two groups in relation to increase in ROE are displayed below.

Type of Education	Average Increase ROE Period 1 2011 -2012	Average Increase ROE Period 2 2012 -2013	Average Increase ROE Period 3 2013 -2014
CEOs WFE	45%	-20%	-1%
CEOs WOFE	-54%	19%	-6%
<b>Differential</b>	<b>99%</b>	<b>-39%</b>	<b>6%</b>

**Table 10: Increase in ROE Summary**

The results for this comparison fluctuate slightly. The organisations with CEOs WFE outperform the CEOs WOFE in two of the three periods under investigation. It is clear that the largest success is that of the organisations with CEOs WFE in period 1. i.e. 2011 to 2012. The principal loss is that of organisations with CEOs WOFE for the same period.

### 5.3.2. Net Profit Margin

The comparison was concluded in the same way as detailed above and the results are as follows:

Type of Education	Average Margin 2011	Average Margin 2012	Average Margin 2013	Average Margin 2014
CEOs WFE	27%	20%	17%	24%
CEOs WOFE	30%	32%	39%	51%
<b>Differential</b>	<b>-3%</b>	<b>-12%</b>	<b>-22%</b>	<b>-27%</b>

**Table 11: Net Profit Margin Summary**



The results of this comparison are consistently in favour of the group of organisations with CEOs WOFE. Over the 4-year period, the average margin of each group indicates that the CEOs WOFE have a margin of 16 percent more than those WFE.

This number is calculated by adding together the 4 differential numbers highlighted above and dividing this number by 4 i.e.  $(3+12+22+27)/4$ . In addition the difference between the groups has grown consistently over the 4-year period under review. Whilst the difference between the groups in 2011 was relatively small (0.03) the difference in the average margin between the groups has shifted substantially to 0.27 in 2014.

#### 5.3.4. Efficiency

Type of Education	Average Efficiency 2011	Average Efficiency 2012	Average Efficiency 2013	Average Efficiency 2014
CEOs WFE	86%	82%	81%	74%
CEOs WOFE	56%	55%	51%	51%
<b>Differential</b>	<b>30%</b>	<b>28%</b>	<b>30%</b>	<b>23%</b>

**Table 12: Efficiency Summary**

The comparison of the average efficiency level of the two groups confirms that the organisations with CEOs WFE outperform their peers WOFE in this category. The average differential over the 4-year period is 0.2775. There is a consistent difference between the two groups over the 4-year period under review with the CEOs WFE driving efficiency at levels substantially higher than CEOs WOFE.

### 5.3.5. Gearing

Type of Education	Average Gearing 2011	Average Gearing 2012	Average Gearing 2013	Average Gearing 2014
CEOs WFE	454%	446%	442%	441%
CEOs WOFE	389%	396%	423%	411%
<b>Differential</b>	<b>65%</b>	<b>50%</b>	<b>19%</b>	<b>29%</b>

**Table 13: Gearing Summary**

The comparison of the average gearing levels of the two groups confirms that the organisations with CEOs WFE outperform their peers WOFE in this category.

The average differential over the 4-year period is 0.41. There is a consistent difference between the two groups over the 4-year period under review with the organisations with CEOs WFE driving gearing at levels higher than CEOs WOFE.

## 5.4. Hypothesis Analysis

### 5.4.1. Hypothesis 1

H0: There is no mean difference in ROE between financially and non-financially educated CEOs.

H1: There is a mean difference in ROE between financially and non-financially educated CEOs.

Variable	Mean CEOs WFE (Standard Deviation)	Mean CEOs WOFE (Standard Deviation)	p-value	Null hypothesis rejected
ROE2014	0.21 (0.16)	0.17 (0.14)	0.40	No
ROE2013	0.18 (0.25)	0.16 (0.09)	0.86	No
ROE2012	0.22 (0.18)	0.17 (0.10)	0.47	No
ROE2011	0.25 (0.21)	0.20 (0.10)	0.51	No

**Table 14: ROE Statistical Analysis Summary 2011 – 2014**

Based on the table 14 above the researcher was able to confirm that ROE delivered by the organisations WFE was on average higher than the ROE produced by organisations with CEOs WOFE. This is reflected by the means highlighted above as well as 5.3.1 above.

Based on the table 14 above, it can be seen that in **2014** the mean ROE for CEOs WOFE is 0.17 (SD 0.14). The mean ROE for CEOs WFE is 0.21 (SD 0.16). The mean difference in ROE (financial – non-financial) is 0.047 (95% CI, -0.07 – 0.16). This is a statistically insignificant difference in means given that the p-value (0.40) is greater than 0.05. Based on this finding, the researcher did not reject the null hypothesis and confirmed that there is no mean difference in ROE between financially and non-financially educated CEOs in 2014.

The results above reveal that the mean ROE for the **2013** financial year is lower for CEOs WOFE in comparison to WFE. Based on Table 14 above, it can be seen that mean ROE for CEOs WFE is 0.18 (SD 0.25) and 0.16 (SD 0.09) for CEOs WOFE. The mean difference in ROE (financial – non-financial) is 0.015 (95% CI, -0.15 – 0.18). The p-value (0.86) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. The researcher therefore did not reject the null hypothesis and confirmed that there is no mean difference in ROE between CEOs WFE and CEOs WOFE.

In **2012**, CEOs WFE recorded a higher ROE. Based on Table 14 above, it can be seen that mean ROE for CEOs WOFE is 0.17 (SD 0.10) and 0.22 (SD 0.18) for CEOs WFE. The mean difference in ROE (financial – non-financial) is 0.044 (95% CI, -0.08 – 0.17). The p-value (0.47) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. The researcher therefore did not reject the null hypothesis and confirmed that there is no mean difference in ROE between financially and non-financially educated CEOs.

In **2011**, CEOs WFE recorded a higher ROE. Based on Table 14vabove, it can be seen that mean ROE for CEOs WFE is 0.25 (SD 0.21) and 0.20 (SD 0.10) for CEOs WOFE. The mean difference in ROE (financial – non-financial) is 0.046 (95% CI, -0.09 – 0.19). The p-value (0.51) is greater than the critical value of 0.05, which suggests that the difference in means in not significant. Based on this finding, the researcher did not reject the null hypothesis that there is no mean difference in ROE between financially and non-financially educated CEOs.

#### 5.4.2. Hypothesis 2

H0: There is no mean difference in increase of ROE between financially and non-financially educated CEOs.

H1: There is a mean difference in increase of ROE between financially and non-financially educated CEOs.

Variable	Mean CEOs WFE (Standard Deviation)	Mean CEOs WOFE (Standard Deviation)	p-value	Null hypothesis rejected
$\Delta$ ROE2014	-0.01 (0.88)	-0.06 (0.51)	0.85	No
$\Delta$ ROE2013	-0.20 (1.10)	0.19 (0.65)	0.30	No
$\Delta$ ROE2012	0.45 (1.53)	-0.54 (1.64)	0.09	No

**Table 15: Increase in ROE Statistical Analysis Summary 2011 – 2014**

Based on Table 15 above, it can be seen that in **2014** the mean change (2013-2014) in ROE for CEOs WOFE is -0.06 (SD 0.51) and it is -0.01 (SD 0.88) for CEOs WFE. The mean difference of the increase in ROE (financial – non-financial) is 0.06 (95% CI, -0.54 – 0.65). This is a statistically insignificant difference in means given that the p-value (0.85) is greater than 0.05. In terms of the relevant hypothesis the researcher did not reject the null hypothesis as there is no mean difference in the change in ROE between financially and non-financially educated CEOs.

In **2013**, the results above show that the group of organisations led by CEOs WFE incurred a negative change (decrease) in ROE for the 2013 financial year. In contrary, CEOs WOFE recorded a positive change in ROE for the same period. Based on Table 15 above, it can be seen that mean change in ROE (2012-2013) for CEOs WOFE is 0.19 (SD 0.65) and -0.20 (SD 1.10) for CEOs WFE. The mean difference of the increase in ROE (financial – non-financial) is -0.39 (95% CI, -1.14 – 0.36). The p-value (0.30) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means.

Therefore, the researcher does not reject the null hypothesis and there is no mean difference in the change in ROE between financially and non-financially educated CEOs.

In contrast to the two previous periods, in **2012**, CEOs WFE recorded a positive change in ROE. Based on Table 15 above, it can be seen that mean change in ROE (2011-2012) for CEOs WOFE is -0.54 (SD 1.64) and 0.45 (SD 1.53) for CEOs WFE. The mean difference of the increase in ROE (financial – non-financial) is 0.99 (95% CI, -0.17 – 2.15). The p-value (0.09) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. The researcher therefore does not reject the null hypothesis that there is no mean difference in the change in ROE between financially and non-financially educated CEOs.

