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Dissertation  
Integrating Competence and Human Capital Value

by

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for the degree  
Philosophiae Magister in Human Resource Management

in the Faculty of Management  
Department of Industrial Psychology and People Management

at the University of Johannesburg



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Prof Gert Roodt

Mr Pharny Chrysler-Fox

31 October 2013

## Dedication

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For the two women who encouraged me to pursue my academic endeavours, Thérèse Delanghe-Vromandt and Professor Adele Thomas. I hope I did you proud.

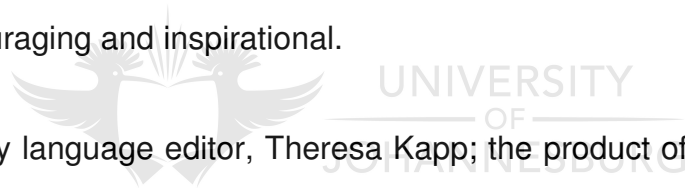
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## Abstract

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The purpose of the study was to establish the Human Capital Value's competence construct theoretical underpinnings by investigating perspectives, definitions, frameworks, models, variables, and measures based on levels of analysis. The research design followed on a theoretical (non-empirical) research approach, based on a systematic literature. The approach allowed for a content analysis, via the application and computer assisted qualitative data analysis software, ATLAS.ti. The findings revealed that individual and team level competence consists of variables such as knowledge, skills, abilities, and attributes that include both the application of behavioural and functional capabilities. Organisation level competence relies on core competencies' resources and capabilities responsible for maintaining its competitive advantage. Furthermore, the findings have established that there is a significant lack of standardised competence frameworks, models, and measures. The implication of this study needs to be empirically validated, since it was based on a non-empirical systematic literature review.



## List of Abbreviations

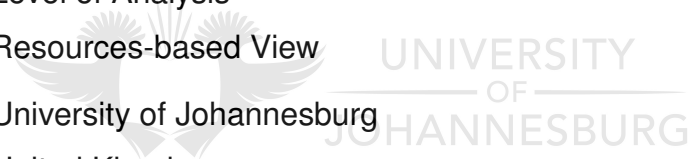
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This dissertation utilised the following abbreviations and/or acronyms, namely:

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Abbreviation/ Acronym	Description
CBV	Competence-based View
CMC	Competency Model Clearinghouse Framework
EA	Enterprise Architecture
FTE	Full-time Equivalent
HCV	Human Capital Value
I-P-O	Input-Process-Output
KBV	Knowledge-based View
KSA	Knowledge, Skill, Ability
LoA	Level of Analysis
RBV	Resources-based View
UJ	University of Johannesburg
UK	United Kingdom
US	United States of America

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## **Preface: Competence vs. Competency**

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Dictionaries do not make a distinction between 'competence' and 'competency' (Merriam-Webster Collegiate Dictionary, 2005, Oxford English Dictionary Online, 2012) and academic literature apply the terms interchangeably (Chartered Institute of Personnel Development, 2013).

This study will apply the term 'competence' as a general reference and in denoting individual level functional outputs related to professional/occupational standards or organisational level (including distinctive) competence. The term 'competency' (plural 'competencies') will be utilised in reference to individual or team level behavioural outputs linked to superior and average performance standard or an organisational level core competencies.

## **Preface: Crediting of Sources in Presenting Textual Data Findings**

---

This study is based on a systematic review of literature that allows for freestanding block quotations (40 words or more) of secondary data items. To improve this study's readability the researcher has removed secondary references within the block quotations, however the source (i.e. author of the scholarly journal article) is cited at the end of the block quotation, in line with APA style referencing techniques.

## **Preface: Use of 'Sic'**

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This study is based on a systematic literature review that allows that utilise a number scholarly journal articles, including American (US-based) publications. In block quotations or in citing references (e.g. journal article titles or publication names) the spelling is not presented in British (UK), punctuation or grammar in the source, at times, are incorrect. To improve this study's readability the researcher chose not to insert the word *sic* immediately after the error.

## Chapter 1: Introduction

---

### 1.1 INTRODUCTION

An article by Roodt (2010) highlighted business's growing interest in measuring the monetary value and contribution of intangible assets in organisational performance. The article centred on human capital value's (HCV) equation and its three constructs, namely competence, commitment, and context (the three Cs). The equation is utilised to establish HCV in monetary terms in and to determine whether organisations are human capital builders or destroyers. Roodt (2010) concluded that the three Cs' variables and measures are applied in a crude manner, and recommended further research to be conducted to develop a more refined predictive model thereby improving scholars and practitioners' understanding and application of the constructs. This study will focus on the challenge posed by the competence construct.

Prior to the development of the Saarbrücken Formula (Scholz, Stein, & Bechtel, 2004), determining an organisation's HCV was deemed impossible (Scarpello & Theeke 1989, cited in Cascio, 1991). By conducting a systematic investigation of literature, analysing the content and integrating the findings (i.e. methodological contribution) related to competence's salient constructs and levels of analysis (individual, team, and organisational) (i.e. theoretical contribution), its HCV variables and measures. In doing so, this study will postulate a valid and standardised means for the calculation of HCV's competence construct in monetary terms (i.e. practical contribution).

The competency approach was pioneered by (McClelland, 1973), which was expanded by Boyatzis (1982) and other prominent authors that established the basis for defining and developing individual competency models. Authors such Spencer and Spencer (1993), Meyer (1996), and Robbins, Odendaal, and Roodt (2010) were instrumental in defining competencies and its related variables. Organisational competence approaches were influenced by Selznick (1957), Andrews (1971), and Prahalad and Hamel (1990), who developed the notion of distinctive competence



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and core competencies. In determining HCV measures in monetary terms this study will focus on authors such as Andriessen, Frijlink, Van Gisbergen, and Blom (1999), Mayo (2011), and Scholz, Volker and Müller (2007).

The current challenge that centres on HCVs competence construct is the equation's crude measures related to the three Cs. Roodt (2010) proposed that, in developing a more refined predictive HCV model, every construct must be unravelled and unpacked. In light thereof, this study has identified five challenges in terms of HCV's competence construct, namely:

Firstly, the competence construct focuses only on the economic labour (human capital) and educational competency perspectives, failing to take human resources performance and human resources accounting perspectives into consideration.

Secondly, the competence construct lacks a general and uniform definition and terminology. Competence is defined along a continuum ranging from broad attribute definitions to performance definitions (Meyer, 1996) which is too wide and not applicable to the operational definition required by the HCV's competence construct.

Thirdly, identifying variables from definitions, and frameworks and models presents a challenge based on the considerable amount of variables identified by authors. For instance, Boyatzis (1982) developed a generic competency model classifying 19 managerial competencies. McClelland/McBer's competency model (Raven & Stephenson, 2001) includes a dictionary of 400 behavioural indicators describing 216 competencies that can be linked to 300 competency models. Spencer and Spencer's (1993) generic competency model describes 20 soft (management) generic competencies. The Clearinghouse General Competency Model Framework (Ennis, 2008) consists of nine competency-related tiers (levels) ranging from foundational to industrial to occupation-specific requirement competencies.

Fourthly, the competence construct only employs traditional human capital (labour economic) competence variables such as knowledge, experience, and personal (skills) development. It fails to consider the broad range of threshold (effective) competencies necessary in executing minimal accepted performance requirements

and differential (performance-based) competencies (Spencer, 2003) that take the multi-dimensional and value orientation of the competence construct into account.

Lastly, measuring HCV in monetary terms does not consistently apply a single measurement procedure. Various methodologies such as market capitalisation, return on asset or investment, and scorecard measures are utilised (Luthy, 1998, and Williams, 2000 in Sveiby, 2010). Like most measurement systems, HCV measurements rely on proxies (i.e. monetary value) that do not seem to be connected to actual competence constructs. For instance, the return on investment methodology is sensitive to interest and discounting rate assumptions; market capitalisation methods that are of little use for non-corporate organisations, and scorecard indicators make comparisons difficult, since these have to be customised for every organisation and purpose (Sveiby, 2010).

The remainder of this section will focus on providing a background to contextualise the dynamics of the research problem, formulating the main research question and objectives, explaining the motivation (rationale), presenting the expected value contribution, and, finally, outlining the remainder of this study.

### **1.2 BACKGROUND**

This section contextualises human capital (HCV measures and value) and competence (framework and classification) to provide a foundation in establishing the research problem.

#### **1.2.1 Human capital**

In the 21<sup>st</sup> century knowledge-based economy, knowledge is considered an essential aspect of human capital management. Prominent authors agree that human capital (an intangible asset and an important element of intellectual capital) is a key driver of organisational growth, competitiveness, and profitability (Ahonen, 2009; Armstrong & Baron, 2007; Becker, 1962; Cascio & Boudreau, 2008; Fitz-enz, 2010; Lev, 2004; Ulrich, 1997).

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A quantitative study to determine the successful generation of intellectual capital dimensions (i.e. HCV, organisational capital value, and relational capital value) by Huang, Hsu, and Cheng (2010) concluded that HCV (37.7%) had the greatest influence on generating intellectual capital, followed by organisational capital (31.4%) and relations capital (30.9%), thereby demonstrating the importance HCV as an intellectual capital asset (resource).

### 1.2.2 Human capital measurement.

Two barriers in measuring the effect of human capital on organisational effectiveness were identified, firstly organisation's inability to accurately measure the impact of employees and human resource processes on the bottom line (i.e. HCV calculated in monetary terms) in a precise manner, and secondly the lack of established analytics and metrics to measure its human resources strategy (Fegley, 2006).

Due to human capital being transacted at will (Armstrong & Baron, 2007; Cascio & Boudreau, 2008; Fitz-enz, 2000), reporting on intangible measures are often not included as part of an organisation's financial monitoring and control systems (Mayo, 2006a). Standard financial metrics (i.e. return on invested capital earnings before taxes, depreciation and amortisation) and/or proxies such as free cash flow, and management practice measurements (scorecards, benchmarking, and/or dashboards) are considered inadequate for measuring human capital in monetary terms (Bassi & McMurrer, 2005; Cascio & Boudreau, 2008; DiBernardino & Miller, 2008).

Research indicated that generally accepted accounting principles (GAAP), have created the wrong impression of an organisation's real comparative growth (traditional book value) by overstating physical assets and understating intangible assets (Aboody & Lev, 1998; Amir & Lev, 1996; Lev & Sougiannis, 1999; Lev & Zarowin, 1999, cited in Phillips, 2005). Traditional book value in financial statements is far removed from an organisation's real value and financial statements often do not indicate realistic comparative growth as publicised (Andriessen et al., 1999). Firms such as Microsoft and Coca Cola include only traditional assets in their

balance sheets, while Honda and British Petroleum's intangible assets are reported at 30% below their market value (Mouritsen, Bukh, & Marr, 2005).

Despite the aforementioned shortcomings, intangible assets (including human capital) form nearly 50% of an organisation's stock market value (Lev, 2004; Ulrich, Brockbank, Johnson, Sandholtz, & Younger, 2008), and human capital represents 36% of the total revenue in organisations (CFO Research Services, 2003). Two thirds of the world's 250 largest companies report on human capital in their annual reports, which is considered a key element of an organisation's market worth (Hansen, 2007). Yet, the theory and practice of measuring and reporting on human capital and its metrics are still under construction (Chaminade & Catasús, 2007, as cited in Ahonen, 2009).

### 1.2.3 Human capital value.

In determining its human assets' value, organisations apply measures that often rely on lagging (backward-looking) financial metrics that no longer address the complex and challenging economic environment in which it operates (Cascio & Boudreau, 2008; Fitz-enz, 2000, 2010; Starovic & Marr, 2003). Due to the cause-and-effect relationship of organisational processes, implementing and integrating leading financial metrics (forward-looking information) tied to an organisation's value drivers and linked to its performance management environment have become critical (Starovic & Marr, 2003). This realisation has led to authors such as Liu, Combs, Ketchen, and Ireland (2007), Prahalad (1993), Robbins et al. (2010), Roodt (2010), Scholz, Volker, and Müller (2007), Tampoe (1994), and Ulrich (1998a) to express HCV in non-monetary and monetary terms.

The growing interest in determining HCV in non-monetary terms has led to equations by through leaders, listed in Table 1.1:

Table 1.1

*Authors Expressing HCV in Non-monetary Terms*

Author(s)	Equation
Prahalad (1993)	Organisational competence = (Technology x Governance x Collective learning)
Tampoe (1994)	Sustained profitable growth = $f$ (core competence of company x shared strategic vision x motivated organisation x market leverage)
Ulrich (1998a)	Performance = Competence x Commitment
Robbins et al., (2010)	Individual Performance = Ability x Motivation x Opportunity
Liu et al., (2007)	High performance = Competence x Commitment x Context

Prahalad (1993) pointed out that an organisation's competitive advantage is located in its core competencies, and not in product positioning or organisational structures, as previously assumed. Organisations possess five or six core competencies, such as technical competencies (know-how), governance processes (quality of relations), and collective learning across all organisational levels (Prahalad & Hamel, 1990). These competencies are fundamental to the dynamics of the organisation's competitive strength (technical know-how), and sustain long-term strategic innovation and product growth (Prahalad & Hamel, 1990). The following characteristics have been attributed to core competencies, namely: they are relevant (customers are strongly influenced by the product or service); difficult to imitate (products or services are better than those of the competitors, and are continuously improved upon); and widely applied (opens up numerous markets to ensure growth) (Prahalad & Hamel, 1990).

Following Prahalad and Hamel's (1990) core competencies' development and strategy formulation paradigm, Tampoe (1994) indicated that sustained profitable growth includes a core competency component, thereby emphasising the benefits of

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utilising core competencies to achieve competitive advantage. He further outlined the characteristics of core competencies as: invisible to competitors; difficult to imitate; unique to the organisation; resulting from a mix of skills, resources, and processes; a capability that the organisation can sustain over time; greater than individual competence; essential to the development of core products and eventually to end products; essential to the implementation of the strategic intent of the organisation; essential to the strategic choices of the enterprise; marketable and commercially viable; and few in number (Tampoe, 1994).

Ulrich (1998a) proposed a formula based on human resources management principles applicable to individuals, teams, and/or organisations. The multiplication between competence and commitment constructs indicates a mutual dependency upon each other. A negative (low) or positive (high) score in either construct will significantly lower or increase performance. Improving competence relies on five basic tools, namely *buy* (internal/external recruitment); *build* (training and development), *borrow* (external networking to find new ideas); *bounce* (exit low and / or sub-par performers); and *bind* (retain the most talented). Performance can be increased by assigning values to each construct, and the analysis thereof will highlight areas to be addressed. To improve commitment, human resources practitioners must be cautious in formulating organisational policies and procedures that will stifle or hinder individual growth (Ulrich, 1998b).

Robbins et al. (2010) equate individual competencies (multiplying ability, motivation, and opportunity) to performance. Like Ulrich (1998a, 1998b), the constructs of Robbins et al. (2010) are mutually dependent on one another, and a positive interaction will result in increased work performance.

Liu et al. (2007) conducted a meta-analysis of a database of over 19,000 organisations, and concluded that human resources management add significant value to organisations. This study identified three key elements that will shape an organisation's performance, such as C1: competence, C2: commitment, and C3: context (Roodt, 2010). With the exception of competence, strong parallels exist between composite construct definitions and outcomes, when compared with those of Robbins et al. (2010). According to Liu et al. (2007), competence refers to an

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organisation's ability to attract, grow, and retain talent beyond its collective capability to simply retain and leverage individual employees' production output.

Table 1.2 illustrates and clarifies the multi-dimensional and layered effect of the performance constructs of Robbins et al. (2010) and Liu et al. (2007), on competence.

Table 1.2

### *Clarifying Performance Constructs*

Construct	Refers to	Sub-elements /construct composite
Ability	Competence	Knowledge, ability, skills, and attitudes.
Motivation	Commitment	Individual's willingness to engage and exert in a work task through identification, work involvement, work engagement, and work energy.
Opportunity	Context	Facilitative leadership style; facilitative and empowering work climate and culture resulting in a high performance (competence) and high commitment (motivational) context.

*Note.* Adapted from "Equating Human Capital: Competence x Commitment x Context," by G. Roodt, 2010, *Human Capital Review*, May, pp. 1-3. Copyright 2010 by the Human Capital Review.

The HCV authors, as shown in Table 1.3, were successful in expressing HCV in monetary terms.



Table 1.3

*Authors expressing HCV in Monetary Terms*

Thought leader	Equation
Scholz et al. (2007)	$\text{HCV} = \text{value base} - \text{value depreciation} + \text{value compensation} + \text{value adjustment. Aggregate expressed as: } \text{HCV} = \sum \{ [ \text{FTE}_i \times \text{W}_i \times (1 - f(k_i; t_i)) + \text{PD}_i ] \times \text{MA}_i \}$
Roodt (2010)	$\text{HCV} = \sum \{ [ \text{FTE}_i \times \text{W}_i \times (\text{C1}) ] \times (\text{C2} \times \text{C3}) \}$

The Saarbrücken Formula (Scholz et al., 2007) stated above is constructed as:  $g$  = groups of employees,  $FTE$  = full-time-equivalents,  $w$  = market salaries,  $f(k; t)$  = relation between the job-specific duration of knowledge relevance and the length of employment,  $PD$  = personnel development, and  $MA$  = motivational value. The equation does not focus on cost of capital acquisition or productivity, but on human capital as stock value. Competence's monetary value is determined via the adjustment of negative and positive measures in the knowledge management and personnel development domain (Scholz et al., 2007).

Roodt (2010) indicated that the Saarbrücken Formula's component variables throw little light on competence (an organisation's ability to attract, grow, and retain talent), commitment (employee's willingness to perform), and context (organisation's ability to create and establish performance opportunities). By incorporating Liu et al's., (2007) context construct, Roodt (2010) adjusted the equation and reconstructed it as:  $FTE$  = full-time-equivalents,  $w$  = market salaries,  $C1$  = competence value adjustment as  $(1 - f(k_i; t_i)) + PD_i$ ,  $C2$  = commitment value (standardised measures of engagement or turnover intentions),  $C3$  = contextual value ('best company to work for' indicators), and  $MA_i$  = an interaction between  $(C2 \times C3)$ .

### 1.2.4 Competence.

Human capital refers to competence (Armstrong & Baron, 2007) based on the knowledge, skills, and abilities (KSAs) of individuals, teams and other factors controlled or possessed by the organisation (Meyer, 1996; Prahalad & Hamel, 1990;



Robbins et al., 2010). Executing competence efficiently and effectively is a key strategic factor that drives organisational performance and creates value, and the proper execution thereof will impact on bottom-line performance and secure a sustained competitive advantage (Becker, Huselid, & Ulrich, 2001; Cascio & Boudreau, 2008; Delaney & Huselid, 1996; Durgin, 2006; Kaplan & Norton, 2000; Leepak & Snell, 1999).

The competence construct is complex and multi-layered that operate in various organisational contexts (i.e. job, occupation, or organisation), and can be applied in a general or specific manner (Becker, 2009). It is acquired through education and experience within the work context (Heijke, Meng, & Ramaekers, 2003), and its application can be firm-specific (organisational), task-specific (job), or industry-specific (economic) (Nordhaug, 1994). Competence is categorised (clustered) according to academic characteristics: general academic (broad general knowledge), scientific-operative (accuracy and attention to detail), professional (field-specific knowledge of methods), social-reflexive (leadership), and physiological-handicraft (manual skills) (Kellerman, 2006); and classified as specialised, methodological, participative, or socio-individual (Bunk, 1994). Table 1.4 presents a framework outlining the various competence classifications according to context, application, development, and grouping.

Table 1.4

*Human Capital Competence Classification and Framework*

Context	Application	Development	Classification and/or grouping	
Job	General	Education	Academic personality	Specialised
Organisation	Specific	Experience	General academic	Methodological
Occupation	Task		Scientific operative	Participative
	Organisation		Social reflective	Social individual
	Industry		Physiological-handicraft	

The current competence construct centres on determining an organisation's market value by aggregating and calculating individual knowledge, experience, and

development. Upon comparing Tables 1.2, 1.3, and 1.4, it becomes evident that the competence construct fail to take competence's multi-dimensional salient concepts and levels of analysis into consideration.

### 1.3 RESEARCH PROBLEM

Competence as an academic (theoretical) and operational (applied) discipline is vast, and its contextual framework includes salient concepts such as *perspectives* (Stein, 2007; Van Loo & Semeijn, 2004), *definitions* (Boyatzis, 1982; Dalal, 2006; Fernandez, Kozlowski, Shapiro, & Salas, 2008; Meyer, 1996; Robbins et al., 2010; Spencer & Spencer, 1993; Van Loo & Semeijn, 2004), *frameworks* and *models* (Boyatzis, 1982; Cannon, 1995; Ennis, 2008; Spencer & Spencer, 1993), *variables* (Prahalad, 1993; Robbins et al., 2010; Scholz et al., 2007; L. Spencer, 2003; Suleman & Paul, 2004; Tampoe, 1994; Ulrich, 1998a), and *measurements* (Bullen & Eyler, 2010; Cascio, 1998; Dobija, 1998; Flamholtz, Bullen, & Hua, 2002; Flamholtz, 1999; Lev & Schwartz, 1971; Roy, 1999; Whiting & Chapman, 2003).

Literature, like the Saarbrücken Formula (Scholz et al., 2007), specifies that HCV's competence construct variables are structured according to the labour economic (human capital) and educational perspectives, namely educational background, years of schooling, and experience (Cahuc & Zylberberg, 2004; Garcia-Aracil, Mora, & Vila, 2004). It is evident from Table 1.1 that the variables do not offer any distinctive theoretical or empirical causal links to the specific value components they aim to measure. However, the constructs are useful as a conceptual foundation in measuring HCV and competence. Although the formulas and variables in Table 1.3 are standardised and can be applied in various management disciplines across organisations and functions, both monetary and non-monetary measures fall short in that the construct variables are considered too broad and their measures too rudimentary (Roodt, 2010), thereby highlighting a management dilemma and the need for further research.

The dilemma faced by human resources practitioners and human capital analysts is that current HCV variables and measures appear vague and lack contextual understanding of the salient concepts central to competence and its levels of

analysis, thereby highlighting the need to conduct a study of existing scholarly literature.

### 1.4 RESEARCH QUESTION AND OBJECTIVES

In light of the dilemma stated above, the main research question can be expressed as:

What are the theoretical underpinnings of the competence construct framework's salient concepts (perspectives, definitions, framework, models, variables, and measures) and levels of analysis (organisational, individual, and team)?

Following the main research question, the main research objective can be expressed as follows, namely:

To conduct a review of scholarly literature based on the competence's salient concepts and levels of analysis.

A delineation of the competence construct's salient concepts, sub-questions, and sub-goals linked to levels of analysis are presented Table 1.5.

Table 1.5

*Delineating this Study's Levels of Analysis, Sub-questions, and Sub-goals*

Levels of Analysis	Salient Concepts	
	Sub-question	Sub-goal
Individual	What are the different individual competence perspectives?	To determine the perspectives within which individual competence operates.
	What are the definitions of individual competence?	To clarify definitions of individual competence.
	Which individual competency	To uncover individual

Levels of Analysis	Salient Concepts	
	Sub-question	Sub-goal
Levels of Analysis	frameworks are utilised?	competency frameworks.
	Which individual competency models are utilised?	To uncover individual competency models.
	What are the individual competence variables?	To determine individual competence variables.
	How are individual competencies measured?	To determine individual competency measurements.
Team	What are the different team competence perspectives?	To determine the perspectives within which team competence operates.
	What are the definitions of team competence?	To clarify definitions of team competence.
	Which team competency frameworks are utilised?	To uncover team competency frameworks.
	Which team competency models are utilised?	To uncover team competency models.
	What are the team competence variables?	To determine team competence variables.
	How are team competencies measured?	To determine team competency measurements.
Organisational	What are the different organisational competence perspectives?	To determine the perspectives within which organisational competence operates.
	What are the definitions of organisational competence?	To clarify definitions of organisational competence.

Levels of Analysis	Salient Concepts	
	Sub-question	Sub-goal
	Which organisational competency frameworks are utilised?	To uncover organisational competency frameworks.
	Which organisational competency models are utilised?	To uncover organisational competency models.
	What are the organisational competence variables?	To determine organisational competence variables.
	How are organisational competencies measured?	To determine organisational competency measurements.

The following section will focus on the motivation of this study.

### 1.5 MOTIVATION



Competence plays a prominent role in expressing HCV, and although Roodt (2010) considered it to provide a reasonable account of the formula, it lacks a comprehensive understanding of the contextual framework's salient concepts and the levels of analysis.

HCV's competence construct variables and measure draw on the economic labour (educational background, years of schooling, and experience) and educational (KSAs) perspectives. An investigation of additional perspectives will provide a holistic view and understanding of competence.

Competence definitions mostly employ a one-definition-fits-all approach that holds different meanings for different application within organisations (Meyer, 1996). This study will clarify competence's key theoretical and operational concepts and characteristics.

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The most prominent and widely applied competency frameworks and models are Boyatzis's (1982) generic management competences, followed by McBer's Competency Framework, the Generic Competency Model (Spencer & Spencer, 1993), and the US Department of Labour's Clearinghouse General Competency Model Framework (Ennis, 2008). This study will identify and clarify the various competence frameworks and models linked to levels of analysis.

The authors referred to in Tables 1.1 and 1.3 applies various variables in expressing competence linked to HCV. For instance, in establishing an organisation's core competencies, Prahalad (1993) utilised variables such as access to markets, customer benefits, and difficulty to imitate. In determining an organisation's profit growth, Tampoe (1994) linked uniqueness, difficulty to imitate, a skills matrix, and sustainability as competency variables. Ulrich (1998a) identified individual, team, and organisational competency variables as buy (internal or external recruitment), build (training and talent development), borrow (external networking to find new ideas), bounce (exit low and/or sub-par performers), and bind (retain the most talented). Robbins et al. (2010) associate competency variables with an individual's knowledge, skills, abilities, and attitudes. Liu et al. (2007) determined that three competency variables, namely the organisation's ability to attract, grow, and retain employees, as the three broad categories that add value to an organisation. Scholz et al. (2007) applied practical knowledge, experience, and personal development as individual and organisational competency variables. This study will identify competence related variables.

A study by Bullen and Eyler (2010) emphasised a multitude of measures in calculating an organisation's human capital, and highlighted the following human capital and human resources accounting practices, namely:

- One of the earliest measures was that of Lev and Schwartz (1971), who determined HCV by calculating the present value of an individual's future earnings.
- Flamholtz (1971, 1999) proposed that HCV may be established by determining an individual's expected conditional value (the amount the organisation could potentially realise from the individual's service life or tenure) and expected

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realisable value (the actual amount expected to be derived, depending on the individual's service life or turnover). This methodology was operationalised by calculating the return on investment of competence development (Flamholtz et al., 2002).

- Dobija (1998) proposed capitalisation in valuing human capital by taking an individual's capitalised value of cost of living, cost of professional education, and value gained through experience into account.
- Cascio (1998) proposed indicators based on innovation, employee attitudes, and an inventory of knowledgeable employees to measure human capital. For instance, innovation can be measured by comparing gross profit margins from new products with those from old products.
- The Skandia Navigator (one of the first intellectual capital measures) and Dolphin Navigator apply ratios to determine intangible assets rather than tangible assets (Roy, 1999).
- Professional sports teams place the value of employees (team players) on the balance sheet, which is amortised over time, instead of expensing costs (Whiting & Chapman, 2003).

To express HCV in a reliable and accurate manner, the competence construct must be expanded beyond its labour economic (human capital) perspective to include salient concepts related to levels of analysis in establishing its variables and measures.

The following section will focus on the proposed value of this study.

### 1.6 PROPOSED VALUE

The expected value contribution of this study is threefold namely: theoretical, methodological, and practical.

#### 1.6.1 Theoretical contribution.

The expected theoretical contribution is twofold, namely:

## Integrating Competence and Human Capital Value

A direct contribution:

- By providing the Saarbrücken/Rood HCV, formulas with the necessary building blocks to refine the competence construct variables and measurement.
- To standardise the HCV formula competence construct variables and measurement.

An indirect contribution to:

- The human resources management profession, by expanding the HCV calculation in monetary terms, and for human resources/human capital professionals to gain credibility as a strategic and business partner.
- Establish industry-related organisational measures in terms of human capital builders and human capital destroyers.
- Apply and utilise the information as a decision-making tool in management disciplines such as strategic management, financial management, risk management, project management, innovations management, and due diligence.

### 1.6.2 Methodological contribution.

The expected methodological contributions are:

- By conducting a systematic review of literature that allows for a content analysis, of a large bulk of textual data of existing quantitative studies will provide a unique insight of the competence construct. Furthermore, this study that will utilise a computer assisted qualitative data analysis software's, namely ATLAS.ti.

### 1.6.3 Practical contribution.

The expected practical contribution of this study is twofold, namely:

A direct contribution by:

- Providing the Saarbrücken/Rood HCV, formulas with the necessary building blocks to refine the competence construct variables and measurement.



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- Standardising the HCV formula competence construct variables and measurement.

An indirect contribution will:

- Increase human resources professionals and human analysts' credibility by providing a standardised and accurate measure of HCV in monetary terms.
- Establish industry-related HCV measures to determine which organisations/institutions are human capital builders and human capital destroyers.
- Apply and utilise the information on HCV as a decision-making tool in management disciplines such as strategic management, financial management, risk management, project management, innovations management, and due diligence exercises.

### 1.7 CHAPTER LAYOUT

Based on the main research question and objective, the remainder of this study will proceed as follows:

Chapter 2 will provide an overview of literature that will delineate and clarify the competence construct's salient concepts and levels.

Chapter 3 will discuss the research design and present the research approach, strategy, method, and ethical considerations.

Chapter 4 will present this study's findings and discuss its theoretical underpinnings according to the research design.

Chapter 5 will conclude this study, by providing an overview of the results, where after limitations and recommendations for further research will be discussed.

The following section will conclude this study's introduction.

## 1.8 CONCLUSION

The current competence construct is not robust enough to be applied in general as an equation to determine HCV within an organisational setting, and fails to take the competence component's multi-faceted nature and complexity into account. Unpacking and clarifying competence's salient concepts and levels of analysis will shed light on how the equation's variables and measurement can be refined.

This chapter presented the background of this study, contextualised the research problem, provided the rationale (motivation), and indicated the possible value contributions thereof.

The following chapter summarise literature based on authoritative scholarship of the research problem identified in this chapter.



## Chapter 2: Literature Review

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### 2.1 INTRODUCTION

The previous chapter introduced this study by presenting the background and motivation. The main research question and objective were formulated and unpacked via sub-questions and sub-goals, and in conclusion, presented the expected theoretical, methodological, and practical value contributions.

This chapter will focus on a high-level overview of selected literature and will be guided by the competence framework's salient concepts. Figure 2.1 presents the competence construct's salient concepts as a process that will guide the literature review in terms of competence perspectives, definitions, frameworks, models, variables, and measurements.



Figure 2.1. Conceptual Framework

The section below will address competence perspectives, as shown in Figure 2.2.



Figure 2.2. Conceptual Framework: Perspectives

### 2.2 PERSPECTIVES

This section describes various competence perspectives in terms approaches (i.e. educational, labour market, human resources, psychological, business; competence and competency), meanings (legal and non-legal), and views (resource-based, competency-based, and knowledge-based).

### **2.2.1 Education, labour market, and human resources.**

Van Loo and Semeijn (2004) identified three individual competence perspectives, namely educational, labour market, and human resources.

Derived from the behavioural sciences movement (Melton, 1994), the *educational* perspective operationalise an individual's competence through KSAs developed and obtained during education and work (job) settings. Performance criteria such as educational targets and work-related outcomes will determine the meaning of competence (Bowden & Marton, 1998; Straetmans, 1998).

The *labour market* (economic) perspective originated from learning and cognitive sciences movement that equates an individual's competence to qualifications or skill (Van Loo & Semeijn, 2004). Job analyses and establishing formal job requirements, within the job context, will determine an individuals' requisite qualifications (Mulder, 1997). Human capital theory operationalise productivity in terms of skill, and is measured by indirect proxies such as educational attainment and direct self-reporting (Becker, 2009; Straetmans, 1998).

The *human resource* perspective encompasses the entire behavioural sciences spectrum (Van Loo & Semeijn, 2004), and involves the optimal application of human resources (individual potential or behaviour that can be developed) (Klarus, Tillema, & Veenstra, 1999). An individual's KSAs (cognitive and social learning/development) will support and achieve organisational objectives and address shortcomings to be overcome (De Wulf, 1999). Human resource competence measurements, based on subjective judgements and mutual agreement, such as assessment centres, are deemed more valid than other research fields (Van Loo & Semeijn, 2004).

### **2.2.2 Educational, psychological and business approach.**

In examining the origins and development of the competency concept, Markus, Cooper-Thomas, and Allpress (2005) classified three approaches, namely educational, psychological, and business.

Two schools of thought expanded the educational approach. The United States of America's (US's) approach focus on KSAs that are demonstrated and assessed according to behavioural standards, i.e. behavioural competencies. In the United Kingdom (UK), the approach centres on vocational and technical (occupational) skills linked to different levels of expertise that are based on expected work or behavioural outcomes and demonstrated according to minimum job-related standards (Markus et al., 2005).

The psychological (behavioural) approach, based on McClelland (1973) and Boyatzis's (1982) definition of a competency, is described in terms of knowledge, motives, traits, self-image, social roles, and skills associated with superior or effective performance (Markus et al., 2005).

The business approach focuses on Prahalad and Hamel's (1998) explanation of core competencies and capabilities that will contribute to an organisation's strategic growth and competitive advantage (Markus et al., 2005).

### 2.2.3 Competence and competency approaches.

In addressing the meaning of competence, Le Deist and Winterton (2005) differentiate between the UK, the US and European tradition.

The country's British National Vocational Qualifications (NVQ), the Scottish Vocational Qualifications (SVQ) frameworks, and Vocational Education and Training (VET) programme guided the UK tradition. The approach focus on competence-based qualifications grounded in occupational standards that assess the individual's (job incumbent's) functional competencies. Occupational standards identify key tasks, which are divided into units of competence and sub-divided into elements that define performance requirements linked to a range of performance indicators. The functional approach requires individuals to demonstrate their competence (ability) according to established job-related standard (Le Deist & Winterton, 2005).

The US tradition's major contributors approach were Boyatzis (1982), McClelland (1972), Spencer and Spencer (1993), and White (1959) Le Deist and Winterton

(2005). The approach describes *competencies* in terms of personality characteristics and motivational factors (i.e. underlying characteristics), coupled with measures to predict effective or superior performance. By focussing on behavioural traits such as self-awareness, self-regulation, and social skills, the US approach moved away from the notion that cognitive intelligence (IQ) is the best predictor of job competencies and job success. This approach links psycho-social characteristics (knowledge and skills) with "...attitudes, behaviours, work habits, abilities and personal characteristics," i.e. behaviour required for superior performance (Le Deist & Winterton, 2005, p. 33).

The European (German, French, and Austrian) approach incorporates knowledge, skills related to both the competence (functional approach) and competencies (behavioural approach), within a multi-dimensional holistic typology (Le Deist & Winterton, 2005).

Garavan and Mcguire (2001) differentiated between the UK and US approaches; as shown in Table 2.1, the authors categorised the differences according to purpose, focus, organisational context, methodological approach, scope, measurement, role of the assessor, and learning perspective.

Table 2.1

*Defining Competencies: UK versus US Approach*

Difference	UK Approach	US Approach
Purpose	Assessment and certification of employees.	Performance enhancement.
Focus	Individual characteristics and skill accumulation.	Individual behaviour and attributes according to defined standards.
Organisational context	Context not as significant as professional area and job-specific functions.	Context defines behaviours and attributes according to defined standards.

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Difference	UK Approach	US Approach
Conceptualisation	Work characteristics as point of departure.	Greater emphasis on individual rather than specific tasks.
Methodological approach	Multi-method and quantitative.	Rationalistic and positivistic.
Scope	Specific to professions and job functions.	Specific to the organisation.
Measurement	Documentation of evidence linked to work activities and experience denotes evidence of competency.	Quantitative measurement and identification of correlation between possession of attributes and work performance.
Role of assessor	Formally assessed by external assessor to determine level.	Assessment of performance by job supervisors and job incumbent.
Learning perspective	Constructionist.	Cognitive.

*Note:* Adapted from “Competencies and Workplace Learning: Some Reflections on the Rhetoric and the Reality” by T.N. Garavan and D. McGuire, 2001, *Journal of Workplace Learning*, 13, p. 150. Copyright 2001 by the Association of Information Management.

chi above denote that the UK approach to competence includes an individual's attributes and efficiencies, regulations, and standards linked to job-related functions and professions, and job performance. Whereas, the US approach to competencies focuses on an individual's attributes, specify skills (qualities), and describes behaviours displayed by high performers linked to a job's function, level, or context.

#### 2.2.4 Legal and non-legal meaning of competence.

Hood and Lodge (2004) described competence as context-specific, and categorised competence into two clusters, namely legal and non-legal, based on behavioural and non-behavioural characteristics.

*Legal* meanings are derived from an individual's or an organisation's authority and control, such as the individual's ability to perform specific tasks, or an organisation's ability to perform certain processes and procedures.

*Non-legal* meanings include individual, team, and organisational configurations. Individual capacity centres on non-behavioural features, such as subject-matter expertise and work standards, as well as behavioural demonstrations of capabilities. Non-behavioural approaches, related to individual, team and/or organisational knowledge and skills, encompass subject-matter expertise (also known as '*fachkompetenzen*,' the traditional German vocational qualification approach) and work standards (the British National Vocational Qualifications Framework, Scottish Vocational Qualifications Framework, and Vocational Education and Training Framework approaches). The behavioural approach, pioneered by McClelland (1972) from the US and later adopted in hybrid form by the UK, defines attitudes required for superior performance. Team and organisational capacity focus on improving specific commodities (products and services) related to organisational core competencies (Hood & Lodge, 2004).

Figure 2.3 charts competence's legal (ability, i.e. possession of skill) and non-legal (capability, i.e. demonstration of ability) meanings, as associated with individuals, teams, and/or organisations.



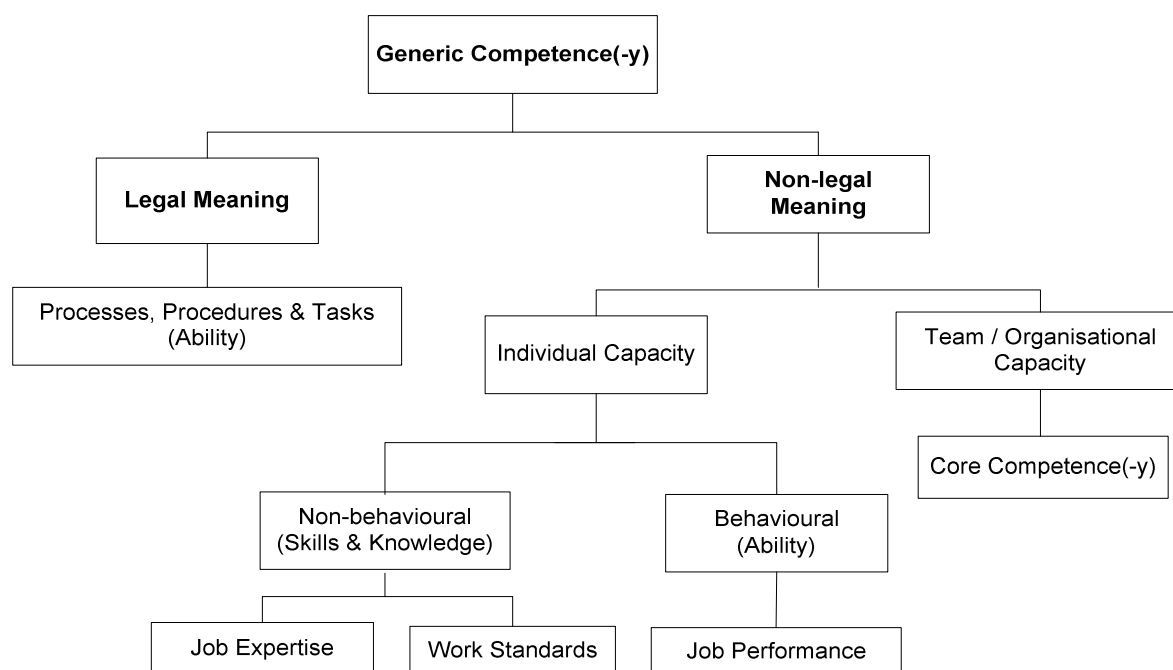
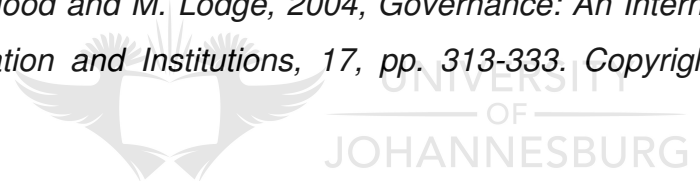


Figure 2.3. Contextualising competence's legal and non-legal meanings. Adapted from "Competency, Bureaucracy, and Public Management Reform: A Comparative Analysis" by C. Hood and M. Lodge, 2004, *Governance: An International Journal of Policy Administration and Institutions*, 17, pp. 313-333. Copyright 2004 by Wiley Periodicals.



