Measuring management and leadership competencies of business school educated managers in South Africa

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Abstract

This paper explores a model to measure managerial and leadership competence of business school educated managers. It starts by reviewing the literature on general management and leadership, seeking to establish a broad theoretical framework to guide this study. After statistically ensuring that the respective theoretical measuring criteria selected do measure the specific management and leadership competency, the paper then presents a model to measure management and leadership competencies. The final model has a total of eleven management and leadership competencies. These are Personal Value System, Career Awareness, Ethical and External Influences, Leading Change, Cultural Sensitivity, Team Building, Strategic Leadership, Conflict Management, Communication Skills, Global Leadership Mindset and Emotional Intelligence. This paper goes on to statistically measure the management and leadership competencies while also determining if the demographic variables influence the management and leadership competencies in any way. Also, the paper seeks to determine if any significant correlations exist between management and leadership competencies. The results of this study are of value to business school educated managers who aim to improve their managerial and leadership skills. It is also of value to researchers and scholars who intend to explore this avenue of managerial and leadership competency models further.

Introduction

In the current highly integrated global economy where many organisations operate across multiple geographies, the importance of a talented and competent workforce is axiomatic. Competent employees are not only central to productive and enriched work environments but also contribute to prosperous outcomes for organisational performance. These, and other, business environmental issues have generated an urgency among organisations to build their executive teams with the requisite managerial and leadership competencies, so that these competencies can be deployed in a manner that achieves superior individual and organisational performance.

Previous studies in the field of work-based competencies demonstrate a link between managerial and leadership competencies, and superior executive performance. Following the formalisation of management and leadership competencies as a managerial concept, management and leadership competencies have gained significant impetus as a substantive management focus area in recent human resource management literature (Lewis, Donaldson-Feilder and Tharani, 2012; Sinh, 2016; Bagraim et al., 2016). The concept of competency-based human resources has been explored seminally by David McClelland (1973). Since then it has moved from a novel approach to widespread practice in the last four decades since McClelland first proposed it as a key differentiator of performance. According to research in this area by Analoui and Hosseini (2001) and later by Boyatzis and Ratti (2009), managerial effectiveness is

strongly correlated to organisational effectiveness and economic performance. In this respect, Analoui and Hosseini (2001) argued that competent managers and leaders have played a significant role in the overall success of their organisations and development of their societies. In an earlier study, Boyatzis and Case (1989) found that management educated graduates, and more specifically MBA graduates, displayed a greater number of skills and competencies related to effective managerial performance. Later, as more studies were completed (Analoui and Hosseini, 2001; Mintzberg, 2004, 2005, 2008; Camuffo et al., 2009), patterns of managerial and leadership competencies could be observed that recurrently appeared to distinguish exceptional performers. This led to the development of numerous competency models; this avenue of research is even more relevant today where managers are confronted by the disruption of the Fourth Industrial Revolution (Cornellissen, 2017).

Most recently though, relentless change within and outside organisational boundaries, coupled with volatility and uncertainty in the general business environment, has forced managers and leaders to rethink organisational design and the managerial skills sets required to succeed under such circumstances. In this regard, Hoffmann (2016) warns that conventional organisational structures with multiple hierarchical levels will disappear in the context of the Fourth Industrial Revolution. In line with this view, Truxillo, Bauer and Erdogan (2016) confirm that the modern organisation has to develop and learn continuously and that the shifting organisational boundaries will lead to adjusted organisational structures. One key aspect, as highlighted by Sinh (2016:14), is that, in contrast to a conventional executive, effective contemporary leaders are characterised by their openness and willingness to embrace change and innovation. Thus, with the acceleration in innovation and massive disruptions in global business brought about by the digital economy, Cornellissen (2017) warns that managers and leaders must have the skills and competencies to identify managerial problems and know suitable strategies to fix them.

Given this background, the purpose of this study is to measure management and leadership competencies of business school educated managers in South Africa. The current study also attempts to determine if significant correlations exist between the demographic variables and management and leadership competencies as well as determine if significant correlations exist between the management and leadership competencies.

Problem Statement

The profile of the 21st century workplace is undergoing large-scale and fundamental changes. Managers, therefore, have to operate in a complex environment and are required to respond rapidly to demands that are, at most times, unpredictable (Bagraim et al., 2016). In recent years though, there has been a rising surge of contemporary criticisms of management education as well as approaches to management and leadership development (Varela, Burke and Norbit, 2013). A number of these post-2000 studies assert inadequacies in the development of managerial skills and competencies (Mintzberg, 2004; Pfeffer and Fong, 2004). The seminal claim by one of the pioneering proponents holding this view, Mintzberg (2004:199) stated that "management education sits worlds apart from that of management development".