### 5.4.3. Hypothesis 3

H0: There is no mean difference in net profit margin between financially and non-financially educated CEOs.

H1: There is a mean difference in net profit margin between financially and non-financially educated CEOs.

Variable	Mean CEOs WFE (Standard Deviation)	Mean CEOs WOFE (Standard Deviation)	p-value	Null Hypothesis rejected
MARGIN2014	0.24 (0.28)	0.51 (1.25)	0.28	No
MARGIN2013	0.17 (0.24)	0.39 (0.88)	0.22	No
MARGIN2012	0.20 (0.21)	0.32 (0.62)	0.37	No
MARGIN2011	0.27 (0.50)	0.30 (0.41)	0.89	No

**Table 16: Net Profit Margin Statistical Analysis Summary 2011 – 2014**

Based on Table 16 above, it can be seen that in **2014** the mean net profit margin for CEOs WOFE 0.51 is (SD 1.25) and 0.24 is (SD 0.28) for CEOs WFE. The mean difference in net profit margin (financial – non-financial) is -0.27 (95% CI, -0.76 – 0.23). This is a statistically insignificant difference in means given that the p-value (0.28) is greater than 0.05. Therefore, the researcher does not reject the null hypothesis and there is no mean difference in the net profit margin between financially and non-financially educated CEOs.

The results above show that both groups recorded positive net profit margins for the **2013** financial year. However, organisations lead by CEOs WOFE recorded higher mean net profit margins. Table 16 above shows that the mean net profit margin for CEOs WOFE is 0.39 (SD 0.88) and 0.17 (SD 0.24) for CEOs WFE. The mean difference in net profit margin (financial – non-financial) is -0.22 (95% CI, -0.58 – 0.14). The p-value (0.22) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. Therefore, the researcher does not reject the null hypothesis and that there is no mean difference in the net profit margin between financially and non-financially educated CEOs.

Both groups recorded positive net profit margins for the **2012** financial year. However, organisations lead by CEOs WOFE recorded higher mean net profit margins. Table 16 above shows that the mean net profit margin for CEOs WOFE is 0.32 (SD 0.62) and 0.20 (SD 0.21) for CEOs WFE. The mean difference in net profit margin (financial – non-financial) is -0.12 (95% CI, -0.49 – 0.15). The p-value (0.37) is greater than the critical

value of 0.05, which suggests that there is a statistically insignificant difference in means. Therefore the researcher does not reject the null hypothesis and there is no mean difference in the net profit margin between financially and non-financially educated CEOs.

In **2011**, both groups recorded a positive net profit margin for financial year. However, organisations lead by CEOs WOFE recorded higher mean net profit margin. Table 16 above shows that the mean net profit margin for CEOs WOFE is 0.30 (SD 0.41) and 0.27 (SD 0.50) for CEOs WFE. The mean difference in net profit margin (financial – non-financial) is -0.03 (95% CI, -0.38 – 0.33). The p-value (0.89) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. Therefore, the researcher does not reject the null hypothesis and there is no mean difference in the net profit margin between financially and non-financially educated CEOs.

#### 5.4.4. Hypothesis 4

H0: There is no mean difference in the level of efficiency between financially and non-financially educated CEOs.

H1: There is a mean difference in the level of efficiency between financially and non-financially educated CEOs.

Variable	Mean CEOs WFE (Standard Deviation)	Mean CEOs WOFE (Standard Deviation)	p-value	Null hypothesis rejected
EFFIC2014	0.74 (0.75)	0.51 (0.40)	0.36	No
EFFIC2013	0.81 (0.89)	0.51 (0.38)	0.31	No
EFFIC2012	0.82 (0.90)	0.55 (0.42)	0.36	No
EFFIC2011	0.86 (0.99)	0.56 (0.43)	0.36	No

**Table 17: Efficiency Statistical Analysis Summary 2011 – 2014**

Findings in Table 17 above, reveal that in **2014** efficiency for CEOs WOFE is 0.51 (SD 0.40) and 0.74 (SD 0.75) for CEOs WFE. The mean difference in efficiency (financial – non-financial) is 0.23 (95% CI, -0.28 – 0.74). This is a statistically insignificant difference in means given that the p-value (0.36) is greater than 0.05.

The researcher therefore does not reject the null hypothesis and confirmed that there is no mean difference in efficiency between financially and non-financially educated CEOs.

In **2013**, the results above show that CEOs WFE were more efficient than CEOs WOFE. Findings in Table 17 above, reveal that efficiency for organisations led by CEOs WOFE is 0.51 (SD 0.38) and 0.81 (SD 0.89) for organisations led by CEOs WFE. The mean difference in efficiency (financial – non-financial) is 0.30 (95% CI, -0.29 – 0.89).

The p-value (0.31) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. The researcher does not reject the null hypothesis and confirmed that there is no mean difference in efficiency between financially and non-financially educated CEOs.

The results above show that CEOs WFE were more efficient than those WOFE during **2012**. Findings in Table 17 above, reveal that efficiency for organisations led by CEOs WOFE is 0.82 (SD 0.90) and 0.55 (SD 0.42) for organisations led by CEOs WFE. The mean difference in efficiency (financial – non-financial) is 0.28 (95% CI, -0.33 – 0.88). The p-value (0.36) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. Therefore, the researcher does not reject the null hypothesis and the researcher confirmed that there is no mean difference in efficiency between financially and non-financially educated CEOs.

The results above show that CEOs WFE were more efficient than those WOFE in **2011**. Findings in Table 17 above, reveal that efficiency for organisations led by CEOs WOFE 0.56 (SD 0.43) and 0.86 (SD 0.99) for organisations led by CEOs WFE. The mean difference in efficiency (financial – non-financial) is 0.30 (95% CI, -0.35 – 0.96). The p-value (0.36) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. The researcher therefore does not reject the null hypothesis and confirmed that there is no mean difference in efficiency between financially and non-financially educated CEOs.



#### 5.4.5. Hypothesis 5

H0: There is no mean difference in the level of gearing between financially and non-financially educated CEOs.

H1: There is a mean difference on the level of gearing between financially and non-financially educated CEOs.

Variable	Mean CEOs WFE (Standard Deviation)	Mean CEOs WOFE (Standard Deviation)	p-value	Null hypothesis rejected
GEARING2014	4.41 (4.27)	4.11 (4.97)	0.86	No
GEARING2013	4.42 (4.53)	4.23 (5.23)	0.91	No
GEARING2012	4.46 (4.57)	3.96 (4.78)	0.77	No
GEARING2011	4.54 (4.81)	3.89 (4.75)	0.71	No

**Table 18: Gearing Statistical Analysis Summary 2011 – 2014**

Findings in Table 18 above reveal that in **2014** the gearing ratio for CEOs WOFE is 4.11 (SD 4.97) and 4.41 (SD 4.27) for CEOs WFE. The mean difference in gearing (financial – non-financial) is 0.29 (95% CI, -3.02 – 3.60). This is a statistically insignificant difference in means given that the p-value (0.86) is greater than 0.05 confirming that the researcher does not reject the null hypothesis and was able to confirm that there is no mean difference in gearing ratio between financially and non-financially educated CEOs in 2014.

The results above confirm that organisations lead by CEOs WFE had more financial leverage than those WOFE for **2013**. Findings in Table 18 above, reveal that the gearing ratio for CEOs WOFE is 4.23 (SD 5.23) and 4.42 (SD 4.53) for CEOs WFE. The mean difference in gearing (financial – non-financial) is 0.19 (95% CI, -3.31 – 3.69).

The p-value (0.91) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. Therefore, the researcher does not reject the null hypothesis and confirmed that there is no mean difference in gearing ratio between financially and non-financially educated CEOs.

The results above show that organisations lead by CEOs WFE had more financial leverage than those WOFE for the **2012** financial year. Findings in Table 18 above, reveal that the mean gearing ratio for CEOs WOFE is 3.96 (SD 4.78) and 4.46 (SD 4.57) for CEOs WFE. The mean difference in gearing (financial – non-financial) is 0.50 (95% CI, -2.94 – 3.94). The p-value (0.77) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. Meaning we do not reject the null hypothesis that there is no mean difference in gearing ratio between financially and non-financially educated CEOs.

The results above show that organisations lead by CEOs WFE had more financial leverage than those WOFE for the **2011** financial year. Findings in Table 18 above, reveal that the mean gearing ratio for CEOs WOFE is 3.89 (SD 4.75) and 4.54 (SD 4.81) for CEOs WFE. The mean difference in gearing (financial – non-financial) is 0.65 (95% CI, -2.92 – 4.21). The p-value (0.71) is greater than the critical value of 0.05, which suggests that there is a statistically insignificant difference in means. Meaning we do not reject the null hypothesis that there is no mean difference in gearing ratio between financially and non-financially educated CEOs.