### 2.2.5 Resource-based views.

Penrose (1959, as cited in Abhayawansa & Abeysekera, 2008) suggested that an organisation is a collection of productive resources that enable it to perform particular tasks. Central to the *resource-based view* (RBV) are tangible resources (human, technological, physical, and information) and intangible capabilities (brand-name, reputation, know-how) that are leveraged to meet strategic objectives, maintain competitive strength, and produce economic value (De Toni & Tonchia, 2003; Lee, Wen, & Hsu, 2008; Seyyedjavadin & Zadeh, 2011; Tippins & Sohi, 2003; Yang, Wu, Shu, & Yang, 2006).

Resources that are valuable, rare, inimitable, and non-substitutable result in an organisation's sustained competitive advantage (Barney, 1991). The RBV considers dynamic capabilities as collective individuals' skills that are possessed by the

## Integrating Competence and Human Capital Value

organisation to create best practices and a competitive advantage through the coordination, reconfiguration, integration, and deployment of competencies (lower- and higher-order routines, knowledge, skills, and learning) (Lawton & Rajwani, 2011; Seyyedjavadin & Zadeh, 2011; Wolter & Portuguesa, 2008).

Figure 2.4 illustrates a resource-based view of an organisation by presenting the context and variables through which organisations achieve sustained competitive advantage.

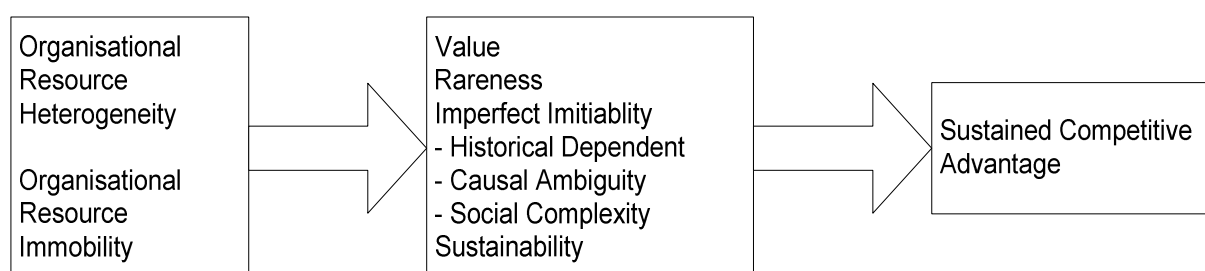


Figure 2.4. An organisation's resource-based view. Adapted from "Firm Resources and Sustained Competitive Advantage" by J. Barney, 1991, *Journal of Management*, 17(1), pp. 99-120. Copyright 1991 by Sage Journals.

Individual capabilities (human capital) are considered the mainstay that enables organisations to achieve strategic-based performance requirements and sustained competitive advantage (Samudhram, Sivalingam, & Shanmugam, 2010). Economic rents (i.e. the economic return attributed to distinctive (unique) and rare productive inputs (Besanko & Braeutigam, 2010)), generated by human capital through organisational processes and procedures, are influenced by criteria such as:

- Causal ambiguity — the extent to which valuable and rare human resource policies and procedures serve to sustain and improve organisational performance; and
- Path dependency — human resource policies and procedures developed over time that are inimitable and non-substitutable (Samudhram et al., 2010).

### 2.2.6 Competency-based views.

The competency-based view (CBV) of an organisation follows a process that the RBV did not consider (De Toni & Tonchia, 2003). The focus shifted from a short-term task-based approach to long-term strategic competency requirements, based on individual and team competencies (KSAs and behavioural characteristics), to meet current and future organisational objectives (De Toni & Tonchia, 2003; Draganidis, 2008; Nilsson & Ellström, 2012)

An organisation's ability to increase and reinforce its competencies through its transferable and tacit knowledge-based assets creates value and will result in a competitive advantage (Drejer, 2002; Guallino & Prevot, 2003; Hwang & Gaur, 2009). Therefore, an organisation's sustained competitive advantage resides in its core competencies that have the potential to access markets; are considered by customers as a source of value-add; and are difficult for competitors to imitate (De Toni & Tonchia, 2003).

### 2.2.7 Knowledge-based views.



The knowledge based view (KBV) extends both the RBV and the CBV (Foss, 1998; Starovic & Marr, 2003) by focusing on knowledge as the primary organisational resource (Simpson, 2002). The KBV is based on the notion that knowledge assets underpins an organisation's dynamic capabilities, core competencies, and individual competencies (Eisenhardt & Santos, 2002; Foss, 1998; Marr, Schiuma, & Neely, 2004).

Converting knowledge into strategic value requires the execution of shared (common) knowledge, integrating new knowledge, and reconfiguring existing knowledge (Eisenhardt & Santos, 2002), thereby creating strategic growth and a sustained competitive advantage (Guallino & Prevot, 2003; Simpson, 2002).

The section below will address competence definitions, as shown in Figure 2.5.



Figure 2.5. Conceptual Framework: Definitions

### 2.3 DEFINITIONS

This section will provide definitions based on literature and will focus on distinctive competence, organisational competence, core and dynamic competencies, organisational capabilities, behavioural competencies, functional competence, and team competencies.

#### 2.3.1 Distinctive Competence.

This section will present distinctive competence definitions from an author-based perspective.

##### 2.3.1.1 Phillip Selznick

Selznick (1957) defined distinctive competence as an outcome related to an organisation's "...peculiar adaptation to its own special purposes and programs..." (p. 50), including activities such as financial management, production engineering, general management, research and development, production, distribution, legal affairs, and personnel, that organisations must identify, invest in, and protect (Selznick, 1957 as cited in Chabert, 1998). Organisations are required to execute a number of skills in performing action programmes (i.e. actions/plans required to be executed to ensure strategic success), whereby its outcomes will eventually become its distinctive competence.

An organisation's distinctive competence is considered as an important determinant of its strategic value and sustained competitive advantage (Chabert, 1998; De Toni & Tonchia, 2003; Henderson & Cockburn, 1994).

### **2.3.1.2 Kenneth Andrews.**

An organisation's distinctive competence is "...more than what it can do; it is what it can do particularly well" (Andrews, 1982, p. 47), and developed in line with an organisation's strategic analysis related to both internal strengths and weaknesses, and external opportunities and threats (SWOT) (De Toni & Tonchia, 2003; Marr et al., 2004). The information obtained from strategic analysis is utilised to create strategic value-add and sustained competitive advantage (De Toni & Tonchia, 2001; Henderson & Cockburn, 1994).

### **2.3.2 Organisational Competence.**

This section will present organisational competence definitions from an author-based perspective.

#### **2.3.2.1 Bernard Reimann.**

Reimann (1982) referred to an organisation's competence as "...the potential to be effective in terms of long term growth and survival ..." (p. 325). Competence involves preserving energy flows that will lead to long-term effectiveness and survival, based on the following performance criteria:

- Profit growth (past five years);
- Sales growth (past five years);
- Attraction and retention of high-quality human resources;
- Product quality;
- Customer service;
- Employees' (individual) job satisfaction and morale;
- The organisation's potential for future growth; and
- Competitive strength.

The author established that the higher the performance criteria ratings are, the greater the probability of long-term organisational growth and survival will be (Reimann, 1982).

### **2.3.2.2 Ron Sanchez and Aimé Heene.**

Sanchez and Heene (1997) referred to organisational competence as an ability to “...sustain coordinated deployments of resources” (p. 3) in such a manner that it contributes towards goal attainment. The authors concluded that an organisation's tangible and intangible assets create value by producing and offering commodities to stakeholders, such as customers and related markets (Guallino & Prevot, 2003).

### **2.3.2.3 Gabriel Guallino and Frédérick Prevot.**

In defining competence, Guallino and Prevot (2003) identified characteristics that span across three levels, namely intrinsic, organisational, and dynamic.

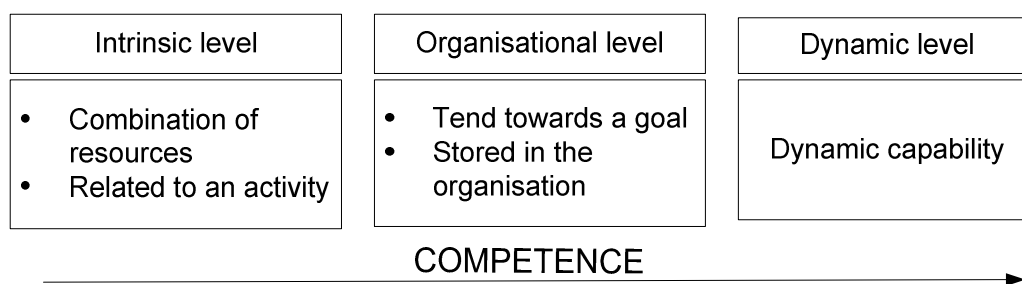
The intrinsic level refers to competence as a combination of resources related to a single activity or set of activities applied in performing or demonstrating the competence (Barney (1986) and Prahalad and Hamel (1990) as cited in Guallino & Prevot, 2003).

The authors differentiated between contained resources (a simple network of factors) and system resources (a complex network of factors) (Black and Boal (1994), as cited in Guallino & Prevot, 2003). Organisational level denotes competence toward goal attainment that occurs in processes identified and recognised by the organisation as useful and valuable that will provide a competitive advantage.

The dynamic level refers to superior organisational performance levels, such as managerial approaches, that will improve organisational efficiency and enable the organisation to adapt to environmental changes. This level captures competence's dynamic nature whereby it will develop additional or alternative sets of competencies (Guallino & Prevot, 2003).

Figure 2.6 illustrates organisational competence in terms of intrinsic, organisational, and dynamic levels and related characteristics.

## Integrating Competence and Human Capital Value



*Figure 2.6.* Intrinsic, organisational, and dynamic levels of competence. Adapted from “Competence-building Through Organizational Recognition or Frequency of Use: Case Study of Lafarge Group’s Development of Competence in Managing Postmerger Cultural Integration” by G. Guallino and F. Prevot, 2003, *Advances in Applied Business Strategy, Volume 11: Leveraging in Interorganizational Relations Competence Building and Leveraging*, p. 63. Copyright 2003 by JAI Press.

### 2.3.3 Core and dynamic core competencies.

This section will present core and dynamic core competencies’ definitions from an author-based perspective.

#### 2.3.3.1 Coimbatore Prahalad and Gary Hamel.

Prahalad and Hamel (1990) refer to core competencies as an organisation’s collective learning experience that enables it to “...coordinate diverse production skills and integrate multiple streams of technologies” (p. 89). This definition involves the collective learning and capabilities that are embedded in range of organisational products and services (commodities), obtained from unique skills (intangible resources) and the application of technologies (tangible resources) that are not outsourced (Andriessen, Frijlink, van Gisbergen, & Blom, 1999; Bani-Hani & Abdelgader AlHawary, 2009; Hood & Lodge, 2004).

Organisations coordinate diverse production skills and integrate multiple streams of technologies that span over several markets and/or business units (Heugens & Zyglidopoulos, 2008; Mills, Platts, & Bourne, 2003), such as Canon’s precision mechanics, fine optics, and microelectronics (their core competencies) that have dominated markets in photocopiers, laser printers, image scanners, and cameras

(Prahalad & Hamel, 1990). Core competencies involve intellectually-based service activities or system processes that the organisation performs better than its competitors (Gião, Oliveira Júnior, & Vasconcellos, 2008). Characteristics linked to core competencies are:

- Relevant (customers are strongly influenced by the product or service),
- Difficult to imitate (products or services are better than those of the competitors, and continuously improved upon), and
- Widely applied (opens up numerous markets to ensure growth) (Prahalad & Hamel, 1990).

### **2.3.3.2 Daniel Andriessen, Martine Frijlink, Inge van Gisbergen, and Jan Blom.**

Professional services provider KPMG (Andriessen et al., 1999) defined core competencies as an organisation's ability linked to assets such as:

- Competencies and implicit knowledge — know-how, competencies;
- Culture and values — client focus, reliability, quality;
- Technology and explicit knowledge — patents, manuals, procedures;
- Management processes — leadership and control, management information, communication; and
- Assets and endowments — client relations, image, and networks (Andriessen et al., 1999).

### **2.3.3.3 David Lei, Michael Hit, and Richard Bettis.**

“Dynamic core competenc[ies] are based on the integration into systematic meta-learning of universal and tacit knowledge through information transfer, redefinition of heuristics and continuous improvement based on experimentation and the development of firm-specific skills based on dynamic routines ... a firm's core competenc[y] is defined as a set of problem-defining and problem-solving insights that fosters the development of idiosyncratic strategic growth alternatives” (Lei, Hitt, & Bettis, 1996, p. 549).



In defining organisational core competencies, the authors included a dynamic aspect by stipulating that operational strategic-level functioning is based on the following learning processes:

- Information transfer and retrieval — accumulating general and tacit knowledge;
- Experimentation — trial-and-error resulting in continuous improvement; and
- Dynamic routines — organisation-specific skills and capabilities (Lei, Hitt, & Bettis, 1996).

Systematic integration of the processes generates meta-learning that result in dynamic core competencies (corporate strategy-level functioning) (Lei et al., 1996).

The strategic outcomes thereof bring about:

- Idiosyncratic (distinctive) growth alternatives, such as global diversification, new technological application, and new lines of business; and
- Reduced uncertainty and path dependence, such as strategic alternatives and organisational direction (Lei et al., 1996).

Dynamic routines obtained from organisation-specific skills, learning, and knowledge will result in the attainment of strategic goals and a competitive advantage (Ray & Ramakrishnan, 2006).

Dynamic core and core competencies operate respectively on an executive and operational strategic level. Both utilise meta-learning whereas core competencies result from operational-level learning process, dynamic core competencies result from executive-level developmental process. Meta-learning is a cyclical process that entails learning, experimentation, and the development of new skills, which, in turn, manifest as dynamic core competencies that influence an organisation's strategic outcomes. Figure 2.7 illustrates the process of development of dynamic core competencies, and highlights the strategic, core, and meta-learning components:

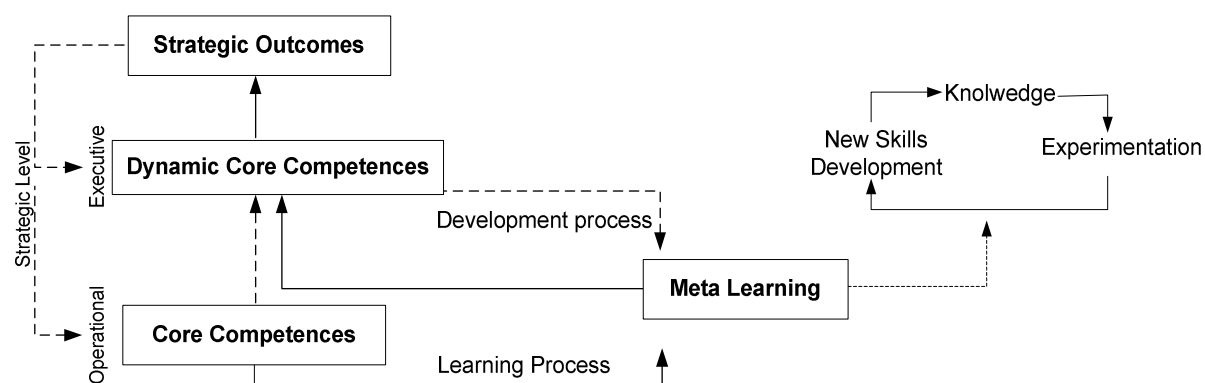


Figure 2.7. The dynamic core competency metal-learning and strategic context. Adapted from “Dynamic Core Competences Through Meta-Learning and Strategic Context” by D. Lei, M. A. Hitt, and R. Bettis, 1996, *Journal of Management*, 22, p. 555. Copyright 1996 by JAI Press.

The section below will focus on organisational capabilities.

### 2.3.4 Organisational Capabilities.

This section will focus on an organisation’s distinctive, high-order, and dynamic capabilities from an author-based perspective.

#### 2.3.4.1 Richard Hall.

Hall (1992) stated that an organisation’s competencies, i.e. “...know-how of employees, (and suppliers, distributors, etc.)” (p. 139) refer to its capabilities that are produced by tangible and intangible resources (assets) that sets it apart from its competitors, create value, and sustain organisational competitiveness (Hall, 1993).

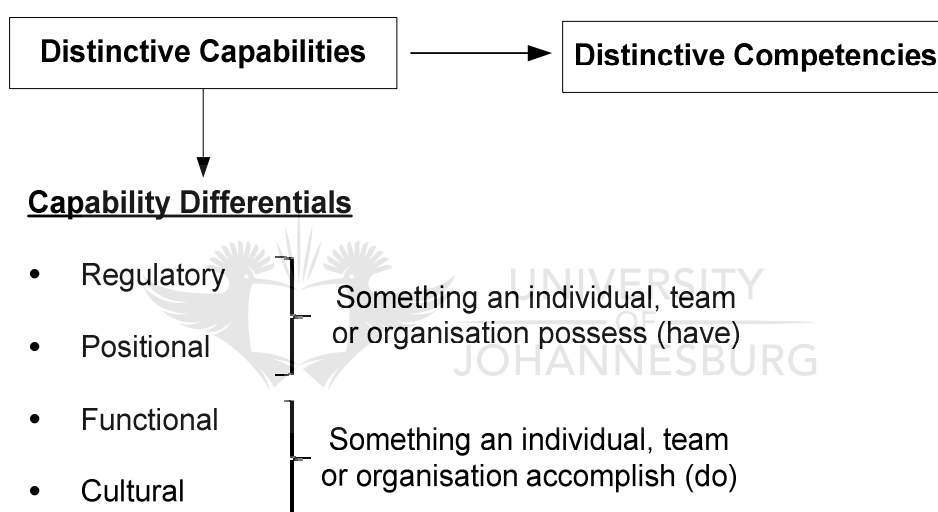
Coyne (1986) classified an organisation’s distinctive capabilities according to the following differentials:

- Regulatory capability — refer to assets within a legal contexts, which are protected in law such as contracts, licences, intellectual property, trade secrets and owned physical resources;

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- Positional capability — refer to assets without a legal context due to previous endeavours such as reputations, networks and databases;
- Functional capability — refers to competencies as a result of skills and experience such as employee know-how, supplier know-how and distributor know-how ; and
- Cultural capability — refers to competencies as a result of organisational abilities such as the ability to change and a customer’s perception of quality and service (as cited in Hall, 1992).

Figure 2.8 demonstrates relationship between distinctive capabilities and capability differentials.



*Figure 2.8.* Demonstrating the relationship between distinctive capabilities and capability differentials. Adapted from “The Strategic Analysis of Intangible Resources” by R. Hall, 1993, *Strategic Management Journal*, 13, p. 609. Copyright 1993 by John Wiley and Sons.

The figure above highlights differences in distinctive capabilities, whereby regulatory and positional capabilities refer to what an organisation, individual or team acquire, own and control (possess/have); while functional and cultural capabilities refer to what an organisation, individual, or team achieve (accomplish/do).

### 2.3.4.2 *George Day.*

Day (1994) defined distinctive capabilities as “...complex bundles of skills and accumulated knowledge” (p. 38) that are applied through organisational processes and enable organisations to coordinate activities and utilise organisational assets such as skill and knowledge components related to:

- Individual skills — technical know-how, training, and experience;
- Management information systems — databases, formal procedures, and established routines;
- Formal and informal knowledge — created and controlled by management information systems; and
- Values and norms — organisational culture (Day, 1994).

Distinctive capabilities must be able to withstand competitor imitation, provide cost-effective value to customers, be applicable to a variety of settings, and rapidly adapt to organisational change (Reed & de Fillipi, 1994, as cited in Day, 1994). Unanimity must exist between distinctive and core competencies, as separate business units draw on some or all its distinctive capabilities that will, over time, result in core competencies. The difference between distinctive capabilities and core competencies is that the former involves skills and accumulated knowledge that enables activities to be performed in a single business processes, while the latter manifests in organisational performance (outcomes) that spans and support several business units (Day, 1994).

Figure 2.9 illustrates the relationship between a business' assets, its capabilities, and core competencies, and highlights the structure components that influence distinctive capabilities as an antecedent of organisational core competencies.

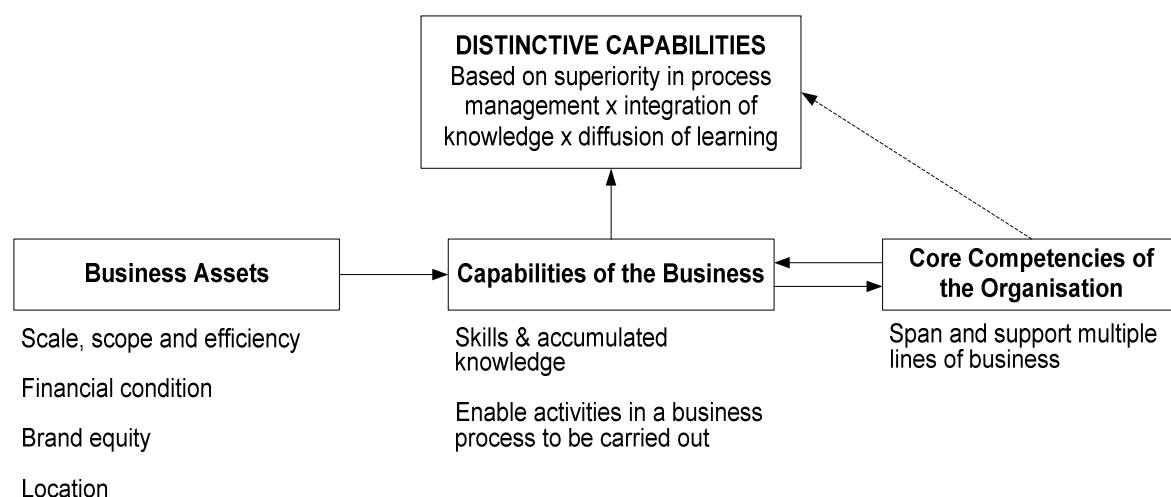


Figure 2.9. Distinctive capabilities. Adapted from “The Capabilities of Market-Driven Organizations” by G.S. Day, 1994, *Journal of Marketing*, 58, p. 40. Copyright 2013 by the American Marketing Association.

### 2.3.4.3 Nicolai Foss.

Foss (1993) described organisational competencies as “... typically idiosyncratic knowledge capital that allows its holder to perform activities – in particular, to solve problems – in certain ways, and typically do this more efficiently than others...” (p. 1), thereby associating competencies with idiosyncratic (distinctive) knowledge and efficient performance.

The author linked competencies to higher order industrial capabilities such as knowledge, skills, and learning that are interdependent, not traded, and result in efficient technical and organisational proficiency (capabilities) (Wolter & Portuguesa, 2008).

### 2.3.4.4 David Teece, Gary Pisano, Amy Shuen.

Teece, Pisano, and Shuen (1997) contextualised *dynamic capabilities* from a strategic management perspective (Güttel & Konlechner, 2010). *Dynamic* refer to an organisation’s ability to renew, replicate, or imitate competencies, in order to adapt to market and/or environmental changes (Teece et al., 1997). The term *capabilities* refer to strategic management’s role in “... adapting, integrating, and reconfiguring

internal and external organizational skills, resources, and functional competenc[ies]” in ever-changing technological environments (Teece et al., 1997, p. 515).

The authors developed a dynamic capabilities framework that examined sources and methods responsible for organisational wealth creation, such as:

- Markets and strategic capabilities that are unique and difficult to imitate;
- Individual and team competencies and capabilities shaped by an organisation’s processes (routines and patterns of current learning), positions (assets that belong to the organisation) and paths (strategic alternatives available to the organisation) that are responsible for its competitive advantage; and
- Replicability and inimitability of organisational resources, routines/competencies and core competencies responsible for economic rents and organisational value (Teece et al., 1997).

The following sections will address individual (behavioural and functional) competence.



### **2.3.5 Behavioural Competencies.**

This section will focus on definitions of behavioural competencies from an author-based perspective.

#### **2.3.5.1 David McClelland.**

McClelland’s (1973) study introduced competency testing (considered free from gender-, degree of knowledge, and socio-economic bias), rather than traditional psychometric and intelligence (IQ) testing, as the best predictor of an individual’s job performance and job success (Bozkurt, 2011; Draganidis & Mentzas, 2006; Hay Group®, 2006; Lans, Hulsink, & Baert, 2008; Markus et al., 2005; Simpson, 2002).

Figure 2.10 illustrate McClelland’s notion that an individual’s competencies is a reliable measure to predict an individual’s job performance and success, rather than intelligence, which are gender, race and socio-economically biased (Bozkurt, 2011).

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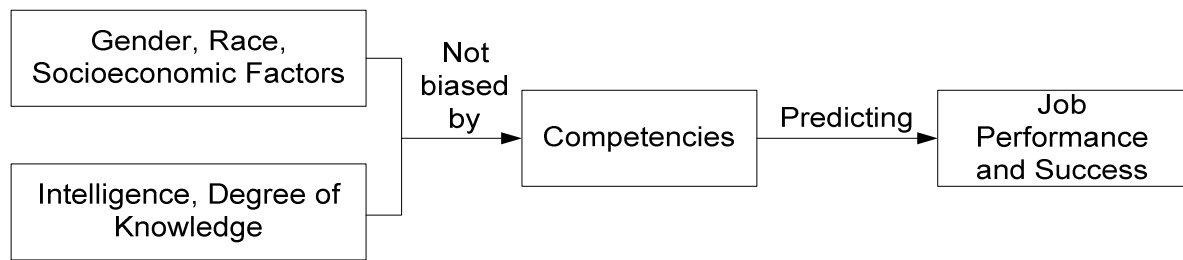


Figure 2.10. Delineating McClelland's competency definition. Adapted from "Management by Competencies," 2011, by T. Bozkurt , p. 11. Copyright 2011 by Risus International.

By utilising specific thoughts and specific behaviours as criterion reference samples McClelland systematically compared superior performance from less successful performance to identify job-related success factors (Bozkurt, 2011), as shown in Figure 2.11.

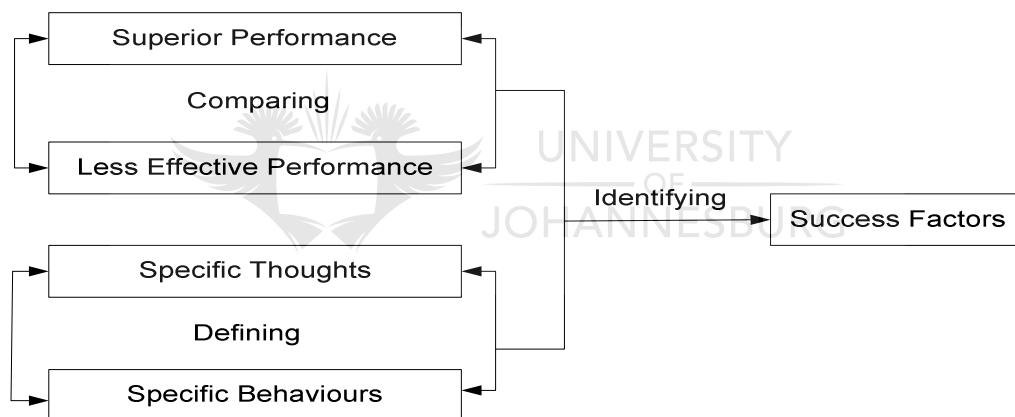


Figure 2.11. Identifying McClelland's competency success factors. Adapted from "Management by Competencies," 2011 by T. Bozkurt, p. 11. Copyright 2011 by Risus International.

### 2.3.5.2 Richard Boyatzis.

Following McClelland's (1973) work, Boyatzis (1982) specified that an individual's competencies refer to underlying characteristics such as "... a motive, trait, skill, aspect of one's self-image or social role as a body of knowledge he or she uses ... [that] may be unconscious aspects of the person" (Boyatzis 1982, p. 21). An individual's underlying characteristics (motives and traits), knowledge and skills are

causally related to effective and superior job performance (Bertoncelj & Kovač, 2008; Draganidis & Mentzas, 2006; Soderquist, Papalexandris, Ioannou, & Prastacos, 2010). A fit exists between the demands of activities or tasks, the abilities (underlying characteristics), and/or potential (unconscious aspects) of an individual or team to successfully translate the activities or tasks (behaviours) into overall organisational outcomes (Brinckmann, Salomo, & Gemuenden, 2011).

Figure 2.12 clarifies the definition's causal link between an individual's underlying characteristics and evidence associated with performance-related behavioural outcomes.

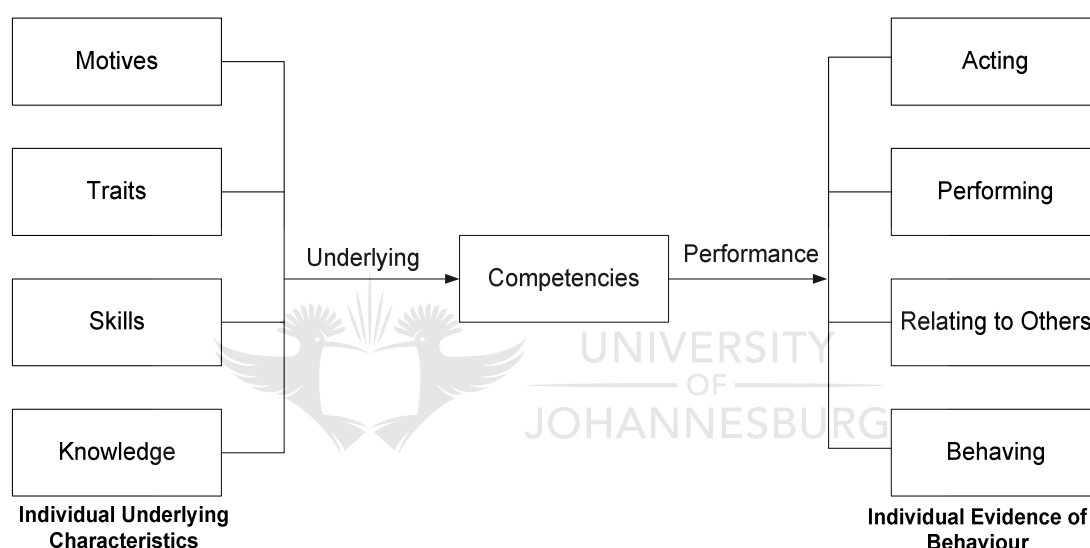


Figure 2.12. Boyatzis' definition of competencies. Adapted from "Management by Competencies," 2011, by T. Bozkurt, p. 13. Copyright 2011 by Risus International.

### 2.3.5.3 Lyle Spencer and Singe Spencer.

Spencer and Spencer (1993) define a competency as "...an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in job or situation" (p. 9). Underlying characteristics refer to the enduring part of an individual's personality that predicts behaviour in a wide variety of jobs and tasks (Spencer & Spencer, 1993).



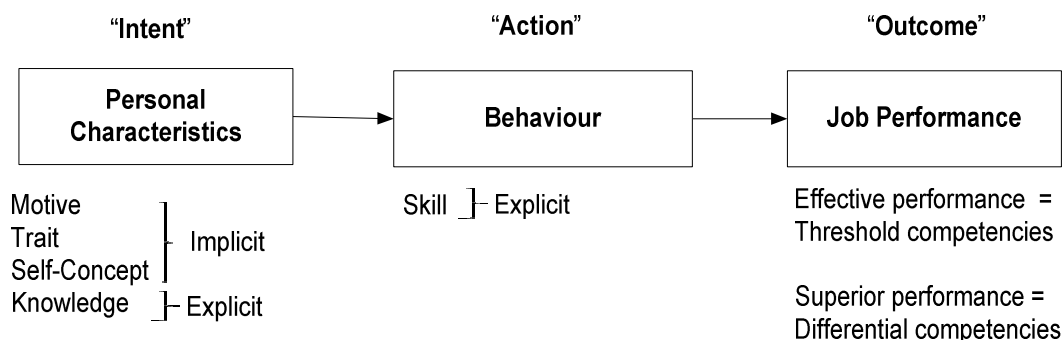
## Integrating Competence and Human Capital Value

There are four personal characteristics an individual will intentionally display, such as motives (contemplations and desires that drive, direct, and select behaviour towards or away from achieving goals), traits (physical characteristics that respond to situations and information), self-concept (attitudes, values, and self-image), and knowledge (possessing information relating to specific content areas) (Spencer & Spencer, 1993).

Underlying characteristics are implicit (hidden), while knowledge and skills are explicit (visible). *Causally related* refers to causes or behavioural predictions that will influence individual performance. The underlying characteristic to the behavioural (action) element is skill (physical or mental abilities in executing tasks) (Spencer & Spencer, 1993). *Criterion referenced* are performance predictors that rate (measure) performance according to specific standards (Spencer & Spencer, 1993).

The authors categorise competencies according to the performance standard it predicts, such as threshold and differential competencies. Threshold competencies refer to minimum required KSAs to perform a job effectively. Differential competencies distinguish between average and superior performers (Spencer & Spencer, 1993).

Figure 2.13 delineates the definition of a competency and its related constructs by highlighting intent as personal (underlying) characteristics, action as behaviour, and outcome as job performance.



### **2.3.5.4 Terry Meyer.**

Meyer (1996) defined a competency as “...the integration of knowledge, skill and value orientation, demonstrated to a defined standard in a specific context” (Meyer, 1996, p. 34).

Knowledge refers to the cognitive processes relative to how information is internalised, conceptualised, processed, and applied by individuals and organisations. Skill indicates a mental or physical ability and/or capacity related to job-performance, and value orientation relates to a specific capability owned by the proprietor thereof, such as an individual's work ethic or organisations' capabilities within a specific sector, such as safety in the mining industry. Being competent refers to the demonstration of behavioural attributable competencies (knowledge, skill, and value orientation) to a defined standard of performance, within a particular context and situation, that links various levels of complexity and systemic thinking (Meyer, 1996).

### **2.3.5.5 Sándor Klein.**



Klein (1997) defined competencies as a set behaviours or behavioural indicators that rely on an individual's characteristics and job requirements (or job success). Two competency approaches are highlighted: firstly, specific knowledge and skills as required by job roles, and, secondly, the effective execution of valued activities (Klein, 1997).

Figure 2.14 is an illustration that highlights behaviours (i.e. behavioural indicators) that form the basis of competencies.

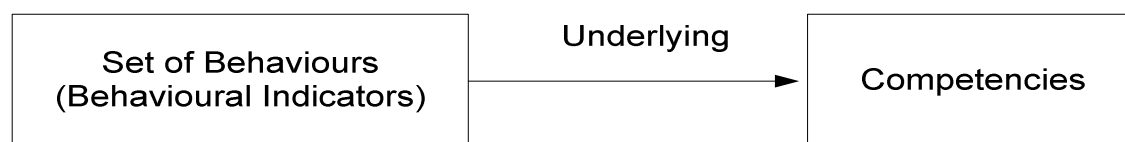


Figure 2.14. Competencies as a set of behaviours. Adapted from “Management by Competencies”, 2011, by T. Bozkurt, p. 16. Copyright 2011 by Risus International.

### 2.3.5.6 Dave Ulrich

Competence is embedded within individual cognition and in the manner in which an organisation “...creates policies and systems to get work done” (Ulrich, 1998, p. 15). Ulrich (1998) identified “...five tools for increasing competence within an organisation, namely buy, build, borrow, bounce, and bind” (p. 17). These tools will ensure a stable and continuous delivery of competencies within the organisation. Key features, linked to this definition, are:

- Deeply embedded in individual and organisational cognitive processing;
- Aligned with the organisation’s strategy; and
- Generated by mechanisms (tools) such as:
  - Buying (staffing);
  - Building (training and development);
  - Borrowing (contracting talent);
  - Bouncing (shrinking the workforce);
  - Binding (retaining talent); and
  - Boosting (promotions) (Ulrich, 1998).

### 2.3.5.7 David Dubois and William Rothwell.

“Job competenc[ies] is an underlying characteristic of an employee (that is a motive, trait, skill, an aspect of one’s self-image, social role, or a body of knowledge) that results in effective and/or superior performance” (Dubois & Rothwell, 2001, p. 14).

Figure 2.15 clarify competencies (as underlying motives, traits, social role, and knowledge) that result in effective performance, namely:

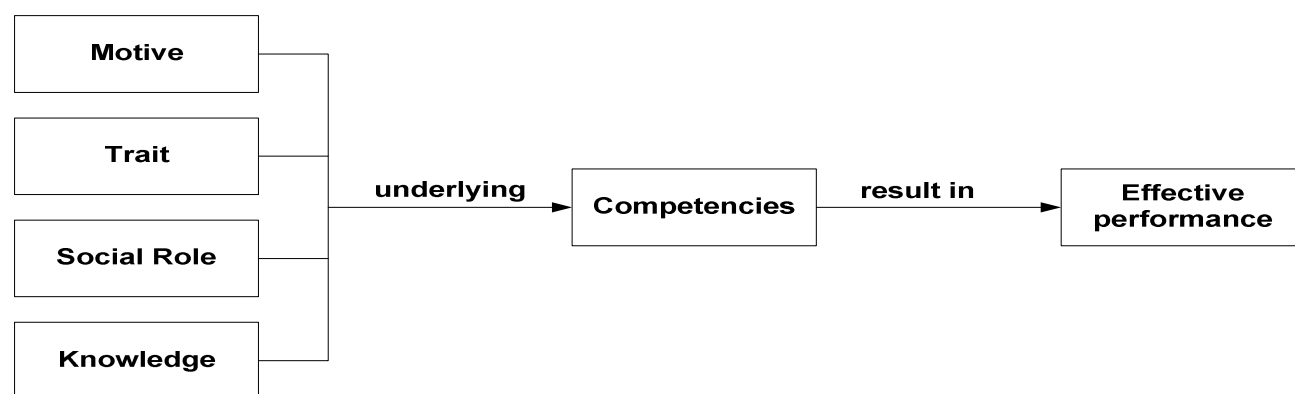


Figure 2.15. Clarifying competencies resulting in effective performance. Adapted from “*Management by Competencies*”, 2011, by T. Bozkurt, p. 15. Copyright 2011 by Risus International.