Despite the growing concerns about the impact of graduate management education, Boyatzis and Case (1989) argued that few studies have measured their impact on the development of students' managerial and leadership competencies. Here Camuffo et al. (2009) contend that even in instances where researchers support the hypothesis that management education leads to enhanced managerial performance, measurement of the specific skills and competencies associated with such management education remains somewhat hazy and unclear. This is especially true in the South African context where, apart from studies by Thekiso (2011) and Shaikh (2013), there is a dearth of such scientific and empirical research. This article, therefore, addresses this specific problem of measuring management and leadership competencies amongst business school educated managers in South Africa.

Research Objectives

The primary objective of this article is to measure management and leadership competencies of business school educated managers in South Africa.

This primary objective is achieved by addressing the following secondary objectives:
Theoretically study management and leadership;
Ensure the relevancy of of the theoretically selected measuring criteria; and
Empirically measure the competencies and demographic profiles of the respondents.

Theory on Management and Leadership

To ground the theoretical framework of this study, literature is presented on the role of management and leadership in organisations, with brief discussions on the nature of management and the nature of leadership. Second, a brief debate on whether management and leadership are theoretically a different or interrelated concept is presented, explaining the various paradigms held by diverse researchers and scholars. Lastly, an attempt is made to reconcile the long-standing debate around whether effective management and leadership are all about nature or nurture.

The role of management and leadership in organisations

The challenges of being an effective manager have never been greater. In a globalised economy that is characterised by rapid advances in technology and hyper-competition, organisations have become highly complex and exposed to constant change. Smit, Botha and Vrba (2016) suggest that, in addition to dealing with issues such as climate change, sustainability, business ethics and corporate governance, present-day managers must also be sensitive to cultural differences that are central to doing business around the globe.

In the South African environment specifically, Smit et al. (2016) go on to argue that organisational managers are facing even greater challenges such as a politically turbulent environment characterised by corruption and bribery. Coupled with these challenges, a very tough labour market, a volatile public higher education sector and Black Economic Empowerment transformation charters for almost every sector of the South African economy, managers have to reflect on sound management principles to be effective in meeting organisational outcomes.

In response to the question: "Why does management matter?", Achadinha et al. (2015) offer a range of reasons which demonstrate that well-managed organisations are more competitive and effective in meeting consumers' needs, generating greater revenues, ensuring a skilled workforce and ultimately serving the needs of society. In support of this notion, Northouse (2013) points out that a manager's link to business performance is even more relevant at present times and that management is a key success factor in the modern business environment. Smit et al. (2016) put forward the view that while organisations have been part of human life for centuries, societies depend on business organisations now, more than ever before, to meet the changing needs of all its members. Competent managers are therefore required to help organisations achieve their mission and goals and be successful in building prosperous societies.

The nature of management

Organisations, especially business organisations, serve the needs of societies in a number of ways by transforming resources into goods and services that societies need. To achieve the organisations' mission and goals, however, capable managers are required to stimulate and guide the organisation to deploy its limited resources in productive and purposeful ways. Accordingly, in carrying out their tasks, managers still perform the four fundamental functions: planning, organising, leading and controlling (Smit et al., 2016).

Managerial roles

In general terms, management refers to getting things done through people. Management, however, is a generic term that is open to various interpretations (Mullins, 2010). Achadinha et al. (2016) more formally describe management as a "process of coordinating work activities through the functions of planning, organising, activating (leading) and controlling". Here, the notion of "coordinating work activities" is what Achadinha et al. (2016) use to distinguish a managerial position from a non-managerial one. Bagraim et al. (2016) however argue that managers can no longer adhere to the rational view of planning, organising, leading and controlling. Instead, reflecting the chaos that best describes the present circumstances in businesses globally, Bagraim et al. (2016) put forward a view that most managers are involved in a variety of "intense, brief and disconnected activities" that they are required to work on. In

other words, managers are often required to perform multiple roles at any given time. Table 1 below sets out the multiple roles of modern-day managers:

Table 1: The multiple roles of managers

Interpersonal roles	Figurehead of the team, unit or organisation
	Leader of team members
	Liaison with lateral contacts inside and outside the team and organisation
Informational roles	Monitor, collector and assimilator of information
	Disseminator of information
	Spokesperson, keeping influential others informed
Decision roles	Entrepreneur, agent of change
	Disturbance handler, restoring functionality and performance, problem solver
	Resource allocator
	Negotiator in interpersonal and group relationships

Source: Bagraim et al. (2016)

Managing in the global environment

Globalization, technological development and changing customer needs create an environment of continuous fluctuation, discontinuity and change; all of which challenges the abilities of managers to anticipate and proactively deal with change. Compounding these difficulties, in a country like South Africa which is characterised by substantial diversity, managers have the additional challenges of developing shared values, building capacity and creating a team-based organisation where diversity becomes a competitive advantage (Robbins and Judge, 2014). To manage diversity in the workplace, a manager must be able to identify the dimensions of diversity in the workplace. Achadinha et al. (2015) suggest that these are divided into primary dimensions of diversity (race, gender, ethnicity, age, culture and physical ability) and secondary dimensions of diversity (education, religion, income levels, parental status, marital status, differences in geographical locations and work experience). The challenges for a manager, therefore, are to synergise these dimensions of diverse work teams to ensure that all role-players within teams contribute toward shared objectives and organisational outcomes.

