

**CONSTRUCTING A CAREER SATISFACTION AND EMPLOYABILITY PROFILE FOR
KNOWLEDGE WORKERS**

by

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DECLARATION

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Constructing a career satisfaction and employability profile for knowledge workers

I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references (APA 7th edition style for referencing was applied).

I further declare that the study has been carried out in strict accordance with the Policy for Research Ethics of the University of South Africa (Unisa). I took great care that the research was conducted with the highest integrity, taking into account Unisa's Policy for Infringement and Plagiarism. I further declare that I submitted the thesis to originality checking software and that it falls within the accepted requirements for originality.

I further declare that ethical clearance to conduct the research has been obtained from the Department of Industrial and Organisational Psychology, University of South Africa (see Appendix A for certificate). Informed consent to use the data for research purposes was obtained from the individuals who participated in this study.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.



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21/2/2021

DATE

ABSTRACT / SUMMARY

CONSTRUCTING A CAREER SATISFACTION AND EMPLOYABILITY PROFILE FOR KNOWLEDGE WORKERS

by

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SUPERVISOR: Prof. M. Coetzee
DEPARTMENT: Industrial and Organisational Psychology
DEGREE: Doctor of Philosophy in Psychology
(Industrial and Organisational Psychology)

The general aim of the research was to construct a career satisfaction and employability profile for the knowledge worker based on the relationship dynamics among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents), their psychosocial career resources (employability attributes, career anchors and career values as moderators) and their career satisfaction and self-perceived employability (consequences or outcomes). The end goal of the research was to draw conclusions on the relationship dynamics (magnitude and direction) between the constructs for the purpose of proposing organisational career development practices for the knowledge worker. A quantitative cross-sectional research approach was followed and involved a sample of N = 404 knowledge workers registered with South African professional bodies. Descriptive, correlation and multivariate inferential statistics were performed. Supplementary to the canonical correlation analysis, regression and structural equation modelling analysis indicated that the career satisfaction profile has unique influencing factors while the self-perceived employability profile also has its unique influencing factors. Moderated regression analysis showed that individuals' career cognitions (i.e. levels of career adaptability and psychosocial career preoccupations) were not conditional upon their psychosocial career resources (i.e. employability attributes, career anchors and career values) in explaining their levels of career satisfaction and self-perceived employability. The career cognitions and psychosocial career resources had individually specific main effects to consider in understanding

knowledge workers' career satisfaction and self-perceived employability. Stepwise regression and the hierarchical moderated regression analysis showed that age, race and employment status were important to consider in terms of the career satisfaction profile of knowledge workers. Race seemed especially important to consider in terms of their self-perceived employability. Differences among the biographical groups also suggested unique career development needs to consider in multi-culturally diverse work contexts. The career satisfaction and employability profile was constructed based on the key insights derived from the core significant findings. The research extended career satisfaction and employability theory. Recommendations for organisational career development support practice were made based on the proposed profile for the professional knowledge worker.

Key terms

Career anchors; Career satisfaction; Career development; Career values; Career adaptability; Employability; Employability attributes; Fourth Industrial Revolution; Knowledge workers; Psychosocial career preoccupations

ABSTRAK/OPSOMMING

DIE SAMESTELLING VAN 'N LOOPBAANTEVREDENHEIDS- EN INDIENSNEEMBAARHEIDSPROFIEL VIR KENNISWERKERS

deur

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Die algemene doel van hierdie navorsing was om 'n loopbaantevredenheids- en indiensneembaarheidsprofiel vir kenniswerkers saam te stel, gebaseer op die verhoudingsdinamika tussen individue se biografiese eienskappe (ouderdom, ras en indiensnemingstatus), loopbaankognisies (loopbaanaanpasbaarheid en psigososiale loopbaanpreokkupasies as voorgangers), hulle psigososiale loopbaanhulpbronne (indiensneembaarheidskenmerke, loopbaanankers en loopbaanwaardes as moderators) en hulle loopbaantevredenheid en selfwaargenome indiensneembaarheid (gevolge of uitkomst). Die einddoel van die navorsing was om gevolgtrekkings te maak oor die verhoudingsdinamika (omvang en rigting) tussen die konsepte ten einde organisatoriese loopbaanontwikkelingspraktyke vir die kenniswerker voor te stel. 'n Kwantitatiewe deursneenavorsingsbenadering is gevolg en het 'n steekproef van N = 404 kenniswerkers behels wat by professionele Suid-Afrikaanse liggeme geregistreer is. Beskrywende, korrelasie- en meerveranderlike inferensiële statistiek is ingespan. Aanvullend tot die kanoniese korrelasieresultate, het regressie and strukturele vergelykingsmodellering ontledings aangetoon dat die loopbaantevredenheidsprofiel unieke beïnvloedingsfaktore het terwyl die selfwaargenome indiensneembaarheidsprofiel ook oor sy eie unieke beïnvloedingsfaktore beskik. Moderering regressie-ontleding het gewys dat individue se loopbaankognisies (dit is die vlakke van loopbaanaanpasbaarheid en loopbaanpreokkupasies) nie voorwaardelik ten opsigte van hulle psigososiale loopbaanhulpbronne was (dit is, indiensneembaarheidseienskappe, loopbaanankers en loopbaanwaardes) om hulle vlakke van loopbaantevredenheid en selfwaargenome indiensneembaarheid te verduidelik nie. Die loopbaankognisies en psigososiale

loopbaanhulpbronne het individuele, bepaalde hoofgevolge om te oorweeg ten einde kenniswerkers se loopbaantevredenheid en selfwaargenome indiensneembaarheid te verstaan. Stapsgewyse regressie en hiërargies-moderering regressie-ontleding het gewys dat ouderdom, ras en indiensnemingstatus belangrike oorwegings was wat betref die loopbaantevredenheidsprofiel van kenniswerkers. Ras in die besonder het geblyk belangrik te wees om in aanmerking te neem ooreenkomstig hulle selfwaargenome indiensneembaarheid. Verskille tussen die biografiese groepe het ook aan die hand gedoen dat unieke loopbaanontwikkeling oorweeg moet word in multikulturele, diverse werkskontekste. Die loopbaantevredenheid en indiensneembaarheidsprofiel is saamgestel, gebaseer op die belangrikste insigte wat uit die essensiële, betekenisvolle bevindings bekom is. Loopbaantevredenheid en indiensneembaarheidsteorie is in hierdie navorsing uitgebrei. Aanbevelings vir organisatoriese loopbaanontwikkelingondersteuningspraktyke is gemaak, gebaseer op die voorgestelde profiel vir die professionele kenniswerker.

Sleuteltermes

Beroepsankers; Loopbaantevredenheid; Loopbaanontwikkeling; Loopbaanwaardes; Loopbaanaanpasbaarheid; Indiensneembaarheid; Indiensneembaarheidseienskappe; Vierde Industriële Revolusie; Kenniswerkers; Psigososiale loopbaanpreokkupasies

SETSOPOLWA / KAKARETŠO

GO HLAMA PHROFAELE YE E KGOTSO FATŠAGO MOŠOMO LE GO THWALEGA MOŠOMONG GO BAŠOMI BA TŠA TSEBO

ka

Louise Engelbrecht

MOHLAHLI WA DINYAKIŠIŠO: Moprof. M. Coetzee
LEFAPHA: Dithutamenagano tša Mešomong le Dikhamphaning
KGRATA: Bongaka bja Filosofi ka go Dithutamenagano
(Dithutamenagano tša Mešomong le Dikhamphaning)

Maikemišetšomagolo a dinyakišišo e bile go go hlama phrofaele ye e kgotsofatšago mošomo le go thwalega mošomong go bašomi ba tša tsebo go lebeletšwe seemo sa dikamano magareng ga dipharologantši tša dipalopalo ka ga batho (e lego mengwaga, bong, mohlobo le maemo a mošomo), go kwešiša ka ga mešomo (go tlwaela mošomo le seemo sa menagano ya setšhaba ka ga mešomo bjalo ka dilo tšeo di tlogo peleng), methopo ya bona mošomo mabapi le menagano ya setšhaba (dikokwane tša go kgona go thwalega mešomong, dihlohleletši tša go hwetša mešomo le maitshwaro a mešomong bjalo ka dilo tšeo di lekolago mešomo) le go kgotsofatša ga dinyakwa tša mešomo le go ipona bjalo ka yo a thwalegago (seo se tlogo ka moragonyana goba bjalo ka poelo). Maikemišetšo ao a nepilwego a dinyakišišo e bile go tla ka dipheo mabapi le seemo sa dikamano (bogolo bja tšona le fao di lebilego gona) magareng ga kago ya maikemišetšo a go šišinya ditiro tša tlhabollo ya bašomi ka dikhamphaning go mošomi yo a šomago ka menagano. Mokgwa wa dinyakišišo wa bontši wa mafapha a mantis o dirišitšwe gomme sampole ya N = 404 ya bašomi ba tša tsebo o dirišitšwe le go akaretša mekgatlo ya sephrofešenale ya ka Afrika Borwa. Dipalopalo tša go hlatholla, tša papetšo le tša tšhupetšo ya makala a mantši di dirilwe. Dipelo tša papetšo tša tatelano di laeditše gore go phrofaele ya go kgotsofatša mošomo e na le dintlha tša khuetšo tša go swana di nnoši mola e le gore phrofaele ya go ipona bjalo ka yo a thwalegago le yona e na le dintlha tša khuetšo tša go swana di nnoši. Tshekatsheko ya poelomorago yeo e hlokometšwego e laeditše gore dikwešišo tša batho ka ga mošomo (ke gore, maemo a tsinkelo mošomong le go tlwaelo go phethagatša mošomo) ga se tša lebana le seemo

sa methopo ya go phethagatša mošomo wa mabapi le menagano ya setšhaba (ke gore, dipharologantšhi tša go thwalega mešomong, dihlohleletši tša mešomo le maitshwaro a mešomong) go hlaloša maemo a bona a go kgotsofatša phethagatšo ya mešomo le go ipona o thwalega mošomong. Dikwešišo ka ga mešomo le methopo ya mešomo mabapi le menagano ya setšhaba di bile le diabe tše itšego go batho tšeo di swanetšego go hlokomelwa gore re kwešiše go kgotsofatša ga mešomo ka bašomi ba tša tsebo le go ipona ba thwalega mešomong. Tshekatsheko ya poelomorago ka dikgato tše mmalwa le ya poelomorago ya bašomi go ya ka tatelano ya bona di laeditše gore mengwaga, morafe le maemo a mošomo di bile bohlokwa go di hlokomela mabapi le phrofaele ya go kgotsofatša mešomo ga bašomi ba tša tsebo. Morafe o bonagala o tloga o le bohlokwa kudu go hlokomela mabapi le go ipona ba thwalega mešomong. Diphapano magareng ga dihlopha tša merafe le mehlobo le tšona di šišintše gore go hlokega tlohabollo ya ka mešomong ye e swanago e nnoši yeo e swanetšego go dirwa ka seemong sa mešomo fao go šomago batho ba ditšo tše di fapafapanego. Phrofaele ya tlhabollo ya bašomi le go thwalega mešomong go hlamilwe go lebeletšwe tsebo ye bohlokwa ye e hweditšwego go dikutollo tša motheo tše bohlokwa. Dinyakišišo di katološitše teori ya mabapi le tlhabollo ya bašomi le ya go thwalega mešomong. Go dirilwe ditšhišinyo mabapi le ditiro tša thekgo ya tlhabollo ya bašomi ka dikhamphaning ka ga phrofaele ye e šišintšwego ya mošomi wa tša tsebo wa sephrofešenale.

Mareo a bohlokwa

Dihlohleletši tša mešomo; go kgotsofatša mešomo; Tlhabolo ya mešomo; Maitshwaro a mešomong; go tlwaela mošomo; go thwalega mošomong; dipharologantšhi tša go thwalega mešomong; Lebakanako la Tirišo ya Theknolotši go Dira Mešomo; bašomi ba tša tsebo; ditiro tša mešomo mabapi le menagano ya setšhaba

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CHAPTER 1: SCIENTIFIC OVERVIEW OF THE RESEARCH

This research focused on constructing a psychosocial career satisfaction and employability profile for knowledge workers in the South African context. The ultimate strategic feature of the research was to create new understandings of existing and emerging issues related to career satisfaction and self-perceived employability in the contemporary world of work. This chapter provides, firstly, the background and motivation for conducting the research. This is followed by the statement of the research problem and the formulation of the research questions. The research aims and research model, as well as the paradigm perspectives of the research, are then discussed. Subsequently, a discussion of the research design and methodology is provided, and the chapter concludes with a layout of the chapters and a summary of the scientific overview.

1.1 BACKGROUND AND MOTIVATION FOR THE RESEARCH

The context of the research was the changing nature of careers and work and the influence this has on the careers of knowledge workers. Knowledge workers are employees who have a deep, well-rounded background in education and work experience and are considered people who “think for a living” (Davenport, 2005; du Toit, 2014; Tchamyu, 2016). Knowledge workers, as highly skilled human resources, are the most critical component to enhance a country’s capacity to develop into a knowledge-based economy in the Fourth Industrial Revolution (Blankley & Booyens, 2010; de Beer, 2015; du Toit, 2014; Tchamyu, 2016). Knowledge workers include software developers, engineers, doctors, actuaries, lawyers, investors, financial analysts, human resource (HR) professionals and scientists.

Work is central to human existence as work occupies almost a third of individuals’ lives. Individuals often define themselves in terms of the work they do (Coetzee & Schreuder, 2021; Fugate et al., 2004; Maree, 2020). The two ultimate aims of individuals involved in a career are to satisfy psychological needs and basic individual needs. Society expects individuals to work to provide for their own well-being and pursuit of happiness, while at the same time work provides a basis for physical resources to satisfy basic needs and wants, which often determines the standards of living (Vondracek et al., 2014). In order to provide for basic needs, individuals need employment and equally important, to satisfy psychological needs, individuals need a satisfying career. The career satisfaction and self-perceived employability of knowledge workers are even more relevant in the contemporary world of work, as the changing nature of work left individuals feeling anxious and insecure (Savickas, 2019).

The world of work is drastically changing at an exponential rate, resulting in the probability to eliminate certain occupations while at the same time, new industries, new ways of work and new occupations might emerge (Brynjolfsson & McAfee, 2014). With all these changes occurring; automation and digitisation, and the outbreak of the Coronavirus during the COVID-19 pandemic in the Fourth Industrial Revolution are some of the most important issues to shape the future nature of careers in terms of career development and career counselling (Akkermans et al., 2020; Hirschi, 2018; Maree, 2020).

The COVID-19 pandemic was a career shock for many individuals, as it was difficult to control and to predict (Akkermans et al., 2020). Countries throughout the world were under lockdown since 2020, where everyone had to stay at home. Suddenly work became a privilege to workers in essential services related to food and medicine; and knowledge workers who were able to work from home (Maree, 2020). Tertiary services related to manual labour were regarded as non-essential for survival and were not allowed to operate. During the COVID-19 pandemic, knowledge workers were confronted with several challenges and had to embrace technology by making online and virtual work arrangements, making challenging career choices and had to constantly adapt to remain employable and enjoy a satisfying career. These implications of the COVID-19 pandemic reflects the dynamic relationship between individual characteristics and contextual factors (Akkermans et al., 2020).

To mitigate the career consequences of the COVID-19 pandemic, knowledge workers need to realign themselves to the changing career environment by developing career competencies (Akkermans et al., 2020). Career competencies are important determinants of knowledge workers' ability to cope with change and can enable knowledge workers to be more employable, engaged and more resilient when facing setbacks (Akkermans et al., 2015). More importantly, Blokker et al. (2019) found that career competencies were indirectly related to perceived employability via career satisfaction. It is therefore argued that career competencies and resilience can indeed make the career shock of the COVID-19 pandemic for knowledge workers more manageable (Akkermans et al., 2020). It is finally suggested that those knowledge workers who are developing proactive career behaviours should more likely be able to experience career satisfaction over time (Akkermans et al., 2020).

Career satisfaction, as an indicator of individuals' subjective career success, is an important area of research within the context of careers as most people strive for career success (Spurk et al., 2014). Career success is generally defined as the accumulated positive career and individual outcomes, which result from individuals' career behaviour, career decisions and career experiences (Koekemoer, 2014; Seibert & Kraimer, 2001). Furthermore, career success typically comprises objective and subjective indicators of career success. Objective indicators of career success refer to indicators related to salary, job status, promotions and

supervisor ratings, whereas subjective indicators of career success refer to indicators related to career satisfaction and self-rated career performance (Chan et al., 2016; Heslin, 2005; Koekemoer, 2014; Ng et al., 2005). The most prevalent indicator of subjective career success is career satisfaction (Hall & Chandler, 2005; Jawahar & Liu, 2016). Career satisfaction refers to the individual's self-evaluation of all the experiences of career progress and feelings of accomplishment and satisfaction (Blokker et al., 2019; Hagmaier et al., 2018). Career satisfaction in this study referred specifically to the extent individuals feel satisfied with the overall success achieved in their careers, as well as the progress towards meeting career goals, goals for income, career advancement and the development of new skills (Greenhaus et al., 1990). It is, therefore, conceivable that the present study focused on career satisfaction as an expression of individuals' perceptions of subjective career success measured by the concise Career Satisfaction Scale of Greenhaus et al. (1990).

Employability is an important aspect of research as one of the most important challenges facing workers is to become and remain employable (Chiaradonna, 2017; Coetzee & Schreuder, 2021; Maree, 2020; Savickas, 2019; Savickas & Porfeli, 2012; Vanhercke et al., 2014). The growing rise of job insecurity and uncertainty resulted in lifetime employment being replaced with lifetime and sustainable employability (Lawrence et al., 2015; van der Klink et al., 2016). Employability in the contemporary career scene is, therefore, one of the most important career outcomes for knowledge workers (Wille et al., 2013). A widely used definition of employability is that of Hillage and Pollard (1998). They define employability as the ability to move independently within the work environment and to appreciate one's potential through sustainable employment. It is within this perspective that individuals' perception of their employability plays a critical role (Vanhercke et al., 2015). Rothwell and Arnold (2007) describe self-perceived employability as the ability to keep one's current employment or to get the ideal employment opportunity one desires. Rothwell and Arnold's (2007) Self-perceived Employability Scale was relevant to this study and was utilised as this measure applies an individual focus, and relates to what individuals believe (self-perceived) their employment options are. Individuals can manage their employability appropriately by adapting to the changing environment utilising their psychosocial career meta-capacities, which act as key transactional resources between the individual's inner (psychological) and external (social) environment (Coetzee, 2014a; Savickas & Porfeli, 2012).

Career satisfaction and self-perceived employability are important psychosocial career outcomes as well as leading research topics in contemporary careers (Akkermans & Kubasch, 2017; Blokker et al., 2019; Spurk et al., 2019). Career satisfaction and self-perceived employability are two career constructs that are distinct but related to each other (Dacre-Pool & Qualter, 2013; de Vos & Soens, 2008; Rothwell & Arnold, 2007). Career satisfaction has

become the benchmark for career success (Coetzee & Schreuder, 2021), while the climbing of the “corporate ladder” is less emphasised (Maree, 2020). Self-perceived employability is particularly meaningful for individuals, as it is a key to foster sustainable employability and a predictor of career satisfaction (de Vos et al., 2011; Forrier & Sels, 2003; Hall, 2002; Peeters et al., 2020; Rothwell & Arnold, 2007; van der Heijde & van der Heijden, 2006).

Research has found positive relationships between career satisfaction and a proactive personality, self-efficacy, extraversion, conscientiousness, agreeableness, openness to experiences and perceived organisational career support (Jawahar & Liu, 2016; Ng et al., 2005; Schooreel et al., 2017). Hirschi et al. (2017) identified significant career resources related to environment, knowledge and skills, and motivational resources that are critical for career success. Haenggli and Hirschi (2020) further assessed the relations between various career resources (optimism, self-esteem, career adaptability, environmental, knowledge/skills and motivational) and their predictive utility for career satisfaction. They further conclude that each of the career resources contributed differently to career satisfaction and called for more research to explore the links between different resources and career outcomes. As indicated by Peeters et al. (2020), it seems that self-perceived employability and its outcomes have been well researched, however, there seems to be limited research on the antecedents of self-perceived employability. In an attempt to address this research gap, Peeters et al. (2020) followed a systematic approach by examining to what extent movement capital (human capital, career adaptability, self-awareness and social capital), contributed to self-perceived employability over time in the Belgium public and private sector. The study of Peeters et al. (2020) did not find strong associations between human capital, career adaptability and social capital; and self-perceived employability over time. Only self-awareness and self-perceived employability were reciprocally related in both samples (public and private sector), therefore they urged researchers to investigate and develop conceptual clarity on other career-related resources to enhance self-perceived employability (Peeters et al., 2020).