### 2.3.5.8 Lyle Spencer.

Competence is referred to as “...a reliably measurable, relatively enduring characteristic” of individuals, teams or organisations “...which causes and statistically predicts a criterion level of performance” Spencer, (2003, p. 64). The authors stated that an enduring aspect refers to the stability of competency traits displayed at a given point in time, whereas criterion level refers to minimum acceptable, average, and superior performance, the latter being one standard deviation above the mean.

### 2.3.5.9 Susan Jackson and Randall Schuller.

Jackson and Schuler (2006) stated that competencies such as “...skills, knowledge, abilities and other characteristics” (p. 180) are required to perform a job effectively. The effective execution of job-performance is based on best practices that require unique (differential) competencies to enhance competitiveness and drive change, and that will result in increased productivity and service delivery (Jackson & Schuler, 2006).

### **2.3.5.10 Samish Dalal.**

Competencies are “...attributes possessed by an employee such as knowledge, skills and abilities (KSA). However, according to another research, conception of work or understanding of the employee towards work precedes the traditionally pounded 'attribute theory' and that is human competence at work” Dalal, (2006, p. 2). This definition shifts the focus from general attribute theories to an understanding of individual and team (human) competenc[y] at work. The author stressed that the differentiating worth (value) of people sharing similar KSAs lies within the individuals' “understanding towards work” (Dalal, 2006, p. 3).

The following section will address functional competence.

### **2.3.6 Functional competence.**

This section will focus on definitions of functional competence from an author-based perspective.



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#### **2.3.6.1 Charles Woodruffe.**

Woodruffe (1991) (as cited in Moore, Cheng, & Dainty, 2002) differentiated between two competence factors, namely:

- An individual's proven ability to demonstrate his or her competence as per the standard job requirements; and
- The set of behaviours that the individual is required to display in order to perform job-related tasks and functions.

This definition integrated both functional and behavioural competencies. Functional competence centres on the task (job) an individual is required to perform, a behavioural competency centres on individual characteristic requirements that enable job performance (Woodruffe 1992, as cited in Bozkurt, 2011).

### **2.3.6.2 Gordon Beaumont.**

Beaumont (1996) defined competence as the “...ability to apply knowledge, understanding and skills in performing to standards required in employment” (as cited in Bartram, 2012, p. 4). An individual is required to attain and adhere to a defined set of work-related performance standards or requirements. The focus is on the individual’s current skill and ability in accomplishing required performance standards, and do not consider future competence and/or performance requirements (Bartram, 2012).

### **2.3.6.3 Robert Roe.**

Competence is “...a learned ability to adequately perform a task, duty or role” (Roe, 1999, as cited in Bartram & Roe, 2005, p. 95) based on an individual’s characteristics, such as abilities, personality traits, interests, and values. Capabilities refer to an individual’s ability to acquire professional skills, display suitable attitudes, and perform the services required by a profession. The author distinguished between four types of competencies, namely:

- Higher-level competence — distinctive (main) tasks;
- Lower-level competence (sub-competence) — activities that involve the individual’s duties;
- Primary competence — key roles or activities; and
- Enabling competence — generic activities (Bartram & Roe, 2005; Bozkurt, 2011).

Roe (1999) (as cited in Bartram & Roe, 2005) based his definition on an architectural model, as shown in Figure 2.16.

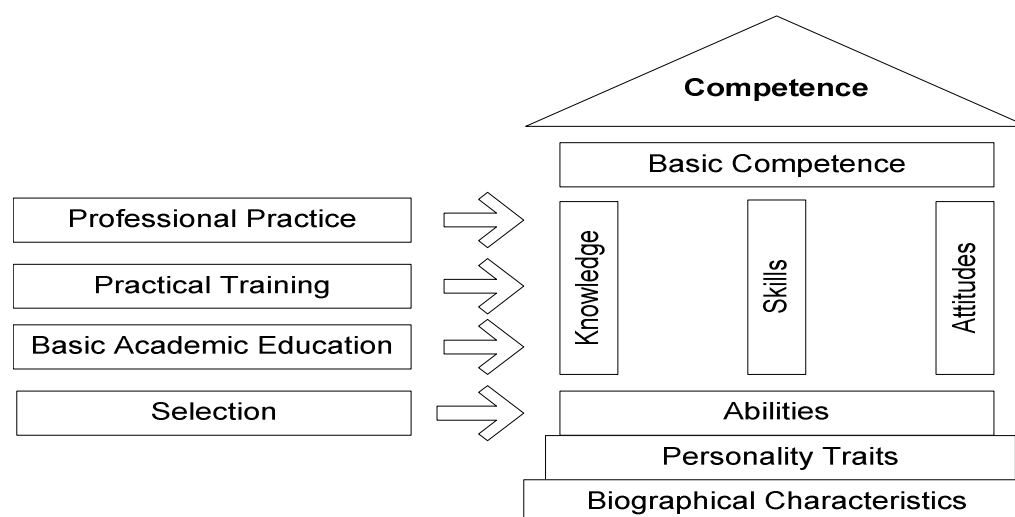


Figure 2.16. The architectural competence model. Adapted from “Definition and Assessment of Competences in the Context of the European Diploma in Psychology” by D. Bartram and N. Roe, 2005, *European Psychologist*, 10, p. 95. Copyright 2005 by Hogrefe and Huber.

Competence according to the model above rests on three pillars, namely knowledge, skills, and attitudes, influenced by factors such as professional practice, practical training, basic academic qualifications, and selection, which is underpinned by biological characteristics, personality traits, and abilities.

#### 2.3.6.4 Jasper Van Loo and Judith Semeijn.

Van Loo and Semeijn (2004) defined competence as “composites of individual attributes (knowledge, skills, and attitudinal or personal aspects) that represent context-bound productivity” (p. 366).

Three important elements featured in this definition were highlighted by the authors. Firstly, composites of attributes denote the definition’s holistic view. Secondly, productivity focuses on competence related to the market perspective (qualification, skill, productivity outcomes, and job requirements). Lastly, competence is context bound and signifies that situational characteristics are required from educational and human resources perspectives, such as potential, job-relevant KSAs, attitudes,

learning goals and processes, person—job fit, and organisational performance (Van Loo & Semeijn, 2004).

### **2.3.6.5 Martin Mulder.**

In capturing an all-inclusive definition of competence, Mulder (2001) defined individual and/or team competence as “... the ability of a person or organisation to achieve particular levels of performance” (as cited in Roelofs & Sanders, 2007, p. 125), and involves the following elements:

- Integrated action proficiencies that are assembled from clusters of knowledge structures, as well as cognitive, interactive, emotional, and psychomotor skills;
- Attitudes and values essential in performing tasks and solving problems; and
- A general ability to function in a particular occupation, position, role, and organisation (Roelofs & Sanders, 2007).

The following section will address team competencies.

### **2.3.7 Team Competencies.**

This section will focus on definitions of team competencies from an author-based perspective.

#### **2.3.7.1 Rosemarie Fernandez, Steve Kozlowski, Marc Shapiro, and Eduardo Salas.**

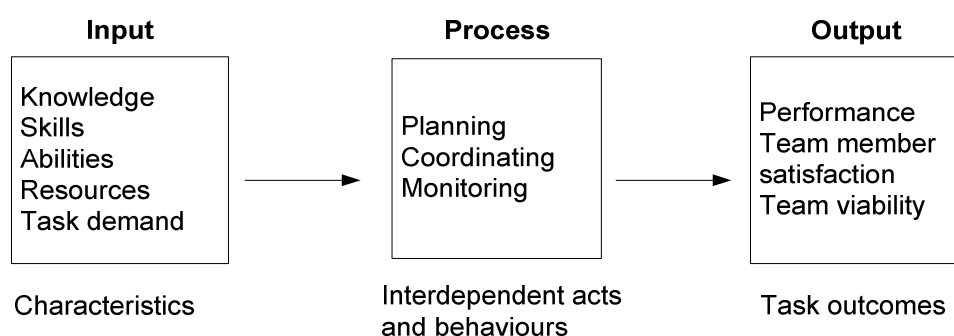
Fernandez et al. (2008) defined team competencies as “...the knowledge, skills, and attitudes (KSAs) [that are] ...critical to effective team performance” (p. 1105).

The authors developed a dynamic teamwork framework that centres on a series of three components. Firstly, inputs that refer to a team member’s individual characteristics (i.e. knowledge, skills, abilities, resources, and task demands). Secondly, processes that are interdependent performance and behaviours that turn inputs into, lastly, outputs, such as performance levels, team member satisfaction,



and team viability. Process components, such as planning, coordinating and monitoring are essential in creating satisfactory team performance (Fernandez et al., 2008).

Figure 2.17 contextualise the interrelated I-P-O (input, process, and output) team competency cycle that focuses on individual characteristics (input), interdependent acts and behaviours (process), and task (job-related) outcomes (output).



*Figure 2.17.* The I-P-O team competency cycle. Adapted from “Toward a Definition of Teamwork in Emergency Medicine” by R. Fernandez, S. Kozlowski, M. Shapiro, and E. Salas, 2008, *Academic Emergency Medicine*, 15, p. 1105. Copyright 2008 by the Society for Academic Emergency Medicine.

### **2.3.7.2 Asela Olupeliyawa, Chris Hughes, and Chinthaka Balasooriya.**

Olupeliyawa, Hughes, and Balasooriya (2009) refer to teamwork competencies as “...a team member should establish and maintain a shared understanding of the team context and tasks, should perform team processes where leadership is important, should also perform team processes where support is important, and effectively communicate to perform these” (p. 65).

The authors cluster teams in competence domains such as:

- Shared understanding of the context - shared vision, shared mental models and, situational awareness;
- Team leadership - decision making, conflict resolution, and adaptability;

- Team support – mutual trust, team orientation, mutual performance monitoring, and backup behaviour; and
- Communication – feedback, and closed loop communication (Olupeliyawa et al., 2009).

### 2.3.7.3 Katherine Figl.

Figl (2010) related team competencies to individual performance, based on KSAs that operate in a team setting. Team competencies include the following:

- Knowing and understanding — theoretical knowledge;
- Knowing how to act — application of knowledge in required situations; and
- Knowing how to be — values that are based on perception and social interaction.

Individuals possess team generic competencies, which they can transfer to other teams, while task-generic competencies focus on specific job-related outcomes, and can be transferred to other tasks (Figl, 2010).

The following section will focus on competence frameworks as shown in Figure 2.18.

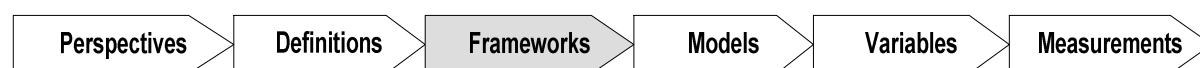


Figure 2.18. Conceptual Framework: Frameworks

## 2.4 FRAMEWORKS

This section presents competency frameworks by focussing on definitions, features, requirements, applications, and structures (types).

### 2.4.1 Definition.

Competency frameworks describe the structure from which competency models are constructed (Robinson & Barberis-Ryan, 1995) for part of or the entire organisation (Armstrong, 2009). In addition, thereto a competency framework is defined as “...the term applied to a complete collection of competencies and behavioural indicators.

They usually contain very detailed behavioural indicators related to specific roles and responsibilities” (National Centre for Partnership and Performance, 2003, p. 3).

### **2.4.2 Features.**

Thompson, Stuart, and Lindsay (1997) differentiated between the following competency framework features:

- Generalisable, simple, and accurate, but runs the risk of not being relevant;
- Specific, simple, and accurate, but runs the risk of not being applicable anywhere else; and
- Generalisable, complex, and accurate, but runs the risk of being impractical.

The National Centre for Partnership and Performance (2003) differentiated between two competency frameworks: firstly, customised role-specific frameworks that provide for “...detailed behavioural indicators related to specific roles and responsibilities” (p. 3) and, secondly, core (or common) competency frameworks applicable to all roles and responsibilities across all organisational levels, to assist individuals in developing a shared sense of organisational values and provide the basis for specific competency framework development (National Centre for Partnership and Performance, 2003).

### **2.4.3 Requirements.**

Bartram (2012) stipulated that competency frameworks must fulfil following requirements:

- Define the nature of competencies;
- Specify how competencies are linked to one another; and
- Be evidence-based, not only content analysis-based (Bartram, 2012).

#### 2.4.4 Application.

The application of competency frameworks involves human resources-based activities such as performance appraisals, articulating organisational values to be embodied in human resource practices and understood by individuals and teams, change organisational culture, and develop skills (Muller, 2001, as cited in Armstrong, 2009).

#### 2.4.5 Framework structures.

This section will discuss competence framework structures according to the title given by industry or scholarly related text; should a title not exist, a descriptive heading will be presented by the researcher.

##### 2.4.5.1 Competency Assessment Framework.

To determine the assessment criteria for an existing clinical development plan, Robinson and Barberis-Ryan (1995) developed a competency assessment framework for the nursing profession. As shown in Figure 2.19, the Competency Assessment Framework consists of a grid that outlines the required competency levels (i.e. novice, advanced beginner, competent, and expert) and the required competencies (i.e. technical, interpersonal, and critical thinking).

Competence: \_\_\_\_\_

Competency Level	Technical	Interpersonal	Critical Thinking
Novice			
Advanced Beginner			
Competent			
Expert			

Figure 2.19. The Competency Assessment Framework. Adapted from “Competency Assessment,” by S. Robinson and C Barberis-Ryan, 1995, *Nursing Management*, 26, p. 42. Copyright 1995 by RCN Publishing.

Every competency according to this framework requires a description related to its technical, interpersonal, and critical thinking capabilities. Thereafter, the development outcome criteria will reflect the progression related skill levels to establish individual and team development (learning) requirements (Robinson & Barberis-Ryan, 1995).

### **2.4.5.2 Competency framework.**

Upon developing a proposed competency framework for top (executive) management teams, Thompson, Stuart, and Lindsay (1997) recommended that it should be generalisable, applicable across a wide range of organisations, be easily understood and accurate, and reflect the needs and culture of the organisation.

Based on Boyatzis's (1982) definition of a competency, the proposed framework focuses on individual characteristics that will result in superior performance. The authors considered organisational competencies, linked to competency domains (areas of activity) and competency elements (individual/team characteristics), essential in successful performance.

Competency domains describe areas of individual and collective (team) contributions within a given job role (e.g. a strategic function) and related competencies (e.g., foresight and strategic planning), and related competency level (e.g., high, medium, or low). Without competency domains, "there is a reduced potential for role development, as individual behaviour, rather than activities which more directly affect others, is considered in development objectives" (Thompson et al., 1997, p. 74).

Competency elements (e.g., exceeding expectations) merge into clusters of competencies (e.g., winning business in the market, leadership integrity), thereby specifying the context in which an organisation will operate and excel in (Thompson et al., 1997).

Figure 2.20 contextualise the framework's dynamic elements related to organisational culture and competencies, and the interconnected nature of competency domains (individual and team contributions within a given job role),

competencies, and elements of competencies (clusters of competencies as contributors to successful performance).

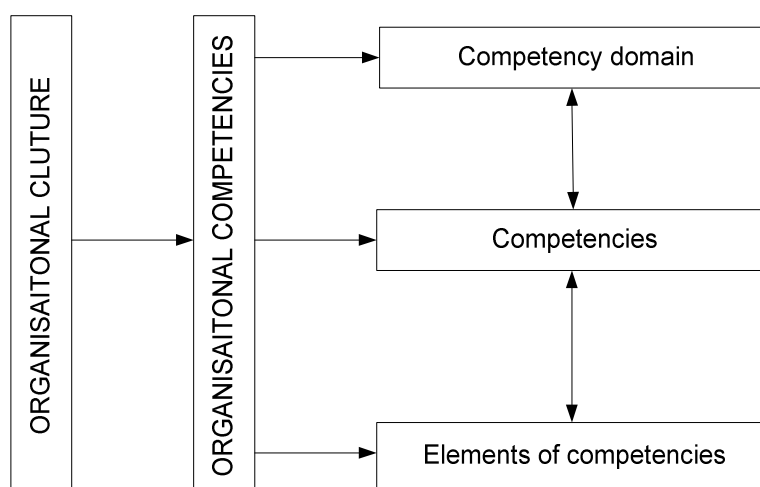


Figure 2.20. The competency framework. Adapted from “The Competence of Top Team Members: A Framework for Successful Performance, 1997, *Journal of Educational Psychology*, 3, p. 60. Copyright 1997 by MCB University Press.

### 2.4.5.3 Holistic model of professional competencies.

Cheetham and Chives (1998, as cited in Le Deist & Winterton, 2005) developed a holistic model of professional competencies. The framework consists of five competence dimensions, namely:

- Cognitive competencies - underpins theory and concepts together with tacit knowledge and experience gained. Knowledge (i.e. know-that) refers to know how and is underpinned by understanding (i.e. know-why).
- Functional competencies - skills and expertise (i.e. know-how) affirming that individuals working in a given area are able to demonstrate their skills.
- Personal competencies - behavioural competences indicating how the individual is required to behave.
- Ethical competencies - the personal and professional values and ability of individuals to sound judgements in work-related situations.
- Meta competencies - the individual's ability to manage uncertainty as well as learning and reflection (Cheetham & Chivers, 1996).

#### **2.4.5.4 Competency-based education framework.**

A competency-based education framework provided a practical foundation for knowledge application in a work setting, which based on the following elements:

- Specifying the job role and work setting;
- Identifying competency areas;
- Writing competency statements;
- Writing performance criteria;
- Developing competency assessment tools; and
- Designing documentation methodology (Nolan, 1998).

#### **2.4.5.5 Workplace learning competency framework.**

A literature review of workplace learning competency frameworks by Garavan and McGuire (2001) differentiated between frameworks from Boyatzis (1982), Devish (1998), Kiuipers (2000), and Nordhaug (1998).

Boyatzis (1982) developed generic management competency frameworks that differentiated between threshold and differential (high-performance level) competencies (as cited in Garavan & McGuire, 2001) .

The Kyoto people management model focus on core, functional and specific competency categories. Core competencies indicate the means whereby individuals adjust to organisational culture thereby resulting in its non-transferable nature. Functional competencies refer to technical and organisational job roles that interact with other roles. Specific competencies are behavioural characteristics derived from fixed list of desirable competences individuals bring to the job (Devish 1998, as cited in Garavan & McGuire, 2001).

Kiuipers (2000, as cited in Garavan & McGuire, 2001) propose broad typologies that focus on three levels, namely:

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- General working competencies required for different working situation and at different stages;
- Learning competencies, i.e. bundles of competencies that will facilitate the development of working competencies; and
- Career-related competencies determined to manage an individual's working and learning. (Kuijpers, 2000, as cited in Garavan & McGuire, 2001).

A robust competency classification framework, developed by Nordhaug (1998, as cited in Garavan & McGuire, 2001) includes three levels of analysis, namely: task specific, organisation specific, and industry specific competencies. The categories are as follows:

- Meta competencies - broad knowledge, skills, and aptitudes (e.g. knowledge of culture and analytical capabilities) and capacity to tolerate and master uncertainty;
- Intra-organisational competencies - knowledge about organisational culture, information-networks, and political dynamics of the organisation; and
- General industry competencies - industry-related knowledge and the ability to analyse competitor activities (Nordhaug, 1998, as cited in Garavan & McGuire, 2001).

### **2.4.5.6 Competency Model Clearinghouse Framework.**

The US Department of Labour's Employment and Training Administration's Competency Model Clearinghouse (CMC), created career-ladder lattice tool, to understand and validate industry-related competencies and skill-sets and on which competency models can be constructed (Personnel Decisions Research Institutes & JBS International, 2012).

The basic CMC structure consists of three levels, namely:

- Foundational - tiers 1 to 3 are soft skills required by most employers for job entry and job success,



- Industry related - tiers 4 to 5 are technical competencies that cuts across industries, thereby creating a career “ladder lattices” for ease-of-movement across industry sub-sectors, and
- Knowledge related - tiers 6 to 9 describes the KSAs of specific industry-related and management competencies

### **2.4.5.7 Enterprise Architecture Competency Framework.**

The Enterprise Architecture (EA) framework, developed by Tambouris, Zotou, Kalampokis, and Tarabanis (2012), refer to competence as the ability to apply KSAs for “achieving observable results” (p. 131). The competency framework consists of 10 classes, 13 sub-classes, 127 concepts, and 30 relationships. The framework highlights knowledge, skills, and attitudes and identified the following components, namely:

- Competency areas including information communication technology;
- Proficiency levels specifying the required behaviour and job complexity;
- Responsibilities of the process related to EA competencies;
- Steps required in developing EA competencies; and
- Target group refer to the sectors in which EA competencies are required (Tambouris et al., 2012).

Figure 2.21 is a schematic presentation of the EA Competency Framework that highlights of knowledge (linked to knowledge sub-classes such as business, technical, and EA specific), skills (linked to sub-classes such as business, technical, legal and EA specific), and attitudes as competency constructs. Additional elements that outline the construct are competency areas, EA processes, and responsibilities, job role linked to proficiency levels, and specifying its target group sub-classes for instance private, public, or student-related competencies.

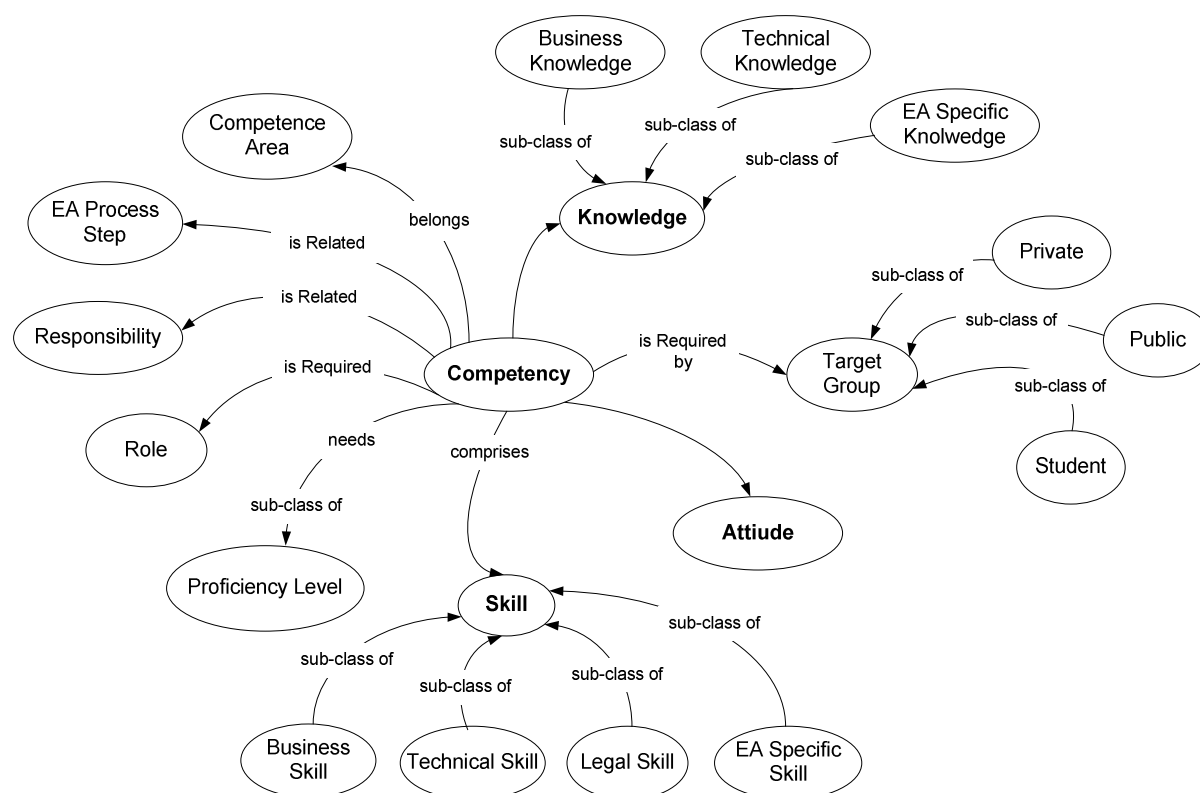


Figure 2.21. The Enterprise Architecture Competency Framework. Adapted from “Fostering Enterprise Architecture Education and Training with the Enterprise Architecture Framework,” by E. Tambouris, M. Zotou, E. Kalampokis, and K. Tarabanis, 2012, *International Journal of Training and Development*, 16, p. 136. Copyright 2012 by Blackwell Publishing.

### 2.4.5.8 Accounting Education Core Competency Framework.

The Accounting Education Core Competency Framework place little emphasis on traditional curriculum-based training that focus on procedural rules and techniques, instead it centres on developing skills typically associated with life-long learning (Bolt-Lee & Foster, 2003). The framework utilise a three-pronged approach by identifying competencies, provision of instructional aids, and provision of assessment tools. Competencies were categorised according the following typologies, namely:

- Functional competencies that centre on specific capabilities (e.g. decision-making);
- Personal competencies related to interpersonal skills (e.g. communication);

- Broad business perspective competencies dealing with the current accounting environments (e.g. strategic/critical thinking) (Bolt-Lee & Foster, 2003).

The section below will focus on competency models, as shown in Figure 2.22.



Figure 2.22. Conceptual Framework: Models

## 2.5 MODELS

This section presents competency models by focussing on definitions, features, requirements, applications, and structures (types).

### 2.5.1 Definitions.

Competency models seeks to “...identify the ideal combination of skills, knowledge, attitudes and experience, the possession of which enables individuals to become high performers with the potential to add value to the organisation” (Gorsline, 1996, as cited in Garavan & McGuire, 2001, p. 145). In addition thereto, competency models identify dimensions of performance required by different job roles and situations (Markus et al., 2005).

Competency models consist of the following key features, such as:

- An underlying construct that specifies key competence features across all organisational functions (Bartram, 2005, 2006; Ennis, 2008; Teodorescu, 2006).
- A collection KSAs, characteristics, behaviours, and activities outlining superior performance requirements (Bozkurt, 2011; Markus et al., 2005).
- KSAs that are linked to business objectives and strategies (Campion, Fink, Rugeberg, Carr, Philips, and Odman, 2011).
- Depicts groupings of seven to nine individual, team, and/or competency clusters required by specific job roles (Shippman, Ash, Battista, Carr, Eyde, Hesketh, Kehoe & Pearlman, 2000, cited in Ennis, 2008).

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- Competency clusters specify and describe behavioural descriptors and tasks for specific positions, groups of positions, roles or functions for performance appraisal purposes (Bozkurt, 2011; Markus et al., 2005)
- It is more than listing KSAs, it sets competences required by a job, occupation, organisation and/or industry (Campion et al., 2011; Ennis, 2008).
- Communicating work assignments and performance requirements aligned to organisational strategy (Sanchez & Levine, 2009).
- Highlighting capabilities and resources (Ljungquist, 2007) by creating detailed process and activities' maps across organisational units (Day, 1994).
- Determining specific competencies that guide leaders' actions (Bozkurt, 2011) such as personal leadership, team leadership, directing others and collaborating with others (Hay Group®, 2006).

### 2.5.2 Features.

In establishing a generic or customised competency model Campion et al., (2011) propose that an organisation's *strategic goals* must be included in the model to define the context within which competencies will operate. A broad *competency framework* will integrate, organise, and align various competency models, relevant to an organisation's performance requirements, such as:

- Competency clusters associated with technical and/or leadership competencies will correlate job performance with specific measures (i.e. success factors or performance divers).
- Behavioural indicators establish specific observable actions to be demonstrated against skills or performance level requirements selected to be measured.
- Skill level reflects the proficiency or expertise related to job performance and is classified as foundational, emerging, proficient, or expert.
- Performance level indicate the successful level of performance an individual is required to demonstrate in terms of being outstanding, successful or that development (growth) is required (Campion et al., 2011).

Figure 2.23 presents a schematic presentation of competency modelling process.

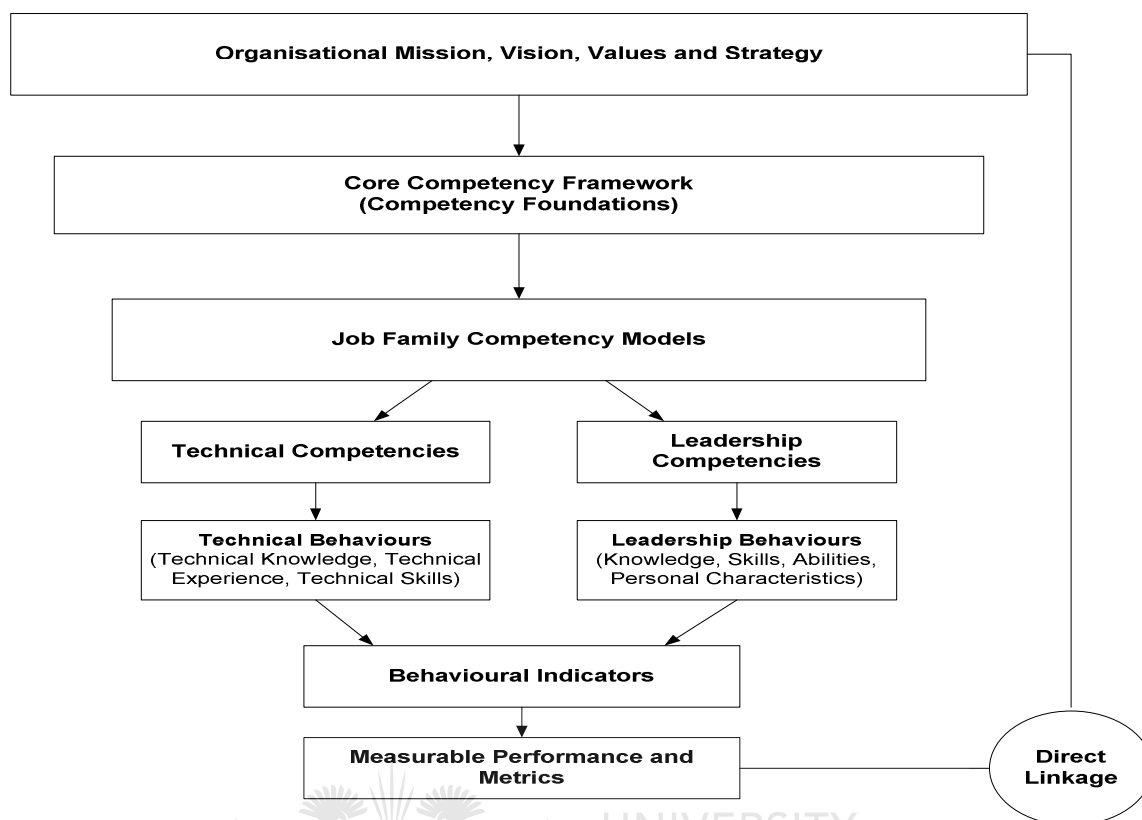


Figure 2.23. Contextualising a generic competency-modelling framework. Adapted from “Doing Competencies Well: Best Practices in Competency Modeling” by M. Campion, A. Fink, B. Ruggeberg, L. Carr, G. Philips, and R. Odman, 2011, *Personnel Psychology*, 64(1), p. 232. Copyright 2013 Wiley Periodicals.

The model above delineates an organisation’s strategic intent that serves as the catalyst upon which competencies are built, and from which job families are created. In turn, job families will determine either a job-role’s technical competency or leadership competency requirement thereby highlighting the behavioural indicators necessary to measure performance or upon which performance metrics are established. Critical to this process is the direct link that exists between performance measures and organisational strategy

According to the Personnel Decisions Research Institutes and JBS International (Aguirre Division) (2012) and Campion et al., (2011) competency models encompass the following elements, namely:

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- Stating the competency name and providing a detailed definition that describes observable behaviours;
- Describing the competency's related activities and/or behaviour;
- Providing a diagram (summary) of the model that highlights key features to enable ease of use and understanding; and
- Providing information representing demonstrated levels of mastery (skill and abilities) thereby including "complexity across proficiency levels" (Campion et al., 2011, p. 40)

Table 2.2 depicts an example of how a competency is presented. Firstly, it identifies the competency by name. Secondly, the competence is clarified by means of a definition. Lastly, the required individual activities or behavioural requirements that will facilitate successful performance are stated.

Table 2.2

*Example of a Competency*

Element	Example
Competency name	Teamwork
Detailed definition	Working cooperatively with others to complete work assignments
Activities or behaviour	Abiding by and supporting group decisions  Facilitating team interaction and maintaining focus on group goals  Handling differences in work styles effectively when working with co-workers

*Note.* Adapted from "Technical Assistance Guide for Developing and Using Competency Models – One Solution for the Workforce Development System" by Personnel Decisions Research Institutes and JBS International, 2012, p. 3. Copyright 2012 Employment and Training Administration United States Department of Labor.

### 2.5.3 Functions.

Competency models fulfil the following functions, such as:

- Establish industry-related job requirements, thereby aligning organisational values and strategy (Bozkurt, 2011; PDRI & JBSI, 2012)
- Allow for consistent application of human resources management processes such as workforce planning and analysis, recruitment and selection, and performance management (Bozkurt, 2011; Ennis, 2008; PDRI & JBSI, 2012).
- Delineate individual and organisational career pathways and specify education and training needs, and experience required (PDRI & JBSI, 2012).
- Develop training curriculums such as learnerships and structuring on-the-job training programmes (PDRI & JBSI, 2012).
- Set standards to recognise prior learning and assess work-related knowledge and skills (PDRI & JBSI, 2012).

### 2.5.4 Types of models.

This section will discuss competence models and will be referred to its related industry or scholarly text title; should one not exist a descriptive heading will be applied.

#### 2.5.4.1 *Competent Manager Model.*

Boyatzis (1982) developed a management competency model wherein he identified 19 generic management competencies. Subsequently, the consulting firm McBer (now Hay Group), developed a dictionary of 400 behavioural indicators defining 216 competencies that can be applied to 300 competency models (Spencer & Spencer, 1993).

### 2.5.5 Competence at Work: Models for Superior Performance.

Spencer and Spencer (1993) developed a competency model that describes 20 types of soft generic competencies. In doing so, they performed the following steps, namely:

- Step 1: Conduct Behavioural Events Interview (BEI)
- Step 2: Analyse the interview samples by means of a thematic analysis
- Step 3: Identify the competencies
- Step 4: Identify the skills required
- Step 5: Reconcile competencies and skills
- Step 6: Test, measure (statistically) and verify findings of preliminary sample
- Step 7: Continue with remainder sample
- Step 8: Conduct the final measurement
- Step 9: Prepare the final job-related codebook (Spencer & Spencer, 1993)

#### 2.5.5.1 Competency Model Clearinghouse

The US Department of Labor's [sic] Employment and Training Administration's Competency Model Clearinghouse (CMC) framework, referred to in Sub-section 2.4.5.6.

The CMC building blocks consist of nine tiers listing competency definitions and the associated behaviours required by individuals concerning job performance. The levels consist of the following competencies, namely:

- Foundational: (1) workplace, (2) academic and (3) personal effectiveness.
- Industry: (4) industry-wide technical and (5) industry-sector technical.
- Knowledge: (6) occupation specific knowledge areas, (7) occupation specific technical competences, (8) occupation specific requirements, and (9) managerial competencies.

Figure 2.24 illustrates the competency model's foundational, industry and occupation related competencies, namely:



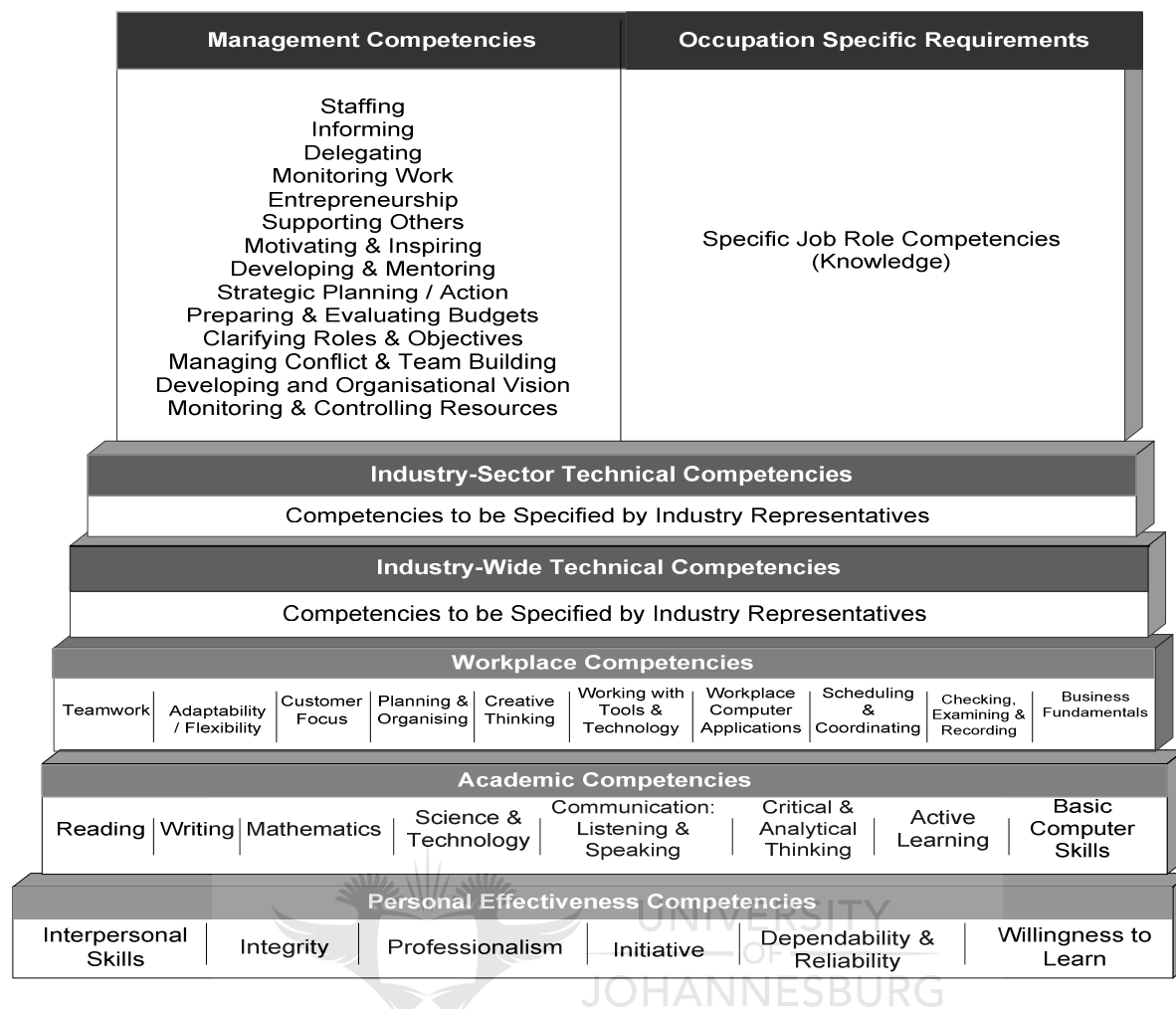


Figure 2.24. The Competency Model Clearinghouse. Adapted from “Technical Assistance Guide for Developing and Using Competency Models – One Solution for the Workforce Development System” by Personnel Decisions Research Institutes and JBS International, 2012, p. 14. Copyright 2012 Employment and Training Administration United States Department of Labor.

A number of industry-wide competencies are available to CMC users and is applicable to individuals, teams and organisations (PDRI & JBSI, 2012).

### 2.5.5.2 Margerison McCann Team Competencies Model.

The Margerison McCann team competencies model describes nine team competencies as follows, namely:

- Advising - information gathering and reporting.

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- Innovating - conceiving and testing new ideas.
- Promoting - investigating and presenting opportunities.
- Developing - assessing and testing new methodologies.
- Organising - arranging and coordinating work.
- Productivity - assembling and delivering outputs.
- Inspecting - system control and auditing.
- Maintaining - sustaining standards and processes.
- Linking - coordinating and participating within the team (Margerison, 2001).