Leadership

Leadership can be regarded as the fundamental sphere of managerial functioning that is correlated to individual and organisational success, financial performance and overall success (Lussier and Achua, 2013). There are many different definitions of leadership, and a general review of the literature would provide a plethora of definitions, sometimes differing significantly according to different societal norms and cultures. A common definition offered by Achadinha et al. (2015) explains leadership as the process of influencing organisational members to such an extent that they willingly work towards the achievement of organisational goals and outcomes.

Leadership as a construct and leadership theories, however, have evolved significantly over time and as such produced varying approaches to its interpretation (Ayers, 2015). In this regard, Bagraim et al. (2016) put forward a view that the way in which present-day organisations respond to the new challenges of radical change and immense volatility is fundamentally tied to the values, attitudes, styles and responses of their leaders. De Wit (2017) presents a contemporary, if not radical view of the nature of leadership as senior management's desire for organisational chaos as a prerequisite for strategic renewal. This means the unfreezing of existing structures, processes, routines and beliefs, and opening employees up to new possibilities of doing business with creativity and innovation. Following through with this argument, De Wit (2017) suggests that leaders ought to release the "energy, creativity and entrepreneurial potential pent up in their organisations" and must, therefore, be willing to let go and allow "some chaos to exist".
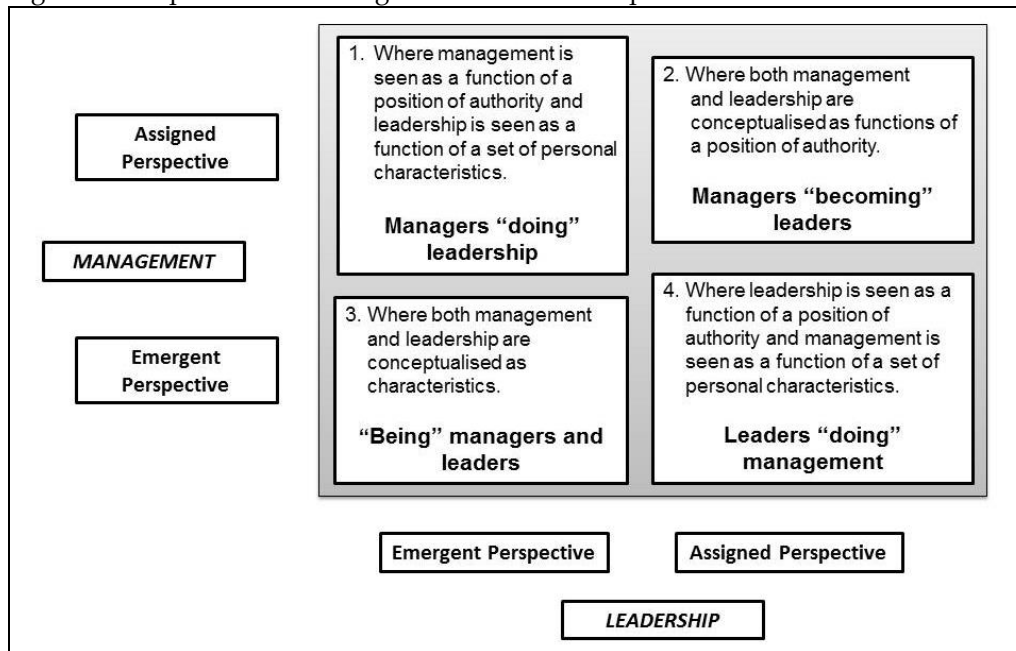
Difference between management and leadership paradigm

It has long been argued that not all managers are necessarily leaders, and not all leaders can necessarily be considered as managers (Robbins and Judge, 2012). Accordingly, the difference between management and leadership is seen as an ambiguous, inherently complex and long-standing debate. Historically, management and leadership have been described as being comprehensively researched yet

having a high level of ambiguity about their conceptual underpinnings (Burns, 1978; Grint, 2005) and even being grounded in different academic disciplines (Ghoshal, 2005; Gill, 2006).