### 5.5. Summary Table

A summary table of the results of the hypothesis testing follows:

Variable	Mean CEOs WFE (Standard Deviation)	Mean CEOs WOFE (Standard Deviation)	p-value	Null hypothesis rejected
ROE2014	0.21 (0.16)	0.17 (0.14)	0.40	No
ROE2013	0.18 (0.25)	0.16 (0.09)	0.86	No
ROE2012	0.22 (0.18)	0.17 (0.10)	0.47	No
ROE2011	0.25 (0.21)	0.20 (0.10)	0.51	No
$\Delta$ ROE2014	-0.01 (0.88)	-0.06 (0.51)	0.85	No
$\Delta$ ROE2013	-0.20 (1.10)	0.19 (0.65)	0.30	No
$\Delta$ ROE2012	0.45 (1.53)	-0.54 (1.64)	0.09	No
MARGIN2014	0.24 (0.28)	0.51 (1.25)	0.28	No
MARGIN2013	0.17 (0.24)	0.39 (0.88)	0.22	No

MARGIN2012	0.20 (0.21)	0.32 (0.62)	0.37	No
MARGIN2011	0.27 (0.50)	0.30 (0.41)	0.89	No
EFFIC2014	0.74 (0.75)	0.51 (0.40)	0.36	No
EFFIC2013	0.81 (0.89)	0.51 (0.38)	0.31	No
EFFIC2012	0.82 (0.90)	0.55 (0.42)	0.36	No
EFFIC2011	0.86 (0.99)	0.56 (0.43)	0.36	No
GEARING2014	4.41 (4.27)	4.11 (4.97)	0.86	No
GEARING2013	4.42 (4.53)	4.23 (5.23)	0.91	No
GEARING2012	4.46 (4.57)	3.96 (4.78)	0.77	No
GEARING2011	4.54 (4.81)	3.89 (4.75)	0.71	No

**Table 19: Statistical Analysis Summary 2011 – 2014**

The summary table above shows a summary of all hypotheses tests done using t-tests. The p-values for all t-tests were greater than the 0.05 critical value. This suggests that there was no statistically significant association established between financial education and organisational financial performance of The Alsi 40 on JSE listed organisations for the selected time period. Based on this the researcher does not reject the null hypothesis for any of the stated hypotheses in Chapter 3.

## 5.6. Conclusion

The education of the CEOs within the sample were analysed. The numerical results of the data were then outlined and finally the hypothesis test results were presented in this chapter. In the following chapter the results are discussed.

## **6. ANALYSIS OF RESULTS**

### **6.1. Introduction**

The results outlined in Chapter 5 above are now discussed. The researcher makes reference to both the theory and the literature review outlined in Chapter 2 and analysed each hypothesis on an individual basis and then summarized the findings at the conclusion of this chapter.

### **6.2. CEO Education**

The analysis of the level of education of the 36 CEOs confirmed that all but two of the CEOs of Alsi 40 organisations have some level of formal education. Financial education is the primary tool to give an individual financial knowledge (Fox, Bartholomae, & Lee, 2005) and it is this knowledge that enables an individual to make financially astute decisions (Huston, 2010). In this regard the majority of CEOs of the Alsi 40 sample of organisations are financially educated. 67% of CEOs have received financial education at the undergraduate level. 47% of the CEOs have attained financial education at an honours level whilst 17% of the CEOs have been financially educated at Masters level. It is important to note that Based on the above findings the research suggests that if an individual has the desire to lead an Alsi 40 organisation in South Africa then the individual may be best served by attaining a level of financial education.

In both Chapter 1 and Chapter 2 the researcher highlighted the importance of a leader to an organisation (Antonakis & Day, 2012) as well the many facets and traits that have the ability to influence a leader's ability to drive organisational performance (Dinh, Lord, Gardner, Meuser, & Liden, 2014).

### **6.3. Hypothesis 1**

H0: There is no mean difference in ROE between financially and non-financially educated CEOs.

H1: There is a mean difference in ROE between financially and non-financially educated CEOs.

The ROE for the organisations with CEOs WFE is on average slightly above that of their peers WOFE. It is noteworthy, however, that over the 4-year period, the ROE of organisations with CEOs WFE is higher in three of the four years. The cumulative difference in ROE over the four years is 6%. As discussed in Chapter 2, when assessing the ROE of each organisation the researcher made use of the DPM (Ward & Price, 2006). This model allowed the researcher to understand what levers the CEOs of each group focus on or are superior at managing in order to attain a higher ROE (Graham, Winfield, & Miller, 2010). Whilst the findings relating to hypothesis 1 are not statistically significant the CEOs WFE were able to generate a higher ROE over the period under review. What is evident is that this is achieved despite lower margins which were compensated for by an improved ability to drive both efficiency and gearing. Keeping in mind the Echelon Theory (Hambrick, 2007) the above findings would indicate that perhaps the financial education of the CEOs WFE may have an impact on their understanding of the importance of and ability to use both efficiency and gearing respectively in order to drive organisational performance and ROE.

The difference, however, is not statistically significant, and therefore, the researcher does not reject the null hypothesis (Saunders & Lewis, 2012). The p-value is an indication of the probability that the researcher could get a result either in favour of or against the null hypothesis (Saunders & Lewis, 2012). When the p-value is very small and below the requisite confidence interval of 0.05 then this would enable the researcher to reject the null hypothesis (Saunders & Lewis, 2012). When assessing the p-value over the 4-year period the researcher found that the p-value across all years was well above the requisite 0.05 level required in order to reject the null hypothesis (Flick, 2015).

For example in 2013 the p-value is at its highest level at 0.85 and once again this is too high and the researcher does not reject the null hypothesis in favour of the alternate hypothesis.

This pattern confirms that from the sample selected by the researcher and the subsequent analysis concluded, there is no statistically significant evidence to confirm that a mean difference between the ROE of financially and non-financially managed organisations exists.

## 6.4. Hypothesis 2

H0: There is no mean difference in increase of ROE between financially and non-financially educated CEOs.

H1: There is a mean difference in increase of ROE between financially and non-financially educated CEOs.

The increase in ROE may be a more accurate measure when assessing the performance of an organisation (Eitzen & Sartorius, 2012). The reason for this is that whilst ROE measures the performance of the business in a specific year, it does not take into account the relative size of the organisation. For example, a small increase in ROE may well equate to a more substantial profit of a large organisation as opposed to a very high ROE of a small organisation. Therefore the increase in ROE is perhaps a more salient measure when assessing the performance of an organisation as it focuses purely on the increase of an organisation. It may well be more difficult for a large organisation to show the same level of increase in ROE as the base for a large organisation, i.e. the equity number may be substantially more than a smaller organisation. The organisations with CEOs WFE show an initial increase in ROE from 2011 to 2012. This, however, changes in 2012 to 2013 as well as in 2013 to 2014. In the earlier period the difference between the two groups of CEOs is 0.97.

The CEOs WFE delivered an average increase in ROE of 0.40. This, however, swings to -0.16 in the subsequent period under review and then -0.30 in the final period under review.

The CEOs WFE deliver on average a -0.57 decrease in ROE in the initial period however this number then becomes positive in the 2012 – 2013 period. In the final period under review the ROE then decreases once again to -0.15.

In addition to the mean increases / decreases the researcher reviewed the p-value generated by the data. In all three instances the p-value generated is above 0.05 and therefore the researcher does not reject the null hypothesis. In the 2011 -2012 period the p-value is 0.11 and this is the closest p-value in the entire set of data that would allow us to reject the null hypothesis. The difference, however, is not statistically significant

and, therefore, the researcher does not reject the null hypothesis (Saunders & Lewis, 2012).

When assessing the p-value over the 4-year period the researcher found that the p-value across all years was above the requisite 0.05 level required in order to reject the null hypothesis (Flick, 2015). For example in 2014 the p-value is at highest level at 0.82 and this once again was far too high to allow the researcher to reject the null hypothesis. What this data indicates is that from the sample selected by the researcher there is no statistically significant evidence to reject the null hypothesis and therefore the research confirms that based on the sample there is no mean difference in the increase in ROE of organisations that are managed by CEOs WFE as opposed to those managed by CEOs WOFE.

### **6.5. Hypothesis 3**

H0: There is no mean difference in net profit margin between financially and non-financially educated CEOs.

H1: There is a mean difference in net profit margin between financially and non-financially educated CEOs.

The net profit margin for the organisations with CEOs WOFE is on average above that of their peers WFE. This is the case in all four years that the researcher reviewed. In two of the four years under review the net profit margin of CEOs WOFE is more than double than that of their peers.