The competency entitled 'linking' is central to this model since it will determine whether a team possess and have been successful in implementing the required KSAs. However, not all team members are required to possess all nine competencies; it is the sum of its parts that will ensure successful contributions and performance (Margerison, 2001).

Figure 2.25 present team competencies as a radial model whereby the 'linking' competency is singled out as the determinant related to successful team performance.

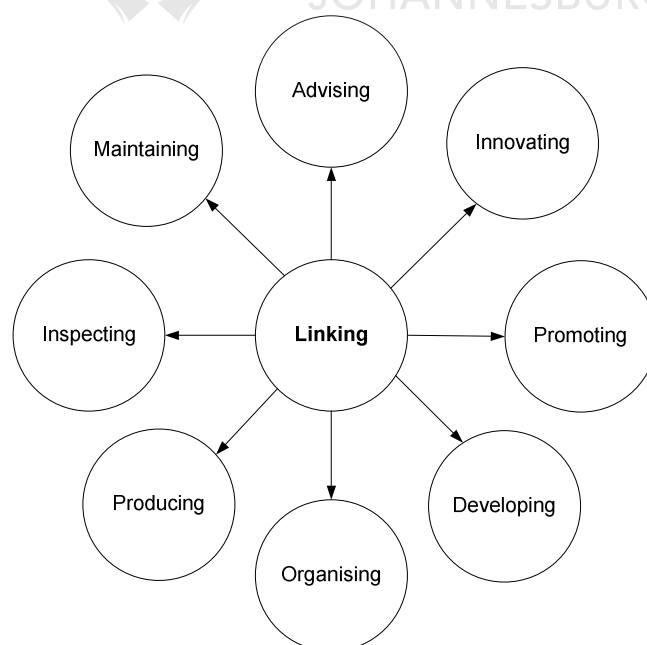


Figure 2.25. The Margerison McCann Team Competencies Model. Adapted from "Team Competencies" by Margerison, 2001, *Team Performance Management*, 7, p. 118. Copyright 2001 by the Emerald Publishing Group.

The section below will focus on measurements related to the competence construct, as shown in Figure 2.27.



Figure 2.26. Conceptual Framework: Variables

## 2.6 VARIABLES

The following section will clarify variables such as knowledge, skill, abilities, attitudes, and competence types.

### 2.6.1 Knowledge.

Knowledge refer to various expertise (know-how) and skills obtained by an individual by way of experience and education and involve the practical comprehension or familiarity of a subject (Bozkurt, 2011).

#### 2.6.1.1 Knowledge creation.

This section will focus on knowledge creation by clarifying tacit, explicit, cognitive, synthetic, analytical, business and technical knowledge.

##### 2.6.1.1.1 Tacit knowledge.

Nonaka (2002) (as cited in Henriksen & Rolstadås, 2010) describes *tacit knowledge* as deeply rooted in an individual's action, commitment, and involvement within a specific context. It relates to an individual's personal qualities that are hard to explain; is gained over time through trial and error; and involves cognitive and technical elements (Nonaka, 2002, as cited in Bassellier & Benbasat, 2011). Technical elements refer to an individual's concrete know-how such as crafts, skills, and techniques applied within a concrete context (Nonaka, 2002 as cited in Henriksen & Rolstadås, 2010). Tacit knowledge is intuitively understood and is captured within cognitive elements and experience, which are related to how the

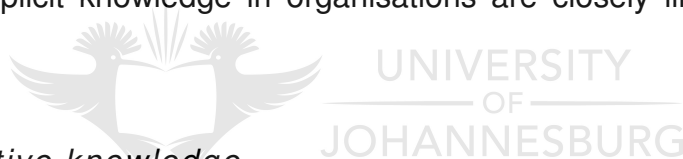
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individual define and perceive the world through working models, schemata, paradigms, and beliefs (Bassellier & Benbasat, 2011; Nonaka, 2002 as cited in Henriksen & Rolstadås, 2010).

### *2.6.1.1.2 Explicit knowledge.*

*Explicit knowledge* (codified or formal knowledge), is transmitted through formal systematic language (Bassellier & Benbasat, 2011; Henriksen & Rolstadås, 2010). According to Asheim and Gertler (2005) (as cited in Henriksen & Rolstadås, 2010) organisations are shaped by their specific knowledge-base wherein tacit and explicit knowledge vary systematically between various industries and is governed by an organisation's strategy. Explicit knowledge alone is not sufficient to describe an individual's competence, in order to be competent, an individual is required to apply and demonstrate knowledge (Bassellier & Benbasat, 2011).

Both tacit and explicit knowledge in organisations are closely linked (Bassellier & Benbasat, 2011).



### *2.6.1.1.3 Cognitive knowledge.*

Cognitive knowledge relates to more than merely doing things, it includes elements of tacit knowledge linked to working models of how the world is viewed, such as schemata, paradigms, beliefs and viewpoints (Nonaka, 2002, as cited in Bassellier & Benbasat, 2011). As such, working models provide for perspectives on how an individual perceive and define the world of work related to business activities, and the perspective associated with his/her profession, or function (Bassellier & Benbasat, 2011).

Acquiring knowledge involve complex cognitive processes such as perception, learning, communication, association, and reasoning, which in turn, relates comprehending a subject and the ability to apply knowledge for specific job-related objectives (Bozkurt, 2011).

### *2.6.1.1.4 Analytical knowledge.*

Individuals apply analytical knowledge to develop and formulate models including linear and rational processes, it is explicit in nature and important for organisations where scientific knowledge is required (Henriksen & Rolstadås, 2010).

### *2.6.1.1.5 Synthetic knowledge.*

Synthetic knowledge is tacit and based on know-how and skill, and exists in industrial settings through individual knowledge linked to incremental product and/or process-development as solutions for specific problems (Henriksen & Rolstadås, 2010).

### *2.6.1.1.6 Technical knowledge.*

An individual's technical knowledge (know-how) operates in business domains and is operationalised through successful job performance, participation in the job market and gaining knowledge related to a profession (Bassellier & Benbasat, 2011).

A measure that serves as a proxy related to technical knowledge is experience that reinforce the notion that an individual with more experience, who participates in job-related initiatives, will develop a higher level of tacit knowledge than those without experience (Bassellier & Benbasat, 2011). Job-related initiatives and participation therein accommodate the development of an individual's experience and the ability to understand his or her function (profession) that in turn allows for knowledge sharing within a team context (Bassellier & Benbasat, 2011).

### *2.6.1.1.7 Business-related knowledge.*

Bassellier and Benbasat (2011) consider business-related knowledge as an essential element that integrate an organisation's units and functions to create larger perspectives (a big picture) to facilitate the fit between knowledge and the organisation (i.e. business environment, strategy, structure, processes and infrastructure).

### 2.6.1.1.8 General knowledge.

Aghion and Howitt (1998) refer to general knowledge refer to (know-how) as universal, scientific, technological, and cultural heritage data available to all (as cited in Teixeira, 2002). Individuals obtain general knowledge through learning-by-doing/on-the-job experience and research (Teixeira, 2002).

### 2.6.1.2 Knowledge transfer.

Lundvall (1992) (as cited in Henriksen & Rolstadås, 2010) differentiate between linear and interactive knowledge transfer models. *Linear* knowledge transfer depends on analytical knowledge, whereas *interactive* knowledge transfer depend on collaborative learning processes between analytical and synthetic knowledge (Lundvall, 1992, as cited in Henriksen & Rolstadås, 2010).

According to Nonaka and Takechi (1995) (as cited in Henriksen & Rolstadås, 2010), knowledge transfer processes are facilitated by individuals who mobilise tacit knowledge within teams through approaches, such as:

- Experimentation – expressing tacit knowledge via explicit concepts such as metaphor, analogy, hypotheses, and models; and
- Internalisation – converting explicit knowledge into tacit knowledge through socialisation.

Organisations require extensive amounts of collateral knowledge and new information that individuals must decode, interpret and apply within new and existing organisational settings (Henriksen & Rolstadås, 2010). The use of information, technology and communication (ICT) systems will enable spatial transmissions of knowledge across the entire organisation (Henriksen & Rolstadås, 2010).

### **2.6.1.3 Team-related knowledge.**

Team knowledge competencies refer to mental models about how and when to apply team competency skills such group decision making and planning, adaptability and flexibility, communication and interpersonal relationships (Figl, 2010).

The following section will focus on skills, its acquisition, and types.

### **2.6.2 Skills.**

A skill is defined as a learned ability related to a distinct and relatively narrow area of psychomotor (physical) and/or mental (cognitive) activity or task requirement (Cheetham and Chivers 1996 as cited in Heilmann, 2007; Stewart, 2006).

Organisational skills are more than the education and training that reside in individuals; it refers to capabilities in the form of “institutional knowledge that is made up of the combined skills of a firm’s members accumulated over time” (Lall, Navaretti, Teitel & Wignaraja, 1993, as cited in Teixeira, 2002, p. 7)

Literature highlighted the following characteristics related to skills, namely:

- Includes a tangible investment in activities such as an individual’s education and formal training; knowledge and know-how (Teixeira, 2002).
- Is a function linked to particular strategies employed by the individual to apply knowledge (Kak, Burkhalter, & Cooper, 2001).
- Involves a combinations of action, reflection and judgements within a given situation (Ruth, 2006).
- Involves an individual’s capability, developed over time and through practice, to perform specific actions (Proctor and Dutta, 1995, as cited in (Henriksen & Rolstadås, 2010; Kak, Burkhalter, & Cooper, 2001).
- Is goal-directed and respond to and is acted upon external environmental demands (Proctor and Dutta, 1995, as cited in (Henriksen & Rolstadås, 2010).

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- Is ambiguous since it can involve the ability to perform a task; or master a number of techniques; or involve a range of behavioural attributes depending on performance required (Teixeira, 2002).
- Acquiring motor skill ability is considered to be difficult; however then the task is mastered it becomes automatic (Hodgkin, 1985 as cited in Chapman & Lovell, 2006).
- Cognitive and motor skill demands reduce as skills develop (Proctor and Dutta, 1995, as cited in Henriksen & Rolstadås, 2010).
- An organisation's competence reside in individuals' skill (capabilities) that are reflected in activities such as organisational routines, processes and operating procedures (Soderquist et al., 2010; Teece et al., 1997).
- Organisational skill is deemed to be a competence-based asset, which is determined by three conditions, namely:
  - Organisation – deployment of assets;
  - Intention – deliberate use of assets; and
  - Goal attainment – achieving objectives through assets (Gullino & Prevot, 2003).

### **2.6.2.1 Skill acquisition.**

Skill acquisition occurs through a variety of methods, such as:

- Discrete (distinctive) skills - acquired through basic or complex learning processes (Chapman & Lovell, 2006).
- Formal learning – gaining skills by investing in training and development job-related knowledge through formal education (Chapman & Lovell, 2006; Teixeira, 2002).
- Self-mastery – skill is self-taught (Chapman & Lovell, 2006).
- Imitate – attaining skills through activities, such as learning-by-doing and apprenticeships (Chapman & Lovell, 2006; Teixeira, 2002).



### **2.6.2.2 Skill development.**

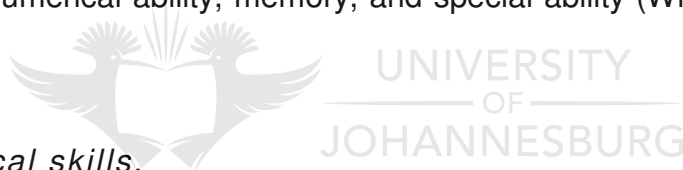
An individual's skill development is influenced by two factors; firstly, an *emotional engagement* related to a task (Dewey, 1916, as cited in Chapman & Lovell, 2006); and secondly, *reflective processes* required by the task (Polyani, 1958, as cited in Chapman & Lovell, 2006) .

### **2.6.2.3 Types of skills.**

This section will focus on cognitive, physical, core, conventional, domain-specific, social, and managerial skills.

#### *2.6.2.3.1 Cognitive skills.*

Cognitive skills refer to general intelligence and specific capabilities such as verbal comprehension, numerical ability, memory, and special ability (Will, 1995 as cited in McKenna, 2004).



#### *2.6.2.3.2 Physical skills.*

Physical skills include capabilities such as stamina, flexibility, and manual dexterity (Will, 1995 as cited in McKenna, 2004).

#### *2.6.2.3.3 Core skills.*

Core skills includes up-to-date interdisciplinary job-related knowledge, skills, and formal abilities, for instance “independent thought and action, methodological flexibility, transferability and foresighted interrelated thinking” (Bunk, 1994, p. 9).

Job-related skills are required by a particular occupation (profession) which is obtained from formal education and on-the-job learning (training) (Teixeira, 2002).

### *2.6.2.3.4 Conventional skills.*

Conventional skills refer to established (standard) occupational requirements, based on the nature of the job and related to specific education and training content required by a certain profession (Teixeira, 2002).

### *2.6.2.3.5 Domain-specific skills.*

Domain skills consist of general skills such as time management, teamwork, leadership, and motivation of self and others (Soderquist et al., 2010)

### *2.6.2.3.6 Specific skills.*

Specific skills are useful for a certain professions that require environmental stimuli and situations to assess the level of skill displayed and utilised by individuals (Soderquist et al., 2010).

### *2.6.2.3.7 Social skills.*



Social or interpersonal skills include a wide variety of skills and behaviours that render individuals to be competent to work effectively with others as team members and/or stakeholders, who display skills such as:

- Effective communication,
- An effective team player,
- Able to get work done via networking,
- Act in the best interest of the organisation and
- Maintaining gratifying relationships with business stakeholders (Janjua, Naeem, & Kayani, 2012).

### *2.6.2.3.8 Managerial skills.*

Managerial skills are identifiable sets of actions (i.e. behaviours) performed by an individual that will result in certain outcomes (McKenna, 2004). Unlike attributes,

management skills are controlled and demonstrated by individuals (McKenna, 2004). Three management skill types were identified by Whetten and Cameron (2002) (as cited McKenna (2004), which are:

- Personal skills - developing self-awareness, managing stress and creative problem solving;
- Interpersonal skills - communicate supportively, gain power and influence, managing conflict and motivating employees; and
- Team skills - empower and delegate, and building effective teams.

### *2.6.2.3.9 Team-related skills.*

Team skills refer to an individual's ability such as to interact with other team members in an effective manner; group decision-making; planning; adaptability and flexibility; and interpersonal relationships (Figl, 2010).

Similar to the development of managerial skills, team skills can be learned independently from the organisational context and used independently by the individual to empower and delegate, and build effective teams (McKenna, 2004).

### **2.6.2.4 Skill levels.**

Skill levels describe the desired behaviours and levels of expertise along a continuum that range from a novice to an expert (Robinson & Barberis-Ryan, 1995), and the components are defined as:

- Novice – a new graduate; require close supervision; assistance and educations; require policies and procedures to guide actions.
- Advanced beginner – independent in certain aspects of the job; require assistance in setting priorities; require frequent monitoring and education.
- Competent – apply experience and adjust to new situations; able to set priorities as to achieve long-term goals; able to manage most complex situations, logical and deliberate decision-making; require on-going education to remain current.

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- Proficient – efficient and flexible behaviour; manage all situations effectively, requires on-going education to remain current.
- Expert – possess an intuitive comprehension in job-related situations; masterful at problem-solving; anticipate complications/challenges; assist other individuals in becoming a mentor; require on-going education to remain current (Robinson & Barberis-Ryan, 1995).

### **2.6.2.5 Skill complexity**

Like skill levels, job complexity is described along the same continuum that differentiate between the degrees of distinction in skill intricacy (Chapman & Lovell, 2006). Skill complexity considers skills at a basic level that gradually ascent to higher levels of complexity and cognitive application that ultimately require an individual to manage operations; possess procedural knowledge, judgement and discretion related to job performance (outcomes) and execute an organisation's strategic objectives (planning, assessing and correcting deviations) (Chapman & Lovell, 2006).

Cognitive skills, like psychomotor skills, are demonstrated in different levels of proficiency where tasks are required to be completed with precision and ease, and accomplished with maximum efficiency and minimum expense (Chapman & Lovell, 2006). Skills may also form part of a series of activities that require skilful execution, or consists of multiple levels of complexities where the demonstration thereof is considered an 'art' (i.e. master-level skill execution) (Chapman & Lovell, 2006).

The section below will focus on abilities and capabilities.

### **2.6.3 Abilities.**

"Abilities refer to the attributes an individual has inherited or acquired through previous experience and brings to a new task" (Landy, 1985 as cited in Kak, Burkhalter, & Cooper, 2001, p. 3) and is considered to be more "...fundamental and

stable than knowledge and skills (Fleishman and Bartlett, 1969, as cited in Kak, Burkhalter, & Cooper, 2001, p. 3).

According to Bunk (1994) occupational abilities possess the following features, namely:

- Occupational elements – knowledge, skills, and abilities.
- Scope of action – defined and founded on individual occupations.
- Character of work – fixed operative work.
- Organisational level – externally organised.

### **2.6.3.1 Capabilities.**

A considerable amount of overlap exist between skills, abilities and attributes which renders it difficult to differentiate one from the other whereby an “ability is viewed as a set of specific skills acquired over time” (Johnson & Apud, 2006 p. 532).

An organisation’s capabilities are linked to an organisation’s internal assets (individuals, teams or processes and systems) (Guallino & Prevot, 2003) that repeatable actions demonstrated by individuals in order to produce or deliver commodities to market (Sanchez Heene, 1997, as cited in Guallino & Prevot, 2003).

The following conditions are necessary for the execution of on specific capabilities (i.e. specialist skills), namely:

- The deployment of organisational assets;
- Deliberate action by specialists to achieve objectives that will result in a sustainable competitive advantage; and
- Accomplish goals (Guallino & Prevot, 2003; Hall, 1992).

The following section will focus on attributes.

### 2.6.4 Attributes.

Attributes, refer to an individual's values, beliefs, norms and personality traits (characteristics) such as flexibility, perseverance, self-efficacy, knowledge, actions, professional standards, internal regulation, and dynamic state (Axley, 2008; Johnson & Apud, 2006).

Personal attributes (or characteristics) are internalised personality traits and manifested by individual through values, norms, beliefs, flexibility, and self-efficacy (Johnson & Apud, 2006). Considered to be a significant variable in determining human behaviour, personal attributes form the stable part of an individual's personality (Janjua et al., 2012). However, it that cannot be readily changed or adapted through learning and development programmes for effective job performance, but play a significant role in how an individual will respond to job-related situations (Janjua et al., 2012).

The section below will focus on types of competencies.

### 2.6.5 Types of competencies.

This section will focus on functional, generic management, human capital, methodological, participatory, social, and specialist competencies.

#### 2.6.5.1 Functional competence.

Functional competence consists of the following characteristics:

- A set of professional skills and abilities related to vocational and/or technical knowledge based on formal education.
- Involves specialist knowledge and skills obtained from targeted training programmes, educational institutions, vocational and apprenticeship programmes and fulfilment of job-related activities (Janjua et al., 2012)

### **2.6.5.2 Specialist competencies.**

Specialist competencies are held by individuals who perform activities and tasks according to their responsibility and accountability, for which they possess the necessary knowledge and skills to execute tasks and activities (Bunk, 1994).

A degree of expertise is required within specialist competencies and experts are considered to be a reliable source of technical skill (Bozkurt, 2011). The extent of specialisation is subject to the degree of knowledge and levels of experience, such as high knowledge capabilities such as:

- Specialist knowledge,
- Problem solving and analysis,
- Verbal communication, and
- Written communication (Bozkurt, 2011).

### **2.6.5.3 Differential competencies.**

Differential competencies refer to individuals and/or teams' superior performance (Boyatzis, 2008; Jackson, 2010; Spencer & Spencer, 1993), that are determined by cluster competencies (i.e. behavioural manifestations of talent) (Boyatzis, 2008), such as:

- Cognitive intelligence – ability to think, analyse and apply information, such as systems thinking, and pattern recognition;
- Emotional intelligence – ability to recognise and use information about oneself, such as self-awareness, empathy, and teamwork; and
- Social intelligence – ability to recognise and use information about others, such as social awareness, empathy and teamwork (Boyatzis, 2008, 2009).

Intelligence refer to observable behaviours that are sufficiently different from other personality constructs that rely on an individual's cognitive functioning and job-life outcomes (Boyatzis, 2008).

#### **2.6.5.4 Threshold competencies.**

Threshold competencies refer to effective performance by individuals and/or teams through minimum job-related requirements (i.e. experience, expertise, and knowledge) (Boyatzis, 2008; Jackson, 2010; Spencer & Spencer, 1993; Stewart, 2006). Individuals who perform below threshold competencies are considered to be incompetent (Janjua et al., 2012; Stewart, 2006)

#### **2.6.5.5 Human capital competencies.**

Petty (2000) lists human capital competencies as follows, namely:

- Know-how
- Education
- Vocational qualifications
- Work-related knowledge
- Work-related competencies
- Entrepreneurial spirit
- Innovativeness
- Abilities (proactive and reactive)
- Reactive abilities
- Flexibility



#### **2.6.5.6 Generic management competencies.**

Janjua et al., (2012) differentiate between generic management competencies and functional competencies. Functional competencies refer to an individual's (manager) ability to handle tools and machines, or other technical job outputs; while generic management competencies focus on core personality (individual) attributes, and demonstrated behaviours and skill required in executing managerial tasks (Janjua et al., 2012).

Management competencies are general descriptions of underlying characteristics and behaviours required in successful job execution (Bozkurt, 2011), irrespective of



industry, hierarchy or job-function (Janjua et al., 2012). Competency domains forms the core requirement of management-related jobs that include skills, knowledge behaviours and strategies to ensure effective execution of routine activities (Janjua et al., 2012).

### **2.6.5.7 Meta competencies.**

Meta competencies refer to multiple levels of complexity performed simultaneously (Chapman & Lovell, 2006) at the highest level of skill mastery (Hinchliffe, 2002, as cited in Chapman & Lovell, 2006). It involves an individuals' ability and skill assisted by actions such as comprehending job-related requirements; processing and interpreting job-related situations that will generate performance, production, and outcomes (Chapman & Lovell, 2006).

### **2.6.5.8 Methodological competencies.**

Methodological competencies consist of core skills held by individuals that include up-to-date interdisciplinary knowledge, skills, and formal abilities such as:

- Interdependent thought and action;
- Methodological flexibility and adaptability;
- Transferability; and
- Foresight and interrelated thinking (Bunk, 1994).

### **2.6.5.9 Participatory competencies.**

Participatory competencies refer to individuals who contribute towards the organisation and beyond, who are able to plan ahead, assume organisational tasks, make decisions, and are willing to assume responsibility (Bunk, 1994).

### **2.6.5.10 Social competencies.**

Social competence reside in individuals who are able to work communally and cooperatively with stakeholders and display team-orientated behaviour, and interpersonal understanding (Bunk, 1994).

The section below will focus on measurements related to the competence construct, as shown in Figure 2.27.



Figure 2.27. Conceptual Framework: Measurements

## **2.7 MEASUREMENTS**

The following section will focus on HCV measures related to the competence construct.

### **2.7.1 Core competencies valuation.**

The KPMG measurement model utilise core competencies (refer to Sub-section 2.4.3.2) to determine an organisational intangible assets value (Andriessen et al., 1999). This method provide management with two applications to monitor the progress of core competencies, such as a scoring agenda with points and a dashboard (ratios) that presents the results of the first measurement (i.e. measurement test and valuations) (Andriessen et al., 1999).

Table 2.3 clarifies the calculation and valuation of a core competency by listing its criterion, indicators items, and related measurement test.

Table 2.3

*Core Competence Criterion, Indicator, and Test (Measure)*

Criterion	Indicator	Measure
Customer benefit	Added value	Added value test
Better than competition	Competitive advantage	Competitiveness test
Future potential	Potential	Potential test
Difficult to imitate	Sustainability	Sustainability test
Solidly embedded	Robustness	Robustness test

*Note.* Adapted from “Testing a core competence Strengths and Weaknesses,” by D. Andriessen, M. Frijlink, I van Gisbergen, J. Blom, 1999, *A Core Competency Approach to Valuing Intangible Assets*, p. 12. Copyright 1999 by KPMG.

The authors express the core competency measurement formula as follows (Andriessen et al., 1999), namely:

$$VCC = \left[ \sum_{t=1}^S GP * (1 + P)^t \right] * R$$

where:

VCC = value of a core competency

GP = share of the gross profit

P = potential factor (annual growth percentage of the gross profit)

S = sustainability (in years)

R = robustness (risk percentage)

The life-cycle  $t=1$  to  $s$  sum the growth profit in each year and expressed by P% (potential growth percentage) that is multiplied by the robustness of the core competency R (risk percentage).

The total core competencies are determined as the sum of the value a, namely:

$$Via = \sum VCC$$

where:

Via = value of intangible asset contributing to the core competencies

VCC = value of a core competence

Similarities between the KPMG method and discounted cash flow are drawn. Discounted cash flows is a reduction for factors in time, interest (growth rate) and risk, while KPMG discounts the growth factor (potential), time factor (sustainability) and risk factor (robustness) (Andriessen et al., 1999). The methodologies differ in terms of where KPMG considered commodities' potential by including new market opportunities, that will impact on value within the near future, related to core competencies (Andriessen et al., 1999).

### **2.7.1.1 Core competency ratios.**

Together with its core competency valuation model, KPMG developed three core competency ratios, namely the knowledge intensity, potential indicator, and balance sheet indicators that allow for external reporting (Andriessen et al., 1999). Table 2.4 identify the core competency indicators as knowledge, potential, and balance sheet and clarify the related measures.

Table 2.4

*Knowledge Intensity, Potential, and Balance Sheet Indicators*

Indicator	Definition
1. Knowledge intensity	1. Value of intangible assets / Value of tangible assets in the balance sheet
2. Potential indicator	2. Value of intangible assets / Gross profit attributed to core competencies
3. Balance sheet indicator	3. Value of intangible assets / Shareholder's equity

*Note.* Adapted from "Testing a core competence Strengths and Weaknesses," by D. Andriessen, M. Frijlink, I van Gisbergen, J. Blom, 1999, *A Core Competency Approach to Valuing Intangible Assets*, p. 19. Copyright 1999 by KPMG.

The knowledge intensity indicator specifies the value of an organisation's intangible assets from its tangible assets value. If the number is greater than one, the

intangible assets is considered as more important than the tangible assets (Andriessen et al., 1999).

The potential indicator is the "...the weighted average of the potential, the sustainability, and the risk factor" (Andriessen et al., 1999, p. 19), i.e. gross profit of an organisation's core competencies. This model's economic potential is determined by the degree to which an organisation applies a well-defined and comprehensive strategy that allows for comparisons (benchmarking) with other organisations, irrespective of industry (Andriessen et al., 1999).

The balance sheet indicator determines the value of intellectual capital to conventional balance sheet factors. A high indicator will highlight the difference between the organisation's true value and its visible net asset value (Andriessen et al., 1999).

### 2.7.2 Human Capital Monitor™.

In assessing the worth of individual competence, Mayo's (2001, 2006) Human Capital Monitor™ utilises the human asset worth (HAW) calculation by multiplying employees cost and the individual asset multiplier (IAM) to calculate an individual's value (worth) according to the following formula, namely:

People as assets + people motivation and commitment = people contribution to added value.

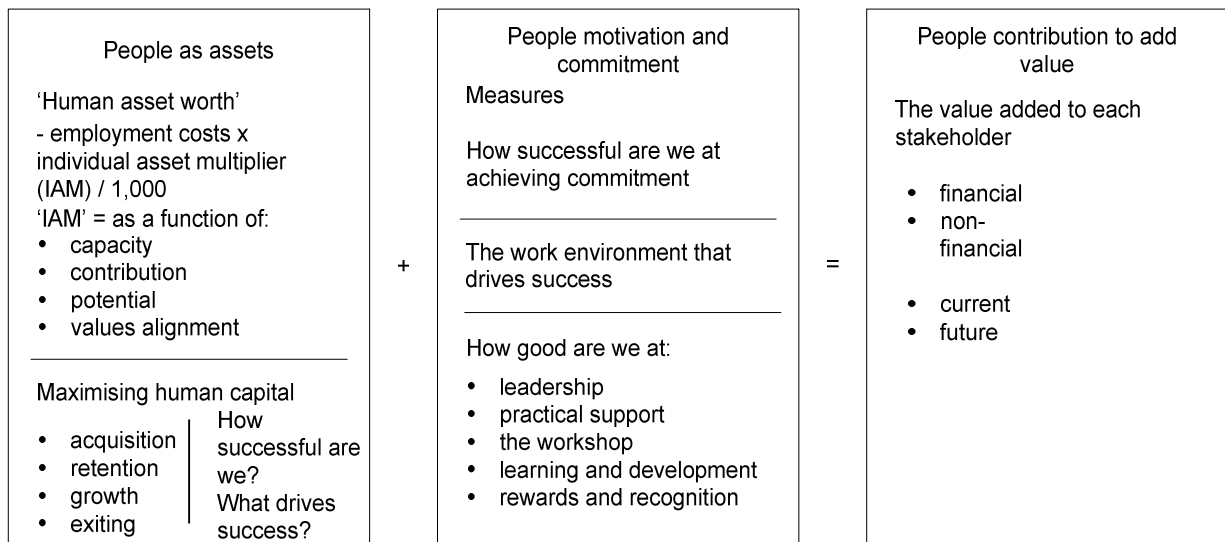
where:

People as assets = human asset worth [(employment cost x individual asset multiplier) / 1,000].

∴ Individual asset multiplier is a function of capability, contribution, potential, and values alignments.

Figure 2.28 illustrates Mayo's (2001) Human Capital Monitor™ calculation, whereby an individual's competence is measured according to the individual asset multiplier's four factors, namely capacity, contribution, potential and values alignment.

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*Figure 2.28. The Human Asset Monitor. Adapted from Human Capital Reporting an Internal Perspective, 2004 by CIPD, p. 15. Copyright 2004 Chartered Institute of Personnel Development.*

The motivation measure focus on the environment (context) in which individuals work, outcome measures translates to attrition, absenteeism, opinions and management judgement and input measures of factors that impacts on human capital (CIPD, 2004). People assets plus people motivation and commitment will result in current or future financial or non-financial value added to stakeholders.

Mayo's (2001)'s individual asset multiplier (IAM) is based on the method advocated by Giles and Robinson (1972) whereby an average multiplier is obtained and weighted for different grades of employees such as age, experience, qualifications, expertise, commitment, performance, and promotion (Durai, 2010). The Human Capital Monitor™ determines an organisation's individual asset multiplier according to four factors weighted average scales of 0.5 to 2.0 based on judgements, as follows, namely:

Factor one: Personal capability profile (i.e. an individual's technical and professional knowledge (know-how); skills, experience, and personal networking:

0.50 Has some noticeable deficiencies related deficiencies compared to expectations for this job role.

1.0 Possess the general balance of capabilities expected for this role.

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- 1.5 Exceed required capabilities across several job role levels; possess distinctive knowledge and experience; capabilities can be utilised within various job roles.
- 2.0 Possess considerable breadth and depth beyond the basic needs for this role; known for distinctive expertise or possess range of capabilities that can be applied flexibly (Mayo, 2001).

### Factor two: Potential to grow:

- 0.50 Probably over-promoted on current level.
- 1.0 Expected to grow at least within job role, or stay up to date with specialisation, or move laterally to different roles.
- 1.5 Able to grow at least one level higher or two further levels of specialist depth.
- 2.0 Consider high potential for management positions or technical/professional leadership (Mayo, 2001).

### Factor three: Potential contribution to shareholder value:

- 0.50 Make certain measurable contributions to non-financial measures.
- 1.0 Make average-level contributions to either financial or non-financial measures or a combination thereof.
- 1.5 Make an above-average contribution to financial and non-financial measures or a significant contribution aimed at value creation.
- 2.0 Make a significant contribution towards financial and non-financial value measures than the average employee aimed at future value creation (Mayo, 2001).

### Factor four: Values alignment:

- 0.50 Demonstrate little alignment to organisational values.
- 1.0 Behaviour is not in explicit conflict with organisational values.
- 1.5 Makes a considerable effort to live as many values as possible.
- 2.0 Known throughout as a role model for organisational values (Mayo, 2001).

Mayo (2001) operationalised the human asset measurement as follows, namely:

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The individual's (a purchasing manager) total cost to company remuneration is £60,000. The guaranteed package consists of £45,000 of which £15,000 is allocated to benefits and 9% allocated to social security (pension / provident funds and statutory benefits). Employment cost is therefore calculated as  $(45,000 + 15,000) / 1,000 \times 1.09 = 65.4$  (Mayo, 2001).

The individual is an excellent performer with ten years job experience who consistently exceeds money-saving targets and builds sound relationships; do not possess the potential to rise in organisational levels, but is expected to deepen expertise in an area of specialisation; and makes a considerable effort to live according to organisational values (Mayo, 2001).

Table 2.5 is an example of how the individual asset multiplier weighing is calculated.

Table 2.5

### *Individual Asset Multiplier Weighting Value*

Factor	Factor value	Weighting	Weighted value
Capability	1.5	0.30	0.450
Contribution	1.7	0.35	0.595
Potential	1.0	0.20	0.200
Values alignment	1.5	0.15	0.225
Individual Asset Multiplier Value			1.470

*Note.* Adapted from "Individual asset multiplier calculation" by A. Mayo, 2006, *The Human Value of the Enterprise. Valuing People as Assets. Monitoring, Measuring Managing*, by A. Mayo p. 82. Copyright 2001 by Nicholas Brealey.

Therefore, the individual's human asset worth (HAW) is  $65.4 \times 1.470 = 94.14$  (Mayo, 2001).

Mayo's (2001) acknowledged that valuing teams are more than the sum of individual value contributions, but for calculating a team's HAW, the value of all individual team members (i.e. aggregate) is considered.



### 2.7.3 Saarbrücken Formula.

Table 1.3 introduced the Saarbrücken Formula, as measurement that determines HCV in monetary terms (Scholz et al., 2004, 2007), as follows, namely:

$$HC = \sum_{i=1}^g [(FTE_i * l_i * \frac{W_i}{b_i} + PE) * M_i]$$

where:

$i$  = teams are clustered according to educational levels, job categories, and levels of hierarchy

$FTE_i$  = full-time equivalent (per team  $i$ )

$l_i$  = average market-based reference wages (per team  $i$ )

$w_i$  = average “life span” of knowledge (per team  $i$ )

$PE_i$  = annual human resources development cost (per team  $i$ )

$m_i$  = motivation index (per team  $i$ )

∴ Teams = employees who are of strategic importance for the organisation (Scholz et al., 2004)



The formula consists of 10 steps whereby the following are determined, namely:

- Strategic differentiation of teams (steps one to three)
- Depreciation of human capital (steps four to five)
- Learning-based adjustment increasing human capital (steps six to seven)
- Changes in human capital motivation steps eight to ten) (Scholz et al., 2004).

Before calculating HCV, the formula requires (Scholz et al., 2004) the following actions, namely:

- Step 1: Determine teams (from full-time employees (individuals)), comprising of the strategic focus of an organisation such as certain job families, clusters of qualification, or the organisation’s own criteria.
- Step 2: Calculate the full-time equivalent (FTE), i.e. the total number of hours worked (workload) divided by the maximum number of legal compensable hours of full-time schedules.

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- Step 3: Obtain and determine the market-base valuation from public (external) sources to avoid manipulation of human capital such as increasing remuneration.
- Step 4: Determine the relevance time of knowledge, which refers to organisations that successfully renew the validity period of individuals' knowledge, such as human resource development. The same logic applies for the counter argument.
- Step 5: Determine the average firm (organisational) tenure; prolonged tenure (average time for professions) refer to the accumulation of experience that exceeds knowledge losses, which automatically depreciate knowledge stock. Unless updated, knowledge residual is expressed as a negative.
- Step 6: Obtain and determine the effective cost of human resources activities as disclosed in internal accounting and related management information system reports. Although not viewed as an opportunity cost, the cost of human resources activities does indicate the investment or worth of human resources development.
- Step 7: Adjust effective costs by means of an efficiency factor ratio that indicate (measure) how effective the development of human resources activities were. The measurement would not include irrelevant or gratuitous activities (e.g. learning-by-doing).
- Step 8: Determine individuals' commitment and willingness (do one's best) by means of a multiplier on a scale between zero to two via the use of two different scales to measure individuals' commitment and willingness to do one's best at the organisation.
- Step 9: Determine individuals' ability (opportunity) to determine working conditions, leadership style, human resources processes, information structures, or organisational routines that enable individual contributions at the organisation.
- Step 10: Determine the probability of individuals' long-term availability to the organisation (i.e. retention). Employee availability and organisational stability increase the longer individuals are available to the organisation (Scholz et al., 2004).

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Roodt (2010) operationalised the Saarbrücken Formula, according to the following hypothetical calculation, namely:

HCV = value base – value depreciation + value compensation + value adjustment.

The individual is a graduate engineer, whose market value amounts to R1,000,000 and value-base is calculated  $FTE_i * W_i = 1 * R1,000,000$ .

Value depreciation refers to knowledge equated as the relation between job-specific duration of knowledge-relevance (k) and length of employment (t) subtracted from  $1[1 - f(k; t)]$  (Scholz, Volker, & Müller, 2007 as cited in Roodt, 2010). The individual has a four year engineering degree and ten year tenure at the organisation, which value depreciation is calculated as  $[1 - 4 / 10 = 6 / 10]$  (Roodt, 2010).

Value compensation refers to the organisation investing R10,000 per capita per year towards their engineers' skills development. Value depreciation plus value compensation =  $6 / 10 (R1,000,000) + R10,000 \times 10 = R700,000$  (Roodt, 2010).

Value adjustment refers to value range between -1 and +1. The individual is satisfied with his job and working conditions and rate himself as +0.5; therefore the individual's monetary value is +R350,000. The value adjustment would be negative if the opposite was applicable (Roodt, 2010).

Roodt (2010) highlighted that the competence variable is representative in equating HCV, but is limited in terms of measuring commitment and context.

The following section will synthesise this study's literature review.

## 2.8 SYNTHESIS

The following section will provide a synthesis of this study's salient concepts according to levels of analysis, thereby highlighting significant gaps (presented as questions) related to individual, team and organisational level competence that it will be required to address.

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Individual level competence perspectives are linked to a number of diverse perspectives (i.e. educational, labour market, human resources, psychological, legal, and non-legal, and competency and competence-based views). Two dominant views prevail, i.e. underlying characteristics and motives (behavioural characteristics) that will determine effective or superior performance; and job-related standards based on a function/profession (functional characteristics) to be demonstrated according to minimum-required performance standards. Subsequently competence is viewed either from a behavioural (competency inputs) or functional (competence outputs) perspective. Therefore, based on these distinct approaches, does scholarly literature adopt an integrated or divergent view of individual level competence perspectives?

Team level competence perspectives are represented sparsely represented in literature. Given its brief reference thereof in the non-legal meaning linked to organisational core competencies, are teams viewed as a composite of individual competence in HCV application? If individual competence is viewed according to behavioural or functional perspectives, does the same apply to team level competence perspectives?

A number of definitions delineate organisation level/types of competence, such as distinctive competence, core competencies, dynamic competencies, and organisational capabilities. In light thereof, what type/s of organisational competence will facilitate the establishment its variables and measures? Does organisation level competence variables reside in organisational knowledge and skill requirements or the strategic capabilities linked to the RBV, CBV, and KBV?