This may be primarily due to the distinction of leadership being based on the basic premise of change in organisations (Brocklehurst, Grey and Sturdy, 2009), while management is about producing disciplined results. In their paper, however, Edwards et al. (2015), while acknowledging the issues of change, explore notions of power as a point of departure for further theoretical debate and research. They go on to develop a four-part conceptual framework that includes: managers "doing" leadership, managers "becoming" leaders, "being" leaders and managers, and leaders "doing" management (see Figure 1).

Figure 1: Perspectives on management and leadership

Source: Edwards et al. (2015)

Framing the differences between management and leadership within a paradox of control and chaos, the proposition of organisational chaos by De Wit (2017) as an essential prerequisite for strategic leadership can sound quite alarming for managers who seek to plan, organise, lead and control systematically. This view is useful in explaining that while managers seek order, control and disciplined implementation of plans, leaders seek to stimulate new ways of thinking about business by allowing experimentation and innovative initiatives. Leaders thereby accept a certain amount of disorder, expecting it to pay off regarding organisational success in the long run.

Taking a strategic management perspective, De Wit (2017) argues that while operational control gives managers influence over the activities within the current organisational system, strategic control gives leaders influence over changes to the organisational system itself.

Interrelationships between management and leadership paradigm

The conundrum as to whether management and leadership are interrelated or mutually exclusive is however still being debated in contemporary academic arguments (Walters, 2016; Aruda, 2016). The trajectory of this debate continues to move through the differences between management and leadership (Zaleznik, 1977) while Kotter (1990a) makes a case for the complementary nature of these two concepts. More recently though, Yukl and Lepsinger (2005) propose that leadership and management are interdependent and that their roles need to be integrated to achieve organisational effectiveness (Gleeson, 2016). In consonance with this view, Bedeian and Hunt (2006) put forward "the assumption that leadership is a subset of management, with both needing to be carried out to ensure organisational success". Mintzberg (2009) suggests that the manager has interpersonal roles and one of them is to be the leader. Further, some scholars use the terms management and leadership interchangeably (Walters, 2016)

and argue that there is some degree of overlap between the two (Aruda, 2016). Others question the two concepts and admit the ongoing scholarly debate (Bolden, 2007; Buttigieg and West, 2013, Gleeson, 2016).

Kent (2005) suggests that while there may be a need to define the two concepts independently to ensure clarity in academic debate and research, he argues that the two processes are essentially integrative in nature. More recently, a seminal analysis of 80 studies on the topics of management and leadership by Nienaber (2010) who considered the similarities and differences claimed in these two concepts. Nienaber (2010) concluded that the literature demonstrates that "leadership and management are inextricably interwoven". Gleeson (2016) agrees that substantial overlapping exists and that both leaders and managers are performing inter-related tasks continuously while leading and managing teams.

This debate about the relationship between management and leadership highlights the ideological, ambiguous and problematic nature of the managing and leading those managers to consider themselves engaged in.

Are management and leadership all about nature or nurture?

This too is a long-standing debate that has been enduring since the management and leadership thinking originated. Although both management and leadership are strongly based in personal commitment (Biro, 2014), there are strong theoretical positions on the opposing views in management and leadership foundations regarding nature or nurture. The general consensus though possibly lies somewhere in the middle of this continuum – managers and leaders can be developed or nurtured, but they must also possess certain inherent characteristics to start with.

De Witt (2017) contends that not all managers have the requisite qualities to be effective leaders – "either by nature or nurture". In answering the key question whether management and leadership competence is innate or acquired, some historical researchers highlight the importance of 'nature', claiming that managers require certain unique personality traits to be effective as leaders (Tucker, 1968; House and Aditya, 1997; Biro, 2014). Other researchers of that time placed greater emphasis on 'nurture', contending that effective leadership behaviour can be developed through deliberate training and effort (Kotter, 1990b; Nanus, 1992; Mintzberg, 2009). These researchers, resultantly, argued that a combination of genetics and environmental factors interact to produce effective leadership behaviour. In yet another emerging perspective on the nature versus nurture contention, some theorists are beginning to further nuance the debate by suggesting that, in addition to personal characteristics ('nature'), a significant part of leadership development derives from the exposure and challenges experienced on the job and only a small part comes from the 'nurture' element of formal training. Known as the 'developmental school', theorists in this school of thought hold the view that management and leadership are essentially grounded in experience and exposure (Kakabadse and Kakabadse, 1999; Alvesson and Svenningson, 2003; Ayers, 2015).

However, it seems that these two schools of thought continue up to today. Here Dissanayake (2016) states that: "Good managers, like leaders, are made; not born" while Anderson (2012) stands firm that leaders are born. Researchers at one of Ohio's leadership research centres, Edunote (2017), present even another scenario, namely that "Leaders are born, but managers are made".