There is thus a need for research on the predictors of career satisfaction and self-perceived employability, the relative importance of different predictors, the relationship dynamics among different predictors (career resources), and the circumstances under which different career resources are activated (Blokker et al., 2019; Haenggli & Hirschi, 2020; Peeters et al., 2020; Spurk et al., 2019). This need can be addressed by focusing on approaches related to resource management behaviours and attitudes, as well as on the resource accumulation and dynamics (Spurk et al., 2019). It is further important to investigate how different career cognitions and resources as predictors of career satisfaction and self-perceived employability relate to each other.

Career adaptability, as a career cognition, is seen as an important resource for sustaining employability throughout the lifespan and has developed into a key construct as a result of the ongoing change in career psychology towards assisting individuals to cope with the more dynamic and boundaryless work context (Chan et al., 2015; Savickas, 2011a). Moreover, as a psychosocial resource, career adaptability connects a person to the environment, in a similar way as that by which one's identity connects the self-concept to a social role. It is, therefore, an important psychosocial career resource that individuals could utilise to manage career-related tasks and transitions in the changing career environment as well as to manage the career shock of the coronavirus pandemic (Maree, 2020; Savickas, 2005, 2011a, 2011b, 2013).

Savickas (2005, 2011a, 2011b, 2013) identified four dimensions of career adaptability, namely concern, control, curiosity and confidence. *Career concern* refers to the degree to which individuals are involved in their own career planning tasks and think about their career future (Savickas & Porfeli, 2012). *Career control* refers to the degree to which individuals feel responsible for managing and building their own career (Savickas & Porfeli, 2012). *Career curiosity* refers to the degree to which individuals explore the world of work and make an effort to gain as much information as possible about the requirements, practices and rewards related to specific careers and occupations (Savickas & Porfeli, 2012). *Career confidence* refers to the degree to which individuals believe in their ability to make and implement good career decisions (Savickas & Porfeli, 2012). Career adaptability will thus be measured by utilising the Career Adapt-Abilities Scale (CAAS) developed by Savickas and Porfeli (2012).

Career adaptability has been shown to relate to proactive personality (Rudolph et al., 2017; Teixeira et al., 2012); employability attributes (Coetzee et al., 2015; de Guzman & Choi, 2013; Rudolph et al., 2017); psychosocial career attributes (behavioural adaptability, career directedness, career purpose, self-esteem) that enhance proactive career self-management behaviour (Coetzee & Schreuder, 2018); orientations to happiness (Johnston et al., 2013); general and professional well-being (Maggiori et al., 2013); and indicators of career satisfaction (Coetzee & Stoltz, 2015; Guan et al., 2014; Guan et al., 2015; Haenggli & Hirschi, 2020; Rudolph et al., 2017; Zacher, 2014). Career adaptability, as a career cognition, can be used as a transactional, self-regulatory resource (independently of more stable dispositions) that could enable knowledge workers to attain career satisfaction (Zacher, 2014). The present research, therefore, supports the belief that career adaptability is a result of active engagement in maximising employability skills through meaningful person-environment interactions.

Another important contemporary career construct influencing the career satisfaction and self-perceived employability of individuals seems to relate to the career cognition psychosocial

career preoccupations. The construct psychosocial career preoccupations refers to a psychosocial perspective relating to certain matters concerning an individual's career issues which are prominently occupying their minds at a specific time (Coetzee, 2014b). These concerns reflect an individual's cognitive judgement regarding which specific adaptive behaviours to apply during career-life transitioning, in an attempt to regain one's state of career equilibrium (Coetzee, 2016). Psychosocial career preoccupations relate to three specific dimensions; career establishment, career adaptation and work-life adjustment preoccupations, that individuals have to face in the career–life cycle (career establishment, career maintenance, career disengagement), and that are predominant in the career–life stories of knowledge workers (Coetzee, 2014b; Savickas, 2005; Sharf, 2010).

During the career establishment stage, knowledge workers might have certain career issues at the forefront of their minds (e.g. fitting in with a group and new job roles, stability and security, development of new skills, personal growth, and career advancement) which reflect career establishment preoccupations (Coetzee, 2016). Career adaptation is an important aspect of the career maintenance stage and knowledge workers might therefore be confronted with career challenges related to sustainable employability; adapting to career changes; developing new skills to remain relevant, and even need to re-evaluate whether they still fit into their specific career environment (market, organisation, group) (Coetzee, 2016). These career concerns reflect career adaptation preoccupations. During the disengagement stage, knowledge workers might have certain career issues at the forefront of their minds (e.g. reducing workload, settling down, seeking harmony between personal and career life, considering to withdraw from paid employment), which reflect work-life adjustment preoccupations (Coetzee, 2016). Psychosocial career preoccupations are important psychosocial developmental tasks of career adaptability for knowledge workers that resulted from the increased organisational and career-related change and the associated career transitions (Coetzee, 2015, 2016; Savickas, 2005, 2013).

Though the contemporary construct, psychosocial career preoccupations, is under-researched (Coetzee, 2016), few studies have been conducted during the past five years in the South African context. Psychosocial career preoccupations were found to be related to lower levels of career satisfaction (Bester, 2018; Takawira, 2018), and lower levels of organisational commitment (Coetzee, 2015). Potgieter et al. (2018) found a significant positive link between job embeddedness and satisfaction with retention practices through perceptions of workplace friendship when psychosocial career preoccupations were low. In addition, Coetzee (2016) found significant positive relationships between individuals' cognitive receptivity to technological change and innovation and psychosocial career preoccupations. Coetzee and Govender (2020) explored psychological career resources in terms of career

preferences, career drivers, career enablers and career harmonisers as explanatory mechanisms of adaptive career preoccupations. The results of the research done by Coetzee and Govender (2020) indicated that career preferences and career values explained higher levels of psychosocial career preoccupations, while career drivers and harmonisers explained lower levels of psychosocial career preoccupations. Finally, more research on the ever-changing nature of individuals' career developmental tasks across the lifespan in relation to additional career-related constructs and measures (such as career satisfaction and self-perceived employability, career cognitions, psychosocial career resources), is required (Coetzee & Govender, 2020).

Apart from important career cognitions, such as career adaptability and psychosocial career preoccupations, the present study was also interested in assessing whether individuals' psychosocial career resources, such as employability attributes, career anchors and values, interact with individuals' career adaptability and psychosocial career preoccupations in predicting career satisfaction and self-perceived employability.

Psychosocial career resources are important for the career development of knowledge workers to reach positive career outcomes (Hirschi, 2012; Hirschi et al., 2017; Hobfoll et al., 2018). Psychological career resources consist of career preferences, career anchors and values, employability attributes, and competencies that can be linked to individuals' experiences of career satisfaction, and self-perceived employability (Gunz & Heslin, 2005). Psychosocial career resources enhance proactive career behaviour, which is critical for sustainable employment and career satisfaction in the current South African labour market (Bezuidenhout, 2011; Botha, 2014; Coetzee, 2014a; Potgieter, 2012, 2014).

To enhance individuals' suitability for sustainable employment further, employability attributes (meta-capacities) are required for proactive career management behaviour (Bezuidenhout, 2011; Potgieter, 2014). Employability attributes are a set of personal resources (intrinsic self-regulatory abilities and attitudes) that prepare and strengthen individuals to be actively engaged in specific career behaviour, such as cognitively adjusting one's career goals and behaviour in order to remain employable by enhancing the person-environment fit (Botha, 2014; Lent & Brown, 2013). Bezuidenhout (2011) identified eight critical employability attributes, which include a variety of psychosocial career meta-capacities relating to individuals' careers and individuals' intrapersonal and interpersonal behavioural domains (career self-management, cultural competence, self-efficacy, career resilience, sociability, entrepreneurial orientation, proactivity and emotional literacy) for sustainable employment (Botha, 2014). These attributes can promote adaptive cognition, behaviour, and affect (Bezuidenhout, 2011).

Specific psychosocial employability attributes related to career self-management, proactivity, and emotional literacy acted as significant positive predictors for satisfaction with retention factors (Coetzee et al., 2016). Employability attributes have also been related to career satisfaction (Coetzee & Beukes, 2010); career adaptability (Coetzee et al., 2015; de Guzman & Choi, 2013; Rudolph et al., 2017); and career anchors (Ndzube, 2013; Oosthuizen et al., 2014). The study of Oosthuizen et al. (2014) further indicated no significant difference between race groups in terms of their employability attributes. Few studies have found employability and age to be negatively related (DeArmond et al., 2006; Neilsen, 1999; Rothwell & Arnold, 2007; van der Heijden, 2002; van Rooy et al., 2005). Moreover, research reported a significant difference in terms of gender and indicated that women tend to have lower levels of employability than men (Clarke, 2008; Lee, 2001; Scandura & Lankau, 1997).

Career anchors are based on individuals' self-perceived motives and needs, talents and abilities, attitudes and values, and tend to alleviate career decisions in predictable ways (Schein, 1990). Career anchors are inherently based on work values relating to the meaning individuals attached to their careers, which may drive individuals to make certain career decisions or changes (Schein, 1990, 2006), reflecting their preferences in terms of the direction their careers took (Coetzee & Schreuder, 2009). Individuals who take career anchors into account when making a career decision will most likely achieve career satisfaction as career anchors reflect the core self-perceived values, talents, attitudes, motives and preferences. Schein's (1978, 1990) eight career anchors, namely technical/functional competence, general managerial competence, autonomy/independence, security/stability, entrepreneurial creativity, service/dedication to a cause, pure challenge, and lifestyle (Schein, 2006) were thus relevant to the present study.

Research on career anchors reported positive associations with self-perceived employability (Coetzee & Schreuder, 2011); a sense of happiness, career satisfaction, life satisfaction and perception of work as a valuable activity (Coetzee et al., 2010). Furthermore, career anchors relate positively to employability attributes (Oosthuizen et al., 2014) and career values (Abessolo et al., 2017; Wils et al., 2010). Research regarding career anchors reported significant differences among gender (Coetzee et al., 2007; de Villiers, 2009; Marshall & Bonner, 2003) and age groups (Coetzee & Schreuder, 2007). However, no significant differences were reported between different racial groups, except for the entrepreneurial career anchor (Coetzee & Schreuder, 2008). Research further indicated that, apart from a dominant career anchor, individuals may also have secondary and tertiary career anchors, which might enable them to adapt to changing career circumstances (Coetzee & Schreuder, 2008, 2014; Feldman & Bolino, 1996; Schein, 1990).

Values related to work, which are referred to as “career values” or “work or job values”, are important considerations in the theory and practice of career psychology (Brown, 2002; Feldman, 2002; Herr et al., 2004). The concept of values is rooted in the theories of career behaviour that emphasise the concept of the self (Super, 1976, 1980; Super & Šverko, 1995). In terms of this, the self is defined as a set of perceptions of the person’s characteristics. Within the context of work and career, individuals develop and implement a career self-concept through which they attempt to fulfil their career values. Career values are often described as a subset of personal or global life values (Patton, 2000). More specifically, values are a set of beliefs and attitudes about what is preferable for a person in life or, specifically, in a career (Macnab et al., 2005) and relate to and influence many aspects of career development, including attitudes and beliefs, interests, goals, decision-making criteria, standards and ethics (Dose, 1997). Career values related to working with others (service orientation, teamwork and influence), self-expression (creativity, independence, excitement and career development) and extrinsic rewards (financial rewards, prestige and security) were of relevance to the present study (Macnab et al., 2005). Career values are traditionally good indicators of what individuals might find satisfying and rewarding in a specific career (Coetzee & Schreuder, 2021).

Traditionally, it has been assumed that career values, representing the objectives sought by engagement in work, are relatively stable across the lifespan (Dose, 1997; Feldman, 2002; Patton & McMahon, 2014). However, a study by Dunning (2010) found that age, gender, and educational differences accounted for a small but significant amount of the variance in the career values. Furthermore, a study done by Sortheix et al. (2015) revealed that intrinsic work values predicted a higher degree of person-job fit two years later, whereas reward–work values predicted lower chances of being unemployed, and security work values predicted higher chances of being unemployed later in life.

Coetzee (2019a) provided an overview of key themes of research published in South Africa and indicated an increase in career psychology literature on psychosocial themes. Despite the increase of career psychology literature related to psychosocial career cognitions, psychosocial career resources and career outcomes which are important career constructs, research linking career satisfaction and self-perceived employability as outcomes of career cognitions (career adaptability, psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values) are not well integrated locally and internationally. The present study aims to address this gap in research.

Furthermore, there seems to be a lack of research that investigated the differences of biographical variables in terms of the construct variables. The present research further aimed to assess and explore broad trends with regard to whether individuals from various age,

gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations), psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability.

The nature of contemporary careers implies that for individuals to sustain their employability and to achieve career satisfaction, they need to change, which requires career cognitions related to career adaptability, which gives rise to specific psychosocial career preoccupations at a specific time of individuals' career life-cycles (Coetzee, 2014b; Savickas, 2005, 2013; Sharf, 2010). Career cognitions (career adaptability and psychosocial career preoccupations) thus acted as independent variables in the research. To enhance individuals' suitability for sustainable employment and career satisfaction further, well developed psychosocial career resources are required. Employability attributes (meta-capacities) are essential for proactive career management behaviour (Bezuidenhout, 2011; Potgieter, 2014). Career anchors and values are fundamentally important, as individuals express themselves through the work they do (Nazar & van der Heijden, 2012). Career anchors reflect individuals' true career-related abilities, needs and values as manifested through a variety of real-work experiences (Schein, 1978, 1990), while career values play a key motivational role in career choice and career development (Balsamo et al., 2013).

It is the basic premise of the present research that psychosocial career resources in the form of employability attributes, career anchors and career values are important meta-capacities on which individuals could draw to ensure sustainable employment by enhancing their self-perceived employability and achieve a satisfying career. These psychosocial career resources, especially employability attributes, may potentially interact with psychosocial career cognitions (career adaptability and psychosocial career preoccupations), in explaining individual's levels of self-perceived employability and career satisfaction. This leads to the question of whether psychosocial career resources could act as moderator variables, which might change the strength of the relationship between career cognitions and career satisfaction and self-perceived employability (as outcomes), from strong to moderate, to nothing at all. It is thus expected that career cognitions may predict the career satisfaction and self-perceived employability of knowledge workers, however, it is not clear whether the link between individuals' career adaptability and psychosocial career preoccupations (antecedents) and their career satisfaction and self-perceived employability (outcomes) is conditional upon (moderated by) psychosocial career resources of employability attributes, career anchors and values.

It was hypothesised that the main effects of and the interaction (moderating) effects between individuals' career adaptability and psychosocial career preoccupations (as antecedents of their career satisfaction and self-perceived employability) and their employability attributes, career anchors and career values (as psychosocial career resources acting as moderator variables), in relation to their career satisfaction and self-perceived employability (as consequences or outcomes) would constitute an empirical psychosocial profile that could potentially inform career development interventions for knowledge workers.

In addition, the research aimed to assess the role of person-centred variables (age, gender, race and employment status), as a set of control variables, in influencing the relationship dynamics among the various career-related variables.

For the purposes of the present doctoral thesis research, and for reasons of parsimony in dealing with a large number of variables, the following overarching research hypotheses were developed as an outflow of the literature review:

H1: There are statistically significant relationships among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables).

H2: Individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables, significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables.

H3: The relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is moderated by individuals' psychosocial career resources (employability attributes, career anchors and career values). The relationship is more positive when individuals' psychosocial career resources are well developed or strongly crystallised than when these resources are not well developed or strongly crystallised.

H4: Individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations), psychosocial career resources (employability attributes,

career anchors and career values), and career satisfaction and self-perceived employability.

H5: The empirically manifested relationship dynamics among the variables constitute a psychosocial profile for enhancing the career satisfaction and employability of knowledge workers.

The present research took a two-pronged approach to investigate the relationship dynamics between the study variables. Firstly, a variable-centred approach was used to explore how the antecedents (career cognitions), moderator variables (psychosocial career resources) and outcome variables (career satisfaction and self-perceived employability) manifested in a sample of knowledge workers. Secondly, it was assumed that individuals should be treated more holistically; thus, allowing the possibility that differentiating experiences of the variables of relevance to the present research might be experienced differently by members of homogenous socio-demographic subgroups (age, gender, race and employment status). Bester (2018) found, for example, race and job level to be important socio-demographical variables to predict career satisfaction. Variables might also have different implications for career development practices in combination than they do individually. The variables under discussion are:

- the antecedent variables (career adaptability and psychosocial career resources);
- the moderator variables (psychosocial career resources of employability attributes, career anchors and career values); and
- the outcome variables (career satisfaction and self-perceived employability).

A person-centred approach complemented the variable-centred approach, by exploring the role of socio-demographic characteristics, thus determining the way their biographical characteristics (age, gender, race and employment status) contribute to the dynamic interplay between these variables.

1.2 PROBLEM STATEMENT

Organisations and knowledge workers are challenged by the changing nature of the world of work. Organisations face challenges to attract, engage, retain and develop their employees (van Zyl & Stander, 2019). The changes in the volatile, uncertain, complex and ambiguous (VUCA) world of work make it even more difficult for organisations to survive. Knowledge workers are often confronted with job losses and uncertainty, leaving them with feelings of anxiety and insecurity (Savickas, 2019). The key to dealing successfully with the changing nature of work involves getting beyond the negative consequences that cause negative career outcomes (lack of engagement, absenteeism and employee turnover); but instead getting at

the “deeper” understanding of human behaviour and to help create meaningful and rewarding work experiences for knowledge workers (Riggio, 2018). Furthermore, the investment in employees' professional and personal development likely enhances employee retention and engagement (van Zyl & Stander, 2019).

The study of work behaviour and positive career outcomes of knowledge workers in the changing world of work is, however, dynamic and complex. With the high unemployment rate, escalated by die COVID-19 pandemic, especially in South Africa, knowledge workers are often faced with the challenge of taking up any job or faced with the urge of keeping themselves relevant just to remain employable (Maree, 2020). To remain employable in the VUCA world of work reflects the underlying theory of the dynamic interplay between person and environment fit and requires knowledge workers to adapt constantly. At the same time, all workers have an inner desire and sense of experiencing a meaningful and satisfying career (van Zyl & Stander, 2019). Career satisfaction and self-perceived employability as positive career outcomes are often seen as two sides of the same coin. Interventions are often aimed at remaining employable and being able to provide for basic financial needs, and therefore neglecting the aspect of career satisfaction. The assumption is that when knowledge workers focus on career satisfaction, they might neglect their ability to remain employed. Therefore, the assumption that the achievement of career satisfaction, together with self-perceived employability (as an outcome of sustainable employment) is regarded as a lofty aim that cannot be achieved as positive career outcomes, is prominent in the VUCA world of work.

The problem is that there has been research done on career satisfaction and self-perceived employability as separate career outcomes. However, limited research has been done on the predictors of career satisfaction and self-perceived employability (Niu et al., 2019). When industrial psychologists know more about the predictors of career satisfaction and self-perceived employability, they will be able to assist organisations and individuals by being able to develop appropriate career development interventions to enhance career satisfaction and self-perceived employability.

Traditionally, industrial psychologists assisted individuals to make career choices and to prepare for the world of work that suits the individual's interest, personality, competencies and values. A test-and-tell objective approach was followed to establish a satisfactorily match between an individual's stable traits and the career environment, as it was thought that this approach would guarantee lifetime employment and career success (Maree, 2020). However, taking the changes in the Fourth Industrial Revolution (Industry 4.0) into account, individuals need to adapt constantly to the changing environment to achieve career satisfaction and to remain employable (Coetzee & Schreuder, 2021). In response to the changing career

environment that has left individuals with feelings of anxiety and uncertainty, industrial psychologists, therefore, need to re-evaluate and reconsider the relevance of traditional career theories and practices.