Individual level competence definitions differentiate between behavioural and functional descriptions. Behavioural competencies refer on KSAs and underlying characteristics (individual attributes). To identify behavioural and job success factors, criterion reference sampling will differentiate between superior and effective performance. Given the HCV measure's constructs, do underlying characteristics' variables (i.e. motives, traits, self-concept, social roles, and value orientation) refer to competence (C1) or commitment (C2)? If criterion-referenced sampling differentiates between superior and effective performance, what are the behavioural, and job success factors' variables? Functional competence definitions refer to an individual's

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KSAs through proxies such as investments in schooling, education and training and job-related experience. Will the findings present similar functional competence-related definitions and variables?

Like individual level definitions, team level competencies refer KSAs, and attitudes and underlying characteristics possessed by individual team members to execute teamwork. A process is utilised to execute effective team performance, whereby inputs require KSAs and underlying characteristics, processing of inputs occur through independent action and behaviours of team members that result outputs, i.e. task outcomes. Given that teamwork require KSAs and underlying characteristic, will the findings be similar? Does the context in which teams operate require different competency variables?

Competency frameworks and models focus mainly on individual and team-level competencies and its features and functions centres on both behavioural and functional/technical competencies. Despite the literature reviews' theoretical distinction between perspectives and definitions (i.e. competency/behavioural approach, and competence/functional approach) the frameworks and models' practical application of competencies incorporate both personal/underlying characteristics and functional/technical competencies. Upon considering all the types of frameworks and models, the author have identified the CMC, the benchmark from which competence variables can be identified. Therefore, given the CMC potential, will the findings be able to uncover a suitable framework and model? Will this model assist in the determining competence variables applicable to HCV measures in monetary terms?

The literature review have examined and reported extensively on individual and team competence variables, i.e. knowledge, skills, abilities, and attributes. Due to the literature review's focus on behavioural competencies (i.e. superior and average job-related performance) and functional/technical competence (demonstrating job-related performance according to minimum standards), will this findings reveal similar variables? Which variables are considered more important, KSAs or attributes?

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The literature review mainly addressed organisation level input competence variables (i.e. explicit and implicit knowledge, skill, and capabilities). However, the strategic output variables responsible for strategic value and sustainable competitiveness (i.e. organisational performance), such as resources/assets that are rare, valuable, inimitable, and sustainable are linked to RBV, CBV, and KBV and not to distinctive/organisational competence and core competences per se. In light thereof, will this study be able to identify and link organisational level variables to resource/asset capabilities? Do these capabilities reside in distinctive/organisational competence or in core competencies?

The literature review revealed three competence measures that determined HCV in monetary terms, namely KPMGs (1999) core competencies valuation model, Mayo's (2001, 2006a, 2006b) Human Capital Monitor <sup>TM</sup> and Scholz et al's., (2004, 2007) Saarbrücken Formula. Individual and team competence measures are determined according to two models that include variables such as practical knowledge, experience and personal development (skills) (Saarbrücken Formula), and capability and potential (i.e. Human Capital Monitor <sup>TM</sup>), that serves as proxies for KSAs. Whereas, the organisational competence measure focus on core competency' variables such as value add, competitive advantage, potential, sustainability, and robustness. Given the discrete manner in which competence measures are presented, will the findings be able to clarify HCV measures in monetary terms?

Table 2.6

### *Integrating Perspectives, Definitions and the CMC Building Blocks and Tiers*

Definitions	LoA		Perspective	CMC Building Blocks and Tiers													
				F			I			K							
	I	T	O	B	F	R	C	1	2	3	4	5	6	7	8	9	
Behavioural competencies	✓		✓					✓	✓	✓							✓
Functional competence	✓			✓					✓		✓	✓	✓	✓	✓	✓	✓
Team competencies		✓		✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓
Distinctive competence			✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Organisational competence			✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Definitions	LoA		Perspective		CMC Building Blocks and Tiers											
					F			I			K					
	I	T	O	B	F	R	C	1	2	3	4	5	6	7	8	9
Core competencies			✓			✓	✓				✓	✓	✓	✓	✓	✓
Individual- and team-level measures			✓		✓						✓		✓	✓	✓	✓
Organisation-level measures			✓			✓	✓				✓	✓	✓	✓	✓	✓

Legend: LoA: Levels of Analysis (I: Individual; T: Team; O: Organisation); B: Behavioural; F; Functional; R: RBV; C: CBV; CMC: Competency Model Clearinghouse F: Foundational (1: Personal effectiveness competencies; 2: Academic competencies; 3: Workplace competencies); I: Industry (4: Industry-wide competencies; 5: Industry-sector competencies); K Knowledge (6: Occupation specific knowledge areas; 7: Occupation specific technical competencies; 8: Occupation specific requirements; 9: Management competencies)

Table 2.6 links behavioural competencies to individual-level competencies and the behavioural perspective. Given CMCs potential according to behavioural competencies' KSAs and underlying characteristics (attributes), focuses on Tiers 1 to 3 and Tier 9. Functional competence links individuals to a level of achievement and able to demonstrate competence according to occupational standards that focus on CMC Tier 2 and Tiers 4 to 9. Team competencies are linked to both behavioural competencies and functional competence that focus on CMC Tiers 1 to 9. Organisation-level core competencies are derived from organisational and distinctive competencies, within are characterised by both RBV and CBV perspectives' strategic capabilities and composite KSAs focus on CMC Tiers 4 to 9. Individual-level competence measures are linked to functional competencies and perspective (educational and labour economic) and focuses on CMC Tier 4 and Tiers 6 to 9, whereas organisation-level competence measures are similar to core competencies.

The following section will conclude this study's literature review.

## 2.9 CONCLUSION

## Integrating Competence and Human Capital Value

This chapter summarised and integrated literature on the competence construct's salient concepts and related to levels of analysis. Competence definitions were presented, and frameworks and models' key features, application and structures/types were outlined. Competence variables and HCV competence measures in monetary terms were presented. The gaps (challenged) posed by way of questions in the synthesis will guide the remainder of this study.

The following chapter will focus on the research design by documenting this study's design, such as its research approach, strategy, and methodology including its strengths, weaknesses, sources of error, and ethical considerations.





## Chapter 3: Research Design

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### 3.1 INTRODUCTION

The previous chapter provided a summary of competence literature's notable scholars to gain an appreciation of and clarify the research problem. The subsequent synthesis integrated the salient concepts and levels of analysis and identified gaps and uncertainties to be addressed.

This chapter presents a discussion of the research design's approach and strategy, its strengths, limitations and sources of error, the research method, and will conclude by disclosing this study's ethical considerations.

### 3.2 RESEARCH DESIGN

The researcher chose a qualitative research design for conducting this study. More specifically, a theoretical (non-empirical) research approach (source/reference) was selected. Among the different theoretical study options, the researcher opted for a systematic literature review to execute this study.

### 3.3 RESEARCH APPROACH

This section will focus on the qualitative research field and its key features and the researcher's key scientific beliefs will be conveyed.

#### 3.3.1 Qualitative research and its key features.

This study is based on qualitative research, which is a form of social inquiry that focus on 'how' and 'why' questions and answers (Guest, Namey, & Mitchell, 2012). Studies are based on how research participants interpret and make sense of their experiences and the world they live in (Holloway & Wheeler, 2013; Merriam, 2009). By exploring the research participants' perspectives, experiences, feelings and what they consider as important to their existence, the social scientist (researcher)

endeavour to understand the reality in which individuals, groups and organisations operate in (Holloway & Wheeler, 2013). As stated in Section 1.4, this study's objective is to conduct a review of scholarly literature based on the competence's salient concepts (perspectives, definitions, frameworks, models, variables, and measures) and levels of analysis (individual, team and organisation).

This study, based on a systematic literature review, will adhere to the conditions and requirements (i.e. categories, features and definitions), as shown in Table 3.1.

Table 3.1  
*Key Features of Qualitative Research*

Category	Feature	Definition
Design and strategy	Naturalistic inquiry	Examine real-world situations in natural settings which is context bound;  Do not manipulate or control participants Focus on participant's' thoughts, feelings, perceptions and interpretations;  Do not premeditate findings; and  Derive theoretical frameworks from data;
	Research design flexibility	Are open and flexible and base findings on emerging data;  Adapt inquiry as understanding grow or situation change;  Avoid rigid research designs;  Pursue new directions as it transpires.
	Purposive sampling	Select informative population samples;  Information form participants are useful; and

Category	Feature	Definition
		Seek insight not generalisations.
Data collection and fieldwork studies	Qualitative data	Describe, analyse and interpret the data; Describe observations in detail; Provide direct quotations based on perspectives and experiences; In-depth inquiry or case study; and Careful documentation or review of data.
	Personal experience and engagement with participants	Deal directly with people, situations and phenomenon; Obtain data from personal experience;
	Neutrality and mindfulness of researcher	Critical perspective and understanding of phenomenon. Empathetic approach during interviews and observations; Seek understanding; Withhold judgement; Remaining neutral; Treat participants with dignity and respect.
	Dynamic systems	Pay attention to study's process, system and interconnected dynamics; Be flexible and facilitate change necessary.
Analysis strategies	Unique case orientation	View every case as unique and special; First level analysis require accurate



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Category	Feature	Definition
		capturing of individual studies;
		Cross-case analysis depends on quality of individual studies.
	Inductive analysis and creative synthesis	<p>The researcher is immersed in data's details and specific features;</p> <p>Uncover important patterns, themes, or categories;</p> <p>Process involve exploring, confirming analysing and synthesising data;</p> <p>Analysis guided by principles rather than rules.</p>
	Holistic perspective	<p>Phenomenon denotes a complex system that is more than the sum of its parts;</p> <p>Phenomenon highlights complex interdependencies and system dynamics.</p> <p>The system cannot be reduced to few discrete variables and linear causal relationship;</p>
	Contextual sensitivity	<p>Social, historical or temporal settings contextualise findings;</p> <p>Question meaning of generalisations across time and space;</p> <p>Extrapolate patterns for possible relocation and adaptations in new settings;</p> <p>Emphasise comparative case analyses.</p>
	Researcher's expression,	Researcher to reflect on expression and perspective;



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Category	Feature	Definition
	perspective, and reflexivity	<p>Convey authenticity and trustworthiness of findings;</p> <p>Realise that complete objectivity is impossible and pure subjectivity is undermining;</p> <p>Aim for a balanced focus based on accurate understanding phenomenon including its complexities; and</p> <p>Be mindful of and reflect on presenting the data, findings, and synthesis.</p>

*Note.* Adapted from “*Qualitative Research and Evaluation Methods*,” by M.Q. Patton, 2002, pp. 40-41. Copyright 2002 by SAGE Publications.

The systematic literature review is defined as endeavour “...that strives to comprehensively identify, appraise and synthesize all relevant studies on a given topic” (Petticrew & Roberts, 2006, p. 19). For the purpose of this study, the systematic literature review will allow the researcher to:

- Focus on the research problem and answer the research question based on this study’s objectives (presented in Section 1.4);
- Make sense of large bodies of textual data linked to the research question and objective by organising the textual data and analyse the findings to identify themes (as conducted in Section 3.6 and presented in Section 4.2).
- Understand the phenomenon by focussing on high-quality evidence (scholarly literature) (as performed in Sub-sections 3.6.5);
- Identify differences between real and assumed knowledge; (as conducted in Sub-section 3.6.7 and presented in Section 4.2)
- Highlight gaps and make recommendations for further research and practice (presented in Sections 5.5) (Petticrew & Roberts, 2006).

Researchers deal with social reality in different ways and are required to make decisions based on their ideological beliefs (Holloway & Wheeler, 2013). Given that researchers not only rely on sample selection, data collection and analysis (Holloway & Wheeler, 2013), the following section will address the researcher's key scientific (ideological) beliefs central to this study.

### **3.3.2 Key scientific beliefs.**

Key scientific beliefs refer to the researcher's underlying world view (paradigm) of her social world (Denzin & Lincoln, 2011) to discover what is real (ontology) and how she came to know it (epistemology) (Fröbeler, 2008), will be discussed below.

#### **3.3.2.1 *Ontology***

Ontology refers to the researcher's perspective on the nature and structure of the social world (Crotty, 1989; Holloway & Wheeler, 2013; Mouton & Marais, 1996; Nieuwenhuis, 2007a). It centres on questions and arguments on whether social reality exist and how it should be constructed (Guba & Lincoln, 1994; Snape & Spencer, 2003).

This study's ontological position is critical realism whereby the researcher, like Maxwell (2012) and Sharpe (2004), believe that the external world must be described and explained in an accurate manner, as it appears and based upon interconnected processes and structures. This study conceptualised and presented the phenomenon (competence) as a process framework that consists of interdependent salient concepts. The researcher's social reality and meaning will be revealed in uncovering and presenting themes related to competence's salient concept and levels of analysis, i.e. context within which the competence construct operate. The researcher's aim is to explain associations between significant constructs and variables linked to the competence construct by stating "...what must be the case...[rather than assuming]...what merely can be the case" (Sayer, 2000, p. 27).

### **3.3.2.2 Epistemology.**

Epistemology refer to the philosophy and theory of knowledge, and concerns itself with the “...treatment, nature, origins, scope and limits of human knowledge, its presuppositions and basis” thereof (Dick, 1999, p. 306). This study’s epistemological stance is based on the interpretivist approach (Merriam, 2009) that will seek to understand (interpret) and describe the competence construct thereof.

Like critical realism, the interpretivist approach “...claims that natural science methods are not appropriate for social investigation because the social world is not governed by regularities that hold law-like properties” (Snape & Spencer, 2003, p. 23). Rather, it describes reality as multiple meanings which is bound within a certain context (Merriam, 2009; Thomas, 2006). Therefore, this study will explore, describe, interpret, and understand the competence construct through its participants’ perspectives (i.e. authors of scholarly literature) and their meaning that will, in turn, influence the researcher. The interpretivist approach’s knowledge-seeking efforts, allows the researcher to understand the salient concepts (process) and levels of analysis (context) in which the competence construct (phenomenon) operates.

However, qualitative studies and the interpretivist approach is not entirely objective and value free (Snape & Spencer, 2003) and the researcher is aware that her findings will be influenced by her own judgement , beliefs and values. Based on the researcher’s critical realist paradigm, her understanding will be influenced by and derived from the research participants’ involvement and their meaning assigned to competence. Furthermore, the interpretivist approach will allow the researcher to analyse and present her findings that yielded a multifaceted understanding of competence, its salient concepts, and levels of analysis.

## **3.4 RESEARCH STRATEGY**

Social sciences distinguish between two main classifications, namely: empirical research, and non-empirical (secondary) research (Mouton, 2001; Smith, 2010). This study employed a non-empirical research design to clarify the researcher’s

understanding and meaning of the competence construct, in order to create “...scientific depth and value by means of factual, empirical data” (Smith, 2010, p. 3).

A systematic literature review research design allows for the execution of a content analysis, i.e. a methodical approach in analysing a large bulk of textual data (Elo & Kyngäs, 2008a; Kleine, 2008; Mouton, 2001; Nieuwenhuis, 2007b). This will focus on the content’s qualitative factors that consists of a “...series of well-defined steps that takes the analyst from the initial identification of research questions and construct to the final interpretation of data” (Kleine, 2008, p. 92). In keeping with Kleine's (2008) systematic approach, this study conducted the following activities, namely:

- Section 1.2 indicated the topics of interest;
- Section 1.3 determined the research problem and
- Section 1.4 presented the research question and objective;
- Sections 2.2 to 2.8 examined current theory based on the research;
- Section 3.6 identified the
  - Body of the text (sample),
  - Decided on a coding system; and
  - Established trustworthiness (reliability and validity) via the coding and data analysis processes (i.e. research methodology) that investigated the research problem; and finally
- Section 4.2 presented the findings and discussion of the data collected and analysed for this study.

The following section will address this study’s strengths, weaknesses, and sources of error.

### **3.5 STRENGTHS, LIMITATIONS AND SOURCES OF ERROR**

The following section will address this study’s strengths, weaknesses, and sources of error.



### 3.5.1 Strengths.

This section will address strengths related to systematic literature review, content analysis, establishing themes, and computer assisted qualitative data analysis software.

A systematic literature review provides "...a good understanding of the issues and debates" (Mouton, 2001) of phenomenon and the number of journal articles selected for this study highlighted previous scholarships' current thinking, definitions, and results (Mouton, 2001, p. 180). In addition thereto, the use of textual data over an extended period of time serves as a powerful means in addressing the research problem and objectives (Sommer, 2012).

A content analysis is regarded as an unobtrusive approach that avoids research bias, invasion of privacy and observation effects (Chelimsky, 1989; Mouton, 2001) and is useful for analysing large volumes of textual data (Chelimsky, 1989; Mouton, 2001). Furthermore, it allows for explicit coding and determine clear-cut themes linked to the research question and objective, based on and supported by the textual data, and facilitate inductive reasoning that leads to new insights and interpretations (Braun & Clarke, 2006; Chelimsky, 1989; Elo & Kyngäs, 2008a; Guest, 2012; Saldana, 2009). The interrogation of data leads to extensive reliability (trustworthiness) checks and corroborating (triangulating) data (Chelimsky, 1989; Elo & Kyngäs, 2008a).

Computer assisted qualitative data analysis software's strengths provides coding scheme stability and yields results (i.e. triangulation) based on explicit coding that offers valid and reliable (trustworthy) interpretations and explanations. Outputs, such as codes, quotations and co-occurrences linked to important concepts, are identified and easily manipulated and created through key-word searches and listings (Kleine, 2008).

### 3.5.2 Limitations.

This section will address limitations related to systematic literature review, content analysis, establishing themes, and computer-assisted qualitative data analysis software.

At best, systematic literature reviews only describe current information and understanding that fail to “...produce new, or validate existing, empirical insight” (Mouton, 2001, p. 180) related to the competence construct.

Content analysis’ limitations affect the authenticity of the data sources and the textual data’s representativeness creates challenges in establishing external validity (Mouton, 2001). Based on seemingly unconnected pieces of information, content analysis is often considered too simplistic (Chelimsky, 1989; Elo & Kyngäs, 2008a). The narrative is non-linear and single paragraphs may contain elements related to several themes (Chelimsky, 1989; Elo & Kyngäs, 2008a), which is often too dense during the analysis phase and become lost when findings are presented (Elo & Kyngäs, 2008a). However, the most challenging aspect is the difficulties researchers encounter in describing the proceedings and insight of the findings (Elo & Kyngäs, 2008a).

Although identifying and presenting themes offset internal reliability, themes may lack practical significance (Chelimsky, 1989); is open to a wide variety of interpretations (Guest, 2012); nuanced data may be overlooked and maintaining continuity of data of individual may be challenging (Braun & Clarke, 2006); and the researcher’s interpretative ability and control may be lost of a theoretical framework is not included (Braun & Clarke, 2006).

Computer assisted qualitative data analysis software’s weaknesses refer to the lack of natural language processing and insensitivity of linguistic nuances such as negation, irony and tone (Kleine, 2008). The software is often unable to provide extensive keyword listings and may not resolve inferences backward and forward to terms elsewhere in the text and the likelihood of crunching of transforming rich meanings into meaningless statements exist (Kleine, 2008).

The following section will address the main sources of error.

### 3.5.3 Main sources of error.

- The researcher was mindful and made every effort to avoid main sources of error, as highlighted by Mouton (2005), namely:
- Selectivity related to sources and the unfair treatment of authors: the researcher selected quantitative sources according to selection criteria described in Sub-section 3.6.4;
- Selection effects (bias) in textual sampling: the researcher utilised a systematic and purposive sampling technique described in Sub-sections 3.6.5;
- Rater coding scheme or system development and reliability; this study utilised one coder, however errors such as inaccuracies due to fatigue cannot be discounted; and
- Limited interpretation; the journal articles offered limited or at times no information regarding author's intention, background, and/or information, which may influence the researcher's interpretation of this study's findings.

The following section will focus on the research methodology.

## 3.6 RESEARCH METHOD

This section delineates and discusses this study's research methodology that centres on the research setting; role of the researcher; location of data; data collection methods; data/sampling procedures; recording of data; presentation of the data; data analysis; and finally strategies to ensure research quality.

### 3.6.1 Research setting.

This study's research setting entailed peer-reviewed, scholarly (academic) journal articles that encompassed a global representation, across a diverse number of industries, and a wide variety of participants.

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The countries involved were Australia, Brazil, Canada, China, Europe, Finland, France, India, Iran, Ireland, Israel, Italy, Korea, Malaysia, South Africa, Spain, Sri Lanka, Taiwan, The Netherlands, and United Arab Emirates.

The industries included banking, communication and technology, food, health care and services, higher education, industrial sector, information technology, manufacturing (including software, and textile) and services (including telecommunication, trading and retail), paint, pharmaceutical, knowledge-based organisations, the private, and sector, public sector, publicly listed companies, and small, medium, and large enterprises.

This study does not refer to the individuals or groups stated below as its primary research participants, but to the author(s) (i.e. creator(s)) of the scholarly research article. The research participants referred to in the scholarly research articles were civil servants, employees (including frontline), engineers, executives (including Master of Business Administration qualified), focus groups, civil servants, heads of Human Resources Departments, higher education graduates (including a Master of Business Administration), managers (including functional (sales), middle, senior and executive management), professional graduates (including health service workers), students, supervisors, and team members.

### **3.6.2 Role of the researcher.**

In line with this study's strategy and research setting, Lincoln and Guba (2003) describes the researcher as a "...human research instrument [that simultaneously acts as an] ... inquirer and respondent" (p. 283) who collects and analyse the data (Merriam, 2009). This process afford the researcher an opportunity to immediately address issues during the interview or during observations, such as confirming whether interpretations are correct or explore unusual or unexpected responses (Merriam, 2009). The researcher either engage in a study either as an insider or an outsider (Punch, 1998). However, a systematic literature review does not provide the opportunity to a researcher.

Based on the non-empirical and secondary nature of this study, the role of the researcher can be described as a proxy or substitute of the human research instrument that interacted with 'research participants' (i.e. authors who reported on their textual data (scholarly research article)), in a retroactive (ex-post facto) manner. Unlike Merriam's (2009) description above, the researcher was not able to interact with research participants to verify or confirm his/her (the author's) statements. With reference to Punch's (1998) roles, the researcher felt that she participated as an outsider who engaged with the research participants' (authors) written reportages based on the competence construct.

### **3.6.3 Location of data.**

Data exists in published textual data format contained in peer reviewed scholarly research journals. The location of data resides in the University of Johannesburg's library search portal and databases. Based on its capacity to provide full-text primary data, two University of Johannesburg's library databases were identified and utilised, namely: EBSCOHost and Emerald. Likewise, Google Scholar was also applied to cross-reference data and collect serendipitous journal articles not published by EBSCOHost and Emerald.

EBSCOHost is as an aggregated online academic database (Carroll, 2007) that contains 375 full text and secondary databases (EBSCO Publishing, 2013), which incorporates Elsevier's SCOPUS, Science Direct, and Wiley. Emerald is a multidisciplinary Online database that offers access to 200 academic journals (Emerald Group Publishing, 2013).

### **3.6.4 Data collection method.**

This study retrieved and collected textual data via the University of Johannesburg's library search portal that offered a unified indexing facility within a single customised search box. Boolean operator search terms allowed for advanced searches that included parameters such as keywords, specific time periods, and extraction of journal articles only.

Keywords this study employed were competence; competency; and human capital value.

The selection of journal articles utilised a three-phase methodology, firstly by means of reading abstracts that explained the article in brief; secondly by downloading full text articles in Portable Document Format (PDF) and Hypertexts Mark-up Language (HTML) formats; and lastly by implementing a purposive sampling.

The section below will address the sampling procedure.

### **3.6.5 Sampling procedure.**

The selection of data/sampling was driven by this study's theoretical considerations and key scientific beliefs (Mouton, 2001) as set out in Section 1.4 and Sub-section 3.3.2. This study selected a purposive (criteria-based) sampling technique that involved typical site sampling based on the premise that it included typical data related to the competence construct, its salient concepts and levels of analysis (Merriam, 2009). In keeping with secondary data selection practices and purposive sampling this study's textual data, based on peer-reviewed journal articles, and selection criteria entailed the following, namely:

- The paper had to be published in a scientific, peer-reviewed, scholarly journal;
- Available in English or a translation thereof that accompanied the article;
- Available in full text PDF and HTML format;
- Published from January 2000 until December 2012;
- Address the research question and at least one sub-question;
- Address at least one salient component and a level of analysis; and
- Comprise of a quantitative study based on the following rationale:
  - Quantitative data analysis are exposed to validity and reliability testing;
  - Causal relationships are highlighted;
  - Quantitative studies employ a deductive process; and
  - Generalisations generate insight and understanding that result in alternative, unique, or new taxonomies and classifications of the competence construct.

Journal articles excluded by this study entailed the following, namely:

- The paper was written in a foreign language and an English translation did not accompany the paper;
- It was published before the year 2000; and in 2013 as most articles are under embargo and not all will be made available as full text articles on the databases;
- Addressed competence, but not within the context of this study, in that it focussed on competence requirements and models (e.g. human resources practitioner's competences; or competences required at a specific pharmaceutical organisation) or human resources management disciplines (e.g. competences required in terms of general employability) not applicable to this study's research question;
- Addressed competence measures but did not include human capital valuation measures that can be linked to monetary assessments/terms (e.g. assessment centres or 360<sup>o</sup> job/performance analysis measures);
- Addressed HCV measures but did not include competence variables (e.g. measures that calculate human capital but focus on financial accounting measures, or balance sheet indicators);
- Addressed all the salient concepts and levels of analysis, but was a qualitative study; and
- Was a quantitative study, but the PDF file was encrypted, which did not allow for computer-assisted qualitative data analysis software coding.

In managing the selection process textual data matrix tables were created and populated according to the following criteria, namely: citation (author and date); salient concepts (perspectives, definitions, frameworks, models, variables, and measures); and keywords (competence, competency, competencies, and human capital).

This study employed the successive fraction document selection method (or the funnel approach), whereby vast amounts of documents were reduced by eliminating irrelevant documentation (journal articles) (Rowley & Slack, 2004).

Similar to Buykx, Humphreys, Wakerman, and Pashen's (2010), Figure 3.1 provides a schematic presentation of this study's successive fraction and selection process discussed below.

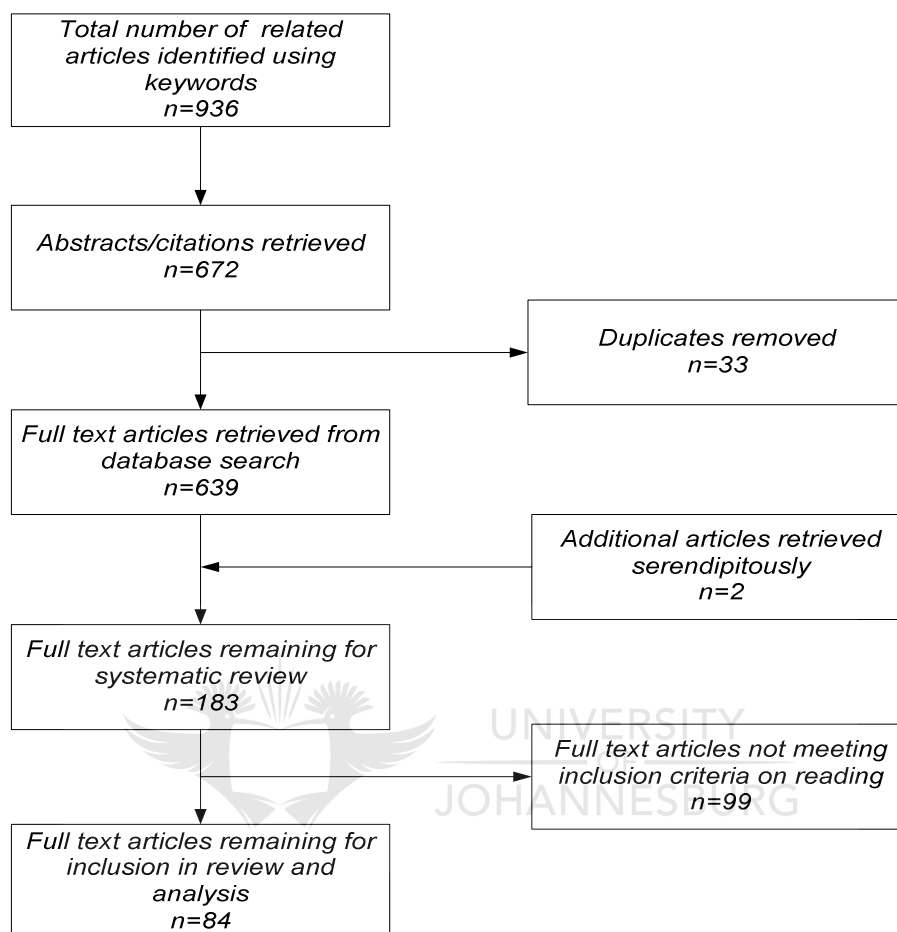


Figure 3.1. Data Selection Procedure

This study's sample selection procedure, illustrated above, entailed the following, namely:

- The keyword search in EBSCOHost and Emerald rendered  $n=936$  articles applicable to this study. The successive fraction process involved scanning abstracts and citations that eliminated a further  $n=264$  articles.
- A duplicate search was conducted that eliminated  $n=33$  articles, whereby  $n=639$  articles remained. A cross-reference validation was conducted in Google Scholar, which yielded two serendipitous articles;  $n=193$  were retrieved and downloaded from the related databases.



- The articles were systematically scanned to identify qualitative and quantitative studies, whereby n=183 of quantitative studies were applicable to this study. However, according to the criteria established above n=99 studies were eliminated;
- n=84 Sample articles remained for analysis.

The section below will address the recording of data

### 3.6.6 Recording of data.

Schurink (2010) advised that data should be organised to ensure ease of access and recommend the creation of a backup and safeguarding system. To spread the risk of loss of data, all relevant documentation, and files was recorded (stored) in three locations. Firstly, electronic copies were uploaded bi-weekly on an external hard drive and kept at the researcher's home; secondly electronic copies were uploaded weekly into Dropbox, a web-based third party virtualised pool hosting (cloud storage) service; and lastly a printed file copy of ATLAS.ti reports was created and kept at the researchers home.

The section below will address the presentation of data.

### 3.6.7 Presentation of data.

This study's findings will be presented in a narrative format that will focus on themes that employed an inductive reasoning (a posteriori) process (Braun & Clarke, 2006; Grbrich, 2007; Snape & Spencer, 2003), and presented according to study's conceptual framework process' salient concepts and levels of analysis, as shown in Figure, 3.2:



Figure 3.2. Conceptual Framework

Themes related to each salient concept and levels of analysis will present major findings supported by an example in the form of a relevant quotation and citation, followed by a discussion of the theme and a synthesis thereof.

The section below will address data analysis.

### **3.6.8 Data analysis**

This study's content analysis, with the use of Atlas.ti, interpreted the textual data to establish and develop themes presented in this study's findings (Braun & Clarke, 2006; Mouton, 2001). Upon analysing the textual data's content, this study utilised Boyatzis' (1998) six-step approach, and discussed below.

#### ***3.6.8.1 Step 1: Becoming familiar with the data.***

During this study's research proposal stage (refer to Section 1.3) an initial review of literature revealed that the competence construct was guided by salient concepts such as the perspective (context) in which it operated; the definitions according to which it was delineated; the frameworks and models from which it was constructed; and the variables identified, and the measurements it applied. The researcher uploaded journal articles onto ATLAS.ti and in becoming familiar with the textual data the researcher read and re-read the journal articles, which allowed for interpretation, and development of a codebook (coding scheme), within ATLAS.ti.

#### ***3.6.8.2 Step 2: Generating initial codes.***

The researcher generated a codebook by labelling each code according to this study's salient concepts and level of analysis. Textual data was coded in a systematic manner across the entire data as shown in Table 3.2.

Table 3.2

*Generating Initial Codes*

Thematic coding	Elements of a good code	Example related to this study
A label	What am I going to label it?	Perspectives_LoA: Individual
A definition	How am I going to define it?	<ul style="list-style-type: none"> <li>• <i>Perspective</i> = way of regarding something; a point of view ("Oxford English Dictionary Online," 2012);</li> <li>• <i>LoA</i> = level of analysis that focuses on the individual (employee) as a distinct research target (Robbins et al., 2010); and</li> <li>• <i>Individual</i> = refers to the attributes and characteristics of the employee distinct from a team/group or an organisation ("Oxford English Dictionary Online," 2012).</li> </ul>

After completing the coding exercise, the researcher generated quotation and co-occurring code reports as a tool to search for themes within the coded data.

### **3.6.8.3 Step 3: Searching for themes.**

Based on the research question and objectives, the researcher examined and organised code items according to potential themes. In selecting overarching themes and sub-themes, the process required reflection on and making value-judgements based on the quotation and co-occurring code reports. The researcher created creation of matrix table, as a visual presentation of the data that assisted researcher in identifying patterns and allocating themes to the coding items.

### 3.6.8.4 Step 4: Reviewing themes

The next step required the re-examining of themes to ensure accurate coding and to remove and reduce the number of overlapping and irrelevant themes. Braun and Clarke (2006) recommend that "...data within themes should cohere together meaningfully, while there should be clear and identifiable distinctions between themes" (p. 91), which as a strategy utilised by the researcher.

### 3.6.8.5 Step 5: Defining and naming themes.

Based on steps three to five (i.e. Sub-sections 3.6.8.3 to 3.6.8.5), themes selected for this study were clearly delineated and defined. Table 3.3 includes an example of how this study identified the first theme (i.e. job-person perspective) linked to individual-level perspectives:

Table 3.3

#### *Defining and Naming Themes*

Thematic coding	Elements of a good code	Example related to this study
Definition of how the theme occurs	How will I recognise it in the data?	"The <u>person-focused approach</u> considers a <u>manager's</u> performance in terms of how it relates to their <u>personal background</u> , <u>personality</u> , <u>values</u> , <u>motivation</u> ... to identify the characteristics that distinguish <u>superior</u> from average managerial <u>performance</u> " (Cheng, Dainty, & Moore, 2005, pp. 382-384).
Description of thematic inclusions	What do I include?	The person-focused perspective that refers to an individual's behavioural characteristics linked to superior performance.
Description of	What do I exclude?	A perspective that does not focus on

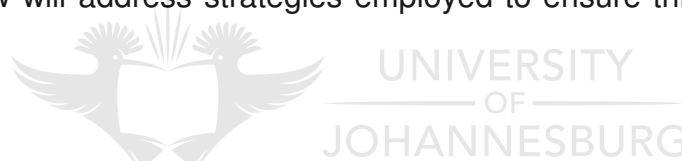
Thematic coding	Elements of a good code	Example related to this study
thematic exclusions		individual behaviour such as job-characteristics linked to minimum job requirements and job standards.

Defining and refining themes involves a dynamic process that produced the overall narrative presented in the findings and discussion outlined in Section 4.2.

### **3.6.8.6 Producing the report.**

The final step required the "...selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature" (Braun & Clarke, 2006, p. 87), and presented in Section 4.2.

The section below will address strategies employed to ensure this study's research quality.



### **3.6.9 Strategies to ensure research quality.**

Strategies utilised to ensure quality are reliability, validity and objectivity are in general attributed to the quantitative research paradigm (Golafshani, 2003), however Lincoln and Guba (1985, as cited in Denzin & Lincoln, 2011) and Seale (2003) proposed trustworthiness as an alternative, that involves following criteria:

- Credibility as an alternative to internal validity;
- Transferability as an alternative to external validity;
- Dependability as an alternative to reliability; and
- Confirmability as an alternative to objectivity.

As suggested by Lincoln and Guba (1985, as cited in Denzin & Lincoln, 2011) and Seale (2003) and based on instrumentality and criteria to improve trustworthiness, this study applied the following strategies to improve its trustworthiness, as shown in Table 3.4.

Table 3.4

*Strategies Applied to Improve Trustworthiness*

Instrumentality	Criteria	Strategies applied by this study
Credibility as internal validity	Extended fieldwork	Peer reviewed quantitative scholarly journal articles were collected over period of time spanning from 2000 until 2012, and systematically examined and interpreted to identify salient concepts, levels of analysis and related themes.
	Low inference descriptors:	Reporting of the data's findings included actual words and phrases that appeared in the textual data (i.e. quotations and citations applied in Section 4.2).
	Peer review	This study was subjected to a single peer-review after it was concluded.
Transferability as external validity	Data triangulation	Multiple data sources were applied to understand the competence construct, and information and conclusions were cross-referenced with literature to establish confirmation or rejection thereof (refer to the sources in text and list of references).
	Database	Data sources such as matrix tables that included quotations and citations were developed to allow for replication of this study by other researchers. All textual data utilised have been referenced, digital object identifiers (doi) and online publication websites, if available, were included in the list of references.
Dependability as reliability	Pattern identification	Patterns and themes were identified (refer to Sub-section 3.6.8), defined and presented according to this study's conceptual framework (refer to Section 4.2)

Instrumentality	Criteria	Strategies applied by this study
Confirmability as objectivity	Reflexivity	The researcher was aware of the biases and predispositions she holds and intentionally applied critical self-reflection to minimise the influence thereof during the design, analysis, and reporting processes.

### **3.6.9.1 Research reporting and writing style.**

Tenenbaum & Driscoll (2005) state that qualitative studies "...selects, transforms and interprets facts and findings to tell a particular research tale" (p. 624). In line with this study's ontological stance, its narrative involves the realist tale. According to Van Maanen (2011) the realist tale encompass the following characteristics, namely:

- The researcher is absent from the text because it focus solely on the research participants.
- The researcher acts as an impersonal agent, who communicates the research participants' thoughts, feelings and perceptions, thereby avoiding any alternative views or her own "...personal bias, political goals or moral judgement" (p. 4).
- Themes links researcher's observations and reflections to describe the phenomenon in detail, but little is revealed about the participants' experiences, thereby focussing on 'what' is communicated rather than 'how' it is communicated
- This study's findings are arranged in a systematic manner to demonstrate themes the researcher deem important to be included in this study by only including sufficient data to support the analysis (Van Maanen, 2011).

The following section will address this study's strengths, weaknesses, and sources of error.

The section below will focus on ethical considerations.

### 3.7 ETHICAL CONSIDERATIONS

Babbie (2001) cautions researchers to pay attention to the general conformity of what is appropriate and inappropriate conduct during the research process. The nature of this study required the researcher to be aware of axiological issues and her conduct related to her own values, morality, and ethics (Hart, 2002) that may influence this study. In addition, thereto, the researcher followed and abided by the University of Johannesburg's Industrial Psychology and People Management's Department's Code of Ethics.

Informed consent refer to research participant's voluntary agreement to participate in a study (Holloway & Wheeler, 2013). During the data collection process seven journal articles were applicable to the study, however during the coding process it was found that articles' text (fonts) were embedded and data was illegible. As a result, the researcher viewed that the owner/publisher did not provide 'consent' to change the format, which led to the data being discarded.

Inferences and conclusions of the data by the researcher, may cause a potential conflict of interested with research participants intention (Schutt, 2011). The researcher was vigilant in interpreting and reporting the data accurately within its relevant context, thereby not manipulating and/or misrepresenting author's interpretations and conclusions.

Given that the study investigated existing scholarship, the researcher was mindful of not committing plagiarism; all references to academic work, other than the researcher's own insights, were cited (Neuman, 2003) and paraphrased in an appropriate manner. To ensure that the researcher did not inadvertently commit plagiarism, the study was subjected to an academic plagiarism regulatory service, namely Turnitin, which is a web-based software programme that exposes copied and plagiarised work.

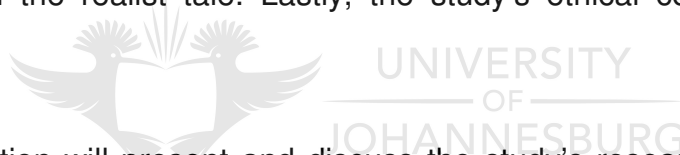
The following section concludes this study's research design.