Given the current competitive business environment, effective management and leadership are increasingly being regarded as the mainstay of organisational success. The strategy of developing such management and leadership is identifying candidates with certain innate personal characteristics (nature), focusing on their development through appropriate training and mentorship (nurture) but also being willing to give potential managers and leaders the responsibilities that invariably come with on-the-job experience.

Research Methodology
Literature base

This study used both a literature review and quantitative empirical analyses. The literature employed the previously identified management and leadership competencies (and their respective measuring criteria) (see Shaikh, Bisschoff and Botha, 2017) to develop a measuring model based on the methodology employed by other studies that succeeded to do so (Bisschoff and Moolla, 2015; Naidoo, 2011; Imandin, 2014; and others). Here Imandin, Bisschoff and Botha (2015) developed seven steps to

construct a model to measure employee engagement constructs successfully. These steps served as a guideline to develop the model to measure management and leadership competencies. Following the development of the model, this study then proceeds to measure the management and leadership competencies of business school educated managers.

Data collection

All executive MBA students of two selected private business schools served as the population. These schools are geographically servicing all areas of South Africa. The students attend study schools in Durban and Johannesburg. The study school held in June 2017 was used to collect the data in the classrooms. The students attending the classes were requested to complete the questionnaires. Participation was voluntary and anonymous. Trained research assistants, mostly lecturers of the business schools, distributed, assisted and collected the questionnaires. The lecturers were specifically used to collect the data because they have, in addition to being well briefed about the research project, good knowledge and understanding of academic research. A total of 385 questionnaires were distributed of which 362 completed and usable questionnaires were collected. Two questionnaires were unaccounted for a while 21 were incomplete. These questionnaires were discarded because they could not be used. This resulted in an effective 94.0% response rate. The data was captured by the Statistical Consultation Services of the North-West University and analysed with the IBM Social Package for Social Sciences Version 24 (SPSS, 2017).

Methodology to development of the model

The model to measure management and leadership competencies was developed through a set of seven steps proven to be successful and useful. These steps (as formulated by Imandin et al., 2015) are:

Step 1: A literature review on management and leadership competencies measurement
Step 2: Purification of competencies
Step 3: Questionnaire development
Step 4: Validity and data collection
Step 5: Validate measuring criteria per competency
Step 6: Reliability
Step 7: Refined model presentation

Results

A model to measure management and leadership competencies

After performing Steps 1 and 2 in model development, the final model has a total of eleven management and leadership competencies. Measuring criteria have also been identified for each of the competencies. The criteria and competencies are measurable; this resulted in the successful construction of the questionnaire (Step 3).

Steps 4, 5 and 6 require statistical proof. Here validating the measuring criteria of the respective management and leadership competencies, the sample adequacy, variance explained, and reliability requires calculation. Additionally, the analysis must confirm that the measuring criteria for each competency actually do measure that specific competency. Exploratory factor analysis is used to determine if these criteria all load onto the respective competency. This means that if the factor analysis extracts only one factor per competency, it implies that the relevant criteria measure one construct only; this is then the specific management and leadership competency (Field, 2009). This methodology was successfully applied in similar research settings by numerous researchers such as Basson (2014), Salim (2011), Bisschoff and Moolla (2015), Fields and Bisschoff (2014) and others. These authors also indicated that in the case where two factors are extracted, it means that the competency actually consists of two sub-competencies, hence not measuring one management and leadership competency. Alternatively, a criterion could also load poorly (factor loading ≤0.40) which will diminish its importance in the measurement of the competency. Low loadings lead to the omission of such a criterion from further analysis. The results of the sample adequacy, sphericity and reliability analyses appear in Table 1 while Table 2 shows the factor analysis and factor loadings per competency.

Table 1: Management and leadership competencies suitability statistics

Competency	Sample adequacy	Sphericity	Reliability	Variance explained
Personal Value System	0.676	0.00	0.600	46.0%
Career Awareness	0.778	0.00	0.772	59.5%
Ethical and External Influences	0.718	0.00	0.694	52.5%
Leading Change	0.766	0.00	0.717	49.8%
Cultural Sensitivity	0.738	0.00	0.640	65.9%
Team Building	0.734	0.00	0.787	62.1%
Strategic Leadership	0.755	0.00	0.739	58.3%
Conflict Management	0.681	0.00	0.755	67.4%
Communication Skills	0.841	0.00	0.861	58.3%
Global Leadership Mindset	0.500	0.00	0.845	86.7%
Emotional Intelligence	0.794	0.00	0.856	70.2%

* Unreliable (0.57<a); ** Marginal reliability (0.57≤a<0.70); *** (a≥0.70) Reliable