This is the case in both 2013 and 2014. In the initial two years i.e. 2011 and 2012 the difference between the two groups is six percent and fifteen percent respectively. The cumulative difference in net profit margin over the four year period is 0.8.

It is noteworthy that this is the only lever/metric within the DPM where the CEOs WOFE outperform the CEOs WFE. In addition, the pattern is consistent over the entire 4-year period.

The fact that this is the case may well align with the Agency Theory. In many organisations, CEO remuneration is aligned to the net profit generated by the organisation (Adams, Heitor, & Ferreira, 2005). In the instance where a CEO is not financially educated, the CEO may focus on net profit as the key metric in order to drive

organisational financial performance. Financial education provides one with the knowledge and understanding that there are, in fact, other variables that if focused on, will assist in the overall financial performance of the organisation (Custodio & Metzger, 2014).

This would align with the Echelon Theory in that a CEO WOFE and a CEO WFE have a different background in terms of education and according to this theory this will have an impact on the type of decisions the CEO will make (Hambrick, 2007). Whilst the differences are consistent over the period, the difference in net profit margin over the 4-year period however, is not statistically significant and, therefore, the researcher does not reject the null hypothesis (Saunders & Lewis, 2012).

When assessing the p-value over the 4-year period, the researcher found that the p-value across all years was above the requisite 0.05 level required in order to reject the null hypothesis (Flick, 2015). In 2013, the p-value is at lowest level at 0.15. However, once again this is not low enough to allow the researcher to reject the null hypothesis.

#### **6.6. Hypothesis 4**

H0: There is no mean difference in the level of efficiency between financially and non-financially educated CEOs.

H1: There is a mean difference in the level of efficiency between financially and non-financially educated CEOs.

The efficiency level of the organisations with CEOs WFE is on average above that of their peers WOFE. This is the case in all four years that the researcher reviewed. The cumulative difference in efficiency over the 4-year period is 84% with an average difference of 21%. The largest difference between the mean of the two groups is in 2013 when there is a 25% difference between the two groups of CEOs.



Financial education is a powerful tool that enhances financial knowledge and it is this knowledge that will improve the financial decision-making ability of an individual (Hung, Parker, & Yoong, 2009). With this notion in mind it may be the case that the CEOs WFE are able to focus on the efficiency equation based on their understanding that to improve the ROE of an organisation the ability to generate and drive maximum revenue from the organisations asset base is of fundamental importance (Rothschild, 2006). Similarly the CEO WFE may understand that it is critical to ensure that the organisations assets on the balance sheet are being utilised in order to generate the maximum return possible.

By way of example a CEO WFE may well seek to make use of a cash balance by either investing the cash in a profit generating asset or investing the capital in the business in order to maximise the return thereof. The CEO WFE would understand that is more efficient to do this than simply holding the cash in a generic bank account earning, at best, at a minimal interest rate.

When assessing the p-value over the 4-year period, the researcher found that the p-value across all years was well above the requisite 0.05 level required in order to reject the null hypothesis (Flick, 2015). In 2011, the p-value is at its highest level at 0.53 and the lowest p-value is 0.41 in 2013 which is still well above the requisite 0.05 confidence interval in order to reject the null hypothesis.

This research therefore, indicates that whilst differences may well exist these differences are not statistically significant and the researcher is therefore, unable to extrapolate or make use of a finding in a larger sample (Saunders & Lewis, 2012).

## **6.7. Hypothesis 5**

H0: There is no mean difference in the level of gearing between financially and non-financially educated CEOs.

H1: There is a mean difference in the level of gearing between financially and non-financially educated CEOs.

The gearing level of the organisations with CEOs WFE is on average above that of their peers WOFE. This is the case in all four years that the researcher reviewed. The largest difference between the mean of the two groups is in 2014.

As highlighted in Chapter 2, Hung, Parker and Yoong (2009) confirmed that financial education will develop ones skills and confidence relating to financial risks and opportunities. In this regard making use of debt within an organisation - if misunderstood and mismanaged - can be detrimental to the performance of that organisation (Baye & Prince, 2013).

Financial education has the ability to assist a CEO in understanding the notion that, if used correctly, debt can in fact improve ROE and assist in the growth of the organisation (Lindorff & Jonson, 2013). With this in mind, it may be the case that the CEOs WFE have an understanding and are confident that being able to introduce a reasonable level of debt into the organisation may well improve the ROE of the organisation.

When assessing the p-value over the 4-year period the researcher found that the p-value across all researched years was above the requisite 0.05 level required in order to reject the null hypothesis (Flick, 2015). In 2011, the p-value is at its lowest level at 0.20, which is still above the requisite 0.05 confidence interval in order to reject the null hypothesis.

This research, therefore, indicates that whilst differences may well exist these differences are not statistically significant and the researcher is, therefore, unable reject the null hypothesis (Saunders & Lewis, 2012).

## **7. CONCLUSION**

### **7.1. Introduction**

The results which were presented in Chapter 5 and discussed in Chapter 6 are analysed below in terms of the principal findings of the research, implications for business, the limitations of the research and finally the researcher suggested areas for future research. As stated in Chapter 1 there is limited research relating to this paper's question. In this regard the researcher has attempted to contribute to the discussion relating to leadership and whether or not it is vital for a CEO to have financial education in order to drive organisational financial performance. The outcome of this paper suggests that there is not a statistically significant difference in organisational financial performance in relation to whether or not the CEO has financial education. The researcher acknowledges that this conclusion is in no way definitive however, the researcher believes that a small contribution to this area of literature has been developed. The research design and methodology, for example, can be extrapolated and enhanced allowing for additional research – possibly in other territories and making use of larger samples.

### **7.2 Principal Findings**

In Chapter 1, the primary objectives were provided to motivate the reasons for this research. Each of these reasons is discussed in terms of the principal findings the researcher was able to identify in each area as well as the implications for business from the research.

#### **7.2.1. To analyse the education of the CEOs of the 40 largest listed organisations in South Africa**

The summary of findings provides a clear understanding of what type and level of financial education a CEO of a large listed organisation in South Africa has obtained. There were many interesting findings in relation to this objective. 75% of the CEOs of the Alsi 40 organisations have financial education and the balance do not. What is clear is that in order to become a CEO of an Alsi 40 organisation some form of formal degree and/or qualification is a pre-requisite. An Honours degree and/or a Masters degree are similarly important.

Out of the entire sample of 36 CEOs a total of 98% of the CEOs have an undergraduate degree, 53% have an honours degree and 31% have a Masters degree. Therefore a total of 84% of the CEOs within the sample have attained either an honours degree and/or a Masters degree. An additional 14% have attained a Doctorate and two CEOs or 6% of these have received an Honourary doctorate degree. There is a heavy leaning towards CEOs WFE. Only 25% of the CEOs within the sample do not have financial education and this seemed to endorse the earlier statement that South African organisations prefer top tier management i.e. CEOs to have a level of financial education.

### **7.2.2. To determine whether or not financial education of the CEO has a relationship with organisational financial performance**

The researcher found that there is no statistically significant difference in organisational financial performance between the CEOs WFE and those WOFE. The numerical analysis making use of the DPM of the two groups however highlights the fact that there are areas of difference between the two groups and that the overall ROE over the 4-year period and the increase thereof was slightly higher for the CEOs WFE verse the CEOs WOFE.

In particular interest to the researcher was the manner in which it would seem the CEOs in each group drove financial performance. The CEOs WOFE seem to focus on net profit margin whilst the CEOs WFE seem to focus on both efficiency and gearing. The researcher is not suggesting that net profit margin is not important to CEOs WFE and that gearing and/or efficiency is not relevant to CEOs WOFE, however it did seem to be the case that each group has a different focus. One possibility may be that, for example, CEOs WFE have a greater level of understanding of the power of both efficiency and gearing that enables them to focus their attention on these two levers within the DPM. It may be their financial education that contributes or enables these CEOs to understand the power of these two levers and therefore drive organisational performance in this manner.

Ultimately, as stated, the difference in all the relevant means between the two groups of CEOs and their respective organisation's financial performance were not statistically significant, however, based on the numerical difference the researcher recommends further research in this regard.

### **7.2.3. Discussion around leadership and the make-up thereof**

The literature reviewed in Chapter 2 confirmed that the leader of any organisation has the ability to impact the performance of that organisation. As stated the researcher did not intend to attempt to prove that one variable caused the other. However when analysing each organisation independently as well as forming a mean for each hypothesis and subsequent test the researcher feels that there is enough evidence to have contributed to the leadership debate.

The research gives CEOs and candidate CEOs, a perspective on the possible impact financial education may have on his/her ability to lead an organisation. In addition to this the research highlights which areas of organisational financial performance a current or prospective CEO may be inclined to focus on based on his/her education. This may provide an indication of which levers within the DPM they will naturally focus on and perhaps which lever or metric within the DPM they may need to pay additional attention to.