Contemporary career theories and practices should be further investigated by exploring contemporary career constructs such as career adaptability, psychosocial career preoccupations and employability attributes, together with more traditional career constructs such as career anchors and career values. By utilising a combination of contemporary and traditional perspectives, industrial psychologists are able to play an even more important role in assisting individuals with developmental processes and pathways that might lead to desired career outcomes, such as career satisfaction and self-perceived employability leading to sustained employability (Vondracek et al., 2014). In order to enhance the ability of knowledge workers to manage their career paths (Clarke, 2013; Drenzo & Greenhaus, 2011; Greenhaus & Kossek, 2014; Koekemoer, 2014; Rudisill et al., 2010; Sutherland et al., 2015), industrial psychologists should guide diverse groups of individuals through the development of positive career cognitions (career adaptability and psychosocial career preoccupations), while exploring and enhancing career resources (employability attributes, career anchors, and career values) to ultimately increase their employability and career satisfaction. Psychosocial career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values) are thus important constructs in career psychology.

After perusing the literature, a problem was identified in that there seemed to be a lack of research which investigated in one single study, the relationship dynamics between career adaptability and psychosocial career preoccupations (as career cognitions) in interaction with employability attributes, career anchors, and career values (as psychosocial career resources) in predicting the career satisfaction and self-perceived employability (as career outcomes) of knowledge workers in the South African context. Moreover, Efendic and van Zyl (2019) highlighted the lack of robust science practice in psychological research and called for more valid, analytically reproducible and replicable research that adds value. Scholtz et al. (2020) also encourage researchers to delve deeper into the inner workings of employees.

The investigation of the relationship dynamics between knowledge workers' career satisfaction and self-perceived employability and their career cognitions (career adaptability and psychosocial career preoccupations) and their psychosocial career resources (employability attributes, career anchors, and career values), might contribute towards constructing a theoretical and empirically tested career satisfaction and employability profile for knowledge workers that could be utilised by industrial psychologists in society and in organisations to inform career development interventions.

This research is a starting point for adopting a dynamic approach towards exploring the relationship dynamics between knowledge workers' career satisfaction and self-perceived employability (as dependent variables); career adaptability and psychosocial career preoccupations (as independent variables); and employability attributes, career anchors and career values (as moderator variables); and the way their biographical characteristics (age, gender, race and employment status) contribute to the dynamic interplay between these variables.

A review of the current literature on the constructs of relevance to the present study brought to light the following research problems:

- Theoretical models do not clarify the relationship dynamics between career satisfaction and self-perceived employability as consequences of the interaction between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and psychosocial career resources (employability attributes, career anchors, and career values as moderators) of knowledge workers jointly and in a single study such as the present research.
- There are competing perspectives on which underlying theoretical approaches to apply when explaining and predicting career satisfaction and self-perceived employability.
- There seems to be a lack of research that investigated the predictors of career satisfaction and self-perceived employability, especially predictors related to specific career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values) of knowledge workers jointly in a single study.
- There seems to be a lack of research that investigated the relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and career satisfaction and self-perceived employability (consequences or outcomes). Furthermore, there seems to be a lack of research that investigated whether the relationship between career satisfaction and self-perceived employability (as positive career outcomes) and career cognitions (career adaptability and psychosocial career preoccupations) is more positive when their psychosocial career resources (employability attributes, career anchors and career values) are well developed or strongly crystallised than when these resources are not well developed or strongly crystallised.
- There seems to be a lack of research that investigated the differences of biographical groupings (age, gender, race and employment status) in terms of the construct

variables (career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values). Investigating the biographical differences in the multi-cultural South African work context of knowledge workers might provide further insights to inform diversity management interventions.

- There seems to be a lack of empirical research on the elements of an empirical psychosocial profile for enhancing career satisfaction and self-perceived employability of knowledge workers.

The problem statement led to the following general research question, comprising two sections:

Firstly, what is the nature of the psychosocial profile that emerges from the relationship dynamics among individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents), their psychosocial career resources (employability attributes, career anchors and career values as moderators), and their career satisfaction and self-perceived employability (as consequences or outcomes)? Secondly, what are the implications for the career development of knowledge workers?

An important contribution to the Industrial and Organisational Psychology field and practice will be made when answering this research question. Firstly, industrial psychologists will be able to develop career development interventions to increase the career satisfaction and self-perceived employability of knowledge workers based on an empirical psychosocial profile. Moreover, in the context of career development, both industrial psychologists and human resource practitioners would require knowledge regarding the theoretical and empirical relationship between these variables, because the knowledge that may be gained from the research could potentially generate new insights to inform career development interventions focused on increasing career satisfaction and self-perceived employability.

1.2.1 Research questions with regard to the literature review

The following specific research questions were addressed in terms of the literature review:

Research question 1: How does the literature conceptualise the variables of relevance to the research (career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors and career values)?

Research question 2: Based on the theoretical relationship dynamics among the constructs, what are the elements that constitute the postulated theoretical psychosocial career satisfaction and employability profile for enhancing the career satisfaction and self-perceived employability of knowledge workers?

Research question 3: What are the implications of the hypothesised psychosocial profile for the career development of knowledge workers in the contemporary employment context?

1.2.2 Research questions with regard to the empirical study

The following research questions were addressed in terms of the empirical study:

Research question 1: What is the nature of the relationship dynamics among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables) as manifested in a sample of knowledge workers in the South African organisational context?

Research question 2: Do individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables, significantly and positively predict career satisfaction and self-perceived employability as a composite set of dependent variables?

Research question 3: What is the relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and career satisfaction and self-perceived employability (consequences or outcomes), and is the relationship more positive when their psychosocial career resources (employability attributes, career anchors and career values) are well developed or strongly crystallised than when these resources are not well developed or strongly crystallised?

Research question 4: Do individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations), and psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability?

Research question 5: What are the elements of the empirically manifested psychosocial profile for enhancing career satisfaction and self-perceived employability?

Research question 6: Which conclusions may be drawn and which recommendations for future research and practice regarding the career development of knowledge workers can be made?

1.3 AIMS OF THE RESEARCH

In this section, the general aim of the research is specified followed by the specific aims.

1.3.1 General aim of the research

The general aim of the research was to investigate the nature of the psychosocial profile that manifests from the relationship dynamics among individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents), their psychosocial career resources (employability attributes, career anchors and career values as moderators) and their career satisfaction and self-perceived employability (consequences or outcomes); and to evaluate the implications for the career development of knowledge workers critically.

1.3.2 Specific aims of the research

Specific aims of the research related to the literature review and empirical study are presented in this section.

1.3.2.1 Literature review

In terms of the literature review, the research had the following aims:

Research aim 1: To conceptualise the variables of relevance to the research (career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors and career values).

Research aim 2: To postulate a theoretical psychosocial career satisfaction and employability profile (based on the theoretical relationship dynamics among the constructs) for enhancing the career satisfaction and self-perceived employability of knowledge workers.

Research aim 3: To evaluate the implications of the hypothesised psychosocial profile for the career development of knowledge workers in the contemporary employment context.

1.3.2.2 Empirical research

Research aim 1: To assess the relationship dynamics among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables). This research aim relates to research hypothesis H1.

Research aim 2: To assess whether individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables,

significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables. This research aim relates to research hypothesis H2.

Research aim 3: To assess whether the relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is more positive when their psychosocial career resources (employability attributes, career anchors and career values) are well developed or strongly crystallised than when these career resources are not well developed or strongly crystallised. This research aim relates to research hypothesis H3.

Research aim 4: To assess whether individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability. This research aim relates to research hypothesis H4.

Research aim 5: To construct a psychosocial profile for enhancing career satisfaction and employability based on the empirical results. This research aim relates to research hypothesis H5.

Research aim 6: To draw conclusions and make recommendations for future research and practice regarding the career development of knowledge workers.

1.4 STATEMENT OF SIGNIFICANCE

The development of an empirical career satisfaction and employability profile for knowledge workers appeared to be a complex and varied task, with many factors either hindering or promoting its development. This is particularly true since the role of career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values, in relation to career satisfaction and employability of knowledge workers, is complex and has not yet been well researched in the South African context before.

This research is a starting point for the investigation of the career development and career satisfaction and employability of knowledge workers.

1.4.1 Potential contribution on a theoretical level

The findings of the present research have the potential to assist industrial psychologists and HR professionals to develop a better understanding of the constructs career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values in considering the career satisfaction and employability profile of knowledge workers. Organisations may also utilise the conceptual framework to inform career development interventions.

The findings may provide useful evidence for future researchers exploring the possibility of increasing career success as expressed in terms of career satisfaction and employability where relationships between these constructs are found.

This research potentially broke new ground because, to date, there has been no single study on the relationship dynamics between the constructs of career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values. In organisational career psychology research, employability and career satisfaction are becoming increasingly important themes (Baruch et al., 2015; de Vos et al., 2011; Fugate et al., 2004; Järnlström et al., 2020; Spurk et al., 2019; van der Heijde & van der Heijden, 2006). This consequently reflects the changing nature of the world of work and careers, which requires people to develop the career meta-competencies they will need to design a meaningful career for life in an uncertain, increasingly chaotic world of work (Coetzee et al., 2016; Olson & Shultz, 2013; Schreuder & Coetzee, 2016; Sutherland et al., 2015).

1.4.2 Potential contribution on an empirical level

On an empirical level, this research may contribute towards constructing an empirically tested career satisfaction and employability profile for knowledge workers, which may inform career development interventions. Furthermore, organisational career psychology research in South Africa is underdeveloped when compared to the rest of the world in terms of international trends in research focus areas in career psychology (Schreuder & Coetzee, 2012). This research study had the potential to contribute new knowledge to contemporary career theory by exploring the empirically manifested relationship dynamics between the constructs from three theoretical perspectives: person-environment fit (PE-fit) (Holland, 1997; van Vianen, 2018), conservation of resources (COR) (Hobfoll, 1988, 1998, 2001) and dispositional employability (Fugate et al., 2004).

1.4.3 Potential contribution on a practical level

On a practical level, once industrial psychologists and HR professionals have a better understanding of the constructs career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values and have an empirically manifested psychosocial profile for enhancing the career satisfaction and self-perceived employability for knowledge workers readily available, they will be able to contribute positively towards career development interventions. The research findings, therefore, have the potential to provide positive outcomes in terms of the career development and career satisfaction and employability of knowledge workers.

For that reason, the importance of career satisfaction and employability when considering the changing world of work of knowledge workers may be emphasised and better understood in career psychology.

1.5 THE RESEARCH MODEL

Mouton and Marais's (1996) seminal social science research model was utilised as a framework to conduct this study, as this model supports the view that social science research comprises a collaborative process of human activity when studying social realities objectively to gain a valid understanding of it. The following five dimensions of social science research were included in the framework:

- sociological dimension (social nature of scientific research);
- ontological dimension (nature of being or what exists);
- ideological dimension (non-scientific view);
- epistemological dimension (creation of knowledge); and
- methodological dimension (methodological choice and beliefs).

The model reflected a systems theoretical model with three subsystems interacting with each other and the research domain of the specific discipline, which in this case relates to Industrial and Organisational Psychology. The three relevant subsystems are the intellectual climate, followed by the market for intellectual resources, and the research process itself.

1.6 PARADIGM PERSPECTIVES OF THE RESEARCH

Paradigms can be described as the general organising framework for theory and research, and comprise key issues, basic assumptions, models of quality research and the research methods or techniques that are applied in the search for answers (Neuman, 2014).

1.6.1 The intellectual climate

The relevant constructs for the present study were career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values. The literature review is presented in terms of a humanistic, social-cognitive and open systems paradigm, whereas the empirical study is presented from a positivist research paradigm.

1.6.1.1 Literature review

The literature review is presented according to the humanistic, social-cognitive and open systems paradigmatic perspectives:

(a) *The humanistic approach*

The humanistic paradigm emphasises the following basic assumptions (Bergh & Theron, 2012; Leong, 2008; Meyer et al., 2003) related to:

- freedom and responsibility of the individual – sets own goals and is responsible for own choices;
- individual agency and holistic functioning of the individual;
- importance of individual experiences – to find meaning in being;
- positive self-concept and inner inclination towards psychological growth and self-fulfilment;
- a strong will enables individuals to overcome environmental limitations; and
- dignity of individuals – what has meaning for individuals is understood in terms of specific thinking, feelings and perceptions and personal experiences.

This research focuses on the individual perspective of knowledge workers, thus reflecting the opinions and perceptions of knowledge workers career cognitions, psychosocial career resources and positive career outcomes.

Thematically, the humanistic paradigm relates to all the constructs relevant to the study – career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values – based on the assumption that work is as natural for human beings as it is to rest and play. As an integrated whole, individuals have the freedom to set their own goals and the ability to take responsibility for their own careers. Organisations can provide support and opportunities to enhance growth and self-fulfilment to ensure effective and satisfied workers.

(b) *The social-cognitive approach*

The social-cognitive approach emphasises the reciprocal interaction of behaviour, cognitive, personal and environmental influences on human functioning based on the following assumptions (Lent & Brown, 1996; Leong, 2008; Meyer et al., 2003):

- Individuals are active participants and can influence their own lives in several ways. Individuals are social beings who are forward-looking, act purposively and possess cognitive and affective competencies. Therefore, individuals have the capacity to evaluate their current experiences and anticipate future events based on the goals they have chosen for themselves.

- Individuals are capable of thinking, anticipating, planning and evaluating their actions and are neither driven by inner factors nor automatically controlled and shaped by the environment. Human performance is thus shaped by the individual's cognitive and behavioural factors interacting with environmental factors.
- Individuals are thus not only products and producers of social systems but are also functioning as contributors to their own behaviour, development and motivation within a network of reciprocally interacting influences.

Thematically, the social cognitive approach relates to all the constructs relevant to this study – career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values – as individuals have the ability to influence their own lives; however, they live in a social environment and will achieve optimal performance when there is a person-environment congruence.

(c) The open-living systems approach

An open systems paradigm perceives an individual as being part of an organisation and who interacts with the external environment, which consequently stimulates change. From a living system (person) process perspective, individuals consist of multiple psychological and biological processes (Vondracek et al., 2014). The open-living systems approach thus emphasise the following assumptions (Bergh & Theron, 2012; Hodge et al., 1996; Newman & Newman, 2017; Patton & McMahon, 2014; Vondracek et al., 2014):

- Organisations are complex and consist of interrelated parts which interact with the external environment.
- Organisations function in terms of inputs (individuals, workgroups, work environment, political, economic, technological influences) transformed into outputs.
- Individuals are open systems which function as a result of the person-environment organisation of various contextual and transactional variables.
- Individual behaviour is complex and dynamic and develops over time and across contexts.
- Individuals function as integrated units in a specific context.
- Individuals develop different complex integrated pathways.
- Open systems move towards growth and expansion and engage in processes related to production, maintenance and adaptation.

Thematically, an open systems approach relates to individuals living in complex dynamic systems where they need to construct their careers. Individuals act as a system comprising a range of intrapersonal characteristics, such as values, personality, age, gender, ethnicity and competencies. However, individuals do not live in isolation. They are part of a complex multi-levelled contextual system and are influenced by the social system reflected in regular personal interaction of family, friends, colleagues, and workplaces. Influences of the environmental–societal system, such as politics, economics, and the turbulent world, may not be personal, but may nevertheless still have a profound influence on individuals' careers. Individuals interact and are influenced by the social system and environmental–societal system. The open systems approach, therefore, relates to all constructs relevant to this study – career satisfaction, self-perceived employability, psychosocial career preoccupations, career adaptability, employability attributes, career anchors, and career values).

(d) *Overarching theoretical lenses*

As indicated earlier, the study, therefore, evaluates the relationship dynamics between the constructs of relevance from three theoretical lenses: person-environment fit (PE-fit) (Holland, 1997; van Vianen, 2018), conservation of resources (COR) (Hobfoll, 1988, 1998, 2001) and dispositional employability (Fugate et al., 2004).

i. *Person-environment fit (PE-fit) (Holland, 1997; van Vianen, 2018)*

Person–environment fit models (Holland, 1997; van Vianen, 2018) emphasise that career behaviour is a result of the continuous interaction between a person and the environment. The three basic principles of the PE-fit theory are: (1) the combination of the person and environment tends to predict human behaviour better, (2) when used separately; outcomes will be optimal when personal and environmental attributes are compatible; and (3) the direction of fit or misfit between the person and environment does not actually matter (van Vianen, 2018).

ii. *Conservation of resources (COR) (Hobfoll, 1988, 1998, 2001)*

The basic tenets of the COR theory are that individuals strive to retain, protect, and build' valuable resources and are threatened with the potential or actual loss of these valued resources (Hobfoll, 1989). Resources reflect what individuals' value and involve psychological characteristics, conditions, energy and objects (e.g., security, social support) (Halbesleben et al., 2014; Hobfoll, 1998, 2001, 2011). Furthermore, individuals who possess fewer resources are more vulnerable to resource loss are less able to invest resources to gain new resources. Individuals who possess a bigger pool of resources are less vulnerable to resource loss and might be better equipped to make

resource gain possible (Gorgievski & Hobfoll, 2008; Hobfoll, 1989, 2001; Meyer et al., 2004).

iii. *Dispositional employability (Fugate et al., 2004)*

The basic tenets of the dispositional employability theory are that employability represents proactive adaptability behaviour that consists of three dimensions: career identity, personal adaptability, and social and human capital (Fugate et al., 2004).

1.6.1.2 Empirical research

The empirical research is presented from a positivistic research paradigm, which developed from an objective ontological perspective (Creswell, 2014; Matthews & Ross, 2010; Morgan, 1980; Newman & Newman, 2017; Rubin & Babbie, 2016; Schrag, 1992):

- A positivist research approach focuses on the study of human behaviour by investigating causal relationships among constructs, aimed to predict outcomes. Researcher applying this approach attempt to understand society in a way that generates useful objective empirical knowledge. Results are therefore based on scientific observations that are objective, repeatable and systematic (Creswell, 2014), rather than subjective assumptions and understandings.
- The researcher acts independently and does not influence the collected data. Statistical analysis techniques are applied to test specific hypotheses constituted from existing theory.

Thematically, the empirical study focused on investigating the relationship dynamics between the constructs relevant to the study through an explorative cross-sectional quantitative research design utilising a large data set and statistical analysis.

1.6.2 The market of intellectual resources

The market of intellectual resources refers to the collected beliefs that have a direct effect on the epistemic status of scientific statements (Mouton & Marais, 1996) and which are reflected in the following sections, which present the theoretical models; meta-theoretical statements; conceptual descriptions; the central hypothesis, and theoretical and methodological assumptions.

1.6.2.1 Meta-theoretical statements

The meta-theoretical statements represent an essential category of underlying assumptions related to theories, models and paradigms of this research. Meta-theoretical values and beliefs form part of the intellectual climate of each particular discipline in the social sciences (Mouton & Marais, 1996). In this study, the disciplinary context related to Industrial and Organisational Psychology and Career Psychology.

Industrial and Organisational Psychology refers to general psychology, which is applied in industry and organisations (Bergh & Theron, 2012; Landy & Conte, 2016; Riggio, 2018; Strümpfer, 2007). As an applied division of psychology, Industrial and Organisational Psychology is concerned with the study of human behaviour and the application of psychological theories, principles, and research in the work context (Schreuder & Coetzee, 2010; van Zyl et al., 2016). In the South African context, the discipline and profession of Industrial and Organisational Psychology relate to the optimisation of individual potential at individual, group and organisational level by utilising scientific theories and paradigms, methods, processes, and the principles of psychology in the work context to facilitate sustainable performance, enhanced productivity, general health and well-being (van Zyl et al., 2016). The HPCSA (2019, p. 3) specifically defined Industrial and Organisational Psychology as: “the science and practice of professionals who function in organisational and occupational settings with an aim to ethically explain, assess and influence human behaviour and its reciprocity at individual, group and organisational levels, with all efforts directed at human flourishing and the sustainable development of all affected stakeholders”. Industrial psychologists focus on developmental interventions by concentrating on facilitating and cultivating a satisfying work role and work life, thus optimising individual well-being to assist organisations in working more effectively (Jorgensen-Graupner & van Zyl, 2019). In contrast, clinical psychologists focus on remedial interventions and offer treatments for human dysfunction (Vondracek et al., 2014).

Career psychology is the study of career development and career behaviour as an integral part of human development. Greenhaus et al. (2010) define career development as the ongoing process of individual progression through a series of stages, each of which is characterised by a relatively unique set of themes, tasks and issues.