### 3.8 CONCLUSION

This section outlined the study's qualitative research approach, highlighted key scientific beliefs related to critical realist ontological beliefs and an interpretivist epistemological approach. This study's research strategy focused on a systematic literature review that allowed for a content analysis and identifying themes that addressed the research question and objectives.

The research method disclosed the research setting and clarified the researcher's role as the main instrument in conducting the study. The data collection method and sampling procedures applied purposive sampling selection criteria. Data was recorded in various locations and presented according to a conceptual process framework. Textual data was analysed as per content and details provided a systematic literature review by way of inductive reasoning. The study's research quality strategies focussed on how trustworthiness was achieved and textual narrative involved the realist tale. Lastly, the study's ethical considerations were addressed.



The following section will present and discuss the study's research findings and in doing so will address the study's research questions and goals.

## Chapter 4: Research Findings and Discussion

### 4.1 INTRODUCTION

The previous chapter covered this study’s design, approach, method, and ethical considerations followed in addressing the research problem.

This chapter will present the findings and discussions of themes uncovered during examination and analysis of textual data, followed by a synthesis will conclude the salient concepts by emphasising the main findings and closing interpretative comments thereof. Following the main research question and objective, this study and set out to answer 18 research sub-questions and sub-goals, as shown in Figure 4.1.

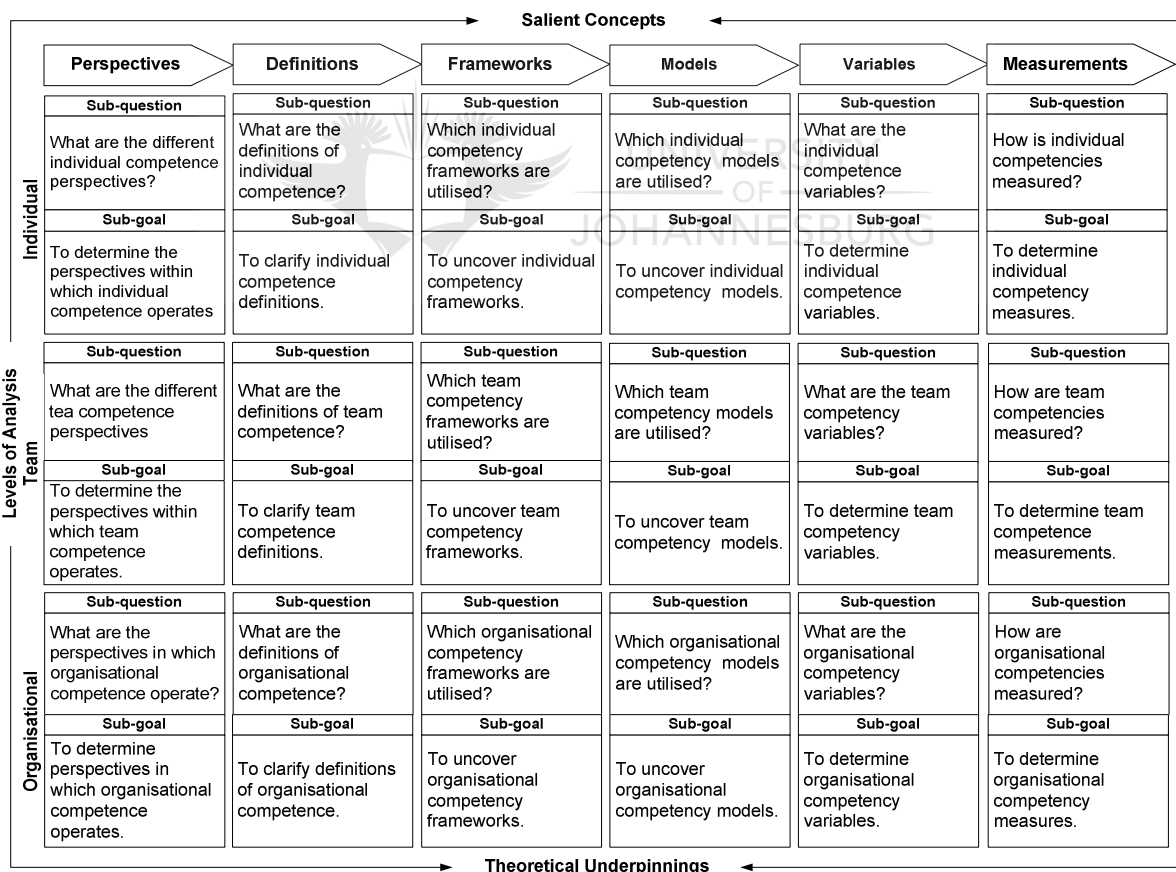


Figure 4.1 The Conceptual Process Framework Contextualising Research Questions and Objectives

The following section will address the themes uncovered from the textual data collected and analysed.

## 4.2 THEMES UNCOVERED

The section below will address themes related to individual, team, and organisation level competence perspectives, as shown in Figure 4.2.



Figure 4.2. Conceptual Framework: Perspectives

### 4.2.1 Perspectives.

The section below will present themes related to individual, team, and organisation level perspectives.

#### 4.2.1.1 Individual level.

Two major themes related to individual competence findings has emerged, firstly, from a person-focused perspective and secondly, from a job-focused perspective.

##### 4.2.1.1.1 Theme 1: Person-focused perspective.

This theme relates to a person-focused perspective that views individual competencies as underlying characteristics responsible for effective or superior job performance, and described as:

The person-focused approach considers a manager's performance in terms of how it relates to their personal background, personality, values, motivation and so on ...The current use of the person-focused approach used in the USA originates from the studies of McBer Associates commencing in the 1970s as an attempt to identify the characteristics that distinguish superior from average managerial performance. As competencies are seen not as the functional tasks of the job, but rather as those actions, which enable people to carry out their job

effectively (Mansfield, 1999), personal qualities are central to this approach. (Cheng, Dainty, & Moore, 2005, pp. 382-384)

As a sub-theme the rationalist approach, correspond with the person focus perspectives that relate to an individual's attributes (underlying characteristics) linked to superior performance, namely:

... the rationalist approach toward human competence [is described as] as an attribute-based phenomenon. In this approach, workers with better knowledge and skills will automatically outperform others. In the past, competence was more about potential or qualification, or IQ, and was referred to as a competency. (Heijde & Van Der Heijden, 2006, p. 452)

The findings revealed that underlying characteristics such as motives, values and attitudes, and KSAs (Cheng et al., 2005; Heijke et al., 2003; Lim, Chan, & Dallimore, 2001; Namvar, Fathian, Akhavan, & Gholamian, 2010; Urtasun & Núñez, 2012; Wickramasinghe & De Zoyza, 2008) differentiate between superior and effective performance (Cheng et al., 2005).

The literature review documented similar positions, such as the psychological and competency-based perspectives (US approach) (Le Deist & Winterton, 2005; Markus et al., 2005). Both perspectives confirm that competencies entail underlying characteristics (composed of personality and motivational factors) and KSAs that predicts superior or effective performance (Boyatzis, 1982; Hood & Lodge, 2004; Le Deist & Winterton, 2005; Markus et al., 2005; Spencer & Spencer, 1993).

#### 4.2.1.1.2 Theme 2: Job-focused perspective.

This theme relates to competence from a *job-focused* perspective that centres on job-related functions and standards:

The job-focused approach concentrates on identifying the key tasks of managerial work. This approach treats the job as existing independently of the jobholder. It can be analysed completely into a coherent set of discrete

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elements. This view corresponds with functionalist approaches such as those found within the UK and Europe ... Competence is expressed in terms of the job purpose and the standards of performance expected to be achieved. (Cheng et al., 2005, p. 382)

However, the job-focused perspective has been:

...widely criticised for the inappropriate and inflexible standards that it promotes ... [and do] not take account of the complex and dynamic context in which managerial performance is manifested ... the British National Vocational Qualifications Framework/competence-based approach maintains an impoverished view of human action in which individuals are caused to perform against external standards. (Cheng et al., 2005, p. 382)

As a sub-theme, the interpretative approach matches the job-focused approach that relates to knowledge, skill and experience within the work setting:

[The] interpretative approach to human competence at work ... points to the importance of the knowledge and skills people use when working. In this approach, conceptions, rather than attributes, determine the level of competence of individual workers. The experience gained by employees determines the framework or mind-set from which the work is undertaken, and subsequently, the goals set (motivation) and the means, such as knowledge and skills, that are deployed to do the work. (Heijde & Van Der Heijden, 2006, p. 452)

The findings exposed that the job-focused and interpretative perspectives operationalise competence through job-required standards (Cheng et al., 2005) that centres on an individual's ability to demonstrate job-related performance outcomes (Lim et al., 2001). However, the emphasis is not on job-related inputs, but on what an individual is required to accomplish, i.e. performance outputs linked to job expertise and required standards (Cheng et al., 2005; Lim et al., 2001).

The literature review documented similar positions based on the educational, labour market and competence perspectives (UK approach) (Hood & Lodge, 2004; Le Deist & Winterton, 2005; Markus et al., 2005; Van Loo & Semeijn, 2004). Both perspectives centres on vocational and technical qualifications that sets minimum performance standards against which individuals are required to demonstrate job-related KSAs (Hood & Lodge, 2004; Le Deist & Winterton, 2005; Markus et al., 2005; Van Loo & Semeijn, 2004).

However, the findings failed address competence's human resources perspective that focus on an individual's potential and the development of KSAs that will address an organisation's current and future skill requirements in support of its strategic focus and objectives (Van Loo & Semeijn, 2004). The findings' criticism of the job-focused inflexible approach to external performance standards (Cheng et al., 2005) and its failure to include the human resources perspective behavioural components (Van Loo & Semeijn, 2001) have highlighted the research problem that require further investigation .

The section below will present the findings and discussion related to a team level competency perspectives.

### **4.2.1.2 Team level.**

The textual data did not reveal sufficient findings and themes associated with team level perspectives. The literature review made one reference to team perspectives, which is based on competence's non-legal meaning within an organisation's core competencies' domain (Hood & Lodge, 2004). Based on the lack of findings, the researcher is unable to determine whether team competence is perceived as a composite of individual competencies or as resource linked to an organisation's core competencies.

Both the findings and literature review's failure to address team level perspectives have highlighted an area for further investigation.

The section below will focus on organisation level competence perspectives.

#### **4.2.1.3 Organisation level.**

Two major themes from organisation level findings have emerged, firstly, the RBV and secondly the CBV.

##### *4.2.1.3.1 Theme 1: Resources-based view.*

This theme refers to the RBV perspective that links competence to tangible and intangible capabilities responsible for attaining strategic objectives and sustained competitive advantage:

RBV is built upon the view that a firm's value creation is largely determined by the resources such as assets and/or capabilities it owns and controls. According to RBV, assets that are "owned" and "controlled" by the firm may be tangible or intangible. Examples include in-house knowledge of technology, and employment of skilled personnel ... RBV explains that resources are made productive and valuable through how this resource is managed and developed. Since, the focus of RBV is the efficient management and use of resources and capabilities, RBV becomes useful in interpreting the HC value creation practices adopted by ... firms in this study. (Murthy & Abeysekera, 2007, p. 87)

The findings disclosed that the RBV, a link between resources (assets), capabilities and organisational strategy (Carmeli & Schaubroeck, 2005), consists of three major factors. Firstly, resources that refer to input-based capital such as assets, information or knowledge available to and controlled by the organisation (Carmeli & Schaubroeck, 2005; Yeh, 2008). Secondly, processed-based capabilities that refer to an organisation's ability to deploy resources through routines and practices (Carmeli & Schaubroeck, 2005; Marti, 2004; Murthy & Abeysekera, 2007). Lastly, cross-functional integration of routines and practices based on competencies that refer to skills and resources organisations own, control, deploy and utilise to drive superior performance and competitive advantage (Carmeli & Schaubroeck, 2005; King & Zeithaml, 2001).

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The findings revealed that to remain competitive and maintain sustainability organisations maximise their performance outcomes through the deployment and development of existing resources and capabilities (i.e. human capital differentials), (Hsu, Lin, Lawler, & Wu, 2007). An organisation's strategic outcomes and sustained competitive advantage depends on how well managers (individuals) create and/or develop their organisation's resources (assets) (King & Zeithaml, 2001), which is based on five criteria. Firstly, resources (assets) that are valuable exploit opportunities, neutralise threats, and allow organisations to develop and implement strategies, such the deployment of individual competencies that improve an organisation's effectiveness and efficiencies (Yeh, 2008) through market driven and cost reduction strategies (Heijde & Van Der Heijden, 2006). Rare resources (assets) are scarce and owned by a few organisations who creates competition dynamics that do not allow existing or future competitors to gain an advantage therefrom (Carmeli & Schaubroeck, 2005; Carmeli & Tishler, 2004; Yeh, 2008). Inimitable resources (assets) are valuable, rare, and difficult for competitors to obtain are safeguarded by three factors, such as history dependent factors (i.e. first to market); causally ambiguous (i.e. a vague understanding of how resources/assets are protected from being imitated); and socially complex (i.e. resources/assets that are time consuming and expensive to imitate). Non-substitutable resources (assets) that cannot be readily replaced by alternative resources or at the same level of effectiveness by others other than the owner thereof (Carmeli & Schaubroeck, 2005; Carmeli & Tishler, 2004). Non-transferable resources (assets) cannot be easily obtained (purchased) by other organisations or competitors (Carmeli & Schaubroeck, 2005; Carmeli & Tishler, 2004).

The findings yielded a significant result in that inimitability is considered to be the most important requirement in creating and sustaining an organisation's competitive advantage (King & Zeithaml, 2001).

The literature review described the RBV as tangible resources and intangible asset capabilities that are leveraged to meet an organisation's strategic objectives, maintain a competitive advantage, and produce economic value based on criteria that are valuable, rare, inimitable and sustainable (Barney, 1991; De Toni & Tonchia, 2003; Lee et al., 2008; Seyyedjavadin & Zadeh, 2011; Tippins et al., 2003).



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It is evident that the findings explicated the RBV in detail, clarified resources, and identified factors linked to the creation of economic value. It further clarified inimitability are socially complex factors that was not explicated in the literature review.

### *4.2.1.3.2 Theme 2: Competency-based view.*

This theme relates to competence from the CBV perspective that utilises organisations human resources' (individuals and teams) competencies to achieve its strategic objectives:

[The] competency-based approach puts the human being at the centre of attention and underlines the importance of human resources to reach the objectives of the organization. Therefore, competencies should be the common language of the human resource system, which enables the organization to match its human resources against the resources it needs. Competency-based approaches can facilitate in the identification of skills, knowledge, behaviours and capabilities needed to meet current and future human resource needs in alignment with the strategies and organizational priorities and can focus on the individual and group [team] development plans. (Wickramasinghe & De Zoyza, 2008, pp. 339-340)

The CBV further clarify an organisation's performance and a attaining its sustained competitive advantage as follows:

The CBV ... postulates that firm individual distinctive competences are the basic source of competitive advantages and economic rents ... [and] seeks to explain organisational performance through the different types of advantages a firm can achieve over its competitors ... The basic proposition of the CBV is concerned with the achievement of sustainable competitive advantages supported by the accumulation of strategic assets. (Camisón, 2004)

The findings determined that the CBV represents the intellectual capital element linked to the RBV responsible for generating value and organisational wealth (Lim et

al., 2001; Veltri & Silvestri, 2011). An organisations' distinctive individual capabilities, knowledge and skill, obtained from education and job-related experienced is difficult for competitors to imitate (Colombo & Grilli, 2005). Therefore, the combination of individual capabilities, organisational systems, core competencies and the manner how these resources (assets) are managed provide for a sustained competitive advantage (Heijde & Van Der Heijden, 2006; Wickramasinghe & De Zoyza, 2009).

The literature review presented a similar view that emphasised the shift from a short-term tasked-based approach (RBV) to long-term strategic organisational requirements based on individuals' and team members' capabilities to meet current and future strategic objectives (De Toni & Tonchia, 2003; Draganidis & Mentzas, 2006; Nilsson & Ellström, 2012). The findings confirmed the literature reviews assertion that an organisation's core competencies serve as a source of value-add imitability and sustainability that maintains a competitive advantage (De Toni & Tonchia, 2003).

The following section presents a synthesis of the findings and discussion above.

### 4.2.2 Synthesis.

Individual level perspectives view competence from two contrasting interpretations. Firstly, the person-focused perspective is derived from the industrial psychological/human resources (behavioural) domain that centres on successful individuals who possess suitable underlying characteristics (attributes and KSAs) associated with superior performance (Cheng et al., 2005; Hood & Lodge, 2004; Le Deist & Winterton, 2005; Markus et al., 2005). Secondly, the job-focused perspective is derived from the human capital domain (i.e. labour economic and educational) that centres on technical (functional) job characteristics (KSAs) demonstrated successfully by individuals/graduates (Cheng et al., 2005; Heijde & Van Der Heijden, 2006; Hood & Lodge, 2004; Lim et al., 2001; Markus et al., 2005; Van Loo & Semeijn, 2004). Therefore, individual competence is viewed from either a behavioural (person-focused) or a functional (job-focused) perspective.

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This study was not able to uncover sufficient findings related to team level perspectives and was therefore unable to establish whether teams are composites of individual level perspectives and/or whether it relates to a behavioural or a functional perspective.

Organisational level perspectives view competence from complementary interpretations, namely the RBV and the CBV. The findings explicated that both perspectives utilise organisational asset capabilities (core competencies) and competencies (individual and team-related KSAs and attributes) a source of adding value and maintaining a competitive advantage (Barney, 1991; Carmeli & Tishler, 2004; De Toni & Tonchia, 2003; Draganidis & Mentzas, 2006; Hsu et al., 2007; I. Y. Huang, Wu, & Lee, 2007; Murthy & Abeysekera, 2007; Nilsson & Ellström, 2012; Seyyedjavadin & Zadeh, 2011; Tippins & Sohi, 2003; Wickramasinghe & De Zoyza, 2008, 2009; Yeh, 2008).

Given that resources and assets are valuable, rare, inimitable, and sustainable (Barney, 1991; Carmeli & Schaubroeck, 2005; Carmeli & Tishler, 2004; King & Zeithaml, 2001; Yeh, 2008). This study revealed a significant result that inimitability is responsible for an organisation's competitive advantage (De Toni & Tonchia, 2003). Factors linked to inimitability, such as historically dependent, causal ambiguity and socially complex resources/assets is responsible for gaining and maintaining a competitive advantage (Barney, 1991; King & Zeithaml, 2001; Yeh, 2008).

The section below will address themes related to individual, team, and organisation level competence perspectives, as shown in Figure 4.3.



Figure 4.3. Conceptual Framework

### 4.2.3 Definitions.

The section below will present themes related to individual, team, and organisation level definitions.

#### 4.2.3.1 Individual level.

Two major themes, namely behavioural competencies and organisation-specific competence definitions have emerged from individual level findings.

##### 4.2.3.1.1 Theme 1: Behavioural competencies.

This theme refers to the development of broadly defined competencies to specific behavioural attributes, namely:

The definition of [a] competency has evolved from a broad view that related competency to any psychological or behavioural attribute associated with success, to a more specific view of competency as knowledge, skills, abilities, or other characteristics that differentiate high from average performance. (Urtasun & Núñez, 2012, p. 430)

Behavioural attributes, known as underlying characteristics, consists of a range of factors that is responsible for the execution of superior and/or effective performance:

Competency ... describe[s] an underlying characteristic of an individual that is causally related to effective or superior performance in a job ... there was no single factor but a range of factors that differentiated superior from average performers. These included personal characteristics, experience, motives, and other attributes. (Wickramasinghe & De Zoyza, 2009, p. 346; Wickramasinghe & Kumara, 2009, pp. 172-173)

The findings revealed that an organisation's needs and environment will determine its individual's underlying characteristics and KSA requirements (i.e. behavioural competencies) to ensure superior and/or effective performance (Ahmed, Rafiq, & Saad, 2003; Dwivedi, 2001; Nurach, Thawesaengskulthai, & Chandrachai, 2012;

Pillay, 2008; Shin & Park, 2009; Wickramasinghe & De Zoyza, 2008). In turn, the collective application of behavioural competencies (Wickramasinghe & De Zoyza, 2008) will drive organisational performance, ensure value-add (Ahmed et al., 2003; Nurach et al., 2012; Rompho & Siengthai, 2012) and maintain its competitive advantage (Urtasun & Núñez, 2012), thereby highlighting a significant finding that links competencies to HCV measurement variables.

The literature review defined behavioural competencies in a similar manner. A competency refer to underlying characteristics involving attributes such as motives, traits, self-concept, social roles and value orientation, and KSAs (Boyatzis, 1982; Dalal, 2006; Jackson & Schuler, 2006; McClelland, 1973; Meyer, 1996; Spencer & Spencer, 1993) that distinguish between superior and effective job performance (Boyatzis, 1982; Meyer, 1996; Spencer & Spencer, 1993). Knowledge refer to cognitive processes responsible for conceptualising, processing and utilising information (Meyer, 1996; Spencer & Spencer, 1993). Skills involve the explicit demonstration of cognitive or physical activities (abilities) based on well-defined job-related standards (Meyer, 1996). Job performance refer to how individuals act, relate to others and behave within a given context (Meyer, 1996; Spencer & Spencer, 1993). Behavioural competence differentiate between superior (differential competencies) and effective (threshold competencies) performance that will identify an individual's behavioural and job success factors (Spencer & Spencer, 1993; Spencer, 2003) that drives an organisation's economic value (Spencer & Spencer, 1993).

The study revealed a significant finding based on differential competencies (superior performance), as a capability variable for measuring HCV, which is based on its ability create organisational value add and maintaining a competitive advantage (Ahmed et al., 2003; Nurach et al., 2012; Rompho & Siengthai, 2012; Spencer, 2003).

### 4.2.3.1.2 Theme 2: Organisation-specific competence.

This theme centres on general or specific individual level performance requirements (competence) in executing a job (function), namely:

Competences are often classified according to the extent to which their application is related to a particular context, such as a job, a firm, or an occupation. A well-known classification of competences is [the] distinction between general and firm-specific competences ... by distinguishing between competences that are specific to firms (firm-specificity), tasks (task specificity) and economic sectors (industry specificity). (Garcia-Aracil, Mora, & Vila, 2004, p. 289)

Based on organisation-specific competence:

Human capital is referred to the knowledge, competences, and technical skills owned by the employees. The basic element of human capital is the tacit knowledge owned by the people who operate inside the organization. This knowledge is defined as the amount of those skills needed to carry out a task, which cannot be codified and are not therefore transmittable in any way but through direct experience. (Longo & Mura, 2007, p. 551)

The findings disclosed that individual acquire knowledge and technical skills through investments in schooling (training and education) and experience gained within the labour market/job context (Garcia-Aracil et al., 2004; Whiting & Chapman, 2003). An individual demonstrate competence in executing a function or task according to organisation-specific KSA requirements (i.e. organisational standards) (Ahmed et al., 2003; Garcia-Aracil et al., 2004; Heffernan & Flood, 2000).

The literature review define competence in a similar manner, whereby individuals are required to demonstrate their ability based on occupational standards (Bartram & Roe, 2005; Roelofs & Sanders, 2007; Van Loo & Semeijn, 2004; Woodruffe, 1993). Occupational standards are determined by organisations, and refer to skills and

levels of expertise obtained from training and education and experience within a given occupation or profession (Van Loo & Semeijn, 2004).

The section below will focus on team level definitions.

### **4.2.3.2 Team level.**

The findings exposed two major themes linked to team level definitions; firstly team competencies and secondly, the I-P-O competency framework.

#### *4.2.3.2.1 Theme 1: Team competencies.*

This theme describes team competencies as KSAs, i.e.:

[Team] competencies are defined as learned abilities to perform a task, duty, or role in a particular work setting, integrating several types of knowledge, skill, and attitude. Although “teamwork skills” are demanded nearly in every job advertisement today it is still discussed controversially what those teamwork skills might be ... we focus on knowledge, skills, and abilities (KSAs) rather than on personality traits or dispositions as important. (Hertel, Konradt, & Voss, 2006, p. 479)

The findings uncovered the “individual determinant” of teamwork is task work, which is defined as technical (job-related) KSAs and attributes (such as conscientiousness, integrity and loyalty) (Hertel et al., 2006, p. 479). In turn, teamwork in conventional teams focus on individuals’ KSAs, experience and underlying characteristics such role perception and values (Hertel et al., 2006). However, teamwork in virtual teams disregard underlying characteristics and only focus on individuals’ KSAs only, such as interpersonal skills (cooperation and communication) and self-management skills (Hertel et al., 2006).

A pre-requisite for teamwork, based on the following elements, namely:

- Team members’ willingness and ability to contribute to the tea;
- Team member’s level of motivation,
- Methods of interaction with other team members;



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- The degree of acceptance of team norms; and
- Organisational goals (Leggat, 2007).

The literature review documented similar findings, in that team competencies are based on an individuals' KSAs that operate within a team setting such as academic knowledge, the application task work within a given situations, and the necessary values, based on perception and teamwork (social action) (Figl, 2010). However, unlike the literature review, the findings did not indicate the possibility whether individuals who possess generic team competencies could be transferred to other teams; or whether task-generic competencies that focus on specific job-related outcomes can be transferred to other tasks (Figl, 2010), thereby highlighting a gap for further research.

### *4.2.3.2.2 Theme 2: The I-P-O framework team competencies.*

The theme below refers to teams according to an input-process-output (I-P-O) framework that centres on cohesion:

The prominent way of thinking about groups is the input-process-output framework, in which inputs (i.e., collective competency) combine to influence intra-group processes (i.e., group cohesiveness), which in turn affect group performance. That is, competent members in highly cohesive groups engage in synergistic interaction creating better performance. (Shin & Park, 2009, p. 2)

The finding above focus on a team's input as the collective competency that influence intra-team processes, i.e. group cohesiveness as a moderator that, in turn, affect a team's output, i.e. performance (Shin & Park, 2009). The finding is supplemented by the assertion that individual employees' know-how, i.e. inputs, become shared knowledge within an organisation, which is achieved through working teams (Longo & Mura, 2007).

On a superficial level, the findings above seem to correspond with the literature review's I-P-O system framework proposed by Fernandez et al. (2008). However, the findings only provided examples thereby failing to describe individual characteristics'



and KSAs (i.e. inputs), the resources and task demands and the independent acts and behaviours (i.e. processes) that drives the team's efficiency and task/job outcomes (i.e. outputs) (Fernandez et al., 2008). In light thereof, this study highlighted a gap for further research.

The section below will focus on organisation level definitions.

### **4.2.3.3 Organisation level.**

Four organisation level themes were identified, such as distinctive competence, shared competence, organisational competence, and core competencies.

#### *4.2.3.3.1 Theme 1: Distinctive competence.*

This theme describes an organisation's distinctive competence as follows:

A suitable criterion for measuring the distinctive-competenc[e] construct is based on the idea that they are organised according to a certain hierarchical structure which their classification must, therefore, reflect. Bearing this in mind, a hierarchy is proposed that distinguishes: (1) static, or first-level, competence which would be associated with the company's functional activities (such as marketing, operations, and finance); (2) coordination and cohesion, or second-level competence, which include managerial and organisational capabilities linked to the integration and extraction of maximum return from functional activities, as well as the development of firm cohesion; (3) dynamic, or third-level, competence which include skills for managing knowledge and innovation, as well as the ability 'to learn to learn', and to learn faster, than the competition. (Camisón, 2004, p. 2240)

The findings present distinctive competence according to a three-tier hierarchical order, which allows for the execution thereof. The first level (static) competence refers to functional activities. The second level (coordinate and cohesion) refer to managerial and organisational capabilities responsible for delivering maximum return on investments (value) and cohesion (sustainability). The third level execute KSAs,

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whereby skills are applied to manage knowledge and innovation (advancement and value creation), and abilities are utilised to learn faster than the competition (competitive advantage) (Camisón, 2004).

The literature review, like the findings, define distinctive competence as adaptations of its own purposes and programmes that includes functional activities (e.g. financial management) wherein organisations invest and protect (Andrews, 1971; Selznick, 1957). The execution of a number of skills leads to distinctive competence, considered to be an important determinant of strategic value and sustained competitive advantage (De Toni & Tonchia, 2001; Henderson & Cockburn, 1994).

### *4.2.3.3.2 Theme 2: Organisational competence.*

This theme refers to individuals' functional competence that contributes towards organisational performance, namely:

Organizational competenc[e] can be derived from all employees within the firms such as management, project team, project manager and employees. Personal competencies will create organizational ones. This paper therefore focuses on personal competencies, which will drive the organizational ones and contribute to increase corporate performance. (Nurach, Thawesaengskulthai, & Chandrachai, 2012, p. 233)

The findings revealed that organisational competence consists of human capital, based on composite individual KSAs (capabilities) (Camisón, 2004; Chang & Ahn, 2005), learning (training and education) and value characteristics (Whiting & Chapman, 2003), which owned and controlled by the organisation (Camisón, 2004). However, the nature of organisational knowledge and individual knowledge is different. An organisation's knowledge is explicit, independent and will remain within the organisation through its routines, activities, structure and culture (Camisón, 2004; Marti, 2004), whereas individual knowledge is tacit, relate to organisational requirements, and is transient as it may exit an organisation at any moment (Camisón, 2004; Chang & Ahn, 2005). In addition thereto, through the application of its dynamic capabilities (i.e. market orientation or human resources), organisations

will develop alternative competencies, such as core competencies (Chang & Ahn, 2005).

The literature review documented a similar outcome that refer to organisational competence as the deployment of assets and activities, which stored within the organisation, and possess of dynamic capabilities (Guallino & Prevot, 2003; Sanchez & Heene, 1997). However, unlike the literature review, the findings did not explicitly refer to its dynamic nature responsible for superior organisational performance levels.

### 4.2.3.3.3 Theme 3: Shared competencies.

The following theme is an unexpected finding, which the literature review did not address. Shared competencies operate within an industrial district (i.e. similar (related) organisations) in a given territory that differentiates between internal and external competitors, and where its members have access to resources and capabilities (Camisón, 2004):

Shared competenc[ies] in an industrial district include the assets of knowledge, information, and learning deposited in a territorial environment close to the firm; the flexibility in production achieved by the district as a whole in the style of almost vertical integration; and the industrial culture solidly established in the territory. These competenc[ies] are based on network assets derived from stable, long-term cooperative relationships between the agents in the local environment. (Camisón, 2004, p. 2230)

The findings refer to shared competencies as resources and capabilities (distinctive competence) possessed by independent organisations, who functions as free agents within an industrial district, and in which collaborating organisations participate (Camisón, 2004). Shared competencies' comprise of the following characteristics, namely:

- Its competitive advantage is based on information, knowledge and learning that reside within the industrial district;

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- Its embeddedness within the industrial district, which is only accessible to member organisations (i.e. exclude competitors); and that
- A causal relationship exist between its embeddedness in the industrial district, the member organisations' distinctive competence and intra-district shared competencies that will result in organisational performance and competitive advantage (Camisón, 2004).

### *Theme 4: Core competencies.*

This theme refer to core competencies based on collective organisational learning processes and application of knowledge and skill across organisational boundaries, namely:

... defined core competency as one which differentiates a firm from its milieu ... [that] ... are usually the result of “collective learning” processes and are manifested in business activities and processes. The core competencies are those unique capabilities, which usually span over multiple products or markets ... that are widespread in the corporation. It results from the interaction between different SBUs' [strategic business units] competencies. Core competencies are skills and areas of knowledge that are shared across business units and result from the integration and harmonization of SBU competencies. One useful finding of [the] analysis is that although Company A regards its core business as manufacturing engineering, the core competencies reside in the sales and marketing area. (Agha, Alrubaiee, & Jamhour, 2011, p. 193)

A surprising result highlighted the notion of individual knowledge, experience, and expertise (know-how) responsible for core competencies and organisational value creation, which is defined as:

... an organisation-based capability that combines and integrates the skills of a set of practitioners working across different business units, and creates superior value for customers. In other words, a core competenc[y] is the

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organisational version of unique individual know-how. (Ahmed, Rafiq, & Saad, 2003, p. 1224)

The findings explicate that by focussing on organisational collective learning processes that is applied across SBUs, manifests in shared skills and knowledge areas (including composites of individual know-how) (Marti, 2004). A surprising finding equate core competencies to core capabilities and intellectual capital defined as “knowledge that can be converted into profits or knowledge that produces value” (Marti, 2004, p. 428), as shown in Figure 4.4.

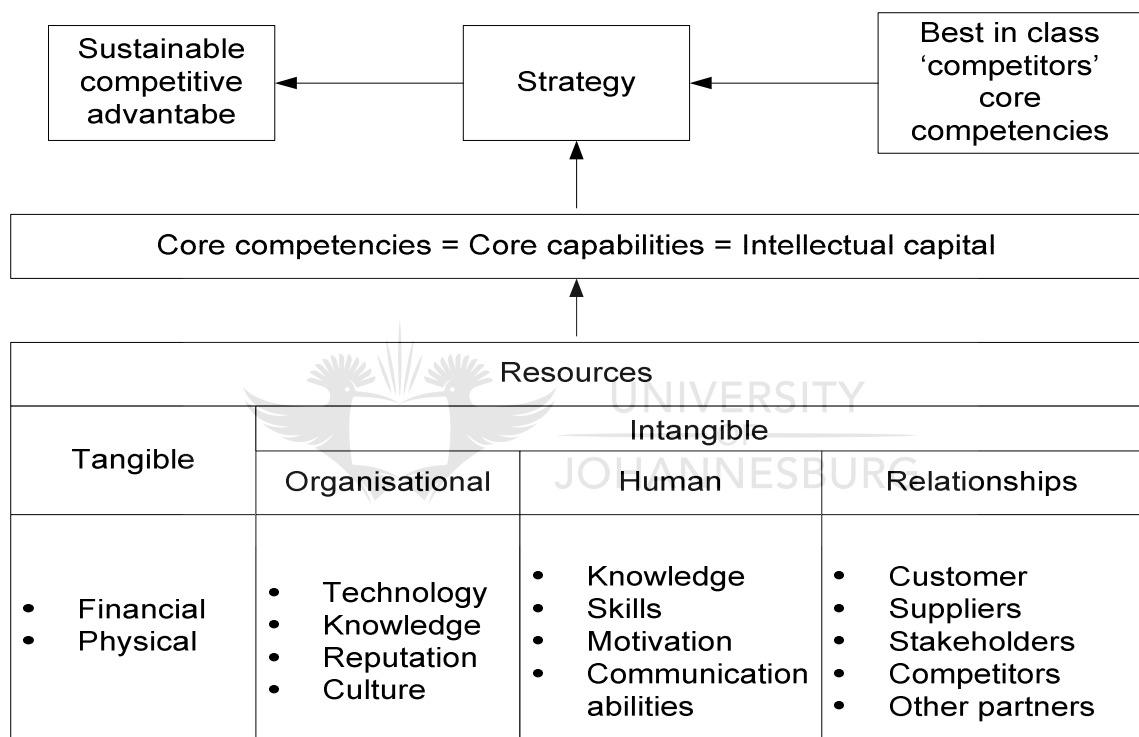


Figure 4.4. Connecting intellectual capital with core competencies and core capabilities. Adapted from “Social Capital Benchmarking System. Profiting From Social Capital When Building Network organisations,” by J.M.V. Marti, 2004, *Journal of Intellectual Capital*, 5:3, 2004, p. 429. Copyright 2004 by MCB University Press.

The following core competency criteria are responsible for creating strategic value and a sustained competitive advantage, whereby it must:

- Make a meaningful contribution to a customers' perceived value thereof.
- Create competitor differentiation by being inimitable,

- Sustainable through the product expansion (Agha et al., 2011).

However, unlike the literature review, the findings did not address organisational capabilities as a core, higher-order or distinct construct linked to organisational-level definitions (Hall, 1992; Lei et al., 1996; Teece et al., 1997), which is restricted to operate within a single business unit (Day, 1994). Despite this exclusion, the researcher is satisfied that the findings addressed core competency capabilities based on the statement that that core competencies operates across strategic business units in a coordinated manner and responsible for strategic value and competitive advantage (Ahmed et al., 2003; Camisón, 2004).

The following section presents a synthesis of the findings and discussion above.

#### **4.2.4 Synthesis.**

Individual level competence defines two distinct descriptions, which was established from the two perspectives identified in Sub-section 4.2.1. Behavioural competencies, based on the person-focused perspective, delineate KSAs and underlying characteristics (an individual attributes) and that distinguish superior from effective performance (Boyatzis, 1982; McClelland, 1973; Spencer & Spencer, 1993; Urtasun & Núñez, 2012; Wickramasinghe & De Zoyza, 2008, 2009). In turn, superior performance drives an organisation's value and sustains its competitive advantage. Organisation-specific competence, based on the job-focused perspective, delineate KSAs (i.e. technical skills and functional competence) obtained from investments in schooling, experience, and training and development, to be demonstrated against occupational standards (Garcia-Aracil et al., 2004; Heffernan & Flood, 2000; Sauber, McSurely, & Tummala, 2008; Van Loo & Semeijn, 2004) .

Team level competencies highlighted two significant findings. Team competencies distinguish between task work and teamwork. Individuals who possess the necessary KSAs and underlying characteristics required by an organisation perform task work, which in turn is a determining factor of teamwork (Figl, 2010; Hertel et al., 2006). Teamwork in conventional teams requires composite individual KSAs and behavioural activities, while teamwork in virtual teams relies only on composite

individual KSAs (Hertel et al., 2006). I-P-O framework team competencies rely on composite individuals' KSAs (i.e. input) executed by independent acts and behaviours (underlying characteristics) (i.e. processed) that result in efficient performance (i.e. output) (Fernandez et al., 2008; Longo & Mura, 2007; Shin & Park, 2009).

It is evident from both individual and team level competencies that in determining HCV and its proposed application by Roodt (2010), underlying characteristics consists of variables that is applicable to the commitment (C2) construct; similarly, the context in which teamwork operates refer to HCVs context (C3) construct. Given this observation, a challenges, related to the interrelationship between HCVs competence (C1), commitment (C2), and context (C3) construct, pose a challenge in clearly delineating and measuring competence variables.

Organisation level competence presented four major findings. Distinctive competence refer to the application of composite individual KSAs, organisational capabilities and innovation (Andrews, 1971; Camisón, 2004; Selznick, 1957) responsible for creating an organisation's strategic value and sustaining competitive advantage (De Toni & Tonchia, 2001; Henderson & Cockburn, 1994). Like distinctive competence, organisational competence is derived from composite individual KSAs, including its resources/assets' capabilities, which is owned, controlled, and deployed by an organisation (Camisón, 2004) from which alternative competencies are developed, such as core competencies. (Chang & Ahn, 2005). Shared competencies refer to different organisations that operate within an industrial district, its composite individual KSAs, distinctive competencies, and resource capabilities for maintaining their competitive advantage and excluding competitors (Camisón, 2004). Core competencies, which is derived from organisational competence (Chang & Ahn, 2005), refer to an organisation's integrated individual KSAs and distinctive capabilities that spans over multiple products and markets (Agha et al., 2011; Prahalad & Hamel, 1990). A significant finding equated core competencies and its capabilities to intellectual capital (Marti, 2004), thereby establishing a link to HCV. Therefore, given intellectual capital's association with core competencies (Marti, 2004), its distinctive capabilities and criteria responsible for establishing and maintaining a competitive advantage (Agha et al., 2011; Prahalad & Hamel, 1990), core competencies' variables refer to its resources/assets that are valuable, rare,



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inimitable, sustainable, non-substitutable, and non-transferable (Barney, 1991; King & Zeithaml, 2001; Yeh, 2008)

Based on the findings, Table 4.1 highlights the variables presented by individual, team, and organisation level definitions.