### **7.3. Implications for business and management**

Whilst the differences between the two groups is not statistically significant there are numerical differences in performance between the two groups of CEOs. In this regard there are various considerations for both CEOs of a business, board members who make hiring decisions relating to CEOs of a business, the investor community within South Africa and finally students seeking out an education path and career in South Africa.

#### **7.3.1. CEOs of on organisation**

As has been seen in Chapter 2 a CEO's background will play a pivotal role in how and what decisions he/she might make (Hambrick, 2007). In this regard his/her education, be it financial or not, may be an important factor. The results of this paper suggest that if you are a CEO WOFE then your automatic tendency will be to drive margin within your organisation. This is an important factor, however, the results suggest that a CEO WOFE needs to ensure that he/she understands how both the efficiency and gearing of a

business work and what metrics and numbers a CEO needs to focus on in order to drive improved organisational financial performance.

Similarly in the case of CEOs WFE the research suggests that their tendency is to focus on efficiency and gearing and to a lesser extent on margin. In order to improve these CEO's level of performance the research suggests that the CEO in question needs to ensure that they focus on margin as well as gearing and efficiency and that if this CEO is able to do this then he/she will undoubtedly enhance organisational financial performance.

### **7.3.2. Hiring Decisions**

The appointment of a CEO of an organisation is an important decision (Bennedsen, Perez-Gonzalez, & Wolfenzon, 2008). In many instances this decision is taken by the Board of Directors of an organisation. This research gives any board member of an organisation insight into the importance of financial education of a prospective candidate. Importantly the research also gives a board member an indication of what to expect in relation to focus on performance from a CEO depending on whether or not the candidate is financially educated or not. As highlighted in Chapter 4 there are a number of limitations relating to this research and the researcher is not suggesting any conclusive evidence was uncovered. Nevertheless, the numerical findings were relevant and should be considered.

### **7.3.3. The Investor Community**

As a stakeholder of a listed organisation, the CEO often plays a significant role in the success or failure of the relevant investment (Bennedsen, Perez-Gonzalez, & Wolfenzon, 2008). In making a decision as to where and what organisation to invest in one of the considerations an investor may take into account is who is the CEO and what type of educational background he/she may have.

In this instance the research suggests, that although not statistically significant, the organisation that has a CEO WFE will on average generate a slightly higher ROE than those managed by a CEO WOFE.

The research may therefore be useful to an investor both now and in the future in order to understand and assess the impact of financial education on a CEO's ability to drive performance. Whilst there are numerous other factors that an investor needs to take into consideration when making an investment decision the research may give an investor some perspective in relation to the research question.

#### **7.3.4. Students seeking clarity on what educational path to pursue**

There is much debate around what course and qualification a student should pursue. In the South African context completing honours in accounting and qualifying as a Chartered Accountant is a sought after route. This is illustrated by the number of Chartered Accountants who are currently leading South Africa's largest listed organisations. A total of 50% of the CEOs of the sample set are qualified Accountants. As stated the research did not indicate a statistically significant difference between the two groups. However, when analysing the ROE of each organisation and the average between the groups it is apparent that the CEOs WFE drive a higher ROE than those CEOs WOFE. Once again this is by no means a conclusive summary of all relevant factors - for example macro factors relating to industry and the economy. - However the research suggests that following a path that includes financial education may well assist in driving organisational financial performance.

#### **7.4. Research Limitations**

The research has a number of limitations which have been elaborated on within this paper and it is with this in mind that the researcher made recommendations for future research in this area. It is recommended that further research is undertaken with regards to the following research limitations:

- The scope and scale of the study;
- The lack of review of state owned, private, family or small to medium size enterprises;
- Aspects of an effective leader not taken into account;
- The different methods of measuring organisational financial performance;
- The lack of considerations of any macro-economic or industry specific factors during the period under review;

- Limitation of focus on the tenure of the CEO's at 31 December 2014;
- Limitations on proportionality and size of groups studied;
- Lack of focus on the other forms of leaders or stakeholders and influencers of the organisation.

## **7.5. Suggestions for further research**

### **7.5.1. A larger sample of listed organisations**

As indicated in Chapter 4 the Alsi 40 makes up a significant proportion of the total market capitalization of the JSE. The Alsi 40 however focusses on a limited sample of 40 organisations and within this sample 2 of the organisations are duplicated due to a dual listing.

In addition Netcare Ltd was removed from the sample for reasons explained in Chapter 5. Based on the above the sample size used in the research was relatively small and whilst adequate the researcher believes that a future study could enlarge the size of the sample and test the same/similar hypotheses in order to gain additional clarity relating to this paper's question. Larger samples generally increase the propensity to make a statistically significant finding and this is another reason to consider a larger sample size (Saunders & Lewis, 2012). A larger sample will also increase the ability to generalize the findings of the study and this would give more weight to any findings from such a study.

### **7.5.2. Analysis of unlisted private small, medium and large organisations**

As stated within the limitations of this paper the sample consisted only of CEOs of the Alsi 40 organisations of the JSE based in South Africa.

There is therefore an opportunity to analyse a sample of CEOs of private small, medium and large enterprises in order to assess if perhaps the level of financial education of these CEOs has a greater or lesser relationship on the organisation's profitability. Securing financial information of privately owned organisations may well prove to be challenging as owners of these organisations may not wish to share their private organisation financial information and this needs to be considered before research in this area is initiated.



### **7.5.3. Analysis of State Enterprises**

As identified within the limitations of this paper the sample consisted of CEOs of the Alsi 40 organisations of the JSE based in South Africa. There is therefore an opportunity to analyse a sample of CEOs of the various state enterprises in order to assess if perhaps the level of financial education of these CEOs has a greater or lesser relationship on the organisations profitability.

### **7.5.4. Foreign and more mature markets**

The Alsi 40 index is made up of organisations that are based and have their primary listings in South Africa. Whilst many of the organisations in the Alsi 40 trade outside the borders of South Africa and keeping in mind the limited research in relation to this research paper's question, there is an opportunity to extend the research to both foreign and more mature markets in order to assess whether or not the results of the same research or similar research correlate with the findings of this study.

### **7.5.5. Understand organisational financial performance taking into account macro-economic conditions and economic profitability**

As discussed in Chapter 2 the literature relating to the notion of profitability is immense and there are a variety of ways in which to measure organisational profitability (Graham, Winfield, & Miller, 2010). The researcher focussed on the DPM methodology in order to assess profitability (Ward & Price, 2006).

Further research could assess profitability taking into consideration a number of other factors, for example, macro-economic conditions and the relative performance of a organisation in relation to the macro environment and/or considering the nature of economic profitability taking into consideration for example opportunity cost over a period.

### **7.5.6. A Qualitative study**

This paper makes use of quantitative data. The research could be conducted in a qualitative manner and this may produce a different set of findings or perhaps even endorse the findings of this research study.

### **7.6. Conclusion**

The purpose of this study was to explore whether a CEO with financial education is better equipped to enable an organisation to perform financially than a CEO without financial education. It is hoped that the research conducted in this paper may-

- Serve to motivate young aspiring entrepreneurs and organisational leaders to embrace and harness their level of financial education with an understanding that this may well ultimately influence career success and improved future organisational profitability;
- Inspire further research to establish additional clarity on the question of providing stakeholders with an understanding as to whether financial education can drive organisational financial performance;
- Be of relevance to the business community both within and outside of South Africa and that it will enhance the discussion as to whether or not financial education is a preferred requirement when seeking to appoint a CEO.

The researcher concludes that in order to become a CEO of a large listed entity in South Africa it is of vital importance that one would have a level of formal education. The researcher by way of this paper supports the study of Bennedsen, Perez-Gonzalez and Wolfenzon's (2008) to the effect that CEOs of organisations do in fact matter and the loss of a CEO has an impact on firm performance (Bennedsen, Perez-Gonzalez, & Wolfenzon, 2008). Based on the fact that the majority of the leaders of Alsi 40 companies are financially educated, the research concluded that it is this financial education that assists a CEO in his/her ability to make the correct financial decisions. These decisions may allow for improved performance of an organisation and in particular the areas of both efficiency and gearing. The researcher has integrated theory and concepts and applied these to the research topic. It is hoped that on a micro and macro level this paper is an academic contribution locally, globally and on an individual level.