This study examined the relationship dynamics between the constructs of career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values in order to construct a career satisfaction and employability profile for knowledge workers.

1.6.2.2 Conceptual descriptions

The following conceptual descriptions served as points of departure for the discussion in this research:

(a) Career satisfaction

Abele et al. (2011) defined the construct career satisfaction as the evaluation of all the accumulated experiences of an individual's career. Career satisfaction thus refers to the extent

individuals feel satisfied with the overall success achieved in their careers, as well as the progress towards meeting career goals, goals for income, career advancement and the development of new skills, and was thus measured by the Career Satisfaction Scale (Greenhaus et al., 1990). Career satisfaction is a significant indicator of an individual's evaluation of the work domain, as it is also a much broader construct than job satisfaction (Hagmaier et al., 2018). Hughes' (1937) framework of career success theory was relevant to this study.

(b) Self-perceived employability

The construct self-perceived employability refers to the ability of individuals to keep their current employment or to get the ideal employment opportunity they desire. The heuristic model of employability (Fugate et al., 2004) was relevant to the study, and the Graduate Employability Measure (GEM) (Rothwell & Arnold, 2007) was utilised to measure self-perceived employability from an individual focus that relates to what individuals believe (self-perceived) their employment options are. The items in the scale measure individuals' confidence related to being retained in the event of company downsizing; retaining self to be employable elsewhere; getting a similar job in a similar or any other organisation; the level of knowledge and skills being sought after and finding a job with relevant knowledge and skills. The items in the scale further measures an individual's confidence in social support of social networks; and awareness of career opportunities in and outside the organisation.

(c) Career adaptability

The construct career adaptability refers to the psychosocial readiness of individuals to utilise resources proactively and confidently for coping with present and anticipated development tasks, changes in work settings and conditions, and work traumas (Savickas & Porfeli, 2012). The career construction theory (Savickas, 2005) was relevant to the study and the Career Adapt-Abilities Scale (CAAS) Form 2, developed by Savickas and Porfeli (2012), was utilised to measure the participants' career adaptability in terms of concern, control, curiosity and confidence.

(d) Psychosocial career preoccupations

The construct psychosocial career preoccupations refers to a mental state of having certain career concerns at the forefront of one's mind at a specific time (Coetzee, 2014b). Super's development theory of life stages (Super, 1990) was relevant to the study and the Psychosocial Career Preoccupations Scale (PCPS) developed by Coetzee (2014b) was utilised to measure the participants' psychosocial career preoccupations in terms of career establishment-, career adaptation- and work-life adjustment- preoccupations.

(e) *Employability attributes*

The construct employability attributes refers to a set of eight career attributes that are regarded as important for individuals in developing, managing and sustaining their employability. These constructs are career self-management, cultural competence, self-efficacy, career resilience, sociability, entrepreneurial orientation, proactivity and emotional literacy (Coetzee, 2010). The employability attributes model of Bezuidenhout (2011) was relevant to the study, and the Employability Attributes Scale (EAS) of Bezuidenhout and Coetzee (2010) was employed to measure the respondents' confidence in their self-perceived employability attributes.

(f) *Career anchors*

The construct career anchors refers to individuals' constellations of self-perceived talents and abilities, motives and needs, attitudes and values and can stabilise individuals' career decisions in predictable ways (Chang et al., 2012; Feldman & Bolino, 1996; Schein, 1990). Schein's (1990) career anchor model was relevant to the study, and his career orientations inventory (COI) (Schein, 1990) was applied to measure respondents' career anchor orientations. Career anchors were measured in terms of the following eight anchors: technical or functional competence; general managerial competence; entrepreneurial creativity; autonomy and independence; security and stability; lifestyle; service or dedication to a cause; pure challenge.

(g) *Career values*

Career values can be described as beliefs that give meaning to specific career preferences (Symington, 2012). Super's (1995) definition of work values was relevant to the study, and the Career Values Scale (CVS) (Macnab et al., 2005) was utilised to measure respondents' career values. Career values were measured in terms of the following sub-scales: service orientation; teamwork; influence; creativity; independence; excitement; career development; financial rewards; prestige; and security.

Table 1.1 provides a summary of the core construct sub-elements, measuring instruments, and the foundational theoretical models of this research.

Table 1.1*Core Constructs Sub-Elements, Measuring Instruments and Foundational Theoretical Models of the Research*

Construct variable	Sub-elements	Measuring instrument	Foundational theoretical model
Career satisfaction	Career satisfaction, perceived marketability Self-rated career performance	Career Satisfaction Scale (Greenhaus et al., 1990)	Hughes' (1937) framework of career success
Self-perceived employability	Self-perceived employability	Self-perceived employability questionnaire (<i>Graduate Employability Measure [GEM]</i>) (Rothwell & Arnold, 2007)	A heuristic model as well as dispositional mode of employability (Fugate et al., 2004)
Career adaptability	Career concern Career control Career curiosity Career confidence	Career Adapt-Abilities Scale (CAAS) (Savickas & Porfeli, 2012)	Career construction theory (Savickas, 2005)
Psychosocial career pre-occupations	Career establishment Career adaptation Work-life adjustment	Psychosocial Career Preoccupations Scale (PCPS) (Coetzee, 2014b)	Super's development theory of life stage (Super, 1990)
Employability attributes	Career self-management Cultural competence Self-efficacy Career resilience Sociability Entrepreneurial orientation Proactivity Emotional literacy	Employability Attributes Scale (EAS) (Bezuidenhout & Coetzee, 2010)	Employability attributes model (Bezuidenhout, 2011)
Career anchors	Technical or functional competence General managerial competence Entrepreneurial creativity Autonomy and independence Security and stability Lifestyle Service or dedication to a cause Pure challenge	Career Orientations Inventory (COI) (Schein, 1990)	Schein's career anchor model (Schein, 1990)
Career values	Working with others Service orientation Teamwork Influence Self-expression Creativity Independence Excitement Career development Extrinsic rewards Financial rewards Prestige Security	Career Values Scale (CVS). (Macnab et al., 2005)	Super's definition of work values (Super, 1995)

Source. Author's own work

1.6.2.3 Central hypothesis

The central hypothesis of the research was formulated as follows:

The main effects of and the interaction (moderating) effects between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents of their career satisfaction and self-perceived employability) and their employability attributes, career anchors and work values (as psychosocial career resources acting as moderator variables), in relation to their career satisfaction and self-perceived employability (as consequences or outcomes) will constitute a psychosocial profile that may potentially inform career development interventions for knowledge workers.

It was assumed that the relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is more positive when their psychosocial career resources (employability attributes, career anchors and career values) are well developed or strongly crystallised than when these resources are not well developed or strongly crystallised. In addition, individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations), psychosocial career resources (employability attributes, career anchors and career values), career satisfaction and self-perceived employability.

1.6.2.4 Theoretical assumptions

Based on the literature review, the following theoretical assumptions were addressed in this research:

- There is a need for basic research that seeks to isolate career satisfaction, self-perceived employability, psychosocial career preoccupations, career adaptability, employability attributes, career anchors, and career values.
- Individuals from different socio-demographic groups (age, gender, race and employment status) differ significantly regarding their career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values.
- The constructs career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values can be influenced by external factors such as age, gender, race and employment status
- Understanding the knowledge worker's career satisfaction and employability will create an awareness of the factors that may potentially inform career development practices.

- The various variables constitute a career satisfaction and employability profile that can be empirically tested and which may guide the career development interventions of knowledge workers.

1.6.2.5 Methodological assumptions

Methodological assumptions refer to beliefs concerning the nature of social sciences and scientific research (Mouton & Marais, 1996). The nature and structure of the research domain are affected by the following methodological assumptions as they relate to methodological choices and beliefs that form the basis of good research.

(a) Sociological dimension

The sociological dimension conforms to the requirements of the sociological research ethics, which draws on the research community for sources of theory development. The sociological dimension highlights the social nature of scientific research as a joint or collaborative human activity. Within the bounds of the sociological dimension, research is experimental, analytical and exact, since the issues under observation are subject to quantitative research and analysis (Mouton & Marais, 1996).

This research was non-experimental and focused on the quantitative analysis of variables and concepts that are described in Chapters 6 (empirical research) and 7 (research results).

(b) Ontological dimension

The ontological dimension involves the issue of what exists or the fundamental nature of reality (Neuman, 2014). This dimension relates to the study of people and may include human activities, characteristics, institutions and behaviour (Mouton & Marais, 1996). The present research measured properties of the constructs career satisfaction, self-perceived employability, psychosocial career preoccupations, career adaptability, employability attributes, career anchors, and career values.

(c) Teleological dimension

The teleological dimension proposes that research should be goal-directed and systematic. It is, therefore, essential to state and relate the research problem being investigated to the research goals (Mouton & Marais, 1996). The overarching research goals in this research were explicit, namely, to assess the relationship between career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values.

In addition, the teleological dimension of this research project aimed to advance the fields of Industrial and Organisational Psychology and Career Psychology in practical terms by

contributing knowledge to enhance individuals' career satisfaction and self-perceived employability and potentially inform career development interventions for organisations.

(d) Epistemological dimension

The epistemological dimension relates to the search for truth in order to generate valid findings reflecting the reality as close as possible (Mouton & Marais, 1996). This research applied a good research design in searching for the truth and to achieve reliable and valid results.

(e) Methodological dimension

The methodological assumptions relate to specific beliefs concerning the nature of social science and scientific research and comprise more than just the methodological assumptions, preferences and presuppositions about what ought to represent sound research (Mouton & Marais, 1996).

In this research, quantitative (exploratory) research was conducted in the form of a literature review on career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values. Quantitative (descriptive and explanatory) research was also applied in the empirical study.

1.7 RESEARCH STRATEGY AND DESIGN

According to Babbie and Mouton (2007), a research design is a basic plan or blueprint of how one intends to conduct the research. A research design focuses on the end-product and the logic of research (Rubin & Babbie, 2016). As a result, the design of the present research is discussed in relation to the types of research conducted, followed by a discussion of validity and reliability.

1.7.1 Exploratory research

According to Rubin and Babbie (2016), the object of exploratory research is to examine relatively unknown areas of research. The goal of exploratory research is to gain new insights into a topic for research, establish central concepts and constructs, and then establish priorities (Babbie & Mouton, 2007; Rubin & Babbie, 2016). The present research was exploratory in that it compared various theoretical perspectives on career satisfaction, self-perceived employability, psychosocial career preoccupations, career adaptability, employability attributes, career anchors, and career values.

1.7.2 Descriptive research

Descriptive research refers to the in-depth description of individuals, situations, groups, organisations, cultures, subcultures, interactions or social objects (Mouton & Marais, 1996; Rubin & Babbie, 2016). In the literature review, descriptive research applied to the

conceptualisation of the constructs career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values. In the empirical study, descriptive research was utilised in terms of the biographical characteristics of the sample of participants and their mean scores on the various measuring instruments.

1.7.3 Explanatory research

Explanatory research builds on exploratory and descriptive research (Neuman, 2014) and aims to show causality between the variables as well as the direction of relationships (Babbie & Mouton, 2007; Rubin & Babbie, 2016). This form of research was applied when studying the relationship between career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values empirically. This was achieved by testing the research hypotheses.

The end goal of the research was to draw a conclusion on the relationship dynamics (magnitude and direction) between the constructs of relevance to the study with a view to construct an empirically tested career satisfaction and employability profile for knowledge workers. This research, therefore, aimed to fulfil the requirements for explanatory research as outlined above.

1.7.4 Validity

The term 'validity' refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration (Babbie & Mouton, 2007). According to Rubin and Babbie (2016), there are several types of validity, namely internal, external and measurement validity, which are all critical in research. **Internal validity** relates to the generation of accurate and valid findings on a specific phenomenon and is synonymous with control (Rubin & Babbie, 2016; Salkind, 2018). **External validity** refers to the degree to which it is possible to generalise the results from the data gathered and the context of the research study to another sample and larger populations and environments (Rubin & Babbie, 2016; Salkind, 2018). External validity is also associated with the sampling procedures used, the time and place of the research, and the conditions under which the research is conducted (Salkind, 2018). **Measurement validity** relates to the fit between conceptual and operational definitions (Neuman, 2014) and includes face, content, criterion and construct validity (Rubin & Babbie, 2016). To ensure validity, it is essential to make a series of informed decisions regarding the purpose of the research, the theoretical paradigms that will be utilised in the research, the context within which the research will take place and the research techniques that will be utilised to collect and analyse data (Rubin & Babbie, 2016; Terre Blanche & Durrheim, 2002).

1.7.4.1 Validity with regard to the literature

In this research, the validity of the literature review was assured by using relevant and up to date literature in terms of the topic, the problems and the aims of the research. Although every attempt was made to utilise the most recent sources, classical and contemporary mainstream publications were also considered owing to their relevance in conceptualising the constructs applicable to the research.

1.7.4.2 Validity with regard to the empirical study

Research should be internally and externally valid. Internal validity refers to the extent to which the relationships between the variables have been interpreted correctly (Punch, 2014), whereas external validity refers to the generalisability of findings to settings and populations beyond the study conditions (Rubin & Babbie, 2016). Measurement validity such as content, criterion and construct validity were applied to establish the trustworthiness of the research instruments (Salkind, 2018).

In the present study, internal validity was ensured by minimising selection bias (by targeting the population of knowledge workers registered at various professional boards in the South African context). The largest possible sample was chosen. The questionnaire included information and standard instructions to all participants, and the instruments were tested for construct validity and reliability. The statistical procedures controlled for biographical variables.

External validity was ensured by the results being relevant only to knowledge workers registered at various professional boards. A cross-sectional research design was followed, which involved observations of a sample or cross-section of a population or phenomenon that were made at one specific time, and non-probability purposive sampling was utilised.

In the research, measurement validity was assured by utilising appropriate and standardised measuring instruments (Gregory, 2000). To assure content validity, efforts were made to ensure that the data collected were accurate and appropriately analysed, and the findings of this research study were based on the data analysed. Furthermore, the reporting and interpretation of the results were carried out by employing statistically standardised procedures. Finally, the researcher assured that the conclusions, implications and recommendations were based on the findings of the specific research.

1.7.5 Reliability

Reliability is a matter of whether a particular technique, applied repeatedly to the same object, would produce the same results each time, and reliability, therefore, refers to the dependability or consistency of a measuring instrument (Babbie & Mouton, 2007; Rubin & Babbie, 2016). In

the literature review, reliability was addressed by using the existing literature sources, theories and models.

The reliability of the measuring instruments in the empirical study was addressed by assessing the internal consistency reliability of the measuring instrument data, where each item on a scale correlated with another item, thus ensuring that the items were measuring the same construct (Rubin & Babbie, 2016; Terre Blanche & Durrheim, 2002).

1.7.6 The unit of research

In the social sciences, the most common object of research is the individual human being (Babbie & Mouton, 2007). The unit of analysis distinguishes between the characteristics, conditions, orientations and actions of individuals, groups, organisations and social artefacts (Babbie & Mouton, 2007). When attempting individual measurement, the unit of analysis is the individual, in contrast to investigating the difference between biographical groups, where the unit of analysis is the subgroup.

This research focused on the constructs of career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values.

For this study, the individual scores on each of the measuring instruments (individual level), the overall scores on all the measuring instruments (group level) and the biographical characteristics (subgroup level) were taken into account. The purpose of the study was to determine the relationship dynamics between the constructs of relevance to the study as well as to construct a career satisfaction and employability profile for knowledge workers.

1.7.7 The variables

This study aimed to assess the relationship dynamics among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), career satisfaction and self-perceived employability (as consequences or dependent variables). A moderator variable is defined as a variable that systematically influences the form and strength of the relationship between an independent and a dependent variable (Rubin & Babbie, 2016).

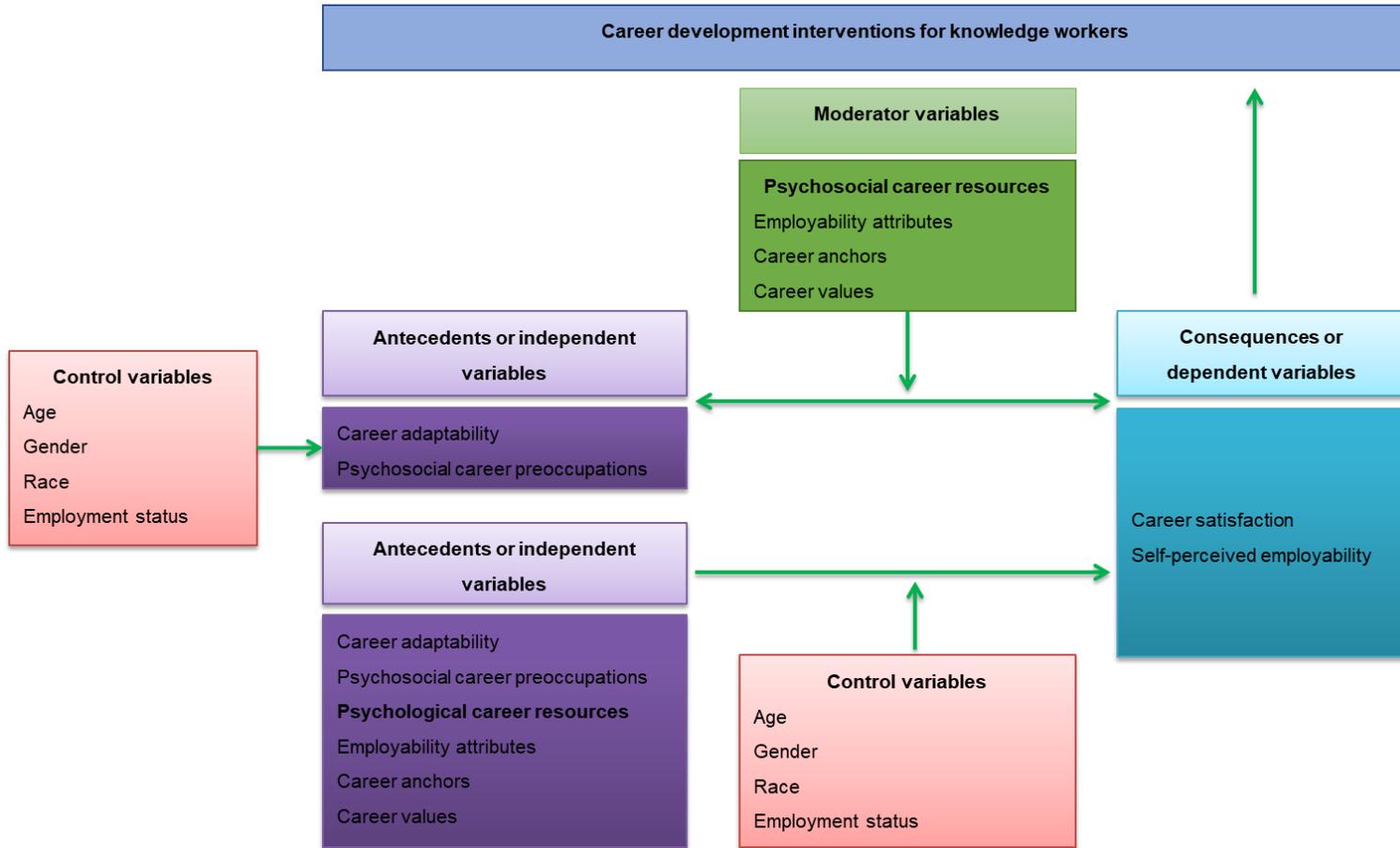
This research focused on the career satisfaction and self-perceived employability of knowledge workers as influenced by a set of career-related cognitions and resources (i.e. their career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values). The research aimed to assess the relationship dynamics among

these contemporary career-related constructs and, based on the observed dynamics, to construct a psychosocial profile for enhancing the career satisfaction and employability of knowledge workers.

Figure 1.1 illustrates the conceptual model of the research, which provides an overview of the relationships that were investigated. The relationships that were investigated manifested in constructing a career satisfaction and employability profile for knowledge workers. The analysis focused on assessing the interaction effect between the career-related cognitions (career adaptability and psychosocial career preoccupations) and the psychosocial career resources (employability attributes, career anchors and career values) in predicting individuals' career satisfaction and self-perceived employability. Person-centred characteristics, such as age, gender, race and employment status, were treated as control variables in investigating the relationship among the construct variables. The outcome of the analysis (i.e. the profile that emerged from the relationship dynamics) might help to inform career development interventions for the knowledge worker. The analysis also considered individual diversity (differences of person-centred characteristics in terms of the construct variables that constitute the profile) and its implications for career development practices.