The results show that all the competencies show satisfactory sample adequacy except the competency *Global leadership mindset*. Here the sample adequacy is marginal. A KMO value of 0.50 is still acceptable, although higher values exceeding 0.60 are preferable (Field, 2009). This favourable result indicates that each of the competencies are indeed measured by their respective criteria. Further, these results indicate that all but two competencies have satisfactory reliability coefficients (α≥0.70). These two competencies (*External and ethical influences* and *Personal value system*) exceeded the lower reliability coefficient set by Cortina (1993) (α≥0.57). How well each competence is measured by the criteria is indicated by the variance explained; this should ideally exceed 60%, although if 50% variance is explained, it is also regarded as acceptable. Here the competency *Personal Value System* shows 46% variance which is below the required 50%. Leading change is acceptable with its variance at 49.8%. This is marginally lower than 50%, but the competency shows excellent reliability. The competency is thus retained for measurement based on the supportive reliability coefficient. No simplification or reduction of measuring criteria could be done as the theoretical model proved to be statistically valid, and all the criteria do measure the competencies as indicated by the literature study.

The results then mean, in practice, that the model is suitable to measure the management and leadership competencies. It also means that the competencies and their respective criteria are deemed fit to perform this measurement.

From the analysis in Tables 1 and 2, the theoretical model could be statistically validated as a tool to measure management and leadership competencies. From Table 2, the model's competencies do not break up into sub-competencies. This result substantiates that a thorough literature basis for the model was used.
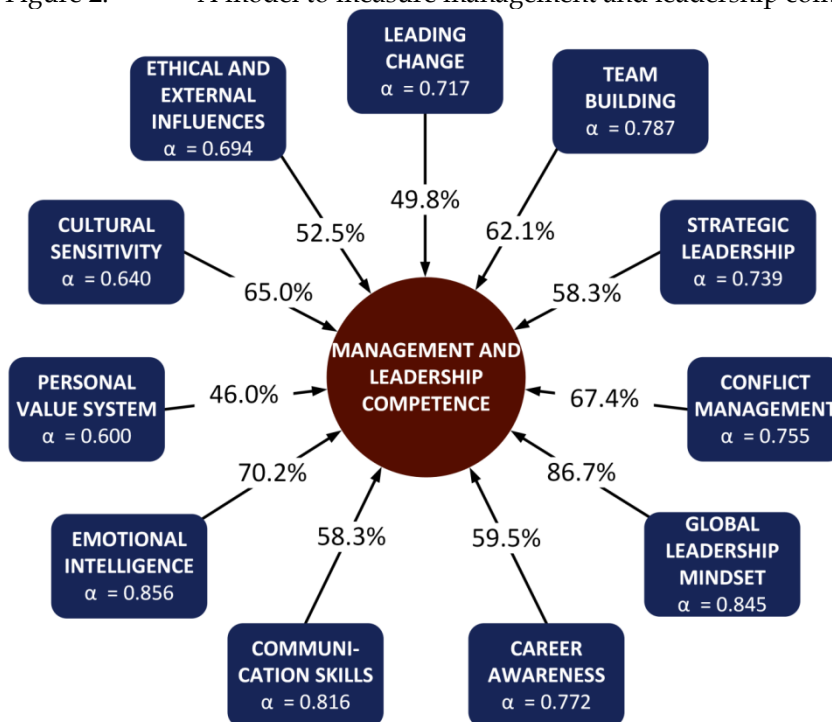
Step 7 requires the presentation of the model. The model to measure management and leadership competencies is shown in Figure 1. The relevant competencies, its reliability and its variance explained are also indicated in the model.

Table 2: Factor analysis of individual managerial competence

Personal Value System	Factor loadings	Career Awareness	Factor loadings	Ethical and External Influences	Factor loadings
PVS2	0.776	CAW2	0.791	EEI3	0.744
PVS4	0.671	CAW3	0.786	EEI4	0.733
PVS1	0.649	CAW4	0.760	EEI1	0.713
PVS3	0.605	CAW1	0.749	EEI2	0.706
Leading Change	Factor loadings	Communication Skills	Factor loadings	Strategic Leadership	Factor loadings
LEC2A	0.803	COS4	0.819	STL3	0.824
LEC1	0.789	COS2	0.788	STL2	0.816
LEC3	0.778	COS5	0.782	STL1	0.803
LEC2	0.563	COS1	0.758	STL4	0.587
LEC4	0.548	COS3	0.662		
Conflict Management	Factor loadings	Team Building	Factor loadings	Emotional Intelligence	Factor loadings
COM2	0.856	TEB3	0.875	EMI3	0.878
COM1	0.805	TEB4	0.829	EMI4	0.863
COM3	0.800	TEB1	0.733	EMI2	0.816
		TEB2	0.703	EMI1	0.791
Cultural Sensitivity	Factor loadings	Global Leadership Mindset	Factor loadings		
CUS2	0.863	GLM2	0.931		
CUS1	0.854	GLM1	0.931		
CUS3	0.709				

The model to measure management and leadership competencies is shown in Figure 2.