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## Appendix A – CEO and organisational Data

DATA SUMMARY	CEO NAME	GENDER	UNDERGRADUATE DEGREE	POST GRADUATE DEGREE	EDUCATION ATTAINED
ANGLO AMERICAN PLC	MARK CUTTANI	M	BSC MINING AND ENGINEERING		0 NON FINANCIAL
ANGLO GOLD ASHANTI LTD	SENI YASAVI VENKATKRISHNAN	M	B COMM ACCOUNTING	ACA (ICAI)	FINANCIAL
ASSEN PHARMACARE	STEPHEN SAAD	M	B COMM - ACCOUNTING	ACCOUNTING: CA SA	FINANCIAL
BARCLAYS	MARIA RAVOS	F	B COMM - ECONOMICS	ECONOMICS; HONOURARY DOCTORATE OF ECONOMY (CS X 2	FINANCIAL
BAT PLC	NICANDRO DURANTE	M	BACHELOR OF FINANCE		0 FINANCIAL
BHP BILLITON	ANDREW MACKENZIE	M	BACHELOR OF SCIENCE	PHD ORGANIC CHEMISTRY	NON FINANCIAL
BIDVEST	BRIAN JOFFE	M	B COMM ACCOUNTING	ACCOUNTING: CA SA	NON FINANCIAL
CAPITAL AND COUNTIES PROP PLC	IAN HAWKSWORTH	M	BSC QUANTITATIVE SURVEYING		0 NON FINANCIAL
DISCOVERY	ADRIAN GORE	M	BACHELOR OF SCIENCE	ACTUARIAL SCIENCE	FINANCIAL
FIRSTRand	SZWE NKASANA	M	B COMM ACCOUNTING	ACCOUNTING: CA SA	FINANCIAL
GROWTHPOINT	NORBERT SASSE	M	B COMM ACCOUNTING	ACCOUNTING: CA SA	FINANCIAL
IMPALA PLAT HOLDINGS	TERENCE GOODLACE	M	B COMMERCE	NHD METALLURGICAL MINING: MBA	FINANCIAL
IMPERIAL HOLDINGS LTD	MARK LAVESI LAVIBERTI	M	B COMMERCE	MBA:	FINANCIAL
INTU PROPERTIES PLC	DAVID FISCHEL	M	B COMM ACCOUNTING	ACCOUNTING: CFA, CPA	FINANCIAL
INVESTEC LTD	STEPHEN KOSSEFF	M	B COMM ACCOUNTING	ACCOUNTING: CA SA	FINANCIAL
INVESTEC PLC	STEPHEN KOSSEFF	M	B COMM ACCOUNTING	ACCOUNTING: CA SA	FINANCIAL
KUINBA ROUN ORE LTD	NORVAN MABAZWA	M	B COMM ACCOUNTING	ACCOUNTING: BCCA	FINANCIAL
LIFE HEALTHCARE GRP HLD LTD	ANDRE MEYER	M		0 ADVANCED IS PROGRAMME	NON FINANCIAL
MEDICLINIC INT LTD	DANIE WEINTES	M	BACHELOR OF PERSONNEL LEADERSHIP	PERSONNEL LEADERSHIP HONOURS DEGREE	FINANCIAL
MONDI LTD	DAVID HATHORN	M	B COMM ACCOUNTING	ACCOUNTING: CA SA	FINANCIAL
MONDI PLC	DAVID HATHORN	M	B COMM ACCOUNTING	ACCOUNTING: CA SA	FINANCIAL
MR PRICE GROUP LTD	STUART LIBRO	M	B COMM ACCOUNTING	ACCOUNTING: CA	FINANCIAL
MTN GROUP	SITSO DABENGIWA	M	BSC ELECTRICAL ENGINEERING	MBA	FINANCIAL
NASPERS LTD	BOB VAN DIJK	M	BACHELOR OF LAW	MBA	NON FINANCIAL
NECOR	MICHAEL WILLIAM THOMAS BROWN	M	BACHELOR OF COMMERCE	ACCOUNTING: DIPLOMA IN ACC + AMP	FINANCIAL
OLD MUTUAL PLC	JULIAN ROBERTS	M	BACHELOR OF ACCOUNTING	CA	FINANCIAL
RAND MERCHANT INSURANCE HOLDING	HERMANUS LAWBERTUS BOSMAN	M	BACHELOR OF COMMERCE (LAW)	LB - LLW / CFA	FINANCIAL
RENGRO	JUDU RANDT	M	B COMM ACCOUNTING	ACCOUNTING: M PHIL (OXFORD)	FINANCIAL
RICHMOND	JOHANN RUPERT	M	BACHELOR OF COMMERCE (LAW)	0 HONOURARY DOCTORATE IN COMMERCE - ECONOMIC	FINANCIAL
RMB HOLDINGS LTD	HERMANUS LAWBERTUS BOSMAN	M	BACHELOR OF ARTS	LB - LLW / CFA	FINANCIAL
SABMiller	ALAN CLARK	M	BACHELOR OF SCIENCE	MA PSYCHOLOGY; DOCTORATE PSYCHOLOGY	NON FINANCIAL
SANLAM	JOHAN VAN ZYL	M	BACHELOR OF SCIENCE	MASTER OF SCIENCE DOCTOR OF SCIENCE + PHIL OSOPHY	NON FINANCIAL
SASOL LTD	DAVID CONSTABLE	M	BSC ENGINEERING		0 NON FINANCIAL
SHOPRITE	WHITEY BASSON	M	B COMM ACCOUNTING	ACCOUNTING: HONOURARY DOCTORATE OF COMMERCE	FINANCIAL
STANDARD BANK	BRUNO RUGER	M	B COMM ACCOUNTING	ACCOUNTING: ADVANCED MANAGEMENT PROGRAM	FINANCIAL
STEINHOFF	MARKUS DOOSTE	M	B COMM ACCOUNTING	ACCOUNTING: CA SA	FINANCIAL
TIGER BRANDS LTD	PETER VATJARE	M	BACHELOR OF POLITICAL SCIENCE	MASTERS IN SOUTHERN AFRICAN STUDIES	NON FINANCIAL
VODACOM GROUP LTD	MOHAMED SHAHEEL AZIZ JOOSAB	M	B COMM ACCOUNTING	ACCOUNTING: MBA	FINANCIAL
WOOLWORTHS	IAN VOIR	M	B COMM ACCOUNTING	ACCOUNTING: MBA / M COM (ECON)	FINANCIAL