Figure 1.1

Conceptual Model of the Research



Source. Author's own work

1.7.8 Delimitations

This study was limited to research dealing with the relationship dynamics between the relevant constructs. In an attempt to prevent the inclusion of misaligned factors that could influence the constructs of relevance to the study, the variables used as control variables were limited to age, gender, race and employment status.

1.8 THE RESEARCH METHOD

The research was conducted in two phases, namely a literature review and an empirical study.

1.8.1 Phase 1: The literature review

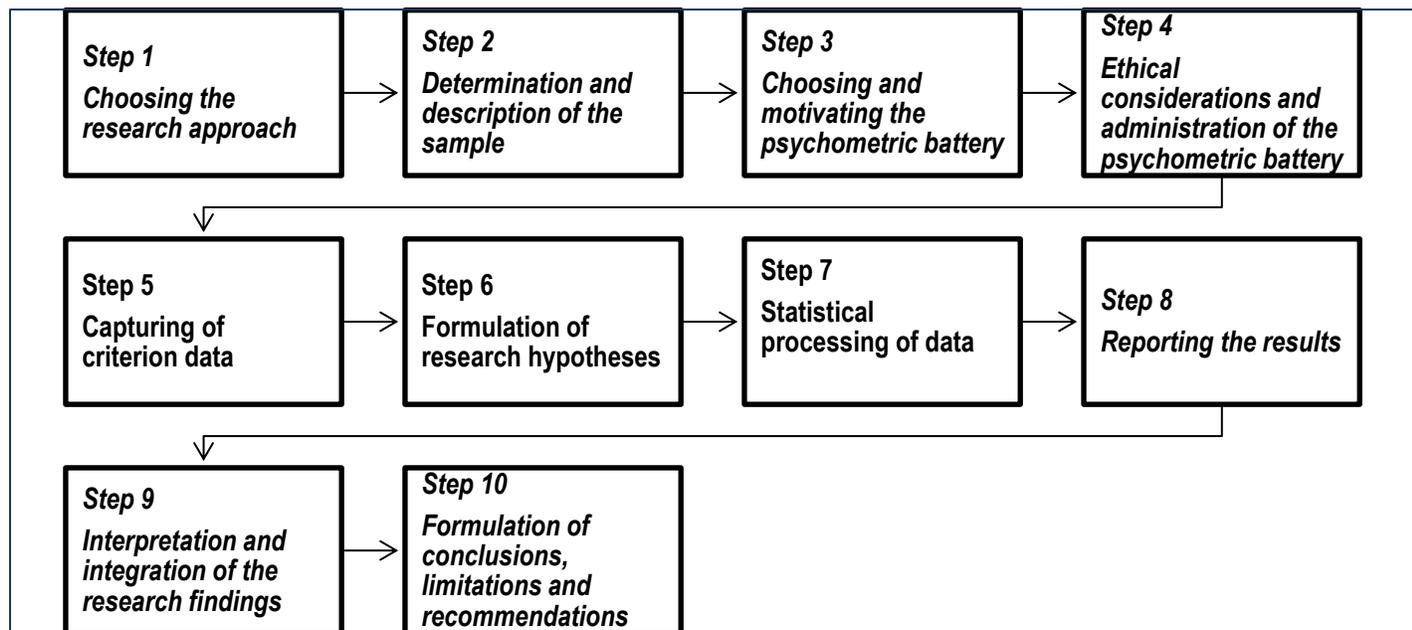
The literature review consisted of a review of the relevant constructs that had to be investigated as well as the biographical characteristics of knowledge workers in the 21st century South African context.

1.8.2 Phase 2: The empirical study

The steps followed in the empirical study are discussed in Chapter 6. Figure 1.2 provides an overview of the empirical study.

Figure 1.2

Overview of the Empirical Study



Source. Author's own work

Step 1: Choosing a research approach

A quantitative exploratory cross-sectional research design was followed and is discussed in Chapter 6.

Step 2: Determination and description of the sample

The target population comprised of knowledge workers registered at different recognised professional bodies. This is discussed further in Chapter 6.

Step 3: Choosing and motivating the psychometric battery

The psychometric properties of the measuring instruments which were utilised to measure the constructs of relevance are described in Chapter 6. The instruments also identified the biographical characteristics (age, gender, race, employment status) of the respondents.

The biographical characteristics of the respondents were measured with a short biographical questionnaire to ascertain the different age, gender, race and employment statuses.

The following measuring instruments were utilised to measure the core constructs:

- the Career Satisfaction Scale (CSS) (Greenhaus et al., 1990),
- a self-perceived employability questionnaire (Graduate Employability Measure [GEM]), (Rothwell & Arnold, 2007)
- the Psychosocial Career Preoccupations Scale (PCPS) (Coetzee, 2014b),
- the Career Adapt-abilities Scale (CAAS) (Savickas & Porfeli, 2012),
- the Employability Attributes Scale (EAS) (Bezuidenhout & Coetzee, 2010),
- the Career Orientations Inventory (COI) (Schein, 1990) and
- the Career Values Scale (CVS) (Macnab et al., 2005).

These instruments are discussed in detail in Chapter 6.

Step 4: Ethical considerations and administration of the psychometric battery

The ethical considerations are discussed in Chapter 6. The ethical clearance certificate is attached as Appendix A.

Step 5: Capturing of criterion data

The participants' responses to each of the items in the six questionnaires were captured on an electronic database and were subsequently converted to an SPSS data file.

Step 6: Formulation of research hypotheses

The research hypotheses and statistical procedures are explained in Chapter 6.

Step 7: Statistical processing of data

The empirical methodology is discussed in Chapter 6, which describes the research approach, population, sample and the data-gathering process.

Step 8: Reporting the results

The results are presented and reported in terms of descriptive, correlation and inferential statistical analysis in Chapter 7.

Step 9: Interpretation and integration of the research findings

The research findings were interpreted and integrated in Chapter 8.

Step 10: Formulation of conclusions, limitations and recommendations

Chapter 8 reflects on conclusions based on the results and their integration with theory. The limitations of the research are discussed in this chapter, and recommendations are made for drawing up an empirical career satisfaction and employability profile for knowledge workers.

1.9 CHAPTER DIVISION

The chapters are presented in the following way:

Chapter 1: Scientific overview of the research

This chapter provided a scientific overview of the research and focused on the background and motivation for conducting this research study. The research problem was stated, and the research questions were formulated. The research aims, research design and methodology, were outlined.

Chapter 2: Meta-theoretical context of the study: The career satisfaction and employability of knowledge workers in the 21st century

The purpose of this chapter is to contextualise the present study by outlining the meta-theoretical context of the study. The literature review, therefore, focuses on subjective career success (career satisfaction) and employability of knowledge workers in the 21st century, such as the conceptualisation, theoretical models and variables influencing career satisfaction and employability, and the implications for the career development of knowledge workers.

Chapter 3: Career cognitions (career adaptability and psychosocial career preoccupations) of knowledge workers

In this chapter, the focus is on career cognitions, including career adaptability and psychosocial career preoccupations of knowledge workers. The conceptualisation, theoretical models and variables influencing career adaptability and psychosocial career preoccupations are explained. Lastly, the implications of career cognitions on the career development of knowledge workers in the context of the knowledge economy are outlined.

Chapter 4: Psychosocial career resources (employability attributes, career anchors and career values) of knowledge workers

In this chapter, the literature review focuses on psychosocial career resources, such as employability attributes, career anchors and career values. The conceptualisation of employability attributes, career anchors and career values is described and the theoretical models, as well as variables influencing psychosocial career resources, are explained. Lastly, the implications of psychosocial career resources on the career development of knowledge workers in the context of the knowledge economy are outlined.

Chapter 5: Conceptual integration: Toward constructing a psychosocial career satisfaction and employability profile for the knowledge worker

This chapter provides an integration of the theory and proposed psychosocial profile based on the theoretical relationship dynamics among constructs. Each research hypothesis is explained in terms of what was expected and justified.

Chapter 6: Research method

The purpose of this chapter is to describe the research methodology employed in conducting the empirical study. The aims of the empirical research and an overview of the research approach, population and sample of the study are presented. The choice of measuring instruments is discussed and justified. The data-gathering process is discussed, and finally, the statistical procedures applied in testing the research hypotheses are discussed.

Chapter 7: Research results

The purpose of this chapter is to report on the results of the statistical analyses of the study. The statistical results are reported and interpreted in terms of descriptive, explanatory and inferential statistics.

Chapter 8: Discussions, conclusions, limitations and recommendations

The purpose of the final chapter is to integrate and discuss the empirical research findings with the literature review and to draw conclusions. The limitations of the study are described. Recommendations are made for application in practice and in terms of future research for the field of Industrial and Organisational Psychology. This chapter concludes with a summary and integration of the research results.

1.10 CHAPTER SUMMARY

This chapter discussed the scientific orientation of the research. The background to and motivation for the research, the aim of the study, the research model and specific paradigm perspectives, the theoretical research, design and methodology, as well as the central hypothesis and research method, were discussed. The purpose of the research was to construct a career satisfaction and employability profile for knowledge workers that could inform career development interventions. This was achieved by exploring the following constructs: career satisfaction, self-perceived employability, career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values). This research also had the potential to inform industrial psychologists and human resource professionals about more effective career development practices.

Chapters 2, 3 and 4 address the first research aim of the literature review, namely, to conceptualise the variables of relevance to the research. Chapter 2 specifically aims to conceptualise career satisfaction and self-perceived employability in relation to knowledge workers in the contemporary world of work context from a theoretical perspective.

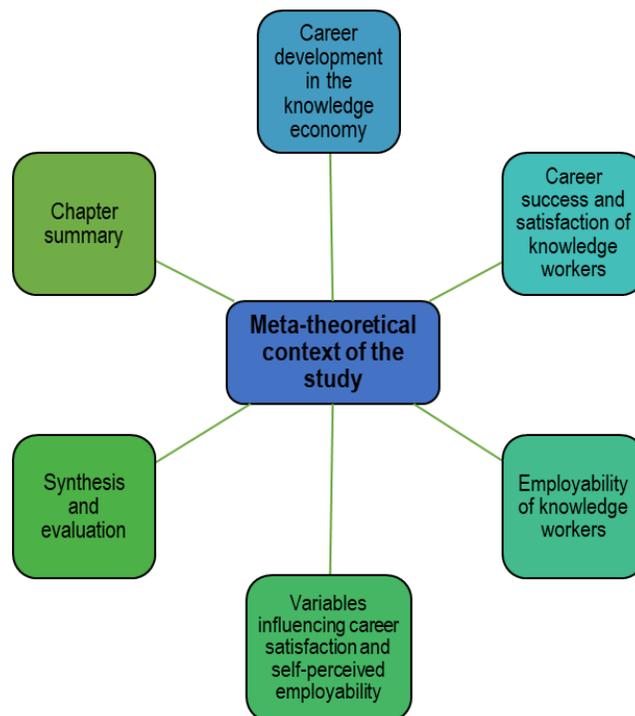
CHAPTER 2: META-THEORETICAL CONTEXT OF THE STUDY-THE CAREER SATISFACTION AND EMPLOYABILITY OF KNOWLEDGE WORKERS IN THE 21ST CENTURY

In this chapter, the researcher will contextualise the present study by outlining the meta-theoretical context of the study. Career development in the knowledge economy is first discussed with a specific emphasis on the changing nature of work, factors shaping the future of work in Industry 4.0 as well as HR 4.0 strategies for enhancing the transition of future work. The features of knowledge work in Industry 4.0 are explored and compared with traditional work. The role of knowledge actions, roles, virtues and skills of knowledge workers are further clarified and explained. Changes in how careers progressed from traditional to new contemporary careers, especially for the knowledge worker, are also discussed. The literature review furthermore focuses on career satisfaction and employability of knowledge workers in the 21st century, including the conceptualisation, theoretical models and variables influencing career satisfaction and employability of knowledge workers.

Figure 2.1 illustrates the layout of this chapter.

Figure 2.1

Layout of Chapter 2



Source. Author's own work

2.1 CAREER DEVELOPMENT IN THE KNOWLEDGE ECONOMY

The most advanced economies in today's world of work are fundamentally knowledge-based (du Toit, 2014; Tchamyou, 2016; Yigitcanlar, 2010; Yigitcanlar & Lönnqvist, 2013). Knowledge-based economies tend to depend highly on knowledge, innovation and highly educated and skilled human capital (Organisation for Economic Co-operation and Development [OECD], 1996, 2015; Tchamyou, 2016); thus, recognising the mutual role of knowledge and technology to guarantee economic growth (Bolisani & Bratianu, 2018; Yigitcanlar, 2016). The distinctive feature of knowledge as an intangible asset is that its value increases the more it is used. Unlike most tangible assets, knowledge does not depreciate through use. The main trait of the knowledge economy is, therefore, to manage an intangible asset (Bolisani & Bratianu, 2018; du Toit, 2014; Lönnqvist et al., 2014).

Knowledge embedded in human capital and technology has always been central to economic development (de Beer, 2015; OECD, 1996). The Fourth Industrial Revolution (Industry 4.0) creates a demand for millions of new jobs, with even stronger demands for "digital" and "human" factors to drive growth (World Economic Forum [WEF], 2020). The main economic resource in the knowledge economy is knowledge and information. These primary ingredients of what is made, done, bought and sold are considered more important than raw materials and even money (Mládková, 2015; Thorp, 1998). Moreover, the knowledge economy relies increasingly on innovation and knowledge-intensive activities to develop new products and services (Al-Hawamdeh, 2003; Waddock, 2007; Yigitcanlar, 2016; Zanda, 2018), which contribute to the accelerated pace of technical and scientific advancement (Caruso, 2016; de Beer, 2015; Department of Science and Technology, 2008; du Toit, 2014; Powell & Snellman, 2004).

The knowledge economy is characterised by an increased demand to employ more highly skilled knowledge workers (du Toit, 2014; Järlström et al., 2020; OECD, 1996). Technological changes, which is accelerated by the Fourth Industrial Revolution, demonstrate that educated and skilled labour has become more valuable, while unskilled labour has become less valuable (Millar et al., 2017). Shandler (2014), therefore, states that about 60% of all jobs are knowledge-based, and companies rely on the knowledge, skills and competencies of knowledge workers to increase their competitive advantage (Rasouli et al., 2014). Knowledge workers are highly skilled and educated, autonomous and career-oriented workers with strong professional ties (Shandler, 2014). Knowledge workers are employed in positions that are linked to work that involves high technology, information technology and services, as well as business and professional services (du Toit, 2014; Frenkel et al., 1995; Millar et al., 2017; Reed, 1996), such as accountants,

engineers, scientists, lawyers, information technology (IT) and human resource (HR) professionals (Drucker, 2002; du Toit, 2014; Lee & Maurer, 1997), or particular occupations, such as business analysts, financial analysts, research and development workers, telecommunication specialists and software designers (Department of Higher Education and Training, 2016; du Toit, 2014; Reed, 1996; Tam et al., 2002; Thompson & Heron, 2005).

In the most influential countries in the world, such as Switzerland, Singapore and the United States, the economy has increasingly evolved into a knowledge economy, relying less on labour and capital for growth and wealth (WEF, 2014). Economic progress is driven by the creation of new knowledge, innovation and technological changes (OECD, 1996, 2015; Tchamyou, 2016). To increase competitiveness in the global market, countries need to contribute more to economic activities that are based on new knowledge, as this will encourage economic growth and provide more employment opportunities with higher wages (Blankley & Booyens, 2010; du Toit, 2014; Houghton & Sheehan, 2000). To build a knowledge economy such as that of the developed countries, critical components, such as new technology investments, high-technology industries, and highly skilled labour (Archibugi & Pietrobelli, 2002; Department of Science and Technology, 2008; du Toit, 2014; Powell & Snellman, 2004; Yigitcanlar, 2016) are essential. South Africa experienced challenges regarding the implementation of growth strategies and the advancement of service delivery, and the country lacks delivery of high-quality products and services due to a shortage of skilled labour (Department of Higher Education and Training, 2014, 2016).

The WEF (2017) estimated that by 2030, the Sub-Saharan African region will have the world's second-highest working-age population and has the potential to raise labour productivity and per capita income significantly; diversifies its economy and unleash new possibilities to create stable economic growth, job creation and highly skilled talent. However, work and education will have the most significant influence on whether these possibilities are achievable. Unfortunately, the Sub-Saharan African region is still under-prepared for the challenges posed by the Fourth Industrial Revolution and are far from optimising its human capital potential (WEF, 2017). Therefore, most developing countries in Africa (including South Africa) remain at the lower end of the continuum when it comes to the capacity to be innovative, which is one of the reasons for slow economic growth and low productivity (Ahmed, 2017; Wolf, 2006; WEF, 2014, 2017).

Although the globalisation of technology offers developmental opportunities for developing countries, true innovation requires deliberate efforts from governments (Archibugi & Pietrobelli, 2002; de Beer, 2015; Department of Science and Technology, 2008). In order to achieve the goals of the South African National Development Plan (NDP), the New Growth Path and the Industrial

Policy Action Plan, the South African government strives to identify current, and future skills need by providing a list of occupations in high demand (Department of Higher Education and Training, 2014, 2016). South African science and technology-related policies aim to drive South African transformation to a knowledge economy (Department of Science and Technology, 2008; Department of Trade and Industry, 2007; South Africa, 2002), with a strong focus on e-commerce, financial services and technology (Department of Trade and Industry, 2012; Tchamyu, 2016). It is finally imperative to invest in education and learning adequately in order to prepare individuals for the world of work for tomorrow (WEF, 2017).

There is a tremendous gap between South Africa as a developing country on the African continent and those countries identified as knowledge-driven economies (Department of Science and Technology, 2008; du Toit et al., 2011; WEF, 2014, 2017). To build South Africa's capacity as a knowledge economy, highly skilled human capital (knowledge workers) is critical (Blankley & Booyens, 2010), and organisations need to employ people who are more skilled than ever before. South Africa experiences critical shortages of skilled doctors, engineers, information technology professionals and accountants, which need to be addressed (Department of Higher Education and Training, 2014, 2016). The high unemployment rate of 29% in South Africa (Statistics South Africa, 2019), together with only 44.6% of skilled workers receiving any form of training, further indicates that South African is not investing adequately in its knowledge workers (Smith, 2008).

During the COVID-19 pandemic, the expanded unemployment rate (those individuals aged between 15 and 64 years, who were not employed, available to work, but did not look for work) increased from 38.5% during 2019 to an astounding 42% during April – June 2020 (Statistics South Africa, 2020). Most of the unemployed individuals (53%) were having education levels below matric (Grade 12), while only 2.4% of unemployed individuals were graduates (Statistics South Africa, 2020). These statistics emphasised the importance of knowledge workers in the South African economy (van Staden & du Toit, 2011). Moreover, the prosperity of knowledge economies depends highly on the productivity of knowledge workers, such workers play an important part in the knowledge economy and contribute to the competitive advantage of organisations (du Toit, 2014; Viñas-Bardolet et al., 2018). Changes in the global business environment are often noted, prompting South African organisations to become more attuned to the role of knowledge workers in the knowledge economy. Organisations in South Africa, therefore, need to understand the role of knowledge workers and need to address issues concerning their knowledge workers if they want to enhance their global competitiveness in the knowledge economy (Council on Higher Education, 2016; du Toit, 2014; du Toit et al., 2011).

In summary, knowledge workers play a critical role in the South African economy and are key contributors to South Africa's effort to move from a resource-based economy to a knowledge-based economy. Education and work are the two most significant factors driving long-term growth and development in South Africa. Thus, it is important that South Africa optimise its human capital potential by investing in education and skills development. Changes brought by the Fourth Industrial Revolution are disrupting jobs and skills, and unfortunately, South Africa is still underprepared. South Africa and its knowledge workers need to respond to the challenges of the Fourth Industrial Revolution by investing in new specialised skills and tools to enhance knowledge workers capabilities; thinking of new ways to organise and coordinate work, and creating a culture of lifelong learning as part of individuals' career development.