Table 4.1

### *Integrating and Contextualising Competence Definitions and Variables*

Competence	K	S	A	V	R	I	S	NS	NT	C
Behavioural competencies	✓	✓	✓	✓*			✓*			✓*
Organisation-specific competence	✓	✓	✓							
Team competencies	✓	✓	✓	✓*			✓*			✓*
I-P-O framework team competencies	✓	✓	✓	✓*			✓*			✓*
Distinctive competence	✓	✓	✓	✓			✓			✓
Organisational competence	✓	✓	✓	✓						
Shared competencies	✓	✓	✓	✓			✓			✓
Core competencies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Legend: K = Knowledge; S = Skill; A = Abilities; V = Valuable; R = Rare; I = Inimitable; S = Sustainable; NS = Non-substitutable; NT = Non-transferable; C = Competitive Advantage; \*Underlying characteristics linked to factors that result in superior performance (i.e. valuable, sustainable, competitive advantage)

Table 4.1 indicates that all levels of analysis (i.e. individual, team and organisational) rely on its individuals KSAs and from whom organisation-specific (functional) competence is executed and demonstrated. Team and organisational level competence utilise composite/integrated individual KSAs in the execution of teamwork and/or organisational functions. Individual level's behavioural competencies and both team level competencies include underlying characteristics (attribute) variables. Given the researcher's observation that underlying



characteristic variables refer to HCVs commitment (C2) construct, its factors linked to value, sustainability, and its competitive advantage are regarded as competence (C1) related variables and have been emphasised with an asterisk as a distinction from organisation-level capabilities. Organisation levels' distinctive competence and shared competencies strategic resource capabilities are valuable, sustainable and result in a competitive advantage. Organisational competence will establish core competencies whose strategic capabilities will result in a competitive advantage are rare, inimitable, sustainable, non-substitutable, and non-transferable (Barney, 1991; King & Zeithaml, 2001; Yeh, 2008) .

The section below will address themes related to individual, team, and organisation level competence perspectives, as shown in Figure 4.5.



Figure 4.5. Conceptual Framework: Frameworks

### 4.2.5 Frameworks.

Based on the nature of this study, the textual data did not reveal themes and/or findings related to individual, team, or organisational level frameworks. Competency frameworks are an unexplored construct within the empirical quantitative studies' domain and therefore highlight a gap for further research.

As indicated in the literature review, and based on the work conducted by Bartram (2006), Boyatzis (1982), Ennis (2008), and Spencer and Spencer (1993), competency frameworks are investigated and measured from a qualitative perspective.

The literature review revealed a competency model framework that hold potential for the application of individual, team and organisational variables, namely the Competency Model Clearinghouse framework. The framework consists of three building blocks related to the following requirements, namely:

- Foundational skill requirements such as generic soft skills linked to job entry and successful job-related performance;
- Industry related technical competencies such as standard technical competencies that cuts across industries and allow for movement across industries; and
- Occupation related KSAs and management competencies such as occupation-specific knowledge, occupation-specific technical competence, and occupation specialist competencies required by a profession or an organisation (Ennis, 2008; PDRI & JBS, 2012).

The section below will address a theme related to individual, as shown in Figure 4.6



Figure 4.6. Conceptual Framework: Models

### 4.2.6 Models.

Given the lack of findings, the section below will present themes related to individual level competence only.

The section below will focus on individual level models.

#### 4.2.6.1 Individual level.

The findings yielded one individual level theme i.e. the integrated management.

##### 4.2.6.1.1 Theme 1: The integrated management competency model

The findings revealed one theme applicable to this study, which is delineated as:

After conducting the iterative classification process, six clusters of managerial competencies could be established when integrating elements from different competency models introduced in the literature. They are:

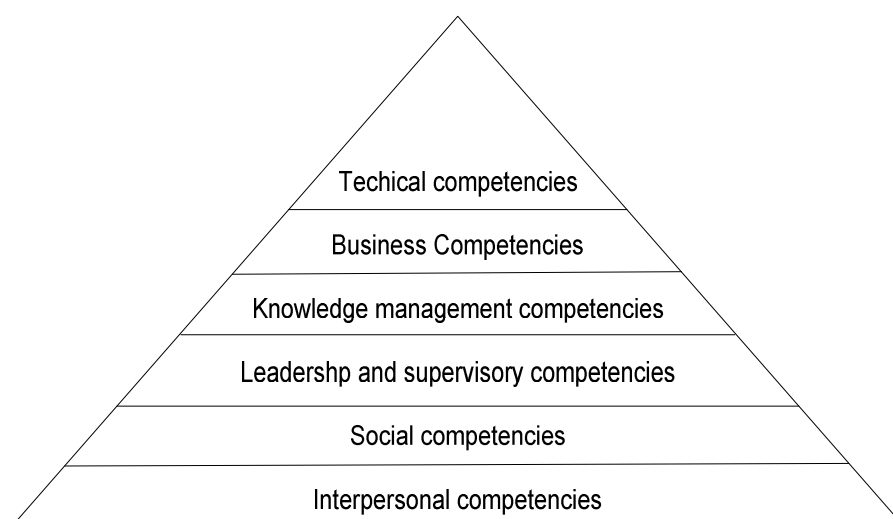
(1) technical competencies;

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- (2) business competencies;
- (3) knowledge management competencies;
- (4) leadership competencies;
- (5) social competencies; and
- (6) intrapersonal competencies. (Viitala, 2005, p 439)

The findings revealed that technical competencies refer to an individual's ability to utilise processes, procedures, and tools according to his/her area of specialisation based on knowledge acquired during schooling. Business competencies refer KSAs obtained from business management studies, including meta-competencies such strategic insight, decision-making, executive management practices (including directing), systems thinking, leveraging internal and external resources, the ability to guide the organisation (i.e. mission and vision), financial skills such as budget monitoring, forecasting, revenue management, and reporting. Social competencies refer to social interactions, communication, and motivating others. Social competencies and business competencies overlap with leadership and interpersonal competencies that include traits such a social role, self-image, motives and values (Viitala, 2005).

Figure 4.7 is an illustration of the generic management competencies model and the level of interaction, according to a hierarchy, between the competencies.



*Figure 4.7.* The integrated management competency model. Adapted from “Perceived Development Needs of Managers Compared to An Integrated Management Competency Model,” by R. Viitala, 2005, *Journal of Workplace Learning*, 17:7, p. 440. Copyright 2005 by Emerald Group Publishing.

Compared to literature the literature review, this finding exhibits a strong association with both behavioural competencies, that focus on underlying characteristics (Boyatzis, 1982; Spencer & Spencer, 1993) and organisation-specific (functional) competencies (Bartram & Roe, 2005; Van Loo & Semeijn, 2004; Woodruffe, 1993).

Based on the nature of this study, the textual data revealed a single theme. No themes and/or findings based on team or organisational level models were uncovered.

As presented in the literature review, and based on the work conducted by Bartram (2012), Boyatzis (1982), Ennis (2008), and Spencer and Spencer (1993), competency models are investigated and constructed from a qualitative perspective. Therefore, like frameworks, competency models seem to be an unexplored construct within the empirical quantitative studies’ domain.

However, the literature review did reveal one competency model that hold potential for the application and identification of individual, team and organisational variables,

namely the Competency Model Clearinghouse that consist of three building blocks and nine related tiers, namely:

- Building block 1: Foundational skill requirements consist of three tiers, i.e. (1) personal effectiveness competencies; (2) academic competencies; and (3) workplace competencies. Tiers one to three refer to generic soft skills linked to job entry and required by organisations for the execution of successful job-related performance.
- Building block 2: Industry related technical competencies and occupation related KSAs that consists of two tiers, i.e. (4) industry-wide competencies; and (5) industry-sector competencies. Tiers four and five refer to competencies that cut across industries and are flexible to allow for movement across industries.
- Building block 3: Knowledge areas that consists of four tiers, i.e. (6) occupation specific knowledge areas; (7) occupation specific technical competencies; (8) occupation specific (specialist) requirements; and lastly (9) management competencies. Tiers six to nine refer to specific knowledge, technical competence and specialist competencies required in a certain occupations/professions (Ennis, 2008; PDRI & JBS, 2012).

The following section presents a synthesis of the findings and discussion above.

### 4.2.7 Synthesis.

Given the lack of findings and applicable competency models and the identification of the CMC mode as a benchmark in the identification and application of competence-related variables, Table 4.2 below, integrates the findings related to perspectives and definitions and its respective application to CMC building blocks and tiers.

Table 4.2

*Integrating Perspectives, Definitions and the CMC Building Blocks and Tiers*

Definitions	LoA		Perspective		CMC Building Blocks and Tiers											
					F			I			K					
	I	T	O	P	J	R	C	1	2	3	4	5	6	7	8	9
Behavioural competencies	✓				✓			✓	✓	✓						✓
Organisation-specific competence	✓					✓				✓		✓	✓	✓	✓	✓
Team competencies		✓			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
I-P-O team competencies		✓			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Distinctive competence			✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Organisational competence			✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shared competencies			✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Core competencies			✓			✓	✓				✓	✓	✓	✓	✓	✓

Legend: LoA: Levels of Analysis (I: Individual; T: Team; O: Organisation); P: Person-focused; J: Job-focused; R: RBV; C: CBV; CMC: Competency Model Clearinghouse F: Foundational (1: Personal effectiveness competencies; 2: Academic competencies; 3: Workplace competencies); I: Industry (4: Industry-wide competencies; 5: Industry-sector competencies); K Knowledge (6: Occupation specific knowledge areas; 7: Occupation specific technical competencies; 8: Occupation specific requirements; 9: Management competencies)

Table 4.2 above, links behavioural competencies to individual-level competencies based on the person-focused perspective, and according to the CMC KSAs and underlying characteristics (attributes) focus on tiers one to three and nine. Organisation-specific competence is linked to individual who must demonstrate competence according to on occupational standards that focus on tiers two and four to nine. Both KSA team competencies and I-P-O team competencies are based on the person-focused and job-focused perspectives, and according to the CMC, their KSAs and underlying characteristics (attributes) focus on tiers one to nine. Distinctive competence, organisational competence, and shared competencies are linked to organisation-level competencies, based on the RBV and CBV perspectives'

strategic capabilities, and composite KSAs focus on CMC tiers four to nine. Core competencies are linked to organisation level competencies, the RBV and CBV perspectives' strategic capabilities and integrated individual KSAs focus CMC tiers four to nine, based on its high-level application of specific industry related and specialist functional (technical) competencies across business units.

In theory, researchers and practitioners draw a distinction between the person-focused perspectives/behavioural competencies and job-focused perspectives/organisation-specific (functional) competence. However, in practice both perspectives and approaches are applied, as shown in Table 4.2, thereby demonstrating that it not possible to utilise behavioural competencies without including organisation-specific (functional/technical) competence.

The section below will address themes related to individual, team, and organisational competence variables, as shown in Figure 4.8.



Figure 4.8. Conceptual Framework: Variables

### 4.2.8 Variables.

The section below will present themes related to individual, team, and organisational levels.

#### 4.2.8.1 Individual.

Individual level competence identified six themes, i.e. knowledge, skills, abilities, attributes, managerial competencies, and human capital competencies related to variables.

##### 4.2.8.1.1 Theme 1: Knowledge.

The findings indicate that knowledge, together skills, and abilities are key drivers of individual level competence. In identifying individual work-based competencies

linked to better career prospects in the Spanish labour market Urtasun and Núñez (2012) found that knowledge competence, i.e. "...knowledge representing explicit knowledge, and social and motivational and creative representing different types of implicit knowledge" (p. 343). Key drivers of the 'ideal' worker refer to being:

- Skilled (knowledge competence);
- Motivated (social and motivational competence); and
- Suggest ideas and able to solve complex problem solving tasks (creative competence) (Urtasun & Núñez, 2012).

A study by Longo and Mura (2007) found that individual's knowledge and technical skills, based on human capital constructs, positively affects an individual's job attitudes such as job satisfaction and turnover. This study's focus on knowledge refer to tacit knowledge as the skills required to perform tasks which are not codified or transferred except through direct experience (Longo & Mura, 2007).

The literature review addressed knowledge in a similar manner, by focussing on its tacit and explicit nature ingrained within individual action, commitment and context that relates to personal attributes (underlying characteristics) and gained through experience (including know-how (technical competence) (Henriksen & Rolstadås, 2010). Although not overtly stated in the findings, organisations specify explicit knowledge refer to knowledge and technical skill to be demonstrated by individuals, that is linked to specific operational and strategic requirements (Bassellier & Benbasat, 2011; Henriksen & Rolstadås, 2010). Compared to the literature review's Saarbrücken's formula, the findings based on the 'ideal worker' is similar to the formula's results lined to competence (C1) and committed (C2) (Scholz et al., 2004, 2007; Urtasun & Núñez, 2012).

### 4.2.8.1.2 Theme 2: Skills.

Heijke et al., (2003) conducted an explorative study to determine the role of various types of competencies (human capital) in the labour market aimed at higher education graduates (individuals), which clarified the following, namely:



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- Field specific skills refer to skills acquired through initial education such as field-specific theoretical knowledge; field-specific knowledge of methods; oral communication skills; tolerance; appreciating of different points of view; initiative; taking responsibilities; and making decisions;
- Management skills refer to skills are obtained through a work and initial learning (academic) context, such as planning, coordinating and organising; leadership; economic thinking; and creativity;
- General academic skills refer to skills such as improving learning processes in learning education and later through development and training, such as broad general knowledge; cross disciplinary thinking/knowledge problem solving and analytical competencies; reflective thinking; self-assessment; learning abilities, power of concentration; critical thinking; and written communication skills (Heijke et al., 2003).

The authors' results indicated that higher level (university) education produces a mix of human capital, i.e. competencies, of which field-specific skills are central. However, the study could not prove a direct link between higher-level education and remuneration rate between field-specific skills and general academic skills (Heijke et al., 2003). Given field-specific skills' is bound within a given context, an individual's earnings are significantly higher if the position is within the field-specific domain. The labour market requires management skills are necessary and investing therein will result in a return of investment. The results also indicated that management competencies are required within the work-related context based on experience and/or on-the-job training rather than field-specific skills guided by higher education. General academic skills obtained through higher level education do not have a direct-payoff for organisations (Heijke et al., 2003).

The literature review addressed skills (i.e. acquisition and types) in a similar manner, which specified that formal (higher level) education, experience, and on-the-job training and development (Chapman & Lovell, 2006; Teixeira, 2002). The literature review identified skill types such as cognitive skills (McKenna, 2004), core skills (Bunk, 1994; Teixeira, 2002), domain-specific skills (Soderquist et al., 2010) and

managerial skills (McKenna, 2004) that are similar to the findings' field specific skills, management skills and general specific skills (Urtasun & Núñez, 2012).

Compared to the literature review's Saarbrücken Formula (Scholz et al., 2004, 2007) that equates market value to competence (C1), commitment (C2) and context (C3), the findings show that there is no direct pay-off between field-specific and generic academic skills (Urtasun & Núñez, 2012). However the practical application of field-specific skills within a field-specific domain will yield higher earnings within the labour market (Urtasun & Núñez, 2012). Like the Saarbrücken Formula (Scholz et al., 2004, 2007) the findings established that experience, and investing in and developing (on-the-job-training) management skills will result in a return of investment (Urtasun & Núñez, 2012).

### 4.2.8.1.3 Theme 3: Abilities.

This theme refers to abilities as capabilities that enable an individual to perform a given task, namely:

...ability is the individual capability to complete tasks and is a stable trait ... [linked to] work performance is as the capability of a worker to achieve an objective or goal of the organization ... [which is] based on several important criteria crucial in planning and organizing, communication, analysis and solving problems, customer orientation focus, staff development, leadership, achievement orientation, decision making and working as a team to achieve an organization's goals. (Ismail & Abidin, 2010. pp. 26-27)

The findings revealed that abilities is a good predictor of job performance (Bartram, 2005; Ismail & Abidin, 2010), and based on this notion Bartram (2005) conducted a meta-analysis to establish the Eight Great competencies, of which four variables, related to abilities, were identified, as shown in Table 4.3.

Table 4.3

*Abilities According to Competency Domain Factor Ranking*

Competency domain (factor ranked)	Competency domain definition	Big five, motivation and ability relationships
Interacting and presenting	Communicates and networks effectively. Successfully persuade and influences others. Relates to others in a confident relaxed manner	Extraversion, general mental ability
Analysing and interpreting	Shows evidence of clear analytical thinking gets to the heart of complex problems and issues. Applies own expertise effectively, Quickly takes on new technology, Communicates well in writing	General mental ability, openness to new experience
Creating and conceptualising	Works well in situations requiring openness to new ideas and experiences. Seeks out learning opportunities. Handles situations and problems with innovation and creativity. Thinks broadly and strategically. Supports and drives organizational change	Openness to new experience, general mental ability
Adapting and coping	Plans and works in a systematic and organized way. Follows directions and procedures. Focuses on customer satisfaction and delivers a quality service or product to the agreed standards.	Emotional stability

*Note.* Adapted from “The Great Eight Competencies: A Criterion-Centric Approach to Validation,” by D. Bartram, 2005, *Journal of Applied Psychology*, 90:6, p. 1187.

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The literature review documented in predicting an individual's performance, abilities are considered to be more important than knowledge and skills, since because capabilities (abilities), obtained from previous experience, are applied in the successful execution of new (unfamiliar) tasks (Kak et al., 2001).

Compared to the literature review, the Saarbrücken Formula (Scholz et al., 2004, 2007) does not address abilities, but focuses on knowledge and skill development (experience) as competence related variables. However, the Human Capital Monitor™ (Mayo, 2001) does and refer to capabilities (abilities) to as know-how (professional/technical knowledge), skills, experience and personal networking.

### *4.2.8.1.4 Theme 4: Attributes.*

This theme refer to attributes (underlying characteristics), as personality measures that predict performance at work (Bartram, 2005). Studies that focus on the Big Five personality dimensions (extraversion, agreeableness conscientiousness, neuroticism, and openness) provide for moderate predictions of relatively gross job performance measures (Bartram, 2005). Expending on the Big Five, Bartram (2005) established the Great Eight competencies identified by four relates to attributes (personality) as shown in Table 4.4

Table 4.4

*Attributes According to Competency Domain Factor Ranking*

Competency domain (factor ranked)	Competency domain definition	Big five, motivation and ability relationships
Leading and deciding	Takes control and exercises leadership. Initiates action, gives direction, and takes responsibility.	Need for power and control, extraversion
Supporting and cooperating	Supports others and shows respect and positive regard for them in social situations. Puts people first, working effectively with individuals and teams, clients, and staff. Behaves consistently with clear personal values that complement those of the organization.	Agreeableness
Adapting and coping	Adapts and responds well to change. Manages pressure effectively and copes well with setbacks.	Emotional stability
Enterprising and performing	Focuses on results and achieving personal work objectives. Works best when work is related closely to results and the impact of personal efforts is obvious. Shows an understanding of business, commerce, and finance. Seeks opportunities for self-development and career advancement.	Need for achievement, negative agreeableness

*Note.* Adapted from “The Great Eight Competencies: A Criterion-Centric Approach to Validation,” by D. Bartram, 2005, *Journal of Applied Psychology*, 90:6, p. 1187. Copyright 2005 by the American Psychological Association.

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Based on the findings (i.e. person-focused perspective, behavioural competencies, team-based competencies) and the literature review (UK approach, legal and legal meaning and competency models) on attributes (i.e. underlying characteristics), the findings above generated a surprising result in that that abilities (capabilities) has a moderate effect on predicting overall performance (i.e. competence) (Bartram, 2005).

Compared to the literature review's HCV measures, neither the Saarbrücken formula (Scholz et al., 2004, 2007), nor the Human Capital Monitor™ (Mayo, 2001) address attributes (underlying characteristics), thereby highlighting a gap for further research collective application behavioural competencies (Wickramasinghe & De Zoyza, 2008).

Given Bartram's (2005) results, disregarding attributes (behavioural competencies) as a variable in determining individual and team-based HCV will result the inaccurate representation of competence. Up to now, the findings have proved that behavioural competencies are an essential element of the competence construct and an important variable in determining HCV in monetary terms, based on the following:

- Differential competencies (superior performance) (Wickramasinghe & De Zoyza, 2009; Wickramasinghe & Kumara, 2009) drives an organisation's performance, ensure value-add (Ahmed et al., 2003; Nurach et al., 2012; Rompho & Siengthai, 2012) and maintain a competitive advantage (Urtasun & Núñez, 2012);
- General academic skills are necessary, but not considered as valuable as field-specific and management (Heijke et al., 2003). Therefore, general skills refer to threshold competencies and field-specific and management skills refer to differential competencies.
- Given the literature review's CMC framework (Ennis, 2008; PDRI & JBS, 2012) and the findings plotted against it in Table 4.2 the following can be concluded:
  - Tiers one to three (foundational competencies) refer to threshold competencies (i.e. personal effectiveness, academic, and workplace competencies); and

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- Tiers four to nine (industry and knowledge-related competencies) refer to differential competencies (i.e. industry wide technical, industry-sector technical, occupation specific knowledge, occupation specific technical competencies, occupation specific requirements, and managerial competencies).
- Given the characteristics of CMCs foundational competencies referred to in tiers one to three (Ennis, 2008; PDRI & JBS, 2012), it refers to attributes (i.e. underlying characteristics).

However, the challenge lies in determining whether attributes reside within the competence construct (C2) or commitment (C3).

### *4.2.8.1.5 Theme 5: Types of competencies.*

The findings revealed two sub-themes related to types of competencies, namely managerial competencies and human capital competencies.

A study by Pillay (2008) of managerial competencies within the South African healthcare industry included biographical and training characteristics that included gender, age, primary formal education, formal and informal training, and intention for further training. Competency variables included the following, namely:

- Specific healthcare (functional) skills
- Planning
- Organising
- Leading
- Control
- Legal & ethical issues
- Self-management (Pillay, 2008)

This study's findings indicated a high need for management development. The respondents indicated that there is a shift from professional background focus to general management competencies in line with the organisation's strategy aimed at improvement of sustainable effective delivery industry related services by developing

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and strengthening management capacity (Pillay, 2008). However, the findings indicated that instead of focussing on formal management development, the respondents indicated that they derive greater benefit from informal development approaches, such as mentoring, coaching and in-house (on-the-job) training and development (Pillay, 2008).

Wickramasinghe and De Zoysa's (2009) conducted a study to establish a set of generic management competencies, irrespective of areas of functional specialisation. The study, which is based in the Sri Lankan telecommunications industry, measured the following knowledge, skill and attributes (value orientation), namely:

### Knowledge:

- Customer relations knowledge
- Cost consciousness
- Change handling skills
- Planning and scheduling
- Strategizing ability
- Technical competence
- Technology management
- Safety focus

### Skill:

- Empathy with people
- Conflict resolution
- Negotiation
- Empowerment
- Holistic
- Creativity
- Coaching ability
- Time management
- Pressure management skills
- Learning





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- Listening
- Oral communication
- Written communication

Value:

- Quality focus
- Flexibility
- Team player
- Customer focus
- Resiliency
- Ethical
- Achievement orientation
- Risk taking
- Positive vision

The results in Table 4.5 below summarise the most important areas of functional expertise (i.e. finance, information technology, marketing, human resources management, and legal) that emphasise important competencies for current and future application thereof according to mean values ranking.

Table 4.5

### *Functional Expertise*

Functional area & competence level	1 <sup>st</sup> Ranked	2 <sup>nd</sup> Ranked	3 <sup>rd</sup> Ranked
<i>Finance</i>			
Current expertise	Resiliency	Listening	Team player
Current importance	Oral communication	Resiliency	Pressure management skills
Future importance	Written communication; quality focus	Pressure management; listening	Resiliency
<i>Information Technology</i>			
Current expertise	Flexibility	Achievement orientation	Empathy

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Functional area & competence level	1 <sup>st</sup> Ranked	2 <sup>nd</sup> Ranked	3 <sup>rd</sup> Ranked
Current importance	Achievement orientation	Pressure management skills	Customer focus
Future importance	Time management	Achievement orientation	Customer focus
<i>Marketing</i>			
Current expertise	Attitude to meet targets	Team player	Flexibility
Current importance	Team player; customer focus	Written communication; quality focus; flexibility	Customer relations knowledge;
Future importance	Time management; customer focus	Attitude to meet targets	Written communication
<i>Human resources management</i>			
Current expertise	Flexibility	Team player	Listening
Current importance	Time management; written communication	Team player	Oral communication
Future importance	Team management; customer focus	Attitude to meet targets	Written communication
<i>Legal</i>			
Current expertise	Listening	Planning and scheduling	Written communication; ethical
Current importance	Resiliency	Quality focus	Technical competence, learning
Future importance	Negotiation	Team player; attitude to meet targets	Technical competence;

*Note.* Adapted from “A comparative analysis of managerial competency needs across areas of functional specialization,” by V. Wickramasinghe, and N. De Zoyza,

2009, *Journal of Management Development*, 28:4, p. 352. Copyright 2009 by Emerald Publishing.

The results indicated that current nine competencies hold significant differences across current levels of expertise, while three competencies indicated significant differences across functional areas. In future, seven competencies indicated significant differences across functional areas. Compared to this study's overall categories, the major differences were in the legal group. The significance of this study's findings are threefold, firstly it allows individuals to develop competencies that will increase their competitiveness (advancement) within their career choice. Secondly, identifying managerial competencies will vertically align the organisation's human resources system and strategic objectives. Lastly increase skills by developing management professionals that addresses organisational management competency requirements and expectations (Wickramasinghe & De Zoyza, 2008).

The literature review documented a different outcome by presenting generic management and functional (organisation-specific) competence in a discrete manner (Janjua et al., 2012). Instead, the findings combine both generic managerial and functional competencies by focussing on an individual's technical knowledge, skills, and attributes to fulfil a managerial role (Wickramasinghe & De Zoyza, 2008). The findings validate KSAs (organisation-specific (functional) competence and attributes (behavioural competencies) (Wickramasinghe & De Zoyza, 2008). Pillay's (2008) study has produced similar findings by stating that managerial competencies include both behavioural competencies and organisation-specific (functional) competence.

This study revealed an interesting finding, by disclosing that levels of competencies are different based on the sector (i.e. private or public) within which the individual is employed (Pillay, 2008). However, this notion cannot be applied in a general/standardised manner since Pillay's (2008) study focused on the South African healthcare industry within the private and public sector.

A study by Garcia-Aracil et al. (2004) focused on the labour market rewards' human capital competencies based on competencies such as participative, methodological,

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specialised, organisational, applying rules, physical, generic and socio-emotional competencies.

- Participative competencies refer to planning, coordinating and organising; negotiating; initiative; assertiveness, decisiveness, persistence; getting personally involved; leadership; and taking responsibilities, decisions.
- Methodological competencies refer to foreign language proficiency; computers skills; understanding social, organisational systems; economic reasoning; documenting ideas and information; problem-solving ability; and analytical competencies.
- Specialised competencies refer to field-specific theoretical knowledge and field-specific knowledge of methods.
- Organisational competencies refer to learning abilities; working under pressure; accuracy, attention to detail; time management; working independently; and power of concentration.
- Applying rules competencies refer to applying rules; and low requirement of creativity.
- Physical competencies refer to fitness for work and manual skills.
- Generic competencies refer to broad general knowledge; cross-disciplinary thinking/knowledge; critical thinking; oral communications skills; and written communications skills.
- Socio-emotional refer to reflective thinking, assessing one's own work; working in a team; adaptability; loyalty, integrity; and tolerance; and appreciating of different point of view (Garcia-Aracil et al., 2004) .

This study's results indicated that jobs with higher requirements of participative and methodological competencies are better remunerated than organisational, applying-rules and physical competencies, which was the worst remunerated (Garcia-Aracil et al., 2004). The results generated an interesting finding whereby field-specific competencies were highly remunerated but was not better remunerated on the commencement thereof compared to traditional jobs within the public sector (Garcia-Aracil et al., 2004).

These findings are relatively similar to the study conducted by Heijke et al., (2003) (in Sub-section 4.1.8.1.2) and clarified the literature review's outcomes that merely listed human capital competencies' skill requirements.

The section below will focus team level variables.

### **4.2.8.2 Team level.**

The textual data did not reveal themes and/or findings related to team level variables. Given the findings on definitions' that focused on task work and teamwork, and the I-P-O framework's application of KSAs and underlying characteristics, within a given team-related context, this study has identified a gap for further research to clearly identify and delineate team level competency variables.

### **4.2.8.3 Organisation-level.**

The findings revealed two themes linked to organisation level variables, namely organisational characteristics and organisational level performance capabilities.

#### *4.2.8.3.1 Theme 1: Organisation-level characteristics.*

Xiao (2006) conducted job survey ranking establish consensus of related to job competencies necessary in accomplishing tasks, determine the extent to which competencies are generalisable across industries, and establish the regional strategy for developing different competencies required for economic development.

The study's result presented a surprising finding that the literature review did not address, in that an organisation's region, ownership, and industry together with individual levels (i.e. managerial, professional, salesperson, and frontline workers) play an important role in determining core skills in performing job routines across different industries and within geographical regions.

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This study identified five groups of skills, linked to daily routines, as dependent variables, namely:

- Dispositional abilities:
  - Effectively allocate my time at work;
  - Raise accurate questions about problems at work;
  - Initiate suggestions to improve work quality;
  - Know my merits and weaknesses;
  - Discuss problems in work and life with peers;
  - Collaborate with peers to complete job assignments; and
  - Understand the relevance of my job to overall production.
- Specific skills for job tasks:
  - Have knowledge about process of my job tasks and required skills;
  - Master skills required by the boss for completing job tasks; and
  - Be able to complete job tasks independently.
- Job-basics:
  - Be able to understand the basic theory of production and operation;
  - Be able to calculate statistics for the job tasks; and
  - Be able to record my job tasks.
- Problem solving skills:
  - Be able to search technical causes of the problem at work;
  - Be able to read technical materials to solve problems; and
  - Initiate learning to master new knowledge and skills about my job.
- Communication skills:
  - Be able to write work reports or technical reports;
  - Be able to exchange ideas and communicate with clients;
  - Accurately communicate with subordinates and give assignments; and
  - Accurately report work to superiors (Xiao, 2006).

The author identified three organisation level characteristics variables that affect competencies and improve competitiveness, namely:

- Region as the predictor to detect differences in perception of job competencies, across, Central, Eastern and Western regions);

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- Ownership that distinguish between the organisation's sources of investment, such as: state owned; collective/cooperative; private/contract; joint stock; and joint investment; and
- Industry such as products or sector in which an organisation is engaged in such as manufacturing; construction, mining, geological prospecting; transportation, telecommunications and real estate; commerce, catering services and tourism; textiles, chemical products for daily life; raw agriculture products processing; and the electronics industry (Xiao, 2006).

The study's results indicated that for organisational ownership, individuals in private organisations in the Eastern Region consider dispositional skills less important than do state owned enterprises (Xiao, 2006). In terms of job-basics, problem solving skills, and communication skills all organisations have the same perception and no clear pattern have been established among types of ownership for disposition skills and job-specific skills, which indicate that ownership does not have a noticeable impact on perceptions of individuals. Individuals among all industries, except manufacturing, in all regions view communication skills significantly more important (Xiao, 2006). Dispositional abilities among all types of industries in all regions four out of 18 groups indicated different perceptions than from those in manufacturing. For specific skills for job tasks individuals in all industries and in all the regions have the same perceptions about technical skills (Xiao, 2006). A number of individuals view job-basics and problem-solving skills differently from the manufacturing industry. Individuals in the commercial and services sector view communications as significantly important. Other than ownership, sector or size does not differ in perceptions related to job competence (Xiao, 2006).

The findings, based on Xiao's (2006) results have a significant impact on measuring organisation level HCV, which indicate every organisation will have to determine its core competencies as according to the region, ownership and industry in which it operates. In determining core competencies (including individual and team level competencies) and its related variables, the CMC can be applied. Such an exercise will allow organisations to determine variables upon which HCV can be measured.

### 4.2.8.3.2- Theme 2: Organisational performance capabilities.

Three sub-themes relates to organisational capabilities, namely causal ambiguity (through linkage and characteristic ambiguity), value-creating competencies, and competitive advantage.

Upon examining the relationship between causal ambiguity (i.e. linkage and characteristic ambiguity), competitive advantage, and organisational performance, sub-theme one set out to clarify the causal ambiguity through linkage ambiguity and characteristic ambiguity. The dimensions King and Zeithaml's (2001) study included were:

- Linkage ambiguity refers to top and middle managers' understand of competencies and its related competitive advantage.
- Characteristic ambiguity is a source of competitive advantage and inherently lined to:
  - Tacitness – i.e. management's perceptions on the extent to how the competency has been communicated through conducting training, written documentation available, a manual, and whether competitors could acquire the competency by analysing trade/other printed material available to the public.
  - Knowledge location – i.e. an individual's knowledge and skill; physical systems (computer databases, equipment or software programmes); education and incentive systems that support knowledge growth; the organisation's mission, culture and values that screen and encourage a diverse range of knowledge) (King & Zeithaml, 2001).

The control variables refer to industry (i.e. service or manufacturing; size (i.e. organisation's performance and the role it plays in processing information and knowledge sharing between management levels (knowledge resources) (King & Zeithaml, 2001)..



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The relative measure of industry was based on number of sales (manufacturing) and number of beds (hospital service); team size (i.e. an factor related to causal ambiguity based on how competencies are understood by top management teams and middle management teams through a communication infrastructure and the inclusivity of facilities between organisational levels) (King & Zeithaml, 2001).

The dependent variable was organisational performance based on a return of assets, in that data provides:

A rich and long tradition operationalizes firm performance based on financial data from secondary sources, such as return on assets (ROA), return on invested capital, and return on sales. ROA presented several advantages as a measure of performance ... this measure provides superior relative year-to-year stability vis a vis other measures. ROA continues to be accepted in the current literature, and, in particular, in multiple industry studies involving the hospital and textile industries and studies regarding knowledge strategies measured according to a binary (weighted) score. (King & Zeithaml, 2001, p. 86)

The study's results indicate that a low linkage ambiguity by middle management on core competencies provides for the recognition and internal transfer of knowledge assimilated within the organisation. Low linkage ambiguity may indicate an established knowledge-base that serves as a platform for sustaining competitive advantage by "recognising, importing, sharing and exploiting external and internal knowledge throughout the organization" (King & Zeithaml, 2001, p. 90).

However, the study's results also suggest that low linkage ambiguity may expose an organisation when middle managers agree on competitive vulnerability based on the transfer and exploitation of inferior competencies that does not lead to a competitive advantage, which require strategic attention to combat such inferior competencies.

The results support the relationship between top and middle management's perceptions of a competency's tacitness and organisational performance, who

believe that core (or distinctive) competencies are tacit in successful organisations and considered a source of competitive advantage (King & Zeithaml, 2001).

Organisation performance capabilities' findings relate to organisation level perspectives (Sub-sections 4.2.1.3) RBV and CBV (themes one and two) (King & Zeithaml, 2001; Yeh, 2008) and with organisation level (Sub-section 4.2.3.3) definitions core competencies (theme four) (Agha et al., 2011; Ahmed et al., 2003), that links causal ambiguity to a core competency's inimitability. Thereby verifying RBV and CBVs usefulness and relevance as organisation level competency measurement variables.

The literature review documented similar outcomes based on an organisation's strategic capabilities' RBV, CBV and KBV (Barney, 1991; De Toni & Tonchia, 2001; Foss, 1996; Guallino & Prevot, 2003; Samudhram et al., 2010). In addition to inimitability's causal ambiguity, the literature review also identified history dependent factors and socially complex resources/assets as elements that protect core competencies from inimitability and sustaining a competitive advantage, however the lack of representation in the findings have highlighted a gap for further research.

Sub-theme two established that organisations utilise human capital (i.e. competencies) in a direct (i.e. computer firms, high-technology firms and software firms) and indirect manner (Murthy & Abeysekera, 2007), whereby both:

...create value from the commercialization of the knowledge created by their employees ... it is not the store of knowledge in employees but rather the ability of the firm to leverage knowledge that drives the value creation. A successful firm would understand the expectation of shareholders and their risk perception and transform the firm's HC capabilities to better meet shareholders' expectations. Therefore, in the context of software firms, if a firm efficiently manages and reports its HC, it would result in increase in the shareholder value. (Murthy & Abeysekera, 2007, p. 86)

Findings established that education, training, and know-how generate organisational capabilities, considered a source of competitive advantage. According to the RBV,

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organisational value will increase by developing organisation-specific capabilities of its individuals and teams (human capital) through training and development that cannot be imitated by competitors. In turn, these individual capabilities are highly valued by organisations (Murthy & Abeysekera, 2007).

An organisation's average professional experience plays an important role in creating organisational value. Through experienced individuals, organisations can compete within an industry and meet stakeholder's expectations. However, large organisations tend to employ new entrants and are willing to invest in training and education. Start-up organisations employ experienced individuals to maintain workflow, as investments in training and education initiatives cannot be justified, and is time consuming (Murthy & Abeysekera, 2007).

The findings further suggest that practices and attributes in building human capital that contributes toward organisational performance and value are based on:

- Discretionary behaviour – refer to organisations who respond to environmental changes and/or demands that allows for entering new markets and creation of technology that are exploited for financial gain (profit);
- Knowledge sharing; and
- Organisational learning (Lim et al., 2001).

The literature review reveal similar outcomes based on RBV, CBV and KBVs strategic focus whereby resources/asset exploit opportunities to create and maintain competitive advantage for organisations, and in doing so counteract the threats imposed by competitors (Barney, 1991; De Toni & Tonchia, 2003; Guallino & Prevot, 2003; Hwang & Gaur, 2009; Samudhram et al., 2010; Simpson, 2002). Value-enhancing competencies refer to HCV practices that will involve organisational learning, knowledge sharing and experience (know-how) that focus on long-term strategic competency requirements (including discretionary behaviour) to meet an organisation's future and current objectives (De Toni & Tonchia, 2003; Draganidis, 2008; Nilsson & Ellström, 2012). By utilising individuals (i.e. knowledge assets' competencies) to convert knowledge into strategic value (Eisenhardt & Santos,

2002), organisations create strategic growth and a sustained competitive advantage (Guallino & Prevot, 2003; Simpson, 2002).

Sub-theme three established that an organisation's performance and competitiveness refer to the following advantages that explain its economic revenues:

The author's aim is to construct and validate empirically a theoretical model that allows performance and competitiveness in firms located in industrial districts to be explained. From the strategic perspective adopted, three types of advantage explain economic revenues: shared advantages, competitive advantages, and comparative advantages ... firms that are better endowed with resources and capabilities find the development of sustainable competitive advantages easier (Camisón, 2004, p. 2227)

The study's variables were based on theoretical assumptions, such as:

Explanatory variables are:

- Embeddedness in an industrial (municipal) district's shared competencies refer to:
  - The external acquisition of knowledge;
  - Collective learning;
  - Shared vision;
  - Collective reputation; and
  - Value system.
- An organisation's distinctive competencies that are:
  - Static (first level competencies) associated with functional activities, e.g. marketing or finance);
  - Coordination and cohesion (second level competencies), associated with managerial (individual) and organisational capabilities linked to integrating and extracting maximum return from functional activities; and the development of organisational cohesion; and

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- Dynamic (third level competencies) associated with knowledge and skill related to managing knowledge and innovation, such as the ability to learn more efficiently than the competitor.
- Organisational performance that refer to macroeconomic performance indicators such as:
  - Growth in production and employment;
  - Partial measurement of organisational performance linked to financial indicators;
  - Exports, innovation, market share, or various financial/economic performance indicators (Camisón, 2004).