DATA SUMMARY

COMPANY NAME	CEO NAME	GENDER	MARGIN				EFFICIENCY				GEARINGS			
			MARGIN 2011	MARGIN 2012	MARGIN 2013	MARGIN 2014	EFFIC 2011	EFFIC 2012	EFFIC 2013	EFFIC 2014	GEARING 2011	GEARING 2012	GEARING 2013	GEARING 2014
ANGLO AMERICAN PLC	MARK CUTLER	M	28.03%	23.03%	1.03%	-4.03%	42.03%	38.03%	41.03%	44.03%	188.03%	181.03%	191.03%	201.03%
ANGLO GOLD ASHANTI LTD	SRINIVASAN VENKATKRISHNAN	M	29.03%	13.03%	-39.03%	-4.03%	64.03%	52.03%	59.03%	59.03%	219.03%	212.03%	218.03%	218.03%
ASPIRE PHARMACEUTICALS	STEPHEN SAUNDERS	M	21.03%	18.03%	18.03%	17.03%	48.03%	48.03%	49.03%	38.03%	182.03%	189.03%	208.03%	208.03%
BARCLAYS	MARIA PAWLOS	F	26.03%	23.03%	22.03%	22.03%	5.03%	5.03%	6.03%	6.03%	115.03%	111.03%	110.03%	109.03%
BAT PLC	NICANDRO DURANTE	M	7.03%	8.03%	8.03%	8.03%	170.03%	188.03%	172.03%	184.03%	322.03%	388.03%	388.03%	481.03%
BHP BILLITON	ANDREW MACKENZIE	M	39.03%	23.03%	18.03%	23.03%	70.03%	58.03%	47.03%	44.03%	178.03%	178.03%	168.03%	177.03%
BIDVEST	BRUNO JOHNSON	M	3.03%	4.03%	4.03%	4.03%	248.03%	239.03%	189.03%	201.03%	247.03%	247.03%	241.03%	241.03%
CAPITLAND COLUIMBER PROP PLC	IAN HAWKSWORTH	M	148.03%	208.03%	288.03%	408.03%	6.03%	6.03%	5.03%	4.03%	182.03%	182.03%	182.03%	182.03%
DISCOVERY	ADRIAN GORE	M	18.03%	11.03%	8.03%	10.03%	58.03%	49.03%	48.03%	47.03%	344.03%	347.03%	402.03%	415.03%
ENRTHAND	SIYETHI KASANDA	M	80.03%	31.03%	31.03%	10.03%	8.03%	8.03%	8.03%	8.03%	409.03%	186.03%	199.03%	197.03%
GROUPOINTE	NOBERT BASTIS	M	18.03%	-18.03%	-12.03%	8.03%	9.03%	9.03%	8.03%	8.03%	181.03%	179.03%	179.03%	148.03%
INRMA PLAT-HOLDINGS	TERENCE GOOLIDGE	M	21.03%	14.03%	4.03%	0.03%	49.03%	38.03%	37.03%	36.03%	138.03%	147.03%	148.03%	148.03%
INRMA PLAT-HOLDINGS	MARK JAMES LAVERTY	M	4.03%	4.03%	4.03%	4.03%	177.03%	178.03%	178.03%	178.03%	288.03%	288.03%	288.03%	288.03%
INTRA PROPERTIES PLC	DAVID FISCHL	M	7.03%	30.03%	31.03%	11.03%	7.03%	7.03%	6.03%	6.03%	251.03%	187.03%	208.03%	208.03%
INVESTEC LTD	STEPHEN KOSSEFF	M	31.03%	31.03%	32.03%	38.03%	3.03%	3.03%	3.03%	3.03%	1488.03%	1585.03%	1572.03%	1382.03%
INVESTEC LTD	STEPHEN KOSSEFF	M	28.03%	18.03%	18.03%	20.03%	3.03%	3.03%	3.03%	4.03%	1288.03%	1288.03%	1322.03%	1178.03%
INVESTEC LTD	NORMAN VANDERVAAL	M	48.03%	38.03%	37.03%	30.03%	144.03%	124.03%	122.03%	94.03%	187.03%	187.03%	188.03%	188.03%
KUPOBA IRON ORE LTD	ANDRE WINTER	M	18.03%	18.03%	17.03%	24.03%	118.03%	118.03%	119.03%	110.03%	189.03%	189.03%	178.03%	201.03%
LIFE-EAL-HOARE GRP-HOLD LTD	DANIE WENTHUIS	M	7.03%	7.03%	-3.03%	12.03%	48.03%	44.03%	47.03%	48.03%	412.03%	412.03%	278.03%	278.03%
MED CLINIC INT LTD	DAVID HATHORN	M	0.03%	5.03%	7.03%	14.03%	58.03%	59.03%	61.03%	78.03%	205.03%	205.03%	172.03%	172.03%
MONDI PLC	DAVID HATHORN	M	8.03%	5.03%	6.03%	8.03%	88.03%	88.03%	104.03%	101.03%	188.03%	231.03%	218.03%	218.03%
MIR PRICE GROUP LTD	STUART BIRD	M	8.03%	10.03%	11.03%	12.03%	284.03%	282.03%	282.03%	282.03%	181.03%	181.03%	148.03%	147.03%
MITSUBISHI	SIF SOBAWENI GWA	M	20.03%	18.03%	22.03%	28.03%	87.03%	74.03%	80.03%	88.03%	188.03%	188.03%	188.03%	188.03%
MASERS LTD	BOGVAAN DIJK	M	18.03%	8.03%	14.03%	10.03%	47.03%	48.03%	48.03%	48.03%	181.03%	181.03%	188.03%	188.03%
NEBCOR	MICHAEL WILLIAM THOMAS BROWN	M	22.03%	23.03%	24.03%	24.03%	4.03%	4.03%	4.03%	4.03%	1447.03%	1385.03%	1393.03%	1348.03%
ODI WJZAL PLIC	JILAN ROBERTS	M	10.03%	8.03%	5.03%	6.03%	14.03%	14.03%	14.03%	14.03%	148.03%	159.03%	189.03%	189.03%
PAWD MERCHANT INSURANCE HOLDING	HERMANUS LAMBERTUS BOSMAN	M	38.03%	30.03%	27.03%	28.03%	11.03%	9.03%	9.03%	4.03%	185.03%	187.03%	170.03%	170.03%
REVENGO	JJ DU RAUIT	M	79.03%	69.03%	28.03%	28.03%	23.03%	23.03%	23.03%	31.03%	107.03%	120.03%	142.03%	143.03%
RICHMONT	JOHANN RUIJBERT	M	18.03%	17.03%	20.03%	18.03%	75.03%	75.03%	70.03%	87.03%	139.03%	142.03%	133.03%	133.03%
RIVER HOLDINGS LTD	HERMANUS LAMBERTUS BOSMAN	M	274.03%	87.03%	97.03%	98.03%	17.03%	17.03%	19.03%	104.03%	105.03%	104.03%	104.03%	104.03%
RWBHILLER	ALAN CLARK	M	13.03%	15.03%	15.03%	18.03%	50.03%	39.03%	41.03%	40.03%	172.03%	214.03%	208.03%	188.03%
SANLAM	JOHANN VAN ZYL	M	11.03%	7.03%	8.03%	14.03%	20.03%	20.03%	18.03%	18.03%	1037.03%	1113.03%	1189.03%	1189.03%
SASOL LTD	DAVID CONSTABLE	M	14.03%	14.03%	14.03%	15.03%	80.03%	80.03%	80.03%	72.03%	182.03%	182.03%	185.03%	185.03%
SHOORTE	WALTER BASSON	M	3.03%	4.03%	4.03%	4.03%	34.03%	28.03%	27.03%	28.03%	289.03%	289.03%	289.03%	289.03%
STANDARD BANK	BERNARDUS ROSE	M	21.03%	20.03%	20.03%	20.03%	4.03%	4.03%	5.03%	5.03%	488.03%	488.03%	488.03%	488.03%
STERNBERG	MARKUS JOHNSON	M	12.03%	8.03%	8.03%	8.03%	49.03%	60.03%	59.03%	50.03%	247.03%	247.03%	241.03%	241.03%
TIGER BRANDS LTD	PEREYALUDE	M	13.03%	13.03%	8.03%	6.03%	148.03%	137.03%	137.03%	128.03%	188.03%	188.03%	188.03%	188.03%
VODACOM GROUP LTD	MCHANEKE STEPHEN AZZUCORSI	M	13.03%	13.03%	18.03%	18.03%	148.03%	138.03%	128.03%	128.03%	218.03%	218.03%	258.03%	258.03%
WOOLOOLTONS	IAN MORRIS	M	8.03%	7.03%	7.03%	7.03%	289.03%	289.03%	289.03%	279.03%	221.03%	208.03%	208.03%	208.03%