2.1.1 The changing nature of work in the knowledge economy

Throughout the centuries, humans demonstrated a significant ability to adapt to change, especially with the way work has evolved. The First Industrial Revolution emerged with the invention of the first steam engine in 1784 and brought about a considerable shift to the world of work — the transition from muscle power to mechanical power. Mechanical production, railroads and steam power led to jobs handling machinery instead of animals, which was a key resource during the agrarian revolution when humans relied heavily on the efforts of animals for effective communication, transportation and production (Schwab, 2016). The Second Industrial Revolution in 1870 was characterised by mass production, electrical power and assembly lines, allowing unprecedented movement of people and ideas. New jobs and careers revolved around the invention of telephones and electricity (Schwab, 2016). During the Third Industrial Revolution in 1969, automated production was optimised through the utilisation of electronics and computers. This Digital Revolution, which was catalysed by the development of semiconductors, large mainframe industrial computers during the 1960s, personal computers during the 1970s and 1980s and the Internet during the 1990s, emphasised the increasing importance of knowledge workers (Schwab, 2016). In the 21st century, at the start of the Fourth Industrial Revolution, digitisation, technology, and the Internet of Things (IoT) are now enabling machines to make decisions and communicate with humans, which fundamentally changes the way we as humans live, work and relate to one another (Schwab, 2016). This Fourth Industrial Revolution is characterised by a VUCA world of work, therefore shaping the increasingly turbulent world of work (Gedro, 2017; Hahn & Kim, 2017).

Though the main driver in the Fourth Industrial Revolution is related to new technologies, it is still people who will make it possible to succeed (WEF, 2019). Professions of the future are thus driven

by both “digital” and “human” factors (WEF, 2020). Therefore, knowledge workers and knowledge processes are the main contributors to organisational competitiveness in today’s knowledge-based economy (Bolisani & Bratianu, 2018). Knowledge workers are therefore still highly valued by organisations for their ability to use, share and convert knowledge into new ideas, products and services (de Beer, 2015; Lee-Kelley et al., 2007; Mládková, 2015; Shandler, 2014; Turriago-Hoyos et al., 2016; Yigitcanlar, 2016) which is critical in order to stay relevant through the Fourth Industrial Revolution, thus contributing to the innovation and creativity of the organisation. These are, therefore, important elements for organisational survival and the ability to be prosperous in an increasingly competitive and fast-changing environment (Mládková, 2015). Knowledge workers will often have a higher level of education and work in areas where they constitute a firm’s key assets (Eggins, 2016; Elkjaer, 2000).

Before further exploring the characteristics of knowledge workers, it is essential to first discuss the factors shaping the future of work in Industry 4.0, followed by HR 4.0 strategies to enhance the positive transition to the future of work.

2.1.1.1 Drivers shaping the future of work in Industry 4.0

Various drivers are shaping the future of work in the Fourth Industrial Revolution. The most prominent changes were explored and identified by the WEF (2018, 2019, 2020) and the World Development Report (WDR, 2019); and are summarised in Table 2.1.

(a) Task disruption

The increase in technological advancements resulted in the disruption of work tasks and transformed how work is done. Robotic process automation (RPA) are replacing procedural routine and transactional tasks, while at the same time enhances productivity (van der Aalst et al., 2018; WDR, 2019). Advanced technologies are shaping the demand for new goods and services by augmenting, substituting, and creating new tasks for workers (WDR, 2019; WEF, 2019). The demand for non-routine cognitive tasks is increasing, and people will be increasingly involved in more “human” tasks, thus increasing the value and importance of human capital (Coetzee & Schreuder, 2021; WDR, 2019).

Production processes are transformed through technology which challenges the boundaries of firms through the expansion of global value chains, while online work platforms are changing the geography of certain tasks as geographical barriers are removed (WDR, 2019).

Advanced technologies are increasingly shaping work tasks of the future and people will be more involved in high level cognitive and analytical tasks, which will require high-level human skills and capacities (Coetzee & Schreuder, 2021; WDR, 2019).

(b) Skills of the future

As disrupted work tasks and jobs transform, the skills of the future are also changing (WDR, 2019; WEF, 2019). The skills of the future relate to the increased demand for inter-and-intra-digital competencies and advanced cognitive skills related to data interpretation and complex problem-solving; socio-behavioural skills related to teamwork, empathy, communication, customer service; and adaptability skills related to perseverance, self-efficacy, resilience and reasoning (Coetzee & Schreuder, 2021; WDR, 2019). To build these skills require lifelong learning, therefore, upskilling and reskilling strategies are increasingly important in developing human capital and contributing to workforce transition approaches (WEF, 2019).

(c) New business models

New business models emerged as advanced technologies are shaping how and under which conditions people work (WDR, 2019). Globalisation and the gig economy are increasingly blurring organisational and geographical boundaries, leading to “alternative workforces” which include contractors, outsourced teams, gig workers and independent/freelance workers (Coetzee & Schreuder, 2021; WDR, 2019). New business models are moving away from traditional employee-employer relationships to more short-term work tasks, projects and assignments (Coetzee & Schreuder, 2021; WEF, 2019).

Increased access to online work platforms via smartphones, tablets and laptops provides an accessible, flexible and enabling work environment facilitating on-demand products and services (WDR, 2019). Digital platform firms are thus able to scale up or down swiftly with fewer resources and can evolve from local community start-ups to leaving a global footprint (WDR, 2019).

(d) Changing demographics and distributed workforces

The changing demographics of the workforce creates new societal expectations which shape business priorities. For the first time, the workforce of most developed and developing economies will consist of five generations, and women being the majority of having higher education (WEF, 2019).

The diverse workforce groups vary as the needs of each generation varies widely, workplaces are thus expected to be inclusive of all identities, religious affiliations, races, genders, cultures, and physical abilities. Technological advancement and the diverse workforce drove organisations towards increased choice and flexibility and hyper-personalisation of worker experience away from a one-size-fits-all model (WEF, 2019). Diversity and inclusion should be embedded as core tenets, and organisations are urged to change their approach of unlocking, managing and sustaining human capital and potential of business (WEF, 2019).

(e) New societal expectations

Intense economic, social and technological forces emphasised the importance of human capital for organisational sustainability. Organisations, therefore, need to balance operational excellence with a human-centric customised approach (Coetzee & Schreuder, 2021; WEF, 2019).

The factors shaping the future of work are, therefore, creating the motivation for the HR 4.0 strategies to enhance the positive transition to the future of work in the Fourth Industrial Revolution.

2.1.1.2 HR 4.0 Strategies to enhance the positive transition to the future of work in Industry 4.0

Several HR 4.0 strategies are identified and summarised in Table 2.1.

(a) Develop new leadership capabilities for Industry 4.0

Leaders need to develop new leadership capabilities to operate effectively in Industry 4.0. As distributed business models emerged, leaders are engaged in adopting the right technologies, driving new vision of organisational culture, leading from the edge, and shaping innovative people strategies for the future of work (WEF, 2019).

The traditional leadership model related to central control is no longer valid as technology advancements created new sources of insights, efficiencies, and capabilities. Leaders should therefore focus on leading with purpose and emphasising the effective use of tools of technology, culture, processes and structure (WEF, 2019). Leaders need to be better equipped with the knowledge to gauge employees' readiness to embrace technology, as well as knowledge of opportunities and risks associated with technology and automation (WEF, 2019). While technology should enable the overall business vision, leaders' knowledge should inform the execution strategy. (WEF, 2019). Leadership adaptability is critical as largely static hierarchical

organisations has transformed into team-based ecosystems (Coetzee & Schreuder, 2021; WEF, 2019). A culture shift is necessary as decision-making power needs to be distributed to teams from the centre to drive innovation and organisation agility (WEF, 2019).

HR leaders are becoming the orchestrator of the fluid workforce and need to bring together the right skills, talent, and experiences in an effort of creating value. Developing leadership capabilities in the current context will require that HR leaders move from their traditional model of leadership that is reactive, based on command and control, to a purpose- and values-driven model of leadership that is adaptive, agile, and focused on building the organisational culture and empowering the workforce of the future (WEF, 2019).

(b) Manage the integration of technology in the workforce

People and technology have a symbiotic relationship. The responsibility of new human capital strategies relates to the designing of optimal solutions that balance people and machines. (WEF, 2019). As the way in which work is done, are changing, the optimal combination of human workforce and automation will ensure a positive impact on the future of work (WEF, 2019).

The changing ecosystem of work creates the need for examining the human impact of the Fourth Industrial Revolution beyond the implications of the adoption of technology on the displacement of jobs. The emergence of technology, the use of alternate employment models, and the shift to flatter, more networked organisational structures led to jobs being reinvented and work performed by individuals being simultaneously substituted, augmented, and transformed. Thus, the socio-economic standing of individuals are changing, and the sense of uncertainty is increasing (WEF, 2019).

In the changing ecosystem, HR leaders should thus move away from their traditional model of focusing on redundancies and job automation while working within the organisational boundaries. Leaders should focus on reskilling, redeployment, and job reinvention while working in an ecosystem with permeable borders (WEF, 2019).

(c) Enhance employee experience

The workplace in the Fourth Industrial Revolution is increasingly complex and consists of a multigenerational workforce, the use of technology, and various alternative methods of work. Therefore the way work is experienced by employees are changing and calls for new ways to define, measure and enable meaningful employee experiences (WEF, 2019).

The employee experience is influenced by automation and digitalisation, forcing organisations to manage work in an agile way with the optimal mix of employees, non-employees, and technology. Organisations are increasingly being seen as stewards of social responsibility by employees, customers, and society as a whole. In this context, a traditional manager-employee dynamic that focuses on rewards and basic support is no longer fit for purpose. The workforce demands a connection to the organisation and meaning in their work. Leaders must expand their view of the employee experience to a broader, more holistic way of defining, measuring and setting the employee experience in the Industry 4.0. Four critical dimensions of the employee experience are 1) connection with colleagues and trust in leadership; 2) individual growth and reward opportunities; 3) meaningful work that aligns with employees' values and contributes to a higher purpose, and 4) occurring in an environment that supports productivity and performance (WEF, 2019).

The workforce's changing nature requires that leaders move from their traditional model of focusing on employee engagement and financial rewards for full-time employees only within the organisation. Organisations need to create, with a strong purpose, a holistic and meaningful employee experience for all talent (WEF, 2019).

(d) Build a personalised and agile learning culture

It is further important to foster a culture of lifelong learning in the context of the declining demand for certain skills, the emergence of new ones, and the requirement for talent to continuously learn, unlearn and relearn (Coetzee & Schreuder, 2021; WEF, 2019).

Changes in technology, longevity, work practices and business models have created a tremendous demand for continuous, lifelong development. As learning moves from the fringes to the centre of the talent experience, leading organisations are taking steps to deliver learning to their people in a more personal way, integrating work and learning more tightly with each other (WEF, 2019).

The changing nature of how learning is approached in an organisation requires that learning moves from the traditional mindset of "knowing it all", with planned learning programs, to an agile culture of lifelong learning that is continuous and digitally-enabled, self-driven and personalised (WEF, 2019).

(e) *Establish metrics for valuing human capital*

Furthermore, there is a need to establish viable and scalable measures of human capital as this strategy will be a key performance driver which demonstrates the impact of its work on business performance (WEF, 2019).

The lack of a standard methodology and rigour in human capital metrics reduces the visibility of the value, health, and progress of the workforce in the organisation. However, to establish sustainable metrics for valuing human capital, will thus require active and coordinated engagement and collaboration with HR, the finance function, and various leaders across the organisation (WEF, 2019).

(f) *Embed diversity and inclusion*

Changes related to social, economic, and political forces have the potential to advance inclusion and diversity in organisations. Strategies aimed at embedding diversity and inclusion will promote a sense of purpose and belonging for employees, and a sense of equality and prosperity in society (WEF, 2019).

To enhance diversity, organisations have started to hold leaders and managers accountable for tangible goals, targets, and quotas. However, while accountability has improved diversity, there is concern that a compliance mindset drives it and that systemic biases will persist while inclusion remains elusive (WEF, 2019). For organisations to move forwards, a culture of equality is required that will be inspiring, allowing, and encouraging diversity and inclusion. Organisations must further shift their approach from one that is set up to meet compliance requirements to creating a culture of inclusion that is infused into every aspect of the organisation—integrated with recruitment, reward, performance management, with a focus on changing behaviours, attitudes and mindsets (WEF, 2019).

Table 2.1

Changing Nature of Work

Drivers shaping the future of work	Strategies to enhance the positive transition to the future of work		Traditional focus	Industry 4.0 focus
Task disruption	Develop new leadership capabilities for Industry 4.0	Leadership styles	Administrative leadership Reactive leadership Building teams Controlling and commanding Centralising innovation	Purpose-driven leadership Adaptive leadership in uncertainty Building culture Coaching and orchestrating Co-creating innovation across the workforce
Skills of the future	Manage the integration of technology in the workforce	Organisation orchestrating the work ecosystem	Redundancy Job automation Organisation (within the walls)	Redeployment and reskilling Job reinvention Ecosystem (beyond the walls)
New business models	Enhance employee experience	How organisations build employee experience for the next generation of talent	Employee engagement Financial reward Full-time employee Organisation	Holistic employee experience Purpose and meaning All talent Individual, society and organisation
Distributed workforces	Build a personalised and agile learning culture	How learning is approached in an organisation	“Know it all” mindset Planned learning programmes Periodic learning Company-directed learning Homogeneous learning	“Learn it all” mindset Lifelong learning culture Continuous digitally-enabled learning Self-driven learning Personalised learning
Changing demographics	Establish metrics for valuing human capital	How organisations measure organisational health and human capital	Business strategy Financial metrics No standard human capital metrics	Business and talent strategy Integrated financial, operation and human capital metrics Viable and scalable human capital metrics
New societal expectations	Embed diversity and inclusion	How diversity and inclusivity is approached in an organisation	Diversity for compliance Diversity and inclusivity specific policies Targets and quotas	Foundational culture of diversity and inclusivity Diversity and inclusivity to be integrated into all HR functions (recruitment, reward, talent and performance management) Targets combined with culture and mindset

Source. Adapted from WEF (2019)

2.1.1.3 *Characteristics of work in Industry 4.0*

The main difference between traditional, knowledge and Industry 4.0 work revolves around the fundamental elements of the changing work environment, shaped by advanced technologies and the digital era; and the development of human capital, shaped by advanced knowledge generation, skills and cognitive competencies. Knowledge and Industry 4.0 work requires critical thinking, flexibility, creativity and engagement in complex tasks within an ambiguous environment, whereas traditional work involved different tasks that could be repeated relatively easily when given specific instructions (du Toit, 2014; Kalff, 2017; Strong, 2003; Turriago-Hoyos et al., 2016). Although most careers require a combination of mental, physical and socially embedded tasks, knowledge work requires constant processing of non-routine complex tasks (de Lange, 2013; Reinhardt et al., 2011).

The difference between traditional work, knowledge work and work in Industry 4.0 are described in terms of feedback cycles, how careers are formed, the focus of work and influence on the success of the organisation, locus of control, loyalty and performance measures, skills obsolescence and skills and knowledge required (Coetzee & Schreuder, 2021; Despres & Hiltrop, 1995; WDR, 2019; WEF, 2018, 2019, 2020). Traditional work revolved around the individual's tasks, objectives and performance of task deliverables. Feedback was provided directly and often. Careers were constructed around training, development, rules and prescriptive career schemes of organisations; therefore, individuals were loyal to organisations. The influence of traditional work on organisational success was relatively small, although consistent and dependable. Knowledge and skills required were often functional and narrow and would not generally be outdated (Coetzee & Schreuder, 2021; Despres & Hiltrop, 1995).

In contrast with traditional work, knowledge work revolves around groups and projects, and process effectiveness, and requires deep and specialised knowledge and skills that become obsolete rapidly (de Beer, 2015; du Toit, 2014). Feedback cycles are lengthy. Careers are constructed through years of education and social interaction, and individuals are therefore loyal to professions, networks and peers instead of being loyal to organisations. The influence of knowledge work on organisational success can be considerable, as a few major contributions can be important for strategic and long-term success (de Beer, 2015; Despres & Hiltrop, 1995; du Toit, 2014).

In contrast with traditional and knowledge work, work in Industry 4.0 revolves around sustainable employability and a series of multiple work projects, assignments roles and work opportunities (Coetzee & Schreuder, 2021). Work in the Fourth Industrial Revolution requires individuals with

high-level skills and knowledge that are digitally smart and possess high-level human capacities. Individuals need to be highly adaptable and need to engage in lifelong learning as skills become continuously and rapidly obsolete (Coetzee & Schreuder, 2021; WEF, 2018, 2019, 2020). Feedback cycles in Industry 4.0 are automated. Careers are constructed through a series of meaningful work projects and evolving roles (Coetzee & Schreuder, 2021). Individuals are focused on enhancing their personal and professional growth and maximising their growth, creativity and happiness and are therefore loyal towards their family and careers (Konstant, 2020). The influence of work in Industry 4.0 on organisational success can be short-term in the form of job tasks and assignments, and high-impact with large projects and rapidly evolving multiple roles. Employees are showcasing their employability through their knowledge and high-level skills and competencies (Coetzee & Schreuder, 2021).

A comparison of traditional, knowledge, and Industry 4.0 work is presented in Table 2.2.

Table 2.2
A Comparison of Traditional, Knowledge Work, and Work in Industry 4.0

	Traditional work	Knowledge work	Industry 4.0 work
Activity–feedback cycles	Immediate and primary	Lengthy	Automated
Career formation	Internal (with-in organisation) through regulated career schemes, rules, training, and development	Externally (outside organisation) through years of education and social interaction	A series of meaningful work projects and evolving roles
Focus of work	Tasks, responsibilities, performance, and goals	Challenges, problems and issues, customers	Multiple project-based assignments, roles and work opportunities
Influence on company success	Small and slight but often and steady Several small contributions supporting the business plan	Potentially notable but unpredictable Few major contributions supporting strategic goals	Job tasks and assignments as short-term High-impact projects and rapidly evolving multiple that showcase employability
Locus of work	Revolved around individuals	Revolved in projects and groups	Revolved around sustainable employability
Loyalty	To specific organisation and its relevant career systems	To relevant profession, peers and career networks	To family and career
Performance measures	Task deliverables	Process effectiveness	Job crafting
Skill obsolescence	General	Rapid	Continuously
Skills/knowledge	Functional and narrow (limited)	Deep and specialised, though with diffused peripheral foci	High-level skills and knowledge Digital smart literacy skills High-level human skills

Source. Coetzee and Schreuder (2021); Despres and Hiltrop (1995)

Knowledge workers interact with industries, organisations and communities as knowledge flow constantly between these entities (Blankley & Booysen, 2010; DeFillippi et al., 2006; du Toit et al., 2011). To interact with these different entities, knowledge workers require new knowledge, skills, competencies and talents. Although knowledge workers spend 15–30% of a typical workday to gather information (Ambrose, 2008), they are not solely just information gatherers. Knowledge workers are also knowledge creators, knowledge disseminators and knowledge sharers (du Toit et al., 2011; Reinhardt et al., 2011; van Staden, 2009).

Reinhardt et al. (2011) outline the knowledge work process as being dominated by actions related to communication and data production in the form of doing calculations, web browsing, drafting documents, sending and processing e-mails, and the authors consequently developed a coherent typology of knowledge actions.

- Acquisition: to obtain information with the conscious goal of either developing personal skills or a project. This knowledge action is supported (Barth, 2005; Davenport, 1999; Hädrich, 2008; Holsapple & Jones, 2004; Markus, 2001; Sellen & Harper, 2003).
- Analyse: to examine information carefully with the aim of understanding it completely. This knowledge action is supported (Barth, 2005; Bernstein, 2010; North, 2007).
- Authoring: to create textual or media content with the assistance of relevant technology. This knowledge action is supported by Davenport (1999), who refers to the documentation of knowledge to reuse later; Sellen and Harper (2003), who refer to composing, Hädrich (2008), who explicitly refers to authoring and co-authoring as a collaborative effort of authoring, thus including documentation actions or document creation actions. Finally, Völkel (2010) refers to document creation.
- Dissemination: to spread information or own work results via several communication channels. This knowledge action is supported by Davenport (1999), who also refers to dissemination, whereas Davis (2003) and Skyrme (1999) refer to communication; Efimova (2004) to exposure; Barth (2005) to the conveyance of information, Holsapple and Jones (2004) to emission; and Bernstein (2010) to presenting and sharing of information.
- Expert search: to retrieve an expert in a specific focus area and to discuss or solve challenges and issues collaboratively. This knowledge action is supported by Hädrich (2008) and Efimova (2004), who describe the process of expert searching as the establishment of relationships with other prestigious researchers.