Control variables are:

- Organisational size referring to the number of full time employees;
- Possible of industry structure and attractiveness on performance and attractiveness of the competitive environment;
- Uncertainty of the environment were measured by three categories, i.e.:
  - Dynamism;
  - Complexity;
  - Munificence.
- Strategy measure as the reactive strategy taken as a reference group; and
- Comparative advantage measure caused by attractiveness of the general environment (Camisón, 2004).

The results indicate that an organisation's distinctive competence have a significant effect on performance, which is measured according to performance indices and competitive position. Returns on assets (the dependent variable) is weaker, but still significant in revealing a greater sensitivity to external cyclical variables (Camisón, 2004). A positive relationship exists in shared competencies within an industrial district and organisational performance. Attractiveness of territorial environment in which competencies are deposited for collective application is not a significant predictor of organisational success (Camisón, 2004). The existence of shared competencies' effectiveness will improve if an organisation is able to internalise the shared competencies. Distinctive competencies are responsible for moderating the

effect of shared competencies on organisational performance. The greatest predictor for explaining organisational performance is the combination of distinctive competencies and a cluster of shared competencies (Camisón, 2004). Embeddedness in an industrial district's shared competencies moderates the effect between distinctive competencies and organisational performance and considered to be the second strongest predictor (Camisón, 2004). However, an organisation's embeddedness in industrial districts reveals a negative relationship between shared competencies and the feeling of belonging to the district and is much lower when referring to returns on assets, considered as a relative weight compared with other independent variables. In contrast, if performance is measured according to the organisation's competitive position variable, returns on assets has no statistical significant effect (Camisón, 2004)

The control variables results indicate that the greatest dimension to moderate organisational performance is the interaction between distinctive competencies through embeddedness in an industrial district and shared competencies (Camisón, 2004).

Like causal ambiguity and value creating competencies above, competitive advantage document similar findings as advocated in the literature review's RBV, CBV, and KBVs strategic orientation. Compared to the literature review's KPMG's core competencies valuation model variables calculate competitive advantage according to the organisation's share of its gross profit (i.e. competitive test) (Andriessen et al., 1999),

The findings' focus on the return on assets, which was not addressed in the literature review (Camisón, 2004), thereby highlighting a gap for further research.

### **4.2.9 Synthesis.**

The findings highlighted five individual level variables.

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Firstly, the findings did not present knowledge in as much detail as the literature review, but the researcher is satisfied that findings addressed the main aspects for the purpose of this study. The findings disclosed that knowledge was explicit and tacit and linked both to behavioural competencies and organisation-specific (functional) competence (Bassellier & Benbasat, 2011; Henriksen & Rolstadås, 2010; Urtasun & Núñez, 2012).

Secondly, the findings revealed that field specific skills dominate the labour market, and play a central role human capital competencies (Heijke et al., 2003). There was not direct link between remuneration, field specific skills and general specific skills, however an investment in management skills, based on experience and skill development (i.e. on-the-job-training) brought about a return of investment for organisations (Heijke et al., 2003). No direct pay-off for general academic skills obtained in higher education was found, therefore regarding it insignificant (Heijke et al., 2003). This finding is significant in determining the market value (FTE worth) of the current HCV competence construct.

Thirdly, based on its ability as a good predictor of job performance (Bartram, 2005), and its capacity as a value contributor and sustainability, individual ability is the only variable that will result in attaining and maintaining an organisation's competitive advantage (Ismail & Abidin, 2010).

Fourthly, the findings revealed that individual level attributes is a moderate predictor of organisational performance (Bartram, 2005). However, findings based on underlying characteristics' (i.e. attributes linked to behavioural competencies) differential competencies (i.e. superior performance) will lead to value creation, sustainability and maintaining a competitive advantage (Ahmed et al., 2003; Rompho & Siengthai, 2012; Wickramasinghe & De Zoyza, 2009; Wickramasinghe & Kumara, 2009).

Lastly, the types of competencies identified referred to managerial and human capital competencies. The findings highlighted a shift from technical/professional skill requirements to general management competence aimed at the strategic application of sustainable service delivery, and whereby developing these skills will provide a

return on investment (Pillay, 2008). The findings disclosed that management competencies include both behavioural competencies (KSAs and underlying characteristics) and organisation-specific (functional) competencies (Wickramasinghe & De Zoyza, 2009), whereas the literature review that focused on functional competence only (Janjua et al., 2012).

The findings disclosed that based on its relevance to the labour market, human capital competencies that are the rewarded the most are participative and methodological competencies followed by field specific competencies, however it depends on the sector in which it operates (Garcia-Aracil et al., 2004). These results hold a significant implication for measuring HCV, and indicate the interrelatedness between competence and HCVs FTE worth (market value rewards) and context (C3).

Table 4.6 below, integrates the findings related to individual level perspectives and variables and its application to the Competency Model Clearinghouse building blocks and tiers.



Table 4.6

*Integrating Individual Level Variables, Perspectives and the CMC Building Blocks and Tiers*

Author	Variables	LoA		Perspective		CMC Building Blocks and Tiers										
						F			I			K				
						1	2	3	4	5	6	7	8	9		
Urtasun and Núñez (2012)	Knowledge	✓			✓								✓	✓	✓	✓
	Social and motivational	✓			✓			✓								
	Creative	✓			✓				✓							
Heijke et al., (2003)	Field specific skills	✓			✓					✓	✓	✓	✓	✓	✓	✓
	Managerial	✓			✓											✓



Author	Variables	LoA		Perspective		CMC Building Blocks and Tiers													
						F			I			K							
						1	2	3	4	5	6	7	8	9					
	skills																		
	General academic skills	✓			✓				✓	✓	✓								
Bartram (2005)	Interacting and presenting	✓			✓				✓										
	Analysing and interpreting	✓			✓					✓									
	Creating and conceptualising	✓			✓					✓									✓
	Organising and executing	✓			✓					✓									
Anitha and Thenmozhi (2011)	Technical	✓				✓									✓	✓	✓		
	Behavioural Leadership	✓			✓				✓										✓
	Intellectual	✓			✓				✓										
	Communication	✓			✓				✓										
	Interpersonal	✓			✓			✓											
	Problem-solving	✓			✓					✓									
	Responsive-ness	✓			✓					✓									

Legend: LoA: Levels of Analysis (I: Individual; T: Team; O: Organisation); P: Person-focused; J; Job-focused; R: RBV; C: CBV; CMC: Competency Model Clearinghouse F: Foundational (1: Personal effectiveness competencies; 2: Academic competencies; 3: Workplace competencies; I: Industry (4: Industry-wide competencies; 5: Industry-sector competencies); K Knowledge (6: Occupation specific knowledge areas; 7: Occupation specific technical competencies; 8: Occupation specific requirements; 9: Management competencies)

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Table 4.6 indicate that individual-level variables linked to knowledge, skills, abilities, and attributes include both the person-focused and job-focused approach and competence varies from CMC tiers one eight that include foundational, industry, and knowledge related competencies. Like KSAs and attributes (underlying characteristics), management competencies with the exception of specialised skills relate to the person focused approach (i.e. behavioural competencies) linked to foundational, industry and knowledge (management) competencies. Labour market (HCV) competencies, like KSAs and attributes include both the person-focused and job-focused approaches and competence varies from CMC tiers one to nine including foundational, industry, and knowledge related competencies.

Two major findings identified organisation level variables.

Firstly organisation-level characteristics determined core skills and performance and job routines such as daily routines, job-specific skills, job-basics, problem-solving skills and communication skills that will influence competencies and improve competitiveness (Xiao, 2006). Although the findings revealed interesting results, its suitability to organisation level HCV is questionable.

Secondly, the findings related to organisational performance highlighted three sub-themes, i.e. causal ambiguity (King & Zeithaml, 2001), value creating competencies (Murthy & Abeysekera, 2007) and competitive advantage (Camisón, 2004).

Casual ambiguity's findings the revealed that low linkage ambiguity accommodate internal knowledge transfer within an organisation, however when managers identify and agree on competitive vulnerability and/or on the transfer and exploitation of inferior competencies, it will impact an organisation negatively (King & Zeithaml, 2001). A noteworthy finding highlighted the relationship between tacitness and organisational performance, whereby core competencies in successful organisations are tacit and serve as a source of competitive advantage (King & Zeithaml, 2001). This finding is significant in that it confirms core competencies' applicability as measure for organisation level competence.

Value creating competencies' findings disclosed that HCV practices, i.e. individuals and teams' education, training, and know-how, generate organisational capabilities that cannot be imitated by competitors, and serve as a source of competitive advantage (Murthy & Abeysekera, 2007). A significant finding that confirm its applicability in measuring individual level competence is experience as an important value creator within an organisation (Murthy & Abeysekera, 2007). The finding related to competitiveness highlighted three types of competitive advantage, such as shared advantages, competitive advantaged and comparative advantages and indicated that organisations who are endowed with better resources and assets find it easier to develop sustained competitive advantages (Camisón, 2004). However, this refer to shared competencies, and for the purpose of this study, it is not considered to be significant in identifying organisation level variables linked to HCV measures, apart from the confirmation that refer to organisations who are endowed with better resources and assets develop sustainable competitive advantages with less effort.

The section below will address themes related to individual, team, and organisational competence measurements, as shown in Figure 4.9.



Figure 4.9. Conceptual Framework: Measurements

### 4.2.10 Measurements.

Based on the nature of this study, the textual data did not reveal themes and/or findings related to individual, team, or organisational level measurements. Competence measurements are an unexplored construct within the empirical quantitative studies' domain and therefore highlight a gap for further research.

The literature review has identified three models that are utilised in measuring HCV in monetary terms.

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Individual and team-level competence is measured by Mayo's (2001) Human Capital Monitor™ (i.e. capabilities and potential) and Scholz et al.'s, (2004, 2007) Saarbrücken Formula (i.e. knowledge and experience (skills development)).

The findings identified individual level variables as knowledge (Longo & Mura, 2007; Urtasun & Núñez, 2012), skill (Heijke et al., 2003), abilities (Bartram, 2005; Ismail & Abidin, 2010), and attributes (Bartram, 2005) which the literature review refers to as potential, i.e. unconscious behaviour (Brinckmann et al., 2011; Van Loo & Semeijn, 2004). The measures, identified in the literature review apply indicators to measure the following individual level variables, namely:

- The Saarbrücken Formula apply knowledge attrition and experience (skill) development; and
- The Human Capital Monitor™ apply capabilities (Mayo, 2001), that refer to for professional knowledge (know-how), skills, experience, and personal networking and potential.

Given the individual level variables identified in the findings, it is obvious that both measures apply knowledge differently. The Saarbrücken Formula's calculation subtract and add the cost and values assigned to knowledge and experience (Scholz et al., 2004, 2007). Whereas the Human Capital Monitor™ assign a factor value, weighting value and weighted value as a contributor to calculating an individual's human asset worth (Mayo, 2001). Despite that it may seem that the Human Capital Monitor™ determine and measure attributes through its potential, it does in fact, only measure an individual's ability to grow (develop) within the organisation.

Organisation level variables such as organisation-level capabilities (i.e. core skills that improve competitiveness) (Xiao, 2006) and organisation-level characteristics variables such as causal ambiguity (King & Zeithaml, 2001), value creating competencies (Murthy & Abeysekera, 2007) and competitive advantage (Camisón, 2004). Although organisation level findings yielded satisfactory results, the researcher consider the findings related to RBV and CBV (Sub-sections 4.2.1.3) and organisation-level definitions' (Sub-sections 4.2.3.3) core competencies' strategic capabilities variables more related to organisation level measures. The measure

identified in the literature review is KPMGs core competencies valuation model (Andriessen et al., 1999) whereby each core competency (identified in relation to the organisation) refer to intangible assets such as knowledge and skills, standards and values, explicit know-how and technology, management processes and assets, and endowments (self-image, relationships, and networks) (Andriessen et al., 1999). Core competencies are estimated utilising criteria and value drivers, indicated in brackets, such as:

- Customer benefit (value added),
- Better than competition (competitive advantage),
- Future potential (potential)
- Difficult to imitate (sustainability), and
- Solidly embedded (robustness),

The value of the core competencies are calculated according to a core competency measurement formula and presented as the sum of the value of intangible asset contributing to the core competencies (Andriessen et al., 1999).

### 4.2.11 Synthesis.



Table 4.7 below, integrates the findings related to perspectives and HCV measurement variables (presented in the literature review) and its application to the Competency Model Clearinghouse building blocks and tiers, thereby highlighting its theoretical underpinnings and main research findings.

Table 4.7

*Integrating Perspectives, Definitions and the CMC Building Blocks and Tiers*

Author	Variables	LoA		Perspective		CMC Building Blocks and Tiers												
						F			I			K						
						I	T	O	P	J	R	C	1	2	3	4	5	6
Andreesse n et al.,	Customer benefit			✓		✓							✓	✓	✓	✓	✓	✓

Author	Variables	LoA	Perspective	CMC Building Blocks and Tiers									
				F	I	K							
(1999)	Potential		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
	Inimitable		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
	Embedded-ness		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Mayo, (2001)	Capability	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
	Potential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Scholz et al., (2007)	Practical knowledge	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
	Experience	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Personal development	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Legend: LoA: Levels of Analysis (I: Individual; T: Team; O: Organisation); P: Person-focused; J: Job-focused; R: RBV; C: CBV; CMC: Competency Model Clearinghouse F: Foundational (1: Personal effectiveness competencies; 2: Academic competencies; 3: Workplace competencies; I: Industry (4: Industry-wide competencies; 5: Industry-sector competencies); K Knowledge (6: Occupation specific knowledge areas; 7: Occupation specific technical competencies; 8: Occupation specific requirements; 9: Management competencies)

Table 4.6 above indicate that Andriessen et al.'s, (1999) core competencies valuation measurement model measure organisational competencies based on the RBV, and according to the CMC the variables are linked to tiers four to nine. Mayo's (2001, 2006) Human Capital Monitor™ measure individual and team level competencies based on person-focused perspectives and job-focused perspectives, and according to the CMC the variables are linked tiers three to nine. Scholz et al.'s, (2004, 2007) Saarbrücken Formula measure individual and team level competencies and based on the person-focused perspectives (i.e. excluding underlying characteristics (attributes) and job-focused perspectives, and according to the CMC

the variables are linked to tiers three to nine, except for practical knowledge that are linked to tiers four to nine.

The following section will synthesise this study's research findings and discussion.

### 4.3 SYNTHESIS

Individual level competence perspectives, in theory, are viewed according to two distinct perspectives based on the person-focused approach (underlying characteristics) and the job-focused approach (functional/technical competence). Individual level definitions are presented in a similar manner based on behavioural competencies and organisation-specific (functional) competence. However when the approaches' and definitions' variables are plotted against the CMC (for instance Tables 4.2 and 4.6) it is evident that individual level competence are incorporated to utilise both its behavioural and functional elements

The textual data did not reveal sufficient findings and themes associated with team level perspectives.

Organisation level competence perspectives were based on strategic management capabilities that emanate from the RBV and CBV that focus on resources and asset capabilities responsible for creating a competitive advantage. According to organisation level perspectives, definitions and variables, the findings confirmed that core competencies are the most appropriate type to implement as organisation level measure. However, core competencies' intellectual asset variables is not applied as measurement variable, but RBV and CBV strategic capabilities are applied as the variables drives an organisation's (core competency) value.

The textual data did not reveal sufficient findings or themes and/or findings related to individual, team, or organisational level frameworks.

Although individual level models revealed one finding, the researcher deemed one competency model in the literature review was more applicable in the identification of individual, team, and organisational variables, namely the Competency Model

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Clearinghouse. Tiers one to three, based on foundational competencies were identified as threshold competencies and tiers four to six that focus on industry related competencies and knowledge-based competencies refer to differential competencies.

The findings identified individual level competence variables as knowledge, skill, abilities, and attributes, which incorporates both underlying characteristics (inputs) including differential and threshold competencies, and functional/technical competence (outputs).

Team level competency variables are based on individual level KSAs and underlying characteristics that will result in task work and teamwork.

Organisation level's core competency variables focus on strategic capabilities responsible for an organisation's competitive advantage that is valuable, rare, inimitable, sustainable, non-substitutable, and non-transferable.

Based on the nature of this study, the textual data did not reveal themes and/or findings related to individual, team, or organisational level measurements.

The following section concludes this study's research findings and discussion.

### **4.4 CONCLUSION**

This study's findings highlighted significant themes that drive the competence constructs' salient concepts and levels of analysis. Based on the findings individual level competence requires behavioural competencies (underlying characteristics) and organisation-specific (functional) competence to define, measure its HCV. Team level competence is viewed as composites of individual level KSAs and underlying characteristics that result in taskwork and teamwork. Organisation level competence on rely on core competencies and its related strategic capability resources/assets' outputs to determine (measure) HCV.



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The findings also highlighted areas where quantitative scholarly work do not exist, based on the following salient concepts and levels of analysis:

- Competency perspectives (team level);
- Competency frameworks (individual, team and organisation levels)
- Competency models (team, and organisation levels)
- Competence HCV measures based in monetary (individual, team and organisation levels).

The following and final chapter will provide recommendations and conclude the study.



## **Chapter 5: Recommendations and Conclusion**

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### **5.1 INTRODUCTION**

The previous chapter documented, discussed, and provided an interpretation of this study's main findings based on a systematic review of scholarly literature. The data was presented according themes linked to a process framework based on competence's salient concepts and levels of analysis.

This chapter will provide a general overview for the study including the introduction and problem statement, the literature review, the research design, a brief summary the findings and conclusions drawn from the study. Limitations of this study and recommendations for additional research will also be discussed.

The purpose of this study was to integrate scholarly literature based on competence and HCV to uncover competence's theoretical underpinnings based on its salient concepts (i.e. perspectives, definitions, frameworks, models, variables, and measures related) and levels of analysis (i.e. individual, team and organisation).

The following section will present an overview of the outcome of this study.

### **5.2 OVERVIEW**

The following section will provide a synopsis of this study's introduction and problem statement, the review of literature, the research design, and findings and discussion.

#### **5.2.1 Chapter 1: Introduction and problem statement.**

The impetus for this study was based on an article by Roodt (2010) who highlighted the significance of the Saarbrücken Formula as a HCV measure in monetary terms, but that the constructs, including competence, was measured in a crude manner. Given this challenge, this study introduced five problems and highlighted the gradual clarification thereof.

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Firstly, HCV focuses solely on the labour economic and educational perspectives of competence, thereby ignoring the alternative viewpoints in which it operates.

Secondly, definitions refer to competence in either broad attributable terms (input based) or vague unspecified work-related standards (output-based) that are associated with superior/effective performance or minimum standard requirements.

Thirdly, frameworks and models present a multitude of different competencies linked to job-roles that render the overall and standardised application thereof impractical.

Fourthly, HCVs competence variables focus only on knowledge and personal development based on labour economic and educational perspectives and do not consider additional perspectives and areas in which it is applied.

Lastly, to determine the value of intangible assets in monetary terms, HCV measures apply a number of inconsistent measures such as:

- Present value (Lev & Schwartz, 1971);
- Return on investments (Flamholtz, 1971, 1999);
- Cost of education, cost of living and value gained through experience (Dobija, 1998);
- Inventories and indicators (Cascio, 1998);
- Ratios (Roy, 1999); and
- Amortisation (Whiting & Chapman, 2003)

Based on these challenges this study established the following main research question:

*What are the theoretical underpinnings of the competence construct framework's salient concepts (perspectives, definitions, framework, models, variables, and measures) and levels of analysis (organisational, individual, and team)?*

Therefore, the objective of this study was to investigate existing scholarly literature related to competence's salient concepts and levels of analysis to uncover its theoretical underpinnings.

### 5.2.2 Chapter 2: Literature review.

The literature review presented a high-level overview of scholarly studies on competence, its salient concepts, and levels of analysis.

The overview highlighted that individual and team competence adhere to labour market, education, human resources, psychological, legal, non-legal, and UK versus US perspectives (i.e. behavioural and functional approaches) whereas organisational competence adhere to the RBV, CBV and KBV perspectives (i.e. strategic/business setting).

Individual definitions are determined according to behavioural (attributes and input-based) and functional (work-standards and output-based) elements, whereas teams refer to cumulative individual KSAs. Organisational definitions focus on deployment of its assets/resources capabilities based on competencies that lead to a competitive advantage and sustainability (i.e. strategic focus).

Frameworks consists behavioural indicators linked to job-roles required by organisations, whereas models specify and communicate specific KSAs linked to job-roles that enabling high-performing individuals (and teams) who add value to organisations.

Based on perspectives, definitions, frameworks and models, individuals' competence variables consists of KSAs and attributes, whereas organisations' variables are based on resources/assets' capabilities that are valuable, rare, inimitable, and sustainable.

The literature review highlighted the following gaps, posed as questions, namely:

## Integrating Competence and Human Capital Value

- Based on the distinct approaches related to individual and team level perspectives, does scholarly literature view competence in an integrated manner?
- Based on the distinct manner in which individual definitions and team level definitions are defined, does scholarly literature define it accordingly?
- Organisation competence is delineated according to various levels/types of competence, what type will facilitate the establishment of its variables and measures.
- Does organisation level competence reside in organisational knowledge or skill requirements, or in strategic capabilities linked to RBV, CBV, and KBV?
- Will the findings uncover generalisable competency frameworks or models? Alternatively, will the CMC model prevail?
- Does individual and team level competence focus on KSAs and underlying characteristics? What are the most important variables? Will the findings reveal superior performance's differential competencies and/or effective performance's threshold competencies?
- Given the discrete manner in which competence is measured, will the findings clarify HCV measures in monetary terms or are the measures according the literature review all there is?

The following section will focus on the research design

### 5.2.3 Chapter 3: Research Design.

This study is based on a qualitative research design that centres on a theoretical approach, executed according to a systematic literature review. The researcher's key scientific beliefs centred on a critical realist ontological and interpretivist epistemological values. The research approached centred on a systematic literature review that allowed for conducting a context analysis thereof and the identification of related themes presented in this study's findings.

This study's strengths based on the systematic literature review integrated scholarly work that led to establishing a thorough understanding of the competence construct

of current scholarly thinking (Mouton, 2001) over an extended period of time that covered from 2000 until 2012. The content analysis' strengths referred to avoiding an invasion of privacy and errors linked to observation effects (Mouton, 2001). By analysing and interpreting the content of large amounts of textual data, themes emerged that allowed for the interpretation and presentation thereof in the study's findings (Braun & Clarke, 2006; Guest, 2012; Mouton, 2001). The computer assisted qualitative data analysis strengths provided coding scheme stability and comparative results (triangulation) based on coding, interpreting and presenting findings reliably by detecting co-occurring codes (Kleine, 2008).

Study's limitations based on the systematic literature review cannot provide new thinking or validate existing empirical understanding based on the competence construct ; it only provides a summary and organise existing scholarly work (Mouton, 2001). The content analysis' limitations refer to the data's authenticity and results that may lack practical significance (Chelimsky, 1989; Mouton, 2001); data is based on unconnected pieces of information that leads to wide interpretations thereof and leads to difficulties in describing proceedings and insights (Braun & Clarke, 2006; Elo & Kyngäs, 2008b; Guest, 2012). The computer assisted qualitative data analysis refer to the lack of language processing insensitivity of linguistic nuances such as negation, irony and tone; and crunching of data that leads to meaningless statements (Kleine, 2008).

The researcher was cognisant of and established to avoid this study's main sources of error such as selection bias, selectivity in sources, rater reliability, and limiting interpretations (Mouton, 2001).

Based on the study's design, the research setting was wide-ranging and based on global representation, across a large number of industries and variety of research participants. However, this study considered the author of the journal article its research participant. The role of the researcher was that of an observer, specifically an outsider who engaged with research participants' (authors) reportages in scholarly journal articles.

Data exists in published textual data format contained in peer reviewed scholarly research journals located from the University of Johannesburg's library search portal and databases, namely EBSCOHost and Emerald and cross referenced with Google Scholar to collect serendipitous scholarly research journal articles not published by EBSCOHost and/or Emerald. The study's textual data was retrieved and collected by use of search parameters and keywords applied. The sampling procedure applied purposive sampling that based on selection criteria that included and excluded data samples, as specified in Sub-section 3.6.5.

Textual data was recorded in three different locations, a printed copy was kept in a file at the researcher's home, an electronic copy was stored on an external hard drive and a third copy was stored on Dropbox, a virtual hosting site (cloud storage). This study has presented its findings in narrative format based on inductive reasoning and presented according to conceptual framework process' based on salient concepts and levels of analysis as presented in to Figure, 3.2.

This study's content analysis, with the use of Atlas.ti, interpreted the textual data to establish and develop themes presented as findings, which was based on a six-step process that involved the following:

- Step 1: Becoming familiar with the data.
- Step 2: Generating initial codes.
- Step 3: Searching for themes.
- Step 4: Reviewing themes.
- Step 5: Defining and naming themes; and
- Step 6: Producing the report.

The following criteria are based on strategies to ensure trustworthiness, namely:

- Credibility as an alternative to internal validity;
- Transferability as an alternative to external validity;
- Dependability as an alternative to reliability; and
- Confirmability as an alternative to objectivity (Lincoln & Guba, 1985; Seale, 2003)

Table 3.4 in Sub-section 3.6.9 outlined the strategies this study applied to improve trustworthiness.

Ethical considerations addressed and focused on axiological issues that involve the researcher's values, morality, and ethics in conducting research and presenting findings. Based on the notion of informed consent, the researcher rejected seven articles that were applicable to this study, however due to encrypted data embedded therein it did not allow for computer assisted qualitative data analysis. Due to this study's use of non-empirical textual data and results, the researcher was vigilant not to manipulate the research participants' interpretations and conclusions, and she was mindful not to commit plagiarism by subjecting this study to Turnitin, which is a web-based software programme that exposes copied and plagiarised work.

The following section will provide this study's findings and discussions.

### **5.2.4 Chapter 4: Findings and discussion.**

This section will present significant findings based on the study's levels of analysis and salient concepts.

The following section will focus on perspectives.

#### **5.2.4.1 Perspectives**

Two contrasting views drive individual level competence perspectives, i.e. the person-focused perspective based behavioural competencies domain and the job-focused perspective based functional (technical) competencies (Cheng et al., 2005; Heijde & Van Der Heijden, 2006).

This study was unable to uncover sufficient findings related to team level perspectives.

Organisation level perspectives reside in organisational resources and assets' strategic capabilities to generate a competitive advantage, which is based on the



RBV and CBV. The capability variables include to a resource and/or assets as being valuable, rare, inimitable, sustainable, non-substitutable and non-transferable (Carmeli & Schaubroeck, 2005; Hsu et al., 2007; King & Zeithaml, 2001; Murthy & Abeysekera, 2007; Yeh, 2008).

The following section will focus on definitions.

### **5.2.4.2 Definitions**

Like perspectives, two contrasting views drive individual level competence definitions. The first, behavioural competencies, based on the person focused perspective, delineate KSAs and underlying characteristics (attributes) that distinguish superior performance (differential competencies) from effective performance (threshold competencies) (Urtasun & Núñez, 2012; Wickramasinghe & De Zoyza, 2008, 2009). Superior performance, and by implication differential competencies, is responsible for an organisation's value and maintaining its competitive advantage (Ahmed et al., 2003; Nurach et al., 2012; Rompho & Siengthai, 2012; Urtasun & Núñez, 2012). The second, occupation-specific competence delineate KSAs, functional competence and technical skills that are derived from investments in schooling, training and development (experience and skill) from which individuals are required to demonstrate their competence against occupational standards (Garcia-Aracil et al., 2004).

Team level competencies follow two approaches in defining competence. Firstly, it distinguishes between taskwork and teamwork. Task work is achieved by individuals who possess the required KSAs and underlying competencies, that in turn, serves as a determining factor for teamwork (Hertel et al., 2006). Teamwork differentiates between conventional and virtual teams, where conventional teams will rely on KSAs and underlying characteristics, whereas virtual teams rely on KSAs only (Hertel et al., 2006). The second approach focus on an I-P-O framework that rely on composite individuals' KSAs (i.e. input) executed by independent acts and behaviours (underlying characteristics) (i.e. processed) and result in efficient performance (i.e. output) (Longo & Mura, 2007).

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Determining HCV variables and its proposed application by Roodt (2010) pose a challenge for the competence construct. It is evident from the from individual and team level definitions (and perspectives) that in underlying characteristics, for instance motives and values (Cheng et al., 2005; Heijde & Van Der Heijden, 2006), consists of variables applicable to the commitment (C2); similarly, the context in which teamwork operates refer to HCVs context (C3). Given this observation, this study has highlighted the interrelationship between HCVs competence (C1), commitment (C2), and context (C3) construct, which will pose difficulties in clearly delineating and measuring HCV competence variables.

Four findings drive organisation level competence. Distinctive competence entail the functions organisational resources/assets are required to execute through composite KSAs, organisational capabilities and innovation (Camisón, 2004) responsible for creating value and sustaining a competitive advantage (De Toni & Tonchia, 2003). Shared competencies refer to different organisations that operate within an industrial district, its composite individual KSAs, distinctive competence, and resource capabilities for maintaining their competitive advantage and excluding competitors (Camisón, 2004). Organisational competence rely on composite KSAs and resource/asset capabilities owned, controlled and deployed by an organisation (Camisón, 2004) to develop its core competencies (Chang & Ahn, 2005). Core competencies, which is linked to an organisation's intellectual capital (Marti, 2004), and derived from organisational competence and refer to integrated individual KSAs and distinctive capabilities that spans over multiple products and markets (Agha et al., 2011). Core competencies' distinctive capabilities is valuable, rare, inimitable, sustainable, non-substitutable, and non-transferable, and is responsible for mainlining an organisation's competitive advantage (Agha et al., 2011; King & Zeithaml, 2001; Yeh, 2008), whereas inimitability are driven by factors such as causal ambiguity, historical dependent, and socially complex (King & Zeithaml, 2001).

The following section will focus on frameworks.

#### **5.2.4.3 Frameworks.**

The study was unable to uncover sufficient findings related to individual, team, or organisation level frameworks.

#### **5.2.4.4 Models.**

The study was unable to uncover sufficient findings related to team level models, but utilised the literature review's CMC to plot findings linked to perspectives, definitions, and variables, such as in Figure 4.2, and Figure 4.6. This exercise resulted in proving that despite its distinct nature and presentation of individual level perspectives and individual level and team definitions, the competence construct apply both behavioural competencies and organisation-specific (functional) competence.

The exercise further revealed threshold competencies operate according to CMCs tiers one to three foundational competencies ((1) personal effectiveness, (2) academic and (3) workplace competencies). Differential competencies and functional/technical competence operate competencies operate according to CMCs tiers four to nine Industry-related competencies ((5) industry-wide technical, (6) industry sector technical), and knowledge ((7) occupation specific knowledge areas, (8) occupation specific requirements, and (9) managerial competencies).

The following section focus on variables.

#### **5.2.4.5 Variables.**

The findings highlighted four individual level and team variables, namely knowledge, skills, abilities and attributes, and types of competencies.

Knowledge is applied in an explicit and tacit manner linked to both behavioural competencies (underlying characteristics) and organisation-specific (functional competence) (Urtasun & Núñez, 2012).

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The findings distinguish between three types of skills, namely field specific (acquired from learning), management skills (obtained through job-related training and development), and general academic skills (gained from learning, and later from job-related training and development). The findings revealed that field specific skills dominate the labour market and considered an important element in human capital competencies (Heijke et al., 2003). The results indicated no direct link in remuneration (value) between field specific skills and general skills exist, however the investment in management skills, based on on-the-job-training generated a return of investment for organisations. General academic skills obtained in higher education did not generate value, and is therefore considered of no great concern (Heijke et al., 2003).

Based on the findings above and given differential competences and organisation specific (functional) competence and the association with CMC, field specific and management skills are considered significant variables in measuring individual and team level HCV. Whereas, given the organisational performance and CMC general academic skills are considered threshold competencies, which is necessary but insignificant in generating value.

The findings revealed that ability is a good predictor of job performance (Bartram, 2005) responsible for generating organisational value add and sustainability, thereby rendering it the only individual level variable that will result in obtaining and maintaining an organisation's competitive advantage (Ismail & Abidin, 2010).

A surprising result revealed that individual level attributes is a moderate predictor of organisational performance (Bartram, 2005). This finding appear to be contradictory since findings based on underlying characteristics' (i.e. attributes) differential competencies related to superior performance will lead to value creation, sustainability and maintaining a competitive advantage (Ahmed et al., 2003; Rompho & Siengthai, 2012; Wickramasinghe & De Zoyza, 2008, 2009).

Managerial competencies require general management competencies in the strategic application of sustainable service delivery and skills development that will provide for a return on investment (Pillay, 2008). Specific managerial competencies

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include knowledge, skills and attributes (i.e. value orientation) that incorporates both behavioural competencies (underlying characteristics) organisation-specific (functional) competencies (Wickramasinghe & De Zoyza, 2009).

The findings on labour market rewards disclosed that human capital's participative and methodological competencies are the highest remunerated, followed by field specific competencies but that it depends on the sector within which it operates (Garcia-Aracil et al., 2004). This finding is significant for measuring HCV and highlights the interconnected manner in which competence and FTE worth (market value rewards) and context (C3) operates in.

The findings identified two organisation level variables, namely organisation-level characteristics and organisation performance capabilities that focused on causal ambiguity, value creating competencies and competitive advantage.

Organisation-level characteristics identified a range of skills and abilities linked to daily routines to improve competitiveness (Xiao, 2006). Although the findings revealed interesting results, its applicability to organisation level measures is unlikely.

Causal ambiguity's results indicated that low linkage ambiguity support an organisation's internal knowledge transfer, but will impact negatively when competitive vulnerability is exposed or inferior competencies are utilised (King & Zeithaml, 2001). A significant finding revealed the positive relationship between tacitness and organisational performance exit, whereby successful organisations core competencies that are tacit is responsible for maintaining its competitive advantage (King & Zeithaml, 2001). This finding confirms core competencies' relevance and its usefulness as a measure of organisation level HCV, such as its application in KPMGs core competencies valuation model.

Value creating competencies derived from individuals and teams, such as HCV generate organisational capabilities that serve as a source of competitive advantage that cannot be imitated by competitors (Murthy & Abeysekera, 2007). A significant finding confirm that human capital competencies linked to an individual's experience

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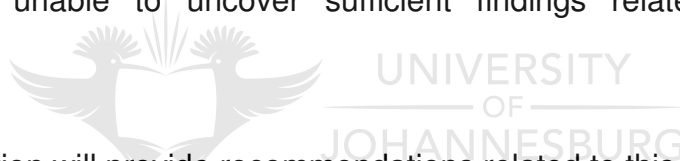
is an important value creator within organisations (Murthy & Abeysekera, 2007). This finding confirms the relevance of the application of experience in the Saarbücken Formula.

Competitiveness identified three types of such as shared advantages, competitive advantaged and comparative advantages (Camisón, 2004), this finding's variables is not considered be significant in identifying organisation level variables linked to HCV measures. However, what is relevant for measuring organisation level HCV is the statement that organisations who are better endowed with resources and capabilities find it less difficult to develop sustainable competitive .

The following section will focus on measures.

### **5.2.4.6 Measures.**

This study was unable to uncover sufficient findings related to team level perspectives.



The following section will provide recommendations related to this study.

### **5.2.5 Recommendations.**

The following recommendations will minimise the need for further research:

- Define the HCV competence construct as:
  - Individual level competence refers to knowledge, skills, and attributes that allow individuals to demonstrate their capability in executing a function according to organisational standards that will result in superior performance.
  - Team level competence refers to knowledge, skills, ability, and attributes that allow team members in executing task work and teamwork according to organisational standards that will result in superior performance.

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- Organisation level competence refers to core competencies whose resources, assets, and capabilities will maintain an organisation's competitive advantage.

Qualitative studies should address the following:

- Determine the variables, patterns of relationship and classify differential competencies and threshold competencies.
- Establish standardised competency framework and model. Alternatively, establish the suitability of the CMC framework's variables and patterns of relationship related to the competence construct in determining HCV.
- Empirically validate the individual, team, and organisation level variables uncovered by this study.
- Establish whether collective calculation individual level competence measures measuring team level competencies. Alternatively establish an HCV model that measure an HCV team competencies construct.

The following section will provide possible findings and suggestions for further research.

### 5.2.6 Possible findings and suggestions for further research.

Given the lack of findings, the researcher suggests that further research should be conducted, based on the following competence constructs, namely on:

- Investigate and validate team level perspectives whether it operates within person-focused (behavioural competencies) perspective and/or job-focused perspective (functional competencies).
- Clarify organisation levels perspectives strategic capabilities' non-substitutable and non-transferable variables responsible for achieving a competitive advantage (Carmeli & Schaubroeck, 2005; Carmeli & Tishler, 2004).
- Determine the leveraging effect of individual level differentiation competencies as organisational value driver responsible for its sustainable competitive advantage (Ahmed et al., 2003; Nurach et al., 2012; Rompho & Siengthai, 2012;



Urtasun & Núñez, 2012). Including determining whether the HCV calculation applied in KPMGs core

- Alternatively determine whether differential competencies can be measured, like an organisation's core competencies according to the KPMGs intangible asset (core competencies) valuation model.
- Determine the leveraging effect of teamwork and taskwork of team level competencies' and the impact it has as a variable in establishing HCV.
- The failure to uncover findings related to individual, team and organisation level frameworks, and models require the development of a standardised model that will determine HCV related competencies.
- Alternatively conduct a study to validate the generalisability and suitability to the CMC and related framework in identifying HCV competencies.
- The KPMG core competency valuation model was presented at a symposium and a longitudinal empirical study to determine its suitability and validity thereof is proposed.
- Conduct an empirical study that will establish the variables, patterns of relationships and classify the types of variables required for individual, team and organisation level related to the HCV competence construct.
- The failure to uncover findings related to individual, team and organisation level measures require the development of standardised model(s) that will measure the HCV competence construct in monetary terms.

The following section will conclude this study.

### 5.2.7 Synthesis.

The study integrated fragmented textual data based on the competence construct and concluded that individual level and team level competence is based on and both behavioural competencies and organisation-level competence. Behavioural competencies utilise KSAs that incorporate underlying characteristics to establishing superior performance (differential competencies) and average performance (threshold competencies). Differential competencies, like organisation level competencies contribute towards organisational value, sustainability, and



maintain its competitive advantage. Organisation-level competence utilise technical KSAs obtained from investments in schooling, training and development (skill based experience) according to which an individual is required to demonstrate his/her functional competence against occupational standards established by his/her profession/occupation and/or organisation.

Core competencies' distinctive capabilities is valuable, rare, inimitable, sustainable, non-substitutable, and non-transferable, is responsible for mainlining an organisation's competitive advantage (Agha et al., 2011; King & Zeithaml, 2001; Yeh, 2008), whereas inimitability are driven by factors such as causal ambiguity, historical dependent, and socially complex (King & Zeithaml, 2001).

This study was unable to uncover sufficient findings related to individual, team, or organisation level frameworks and models. An exercise was conducted utilising the CMC model that indicated that both behavioural competencies and organisation level (functional) competence was utilised thereby disproving the discrete manner in which competence was claimed to operate in. The exercised also revealed that threshold competencies are linked/refer to the CMC foundational competencies, threshold and that differential competencies and organisation-specific (functional) competence are linked/refer to CMC industry-related and knowledge (including managerial) competencies.

The following section will conclude this study's recommendations.

### **5.2.8 Conclusion.**

The study set out to determine competence's theoretical underpinnings by conducting a systematic literature review from a critical realist perspective.

The findings established that individual and team level competence consist of KSAs and attributes that include both behavioural and functional capabilities. The findings also determined that organisation level competence rely on core competencies' resources and asset capabilities responsible for maintaining its competitive advantage.

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Furthermore, the findings have established that there is a significant lack concerning standardised frameworks, models, and measures.



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