Figure 2: A model to measure management and leadership competencies

Source: Compiled from empirical results

Figure 2 shows the competencies that measure management and leadership competencies; its variance explained and the reliability of each competency. The competency Global Leadership Mindset explains the most variance (86.7%) while also showing a high reliability coefficient (0.845). Inversely,

Personal value system is the competency that explains the least variance (46.0%) and has the lowest reliability coefficient of 0.600. This, however, does exceed the minimum reliability coefficient of 0.57 set by the guidelines by the seminal reliability study of Cortina (1993).

The demographic profile of respondents
The demographic profile of the respondents is shown in Table 3 below.

Table 3: Demographic profile

Demographic variable	Percentage	Demographic variable	Percentage
Gender		Do you manage people	71.4
Male	50.4	Yes	28.6
Female	49.6	No	
Age		Education	
Less than 26 years	5.4	Diploma	17.4
26-30 years	19.1	Degree	39.1
31-35 years	27.0	Masters	29.6
36-40 years	19.4	MBA	7.6
41-45 years	18.1	Doctorate	4.9
More than 45 years	11.1	Others	1.1
Home language		How long have you been managing people?	
English	43.5		
Afrikaans	3.0	Up to a year	12.5
isiZulu	26.7	Between 1 and 2 years	11.5
Tswana	3.0	More than 2 and up to 3 years	
Sesotho	6.6	More than 3 and up to 5 years	9.9
Other	17.1	More than 5 and up to 10 years	
		More than 10 years	16.8
			25.7
			23.7
Working experience		The biggest team you ever managed comprised how many people?	
Less than 1 year	1.1		
1 to 2 years	3.5	Up to 5	19.7
More than 2 and up to 3 years	5.1	Between 6 and 10	25.2
More than 3 and up to 5 years	12.5	Between 11 and 15	14.8
More than 5 and up to 10 years	25.5	Between 16 and 25	12.9
More than 10 years	52.3	Between 26 and 35	6.8
		More than 35	20.6

n=362

Measuring the management and leadership competencies

The data is captured on a structured 5-point Likert scale questionnaire, which was designed to measure the business school educated managers' management and leadership competencies. The scale to do so range from 1 (which represented the category "Totally disagree") to 5 (which indicated a response in the "Totally agree" category).

Inferential statistics were used, and the mean values and standard deviations were calculated to indicate the agreement, or not, to the importance of the required managerial and leadership competencies and their respective measuring criteria. The mean values were interpreted by using two indicators. Firstly, as an initial indicator, the mid-point indicated if a competency is important (thus scoring higher than the midpoint of three), or whether it is not (then scoring below the midpoint). This interpretation was developed by Fullerton (1993) and successfully applied globally in various management studies (see Fullerton, 1993; Fullerton and Neale 2008a; 2008b; Bisschoff, 2017; Craven, 2010; Fullerton, Bisschoff & Fields, 2017). Secondly, the mean value was interpreted to provide more information on the required competency by providing a relative measure of importance or unimportance of a criterion or a competency. Here various managerial studies (such as; Thekiso, 2011; Salim 2011; Basson, 2014; Liebenberg 2016) successfully applied the guidelines to interpret the mean scores using the guidelines originally applied by Bisschoff and Hough (1995) where:

Scores of 1.5 and lower indicate that the management and leadership competency is not very important;
Scores above 1.5 but below 3.5 an indicate important management and leadership competency;
Scores of 3.5 and higher indicate a very important management and leadership competency; and
Standard deviations more than one indicate that the respondents do differ from one another, while deviations higher than 1.5 shows that they differ a lot from one another on the importance of the criterion.