- Providing feedback: to assess an idea based on individual or community rules. This knowledge action is supported by Hädrich (2008), who refers to feedback directly; and also by Barth (2005), Bernstein (2010) and Davis (2003), who refer to this action as the evaluation or reviewing of some ideas.
- Information organisation: to organise ideas, or to organise knowledge by using weblogs (Efimova, 2004). This knowledge action is supported (Bernstein, 2010; Sellen & Harper, 2003).
- Information search: to look up or search for information related to a specific topic, and in a specific format. Knowledge workers often utilise search engines or organisational or personal stored files for this action. This knowledge action is supported (Barth, 2005; Bernstein, 2010; Davenport, 1999; North, 2007; Sellen & Harper, 2003; Skyrme, 1999).
- Learning action: formal training and informal learning processes involved in the interaction with others and the execution of tasks. This knowledge action is supported (Hädrich, 2008; North, 2007).
- Monitoring: to stay abreast on a specific topic or field. Monitoring involves a basic action, which includes analysing or providing feedback, including self-directed efforts of being up to date about relevant and specific topics after a period of absence from work. This knowledge action is supported by related actions, such as controlling (Holsapple & Jones, 2004, 2005), updating (Hädrich, 2008), an awareness which relates to topic or community being actively monitored (Efimova, 2004; Skyrme, 1999).
- Networking: to interact with organisations or other people through physical or technologically mediated interaction, to exchange information and developing contacts or networking with experts. This knowledge action is supported by relevant concepts related to communication (Davis, 2003; Holsapple & Jones, 2004, 2005; Skyrme, 1999) and collaboration (Barth, 2005; Davis, 2003; Efimova, 2004).
- Service search: to acquire specialised services to solve a specific problem. This action of knowledge or information securing (Barth, 2005; Bernstein, 2010) requires that knowledge workers explore existing service propositions both within and outside organisations.

Table 2.3 provides an overview of the typology of knowledge actions as developed by Reinhardt et al. (2011).

Table 2.3*A Typology of Knowledge Actions*

Knowledge action	Description
Acquisition	Information gathering aimed at skills development
Analyse	To think about and examine something thoroughly in order to enhance understanding of it
Authoring	To create media and textual by utilising software systems (e.g. presentation software, and word processing systems)
Co-authoring	To create media and textual content collaboratively by utilising software applications (e.g. presentation software, and word processing systems)
Dissemination	To spread results and information
Expert search	To retrieve an expert in order to discuss and resolve specific problems
Feedback	Assess propositions or information objects
Information organisation	To manage collected information
Information search	To look up information related to a specific topic and form. Make use of a folder structure of a web search-information retrieval service or -file system
Learning	To gain new knowledge, skills, competencies and understanding during work execution or by utilising structured learning material
Monitoring	To keep oneself or the organisation up to date regarding specific topics
Networking	To exchange information, develop contacts, and interact with other people and organisations
Service search	To retrieve specialised web services with specific functions

Source. Reinhardt et al. (2011, p. 158)

Reinhardt et al. (2011) further identified the nine knowledge worker roles, namely controller; helper; learner; linker; networker; organiser; retriever; sharer; solver; and tracker. Table 2.4 provides a short description of the individual roles and typical knowledge actions associated with the roles.

Table 2.4*Typology of Knowledge Worker Roles*

Role	Description	Typical knowledge actions
Controller	To monitor organisational performance based on raw data or information	Monitoring, analysis, information organisation, dissemination
Helper	To transfer information aimed at teaching others, once a problem has been overcome	Authoring, analysis, feedback, learning, dissemination, networking, information search
Learner	To utilise information and practices aimed at improving personal competencies	Acquisition, analysis, learning, expert search, service search, information search
Linker	To associate and compare or mashing up of information from several different sources aimed at generating new information	Analysis, networking, information search, dissemination, information organisation
Networker	To share information, provide support, and create personal or project related connections with people in the same career field	Analysis, expert search, dissemination, service search, monitoring, networking
Organiser	To plan activities (personal or organisational) by utilising schedules, and to-do lists	Analysis, networking, monitoring, information organisation
Retriever	To search and collecting related to a specific topic	Acquisition, monitoring, analysis, information search, expert search, information organisation
Sharer	To disseminate information with a community	Authoring, dissemination, co-authoring, networking
Solver	To provide or find a way to cope with challenges and problems	Acquisition, service search analysis, dissemination, learning, information search
Tracker	To monitor and respond to personal and organisational activities that may cause problems	Analysis, networking, monitoring, information search

Source. Reinhardt et al. (2011, p. 160)

Turriago-Hoyos et al. (2016) provided a framework of intellectual virtues and moral characters of knowledge workers based on the fundamental work of Drucker (2005), while also considering the changes in the contemporary knowledge society. The role of virtues is to develop good and stable personal qualities necessary for intelligence and perfection. Furthermore, knowledge workers need to establish capacities to know the truth and to excel in their actions to behave well and to succeed in an environment that promotes freedom (Turriago-Hoyos et al., 2016).

The framework developed by Turriago-Hoyos et al. (2016) identifies the following five foundational categories of virtues, which are important for knowledge workers to develop and sustain:

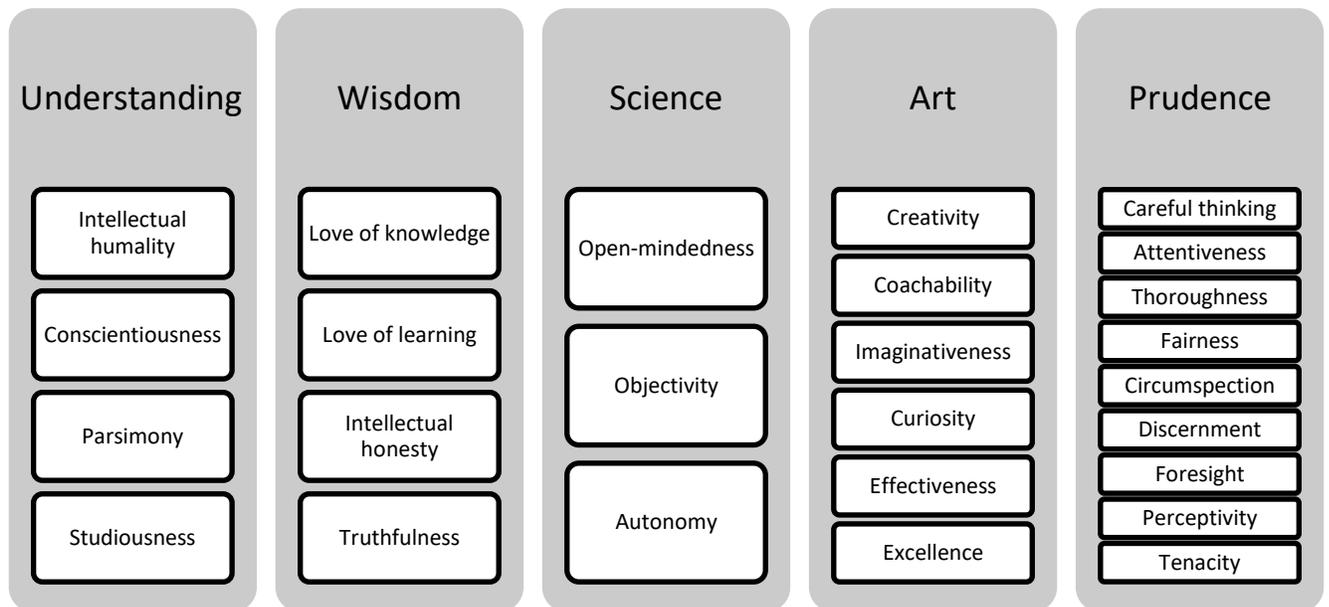
- Understanding: grasping the truth without lengthy reasoning
- Wisdom: understanding realities in the light of ultimate causes

- Science: grasping conclusions in specialised knowledge
- Art: making artistic and useful things
- Prudence: discerning the purpose of human activity and choosing the appropriate means to achieve it.

Understanding, wisdom and science are directed towards knowledge, while art and prudence are directed towards action and production. Figure 2.2 provides the integral components of each of the framework of the five virtues (Turriago-Hoyos et al., 2016).

Figure 2.2

Virtues of Knowledge Workers



Source. Turriago-Hoyos et al. (2016, p.2)

Technological changes in Industry 4.0 demonstrated that educated and skilled workers have become more valuable. In contrast, unskilled workers have become less valuable (Hirschi, 2018; Millar et al., 2017). Changes in Industry 4.0 revolved around new advanced technologies and possibilities, while skilled workers will make it work (WEF, 2019).

The demand for knowledge workers is therefore on the increase, and organisations are required to manage knowledge workers more efficiently (du Toit et al., 2011; Serrat, 2017); thus, adjusting knowledge management programmes to retain key resources in order to reduce expenses and develop new and innovative products and services (Stankosky, 2005; Sutherland et al., 2015). However, since organisations and employees do not expect a long-term employment relationship,

employee development is no longer the main concern for organisations (de Lange, 2013; Tam et al., 2002). However, self-management and control are essential for knowledge workers themselves who are more than likely to move on to other, more innovative, challenging and remunerative projects or organisations (Mládková, 2015). The desire to be their own managers often also leads knowledge workers to obtain more skills, education and training to stay creative and innovative (de Vos & Soens, 2008; Drucker, 2005; Winslow & Bramer, 1994).

The diverse and highly valuable nature of the roles that knowledge workers play in the knowledge economy, coupled with increasing mobility in the labour market, leads to poorly integrated careers of these workers (Mládková, 2015; Tomlinson, 2009; Tremblay, 2003). Significant growth in seven key professional clusters related to data and artificial intelligence; engineering; cloud computing; people and culture; product development; marketing; sales and content; green economy; and care economy reflect the growing demand for “digital” and “human” factors in Industry 4.0 (WEF, 2020). These seven key professional clusters identified by the WEF (2020) reflect the adoption of new technologies as well as the continuing importance of human interaction in the new economy.

To enable knowledge workers to enter these professional clusters, formal education is firstly required. Once knowledge workers enter these clusters, continuing training and education is required to ensure that their knowledge is kept up to date (de Beer, 2015; Sutherland et al., 2015; van Staden, 2009). Lifelong learning and networking are probably the most important actions within which knowledge workers could engage. Lifelong learning is a key ingredient for enhancing the productivity and effectiveness of knowledge workers (Reinhardt et al., 2011). Networking, when regarded as a coordinated process (Holsapple & Jones, 2004, 2005) of conversations (Efimova, 2004), relates to enhancing psychosocial career resources and could facilitate new employment opportunities for knowledge workers as networking relates closely to the knowledge action of expert search. Besides these requirements, knowledge workers should also engage in “deep work” which is defined by Newport (2016) as professional activities performed in a state of distraction-free concentration that drives individuals’ cognitive capabilities to their limits. Deep work efforts are hard to replicate and enable knowledge workers to improve their skills and create new value (Newport, 2016).

In summary, the VUCA world of work together with technological advancements in the Fourth Industrial Revolution, are changing the nature of work and shaping the future of work. Various HR 4.0 strategies can be utilised to enhance the positive transition to the future of work. Knowledge workers play an increasingly important role to facilitate technological advancements in Industry 4.0.

Furthermore, taking the typology of knowledge work roles and knowledge actions developed by Reinhardt et al. (2011) into account is important as this not only improves the understanding of knowledge work but also supports the need and usefulness of research related to knowledge workers. Apart from developing important knowledge actions, roles (controller, helper, learner, linker, networker, organiser, retriever, sharer, solver and tracker), and virtues directed towards knowledge (understanding, wisdom and science) and virtues directed towards action and production of knowledge workers (art and prudence), knowledge workers need to remain employable to enjoy a satisfying career. The rise of artificial intelligence, robotics and other digital developments is upending the primacy of knowledge workers. Individuals who will succeed in the economy of the future will be those who can complement the work done by mechanical or algorithmic technologies, and 'work with the machines' (WEF, 2018). The future of work shows a demand for a broad variety of skills and competencies. It is therefore also necessary that knowledge workers focus on developing their career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors, career values) to enhance their self-perceived employability and career satisfaction.

2.1.2 Traditional versus new career context and form in the knowledge economy

Traditionally, careers were associated with an occupation (Baruch & Vardi, 2016; Slocum, 1974), specific career field (Iellatchitch et al., 2003), and evolving sequences of work experiences (Arthur et al., 1989) within a specific social space in organisations (Dyer, 1976; Feldman, 1988).

In the 1970s, traditional or 'old' careers were associated with organisations that were structured hierarchically, where work processes were formally documented, planned and controlled (Kallinikos, 2004) and regulated by linear timetables (Courpasson & Reed, 2004). Career paths were characterised by loyalty-based psychological contracts (Rousseau, 1995) where companies provided job security (in terms of a steady upward move in level, income, and status) in exchange for employees' loyalty (Rousseau & McClean Parks, 1993).

The mid-1980s and 1990s witnessed fundamental changes in career paths, and the way work was organised when organisational structures moved towards flatter and leaner hierarchies (Sewell, 2005), resulting in employment opportunities increasingly becoming short-term with an emphasis on contracts and projects (Knights & McCabe, 2003; Ross, 2004). Consequently, low levels of job security lead to a reduction of employee loyalty (Spell & Blum, 2000; Staufenbiel & König, 2010), making lifelong employment less prevalent, and expecting individuals to make more career moves (Sullivan & Baruch, 2009).

Comparing to the traditional career context, the frequency of career transitions have increased in the contemporary career context (Chudzikowski, 2012). Since the traditional career model of lifetime employment at a specific organisation is no longer relevant for knowledge workers, they rather pursue careers that are boundaryless; protean (changeable); customised and kaleidoscopic with a strong emphasis on sustainable employability and life-long learning, being gig-economy oriented, carrying out internet-work (wirk) or changing one's career strategy completely to avoid failure, to create a positive path towards career success (pivoting) (Coetzee & Schreuder, 2021; Donnelly, 2009; Hall, 2013; Maree, 2020; Savickas, 2013).

DeFillippi and Arthur (1996) describe the boundaryless career as the sequence of employment opportunities that go beyond the boundaries of a single organisation. This career concept emphasises the increasing permeability of boundaries between and within organisations, which lead to individuals being more independent than rather depending on traditional organisational and hierarchical career arrangements for employment (Arthur & Rousseau, 1996). Baruch (2004) describes a protean career as one where individuals, rather than organisations, take responsibility for transforming their careers. A protean career mindset enables workers to have a contract with themselves rather than with an organisation (Baruch, 2004). Workers have, therefore, more options and can decide how they want to interact with the labour market (Hall, 2002). The development of a boundaryless and protean career mindset is still prominent in knowledge-intensive economies, as knowledge workers can take advantage of extensive employment and career opportunities (Hall, 2013; Savickas, 2013; Tams & Arthur, 2006).

Contemporary careers in the digital era reflect a digital-driven workplace and are characterised by self-drive, data-drive, agility, adaptability, insecurity, flexibility, personalisation, flatter organisational structures, and artificial intelligence (Coetzee & Schreuder, 2021; Kohl & Swartz, 2019; Maree, 2020). In the contemporary career context, knowledge workers are less likely to experience job security; move upwards frequently within an organisation; and work for one or few organisations only (Coetzee & Schreuder, 2021; Glavin, 2015; Greenhaus & Kossek, 2014; Maree, 2020; Savickas, 2005, 2011c, 2012). Knowledge workers in the contemporary career context are more likely to engage in telework (i.e. work from home); pursue reduced-workload arrangements; change retirement plans to meet lifestyle needs; make career decisions based on family and personal needs; engage in life-long learning for sustainable employability and sustainable careers (Coetzee & Schreuder, 2021; de Vos et al., 2020; Greenhaus & Kossek, 2014; Maree, 2020; van der Heijden & de Vos, 2015).

Contemporary careers are associated with turbulent paths —

- in the gig economy which reflects the insecure economic environment where permanent jobs are being replaced with short term contracts, and freelance jobs (Coetzee & Schreuder, 2021; Deloitte Insights, 2019; Graham et al., 2017; Graham & Wood, 2016);
- marked by an increasingly hourglass-shaped economy which reflects an increase in high-level skilled and high-paid knowledge workers contrasted with a large pool of low-level skilled and unskilled poorly paid workers (Applebaum et al., 2003; Campbell et al., 2001; Keep & Brown, 2005; Maree, 2020);
- across multiple cultural, occupational and organisational settings (Arthur & Rousseau, 1996, DeFillippi & Arthur, 1996; Sullivan & Arthur, 2006);
- embedded in an ever-evolving digital-era career ecosystem within economic, political, technological, and societal contexts (Arthur et al., 1999; Baruch, 2015; Coetzee & Schreuder, 2021; Collin & Young, 1986; Mayrhofer et al., 2007);
- associated with “pivoting” where entrepreneurs who engage in self-employment dramatically change their strategies to avoid failures, and to craft a path of career success (Maree, 2020; Kirtley & O'Mahony, 2020).
- associated with “wirk” which refers to individuals who have access to the internet and who engage in part- and full-time internet work for an income (Maree, 2020; Reverso dictionary, 2019);
- leading to careers that are – customised (Kossek et al., 2011; Valcour et al., 2007), kaleidoscopic (Mainiero & Sullivan, 2005) and sustainable (de Vos et al., 2020; van der Heijden & de Vos, 2015).

The customised career (Kossek et al., 2011; Valcour et al., 2007) crystallised around career decisions based on personal and family circumstances, with less emphasis on climbing the corporate ladder. Valcour et al. (2007) identified the following three characteristics of customised careers: (1) full-time workload may lead to workload reduction, job-sharing or part-time employment; (2) employment interruptions, delayed workforce entry, or personalised retirement approaches; and (3) temporary, short term contracts rather than permanent employment relationship within one organisation.

The kaleidoscopic (varied) career context is characterised by workers who create their careers based on their own terms. This career context consists of multiple layers, and individuals

constantly adapt to construct their careers based on their specific interests, choices and values (Mainiero & Sullivan, 2005).

The changing and unpredictable contemporary career context has made society, organisations and individuals more concerned about sustainable careers (Lawrence et al., 2015). A sustainable career is characterised by achieving a meaningful balance between one's work and family, that is still congruent with one's core work, career and life values (Coetzee & Schreuder, 2021). A sustainable career applies a long-term perspective, that is successfully integrated with an individuals' broader life domain to facilitate mutual benefits for an individual as well as the context surrounding an individual (de Vos et al., 2020; Greenhaus & Kossek, 2014). The three key indicators of sustainable careers (happiness, health and productivity) are therefore equally important for an individual, organisation and the broader context (de Vos et al., 2020).

Knowledge workers who want to achieve a sustainable career need to be flexible and agile and need to further realign themselves to the changing career environmental context, by adapting to changing needs and interests (Coetzee & Schreuder, 2021). To adapt and change to match the changing environmental needs reflects the dynamic fit between a person and career, and are thus at the core of sustainable careers (de Vos et al., 2020). A sustainable career is therefore continuously renewed; and knowledge workers need to engage in proactive career self-management to facilitate meaningful individual growth and development across the entire lifespan (van der Heijden & de Vos, 2015). Individuals who engaged in sustainable careers are feeling satisfied and employable, are healthy and productive, and have a sense of security to fulfil economic and quality-of-life needs (Coetzee & Schreuder, 2021).

The contemporary career is associated with high career mobility, which is in turn associated with employability and career satisfaction of individuals (Chudzikowski, 2012), and can further be conceptualised as a working life path, which is psychosocially built by people in relation to their work and to other workers (Ribeiro, 2015). The world of work has undergone dramatic changes following the global economic downturn and related developments and has become increasingly diverse, complex and flexible, which resulted in a significant change in the structure and dynamics of work (Gedro, 2017; Hahn & Kim, 2017; Maree, 2015). These changes have reshaped organisational processes and practices as well as individual careers, moving from previous stability to current mobility (Maree, 2015; Ribeiro, 2015). As a result, employees often face insecurity, uncertainty, work trauma, and feelings of 'stuckness', which may influence their career

satisfaction and self-perceived employability and their career adaptability and psychosocial preoccupations (Maree, 2015; Savickas, 2019).