DATA SUMMARY

COMPANY NAME	GEO NAME	GENDER	AVG MARGIN %	AVG EFFIC %	AVG EARNING %	ACTUAL ROE					2011 TO 2012			2012 TO 2013			2011 TO 2013		
						ROE 2014	ROE 2013	ROE 2012	ROE 2011	INCREASE ROE P1	INCREASE ROE P2	INCREASE ROE P3	INCREASE ROE P1	INCREASE ROE P2	INCREASE ROE P3	INCREASE ROE P1	INCREASE ROE P2	INCREASE ROE P3	
ANGLO AMERICAN PLC	MARK CUTLER	M	4.90%	40.17%	188.15%	-4.74%	1.44%	-1.40%	18.94%	-515.42%	181.31%	-107.84%	-1.89%	-6.92%	-2.72%				
ANGLO GOLD ASHANTI LTD	SHIN YASUN YENKAWAKRISHNAN	M	-0.85%	58.85%	287.68%	-1.38%	-76.80%	18.53%	30.83%	88.00%	-556.42%	-48.80%	-55.44%	-48.80%					
ASBEN PHARMACEUTICALS	STERENHESKAMP	M	1.65%	43.44%	217.27%	17.33%	15.41%	18.25%	19.48%	12.48%	-15.44%	-15.44%	-15.44%	-15.44%					
BARCLAYS	MARIA MAIOS	F	22.93%	5.22%	1120.00%	15.55%	15.11%	22.02%	14.89%	2.93%	25.04%	-12.94%	25.04%	-12.94%					
BAT PLC	NICANDRO DURANTE	M	8.34%	18.05%	168.05%	58.98%	60.58%	52.89%	38.89%	-3.82%	14.72%	-26.48%	-4.47%	-4.47%					
BHP BILLITON	ANDREW WACKENZIE	M	24.24%	54.34%	377.25%	17.69%	17.03%	23.15%	41.45%	4.72%	-26.48%	-4.47%	-4.47%	-4.47%					
BIDVEST	BRIAN JOFFE	M	3.86%	22.13%	248.45%	14.65%	18.34%	20.98%	20.45%	-20.11%	-12.82%	2.52%	-12.82%	2.52%					
CAPITAL AND COUNTIES PROP PLC	IAN LAWGORTH	M	282.28%	5.13%	138.42%	17.81%	18.42%	18.24%	14.31%	-2.74%	-13.93%	13.52%	-13.93%	13.52%					
DISCOVERY	ADRIAN GORE	M	11.10%	49.88%	374.91%	18.03%	15.55%	18.94%	28.74%	22.44%	-17.53%	-34.12%	-17.53%	-34.12%					
FISIRAND	SITWA MUSAJANA	M	35.23%	81.2%	1089.08%	22.43%	20.18%	20.58%	33.52%	-1.93%	-4.93%	-28.59%	-4.93%	-28.59%					
GROWWPOINT	ROBERT SASSER	M	14.83%	8.85%	177.05%	11.88%	-0.93%	-2.52%	-0.50%	720.84%	23.12%	-181.10%	-181.10%	-181.10%					
IMPALA PLAT HOLDINGS	TERENCE GOODLAGE	M	8.82%	40.13%	147.78%	-0.23%	1.85%	8.15%	13.73%	-11.01%	-761.3%	-4.37%	-4.37%	-4.37%					
IMPALA HOLDINGS LTD	MARK JAMES LAWBERTI	M	4.05%	177.00%	287.28%	20.03%	21.03%	21.93%	22.34%	-4.77%	-4.55%	-4.55%	-4.55%	-4.55%					
INTU PROPERTIES PLC	DAVID HESCHEL	M	54.81%	8.45%	234.02%	13.05%	10.05%	5.28%	1.14%	28.80%	80.54%	384.51%	80.54%	384.51%					
INVESTEC LTD	STEPHEN KOSSEFF	M	128.87%	10.81%	598.72%	13.15%	13.20%	12.22%	12.83%	-0.38%	8.07%	-5.45%	8.07%	-5.45%					
INVESTEC PLC	STEPHEN KOSSEFF	M	77.48%	13.48%	508.04%	8.81%	7.95%	5.89%	10.52%	10.80%	34.12%	-44.77%	10.80%	-44.77%					
KUWEBA HOLDINGS LTD	NOVIAN WBAZIMWA	M	37.05%	140.22%	177.17%	52.40%	74.88%	89.88%	108.65%	-28.89%	-10.44%	-28.00%	-28.89%	-28.00%					
LIFE HEALTH CARE GRP HLD LTD	ANDREW WENTERS	M	17.88%	115.75%	187.23%	52.51%	38.75%	38.73%	34.03%	48.89%	0.04%	-0.42%	48.89%	0.04%					
MEDI CLINIC INT LTD	DAVID HATHORN	M	5.82%	43.22%	361.38%	14.12%	-4.70%	13.01%	13.06%	48.89%	-136.11%	-4.45%	-136.11%	-4.45%					
MOND LTD	DAVID HATHORN	M	5.88%	64.7%	182.07%	15.85%	8.13%	6.40%	11.74%	85.07%	27.64%	-48.81%	85.07%	-48.81%					
MOND PLC	DAVID HATHORN	M	8.30%	98.52%	233.84%	17.27%	14.55%	8.70%	14.74%	18.04%	48.89%	-13.58%	18.04%	-13.58%					
MTR PRICE GROUP LTD	STUART BIRD	M	10.93%	272.8%	157.75%	47.85%	46.38%	49.79%	42.20%	2.85%	8.07%	3.77%	2.85%	3.77%					
MVA GROUP	SIFISO DABENGWA	M	21.37%	64.84%	182.40%	28.25%	25.34%	25.81%	25.65%	-22.22%	-22.22%	0.98%	-22.22%	0.98%					
NASPERS LTD	BOSYAN DIK	M	12.86%	4.835%	175.01%	8.57%	7.02%	7.02%	13.85%	-20.77%	72.27%	-48.30%	-20.77%	-48.30%					
NECOR	MICHAEL WILLIAM THOMAS BROWN	M	23.40%	4.48%	1370.98%	14.38%	13.87%	13.88%	12.81%	2.43%	6.24%	6.24%	2.43%	6.24%					
OLD MUTUAL PLC	JULIAN ROBERTS	M	8.97%	11.20%	1501.51%	8.93%	10.88%	15.18%	8.51%	-17.94%	-28.33%	70.41%	-17.94%	70.41%					
PAID MERCHANTS FINANCE HOLDING	HERMANUS LAMBERTUS BOSMAN	M	30.77%	31.23%	165.83%	20.24%	17.13%	17.58%	8.24%	17.88%	-24.33%	-24.33%	17.88%	-24.33%					
REVENO	JU DU RANDST	M	48.81%	25.93%	113.34%	8.89%	6.80%	17.88%	20.22%	44.75%	-60.58%	-17.48%	44.75%	-17.48%					
RICHMOND	JOHANN RIJPERT	M	18.05%	70.87%	137.51%	17.28%	18.43%	17.87%	15.43%	-11.93%	8.84%	15.80%	-11.93%	15.80%					
RIME HOLDINGS LTD	HERMANUS LAMBERTUS BOSMAN	M	14.42%	17.59%	108.00%	18.87%	17.32%	17.38%	49.28%	-64.72%	-64.72%	-64.72%	-64.72%	-64.72%					
SAB MILLER	ALAN CLARK	M	16.28%	42.87%	188.80%	13.28%	12.70%	17.21%	11.24%	4.85%	-26.52%	53.15%	4.85%	53.15%					
SANLAM	JOHAN VAN ZYL	M	8.51%	1148.85%	1148.85%	18.12%	20.47%	18.13%	18.45%	-6.82%	26.72%	-1.85%	-6.82%	-1.85%					
SASOL LTD	DAVID COSTAHL	M	14.87%	78.25%	163.42%	17.40%	17.73%	18.90%	18.41%	-1.88%	-6.92%	2.72%	-1.88%	2.72%					
SHOPIRE	WALTER BASSON	M	3.85%	288.50%	248.28%	21.40%	23.70%	23.70%	35.41%	-8.70%	-0.24%	-28.81%	-8.70%	-28.81%					
STANDARD BANK	BEN RUGGER	M	22.42%	4.83%	1494.51%	14.17%	13.28%	17.10%	17.89%	6.71%	-22.34%	-5.59%	6.71%	-5.59%					
STEINHOFF	MARKUS COOTE	M	8.11%	55.11%	243.22%	11.24%	11.91%	11.27%	13.03%	-5.82%	5.87%	-13.92%	-5.82%	-13.92%					
TIGER BRANDS LTD	PETER MALTAPE	M	10.13%	130.28%	187.80%	18.68%	18.48%	23.48%	25.17%	-24.88%	-24.88%	-4.64%	-24.88%	-4.64%					
VODACOM GROUP LTD	MORARJE SHAHWEEL AZZ JOSSA B	M	18.31%	134.22%	257.18%	57.55%	82.33%	53.80%	49.31%	-7.85%	15.64%	8.30%	-7.85%	15.64%					
WORLDWORTS	IAN ROE	M	7.11%	282.84%	241.78%	42.02%	44.43%	48.02%	40.24%	-3.20%	-1.34%	11.93%	-3.20%	11.93%					

## Appendix B – Ethical clearance confirmation

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

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Kind Regards,


Adele Bekker

## Appendix C – Turnitin report

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**paper text:**

Assessing the impact of chief executive officer financial education on organisational financial performance  
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17A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration. 9 November 2015 Abstract: This research assessed whether the financial education of the

21Chief Executive Officer ("CEO") of an organisation has a

relationship with the profitability of that particular organisation. The

96purpose of the study was to explore whether

a CEO with financial education is better equipped to enable an organisation to perform financially than a CEO without financial education. The researcher made use of a quantitative study based on 40 of the largest listed organisations

70on the Johannesburg Stock Exchange. The initial research was based on the type of

education of each CEO with a focus on whether or not the CEO had been financially educated. Once this was completed the researcher then made use of the Du Pont Model relating to return on equity in order to assess each organisations' relative performance. This assessment was concluded over a four year period. A direct comparison was then completed between the organisations managed by CEOs with financial education and those that were managed by CEOs without financial education. There were clear differences in organisation performance between the CEOs with financial education as opposed to the CEOs without financial education. The findings however were not statistically significant and further research in this area was therefore recommended. Keywords Keywords Researcher Definition i. CEO The Chief Executive Officer is the primary executive leader of an organisation. ii. Financial Education Formal tuition over a period of time that gives an individual an understanding of how and what factors need to be considered in order to make the correct financial decisions. iii. Profitability The ability of an organisation, be it commercial or other, to generate a positive return on the capital employed within the organisation.

6Declaration I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research. Signed: Neil Jankelowitz Date: 9 November

2015 Glossary ABBREVIATION FULL WORD OR PHRASE CEO Chief Executive Officer ROE Return on Equity Du Pont Model DPM WFE WFE WOFE WOFE % Percentage Alsi All Share Index TABLE OF CONTENTS

281. INTRODUCTION TO THE RESEARCH PROBLEM

..... 15 1.1 Research

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