Almost all the competencies show high levels of importance (scoring a mean of higher than 3 or even 3.5). However, the mean values of the competency *Personal value system* are an exception. Three of the criteria scored below 3. This indicated that respondents do not regard applying one's own beliefs and values, leadership traits are built on character, and a solid leadership character is indispensable as important issues. These criteria all also have high standard deviations showing that all respondents are not in agreement on this competency. Interesting though is that the respondents do believe that ethics play an important role in a leader's personal value system. The competency thus has a low mean score of 2.58 indicating a low level of importance. The other competency that shows marginal importance is *Career awareness* with a mean (3.18) that is below the higher importance level of 3.5 but well above the lower margin of 3. The mean values of the competencies are shown in Figure 4 below.
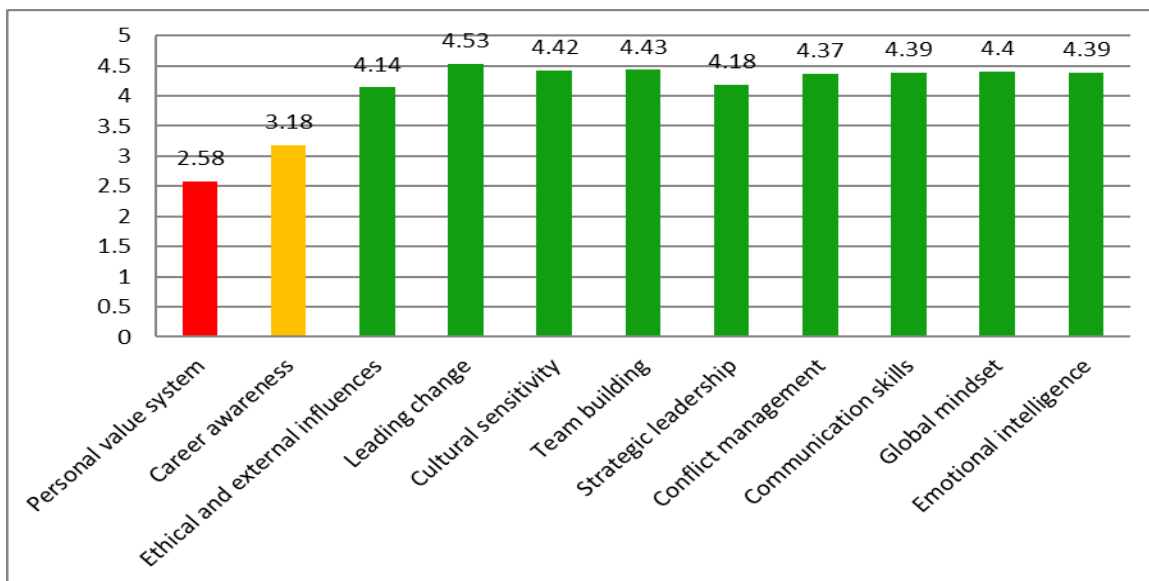

Figure 4:   Mean values of competencies
Source: Compiled from empirical analysis

Figure 4 shows that a *Personal value system* and *Career awareness* rank the lowest among the respondents. The rest of the competencies are well presented and score above 3.5.

Correlational analysis

Pearson's correlation coefficient was used to determine if the demographic variables correlate significantly with any of the competencies. The analysis showed that although some significant correlations do exist, these correlations are very low ($p \leq 0.05$; $r \leq 0.2$). This means that, in practice, the demographic variables do not strongly influence on any of the competencies (Field, 2009). However, the correlations between the competencies were all significant and high ($p \leq 0.05$; $r \geq 0.5$). This means that the improvement in any competency has a large positive influence on all the other competencies; in practice, it implies that management and leadership competence levels achieve development synergy and as one skill improves, so do the others. This supports the theory consulted to identify competencies and indicates that all the competencies identified from the theoretical study are statistically inter-related and do indeed measure only one construct; that is management and leadership competence.

Discussion

The study used a scientifically-researched process proved to be successful and useful by some social science studies to successfully construct a model to measure management and leadership competencies. The methodology identified 11 competencies which are measured by 42 criteria. Like some social studies the methodology proved successful in theoretical model development.

Following the identification of relevant management and leadership competencies from the literature, the relevance and importance of the competencies was confirmed statistically and proceeded to compile a final list of management and leadership competencies to use in measuring management and leadership competencies. The results showed that a Personal value system and Career awareness scored the lowest; in practice, this means that these competencies are not well developed among the manager-respondents. These are also areas of development that organisations should develop to provide their managers with an opportunity to gain better management and leadership competencies. Regarding correlations between the competencies, the Pearson correlations identified significant low, correlations between the demographic variables and the competencies, and also significantly high correlations between the competencies. In practice, this means that no demographic variables influence any of the competencies, but that the different competencies, by the literature, measures one core construct, namely that of management and leadership.

Limitations and Possible Future Research Areas

The developed model to measure management and leadership competencies offer two limitations. First, the model cannot be operationalised at present to a larger population of managers as the findings result from university-educated managers. Many managers and leaders developed their managerial competencies through experience. This study did not compensate for this group. As a result, this limitation offers a possible area for further research, namely, to test and measure the model among this respondent group. Second, the respondents in the model are diverse in ethnic and cultural demographics; however, the study did not specifically classify each demographic variable and compare the different groups with one another. This limitation offers another future research possibility namely to analyse if these demographic variables do make a difference. Various examples exist; male versus female competencies, cultural or ethic competency differences and if age or type of experience plays a role in management and leadership competencies. Furthermore, are these differences significant or not?

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