It is critical to recognise the contemporary changes related to the turbulent career paths of knowledge workers which reflects the lack of employment security (Coetzee & Schreuder, 2021). Indeed, the careers of knowledge workers revolved around meaningful experiences, high level skills and competencies, flexibility, career agility and resilience and personal and professional growth and development (Coetzee & Schreuder, 2021). Knowledge workers in the Fourth Industrial Revolution are challenged to remain adaptable and employable in an attempt to craft sustainable careers (Coetzee & Schreuder, 2021). Taking into account the characteristics of knowledge workers and the changing knowledge society where organisations are no longer the sole provider of career development, knowledge workers need to manage themselves. Peter Drucker's (1999, 2005) classical management theory should still be respected, as he denotes the importance of self-management, values and preoccupations of knowledge workers.

In the next section, the career development of knowledge workers is discussed.

2.1.3 Career development of knowledge workers

Career development is a lifelong process of managing learning, work and transitions in order to move towards a personally determined and evolving preferred future (Greenhaus & Callanan, 2006; Greenhaus et al., 2010). Considering the dramatic changes in the new world of work and the fast-emerging Industry 4.0, knowledge workers need to take a more assertive, risk-taking approach to their career development. During the life-long career development process workers may be facing many uncertainties about the meaning of work, while at the same time being concerned about financial self-sufficiency and experiencing conflicts between work and other spheres of life, especially in terms of social relationships and family responsibilities (Newman & Newman, 2017).

In this study, the career development of knowledge workers was viewed from a personal, organisational and work–life integration perspective (Greenhaus & Callanan, 2006; Greenhaus et al., 2010). The personal perspective of career development is not only concerned about individuals' own achievement and success but also about their work–life integration (Greenhaus & Kossek, 2014). Career development increasingly demands a successful integration of work and non-work domains. The organisational perspective of career development is concerned with organisational practices or support that assist knowledge workers in managing their careers and achieving career success (Jiang, 2017). Career satisfaction is important because it reflects an

overall evaluation of the individual's career: the ultimate outcome of career development (Seibert, 2006).

The achievement of career satisfaction (Arthur et al., 2005; Ng et al., 2005; Seibert et al., 2001) is increasingly unpredictable as a result of flatter and leaner organisations, which provide fewer opportunities for hierarchical advancement, a traditional hallmark of a successful career (Greenhaus & Kossek, 2014). Sustained employability is a predictor of career satisfaction, and depends largely on continuous and lifelong learning, being adaptable to changing career demands or career expertise, and being able to perceive new lateral career opportunities in varied organisational contexts, rather than upward career moves in one organisational context (de Vos et al., 2011). Networking will enable knowledge workers to utilise a diverse range of sources, thereby creating awareness and detailed information for sustainable employment.

Career competencies, such as having a proactive personality, openness to experience, career insight, and the ability to access mentors and internal and external networks, relevant skills, and a sense of career identity, have been associated with indicators of career success, including perceived career satisfaction and self-perceived employability (Akkermans et al., 2020; Blokker et al., 2019; de Vos et al., 2011; Greenhaus & Callanan, 2006). Furthermore, career satisfaction has been found to be positively related to self-management strategies, such as self-set career goals, and having positive career expectancies (Greenhaus et al., 2010).

Knowledge workers have unique developmental preferences (Shandler, 2014). They embrace communities of practice and demand that knowledge is continually replenished. Knowledge workers value exclusive learning opportunities and have respect for those ultimate experts whom they regard as having wider experiences. They, therefore, prefer to develop their own leadership skills, learning from other leaders with proven competencies, rather than attending generic leadership training courses. Knowledge workers prefer developmental opportunities that are linked to strategic priorities, such as mentoring programmes, attending conferences and having informal learning sessions and discussions, and creating opportunities to learn together (Shandler, 2014). Knowledge workers value personal and professional growth independence and autonomy (Drucker, 1988; Kelemen, 2010; Mládková, 2012, 2015; Newell, 2000; Strong, 2003; Suff & Reilly, 2005). More importantly, being acknowledged or recognised and appreciated are more important for knowledge workers than cash or financial rewards (Despres & Hiltrop, 1995). The implication is that knowledge workers measure their career success in terms of subjective indicators of career success in the sense of career satisfaction rather than objective indications of career success. By taking responsibility for their own career development, knowledge workers

are able to decide, manage, organise and control their own careers (Mládková, 2015) by developing proactive adaptive behaviour patterns, acting as a prerequisite for sustainable employment and career satisfaction.

In conclusion, it is evident that the digital era shapes the unstable and unpredictable world of work through advanced innovative technologies, tasks disruptions, new skills requirements, corporate restructuring and a mobile workforce (Glavin, 2015; WEF, 2019). As a consequence of the unstable and unpredictable 21st century, knowledge workers must strive to maintain their employability and try to work for different companies in different economic sectors, rather than plan for a stable career path with only one employer (Coetzee & Schreuder, 2021; Maree, 2020; Savickas, 2011c). More emphasis is consequently placed on boundaryless and protean careers, customised and kaleidoscopic careers, where multiple employers, jobs and areas of skill development have become the norm. The implications for the career development of knowledge workers are that knowledge workers should act as life or career managers, taking responsibility for choosing their work and learning activities throughout their careers (Eggins, 2016). Knowledge workers are therefore obliged to engage in proactive behaviour to ensure career success, rather than waiting for the changing economic, technological and organisational conditions to stabilise and influence their career success (Uy et al., 2015). Industrial psychologists could play a key role in the career development of knowledge workers by equipping them with important psychosocial career resources and creating an awareness of career cognitions in order to facilitate an increased sense of self-perceived employability and career satisfaction.

2.2 CAREER SATISFACTION OF KNOWLEDGE WORKERS

The career satisfaction of knowledge workers is discussed in line with the conceptualisation and theoretical perspectives.

2.2.1 Conceptualisation

Traditionally, career satisfaction was conceptualised as individuals' positive psychological attitude towards the overall work situation (Dawis & Lofquist, 1984), and reflects all jobs with which individuals have been involved (Judge et al., 1999). Coetzee et al. (2010) define career satisfaction as a cognition with affective components resulting from individuals' perceptions about work. The immediate emotional reactions of individuals' towards their current job and the satisfaction with their past and future work history are taken as a whole. Career satisfaction thus represents individuals' self-evaluation of all the experiences of career progress and feelings of accomplishment and satisfaction (Blokker et al., 2019; Hagmaier et al., 2018). Career satisfaction

represents a unique and important personal construct of well-being (Kidd, 2008; Klusmann et al., 2008; Mauno et al., 2014). However, it is highly unlikely for individuals to perceive their careers as successful if they are not satisfied with certain aspects of their careers (Judge et al., 1999). Therefore, career satisfaction seems to be a prominent indicator of subjective career success (Coetzee & Bergh, 2009; Schreuder & Coetzee, 2016).

In the present study, career success was measured in terms of individuals' levels of career satisfaction. The Career Satisfaction Scale of Greenhaus et al. (1990) was utilised to measure subjective career success. This scale measures the extent to which individuals feel satisfied with their overall career success achieved (individual satisfaction for achievements); and the progress towards meeting career goals (individual satisfaction for progression), goals for income (individual satisfaction for income), career advancement and the development of new skills (Eby et al., 2003; Greenhaus et al., 1990). From the individual's point of view, career satisfaction is a consequence of perceived person-environment congruence, which refers to positive adjustment at work and the achievement of career goals within a particular social-cultural environment.

2.2.2 Theoretical models

Career satisfaction is discussed in this thesis in terms of three underlying theoretical perspectives and important dimensions of career satisfaction. The three underlying theoretical perspectives are the person-environment fit (PE-fit) (Holland, 1997; van Vianen, 2018), conservation of resources (COR) (Hobfoll, 1988, 1998, 2001) and dispositional employability (Fugate et al., 2004). The social cognitive career theory (SCCT) (Lent, 2004, 2013; Lent & Brown, 2006, 2008; Lent et al., 1994, 2000) and dimensions of career satisfaction are discussed in terms of Gattiker and Larwood's (1986) five dimensions of career success, Parker and Chusmir's (1992) six dimensions of subjective career success, and Shockley et al.'s (2015) eight dimensions of subjective career success (career satisfaction).

2.2.2.1 Person–environment fit

Person–environment fit models emphasise the importance of assessing and exploring the personal and occupational work environment and the corresponding congruence or fit between the person and environment. The concept of a person–environment fit (PE fit) model is central to research in organisational behaviour (Dawis & Lofquist, 1984; Edwards et al., 1998; Holland, 1997; van Vianen, 2018) and relates to the assumption that human behaviour tends to be influenced by several determinants both in the person and in the environment (Ender & Magnusson, 1976; van Vianen, 2018). The effects of person–situation interactions on personality,

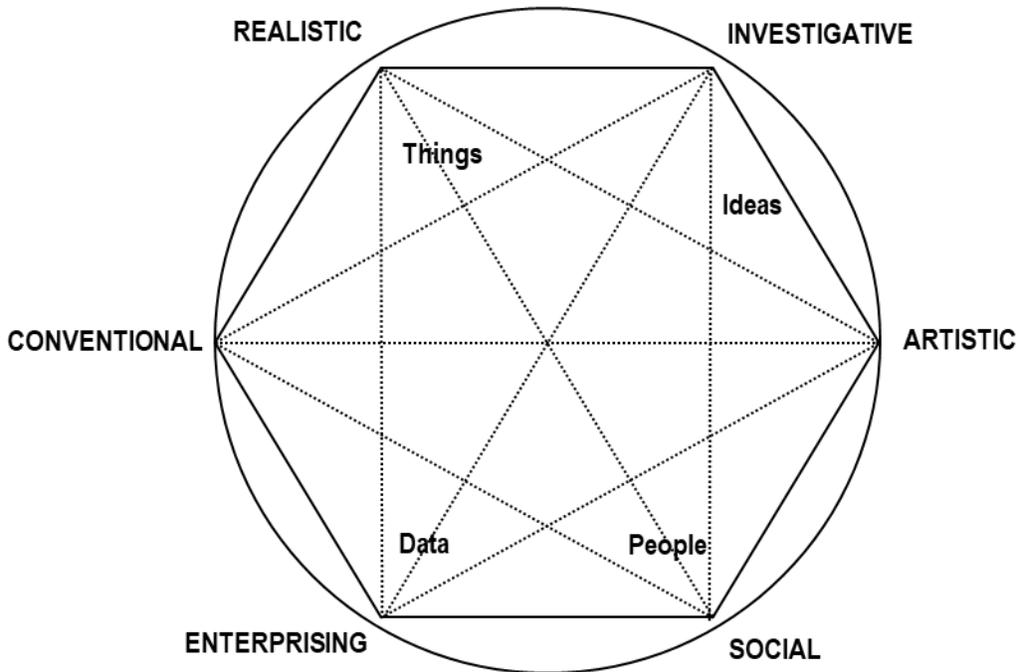
satisfaction and well-being are emphasised, and behaviour is therefore seen as a result of the continuous interaction between a person and environment (van Vianen, 2018; Walsh et al., 2000).

The most widely applied person–environment fit theory in vocational interest is Holland's (1959, 1985, 1997) theory of vocational personalities and work environments. According to Holland (1959, 1985, 1997), congruence between individuals' personality and career environment lead to career satisfaction. His theory thus claims that individuals strive to seek and create work environments that enable them to manifest their work personalities. Holland's (1959, 1985, 1997) Hexagonal RIASEC types and dimensions is presented in Figure 2.3. Holland identified six distinct work personality types (vocational interests): **R**ealistic, **I**nvestigative, **A**rtistic, **S**ocial, **E**nterprising, and **C**onventional. The six work personality types are presented around a circular or hexagonal model to visually reflect the degree of similarity.

The realistic work personality type reflects individuals who are hands-on and express interest in mechanical and outdoor activities. The investigative work personality type reflects individuals who express interest in scientific and analytical activities. The realistic and investigative work personality types are quite similar to each other. The artistic work personality type refers to individuals who show an interest in creative expressions. The social work personality type reflects individuals who show sincere interests to help others. The enterprising work personality type reflects individuals who express interests to lead and persuade others, while the conventional work personality type reflects individuals who express interests in structure, details, and the organising of things and data. The realistic and social work personality type are directly across from each other on the hexagon or circle, indicating maximum difference as the realistic work personality type is centred around things, whereas the social work personality type is centred around people (Holland, 1959, 1985, 1997; Su et al., 2015).

Figure 2.3

Holland's Hexagonal RIASEC Types and Dimensions (Data/Ideas and Things/People) of Prediger



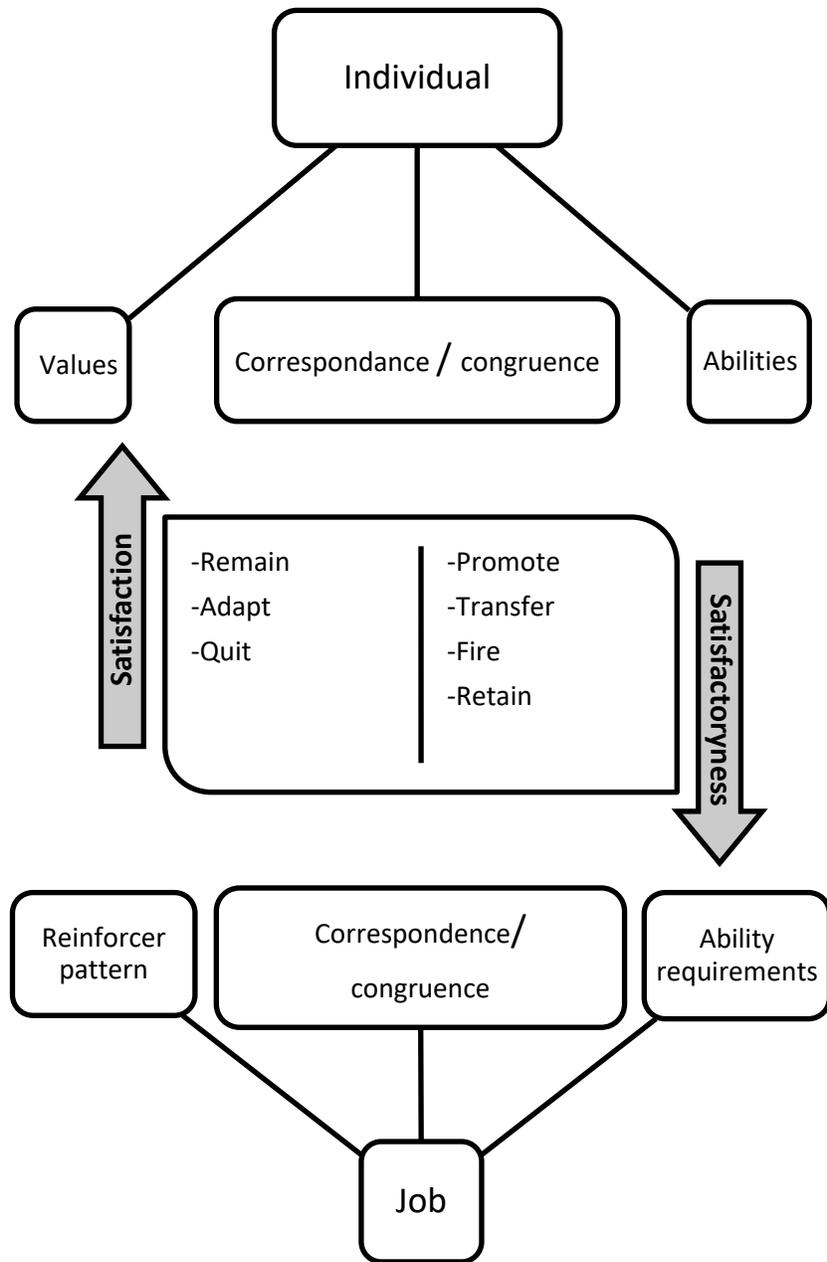
Source. Prediger (1982, p. 260); Holland (1985, p.29)

Holland (1997) also categorised work environments into the six RIASEC types and proposed that individuals with similar personalities tend to congregate in the same group of careers. Holland's (1985, 1997) theory provided evidence that the degree of similarity (fit or congruence) between individuals' personality (interest) type and work environment influence individuals' work attitudes and behaviours. Higher levels of congruence lead to higher levels of career satisfaction, success, and persistence (Holland, 1985; Nye et al., 2012; Su et al., 2015; van Iddekinge et al., 2011; van Vianen, 2018).

The theory of work adjustment (TWA) (Dawis, 2005; Dawis & Lofquist, 1984) is primarily concerned with adjustments to the expectations and rewards of work and is presented in Figure 2.4.

Figure 2.4

Theory of Work Adjustment



Source. Dawis (2005); Dawis and Lofquist (1984)

In TWA, individuals and work environments have a mutual relationship that jointly influences the employment relationship and length of employment. Organisations require individuals to have specific knowledge, skills and competencies (abilities) to perform in specific jobs successfully. In

contrast, individuals' expect organisations to supply rewards reflected as reinforcers that meet specific needs related to specific work values. The relevant congruence or correspondence (fit) between jobs and individuals seems to be high when individuals meet or exceed the competencies (abilities) demanded by jobs, or when jobs meet or exceed the value needs of individuals. Individuals who have high correspondence in the realm of competencies (abilities) represent satisfactoriness, whereas individuals who experience high correspondence in the realm of work values and needs represent satisfied individuals. Satisfaction and satisfactoriness are thus predictors of job tenure (Dawis, 2005). Unsatisfactory individuals may be disciplined, transferred, laid off, or dismissed, while satisfactory employees are promoted or retained. On the other hand, unsatisfied individuals may engage in counterproductive behaviours and may resign, or withdraw from work altogether. It seems that satisfaction moderates the effect of correspondence between abilities and requirements, while satisfactoriness moderates the effect of correspondence between needs and supplies (Dawis, 2005; Dawis & Lofquist, 1984).

Correspondence in the TWA is seen as a dynamic process. Poor correspondence can be ameliorated through adjustment, which involves changing to meet expectations or lowering expectations to meet reality. Individuals tend to have adjustment styles, characterised by flexibility (ability to tolerate dis-correspondence), activeness (acting on the environment to adjust), reactivity (acting on one's self to adjust), and perseverance (the length of time an individual will persist in adjustment behaviours) (Dawis, 2005; Dawis & Lofquist, 1984). These four adjustment styles, along with four corresponding environmental styles, further moderate the effect of satisfaction and satisfactoriness.

Person–environment fit models (Holland, 1997; van Vianen, 2018) are utilised widely in organisational behaviour which reflects the importance of the continuous interaction between a person and the environment. Holland's (1985, 1997) theory has been well researched and is mostly utilised in career exploration and decision making. The weakness of Holland's (1985, 1997) theory lies in the lack of change and developmental processes, and whether it is still relevant in the changing world of work (Morgan et al., 2019). Similar to Holland's (1985, 1997) theory, the TWA (Dawis, 2005; Dawis & Lofquist, 1984) has been widely researched. The TWA (Dawis, 2005; Dawis & Lofquist, 1984) is especially useful in career counselling to facilitate career decision-making, adjustment and change and continues to attract attention in research (Hesketh et al., 2011; Lubinski & Benbow, 2006; Patton & McMahon, 2014; Su et al., 2015). The application of TWA (Dawis, 2005; Dawis & Lofquist, 1984) provides insights towards better understandings of how change affects individuals, the environment, and the corresponding relationship between

them; and consequently career adaptability, career stages and work trends (Patton & McMahon, 2014; Swanson & Schneider, 2013). The person-environment fit theory (van Vianen, 2018) emphasised that: human behaviour are better predicted by the combination of the person and environment than when used separately; outcomes are optimal when personal and environmental attributes are compatible; the direction of fit or misfit between the person and environment does not actually matter.

2.2.2.2 Conservation of resources

Conservation of resources (COR) theory begins with the tenet that individuals strive to obtain, retain, foster and protect those things they centrally value (Hobfoll, 1988, 1998, 2001). This means that people employ key resources in order to conduct regulation of the self, operation of social relations, and the way individuals organise, behave and fit into the greater context of organisations and culture itself. The COR theory posits further that what is centrally valued, is universal and includes health, well-being, peace, family, self-preservation and a positive sense of self, even if the core elements of sense of self differ culturally. This also means that organisational settings have no choice but to operate in coordination with this motivation. To do otherwise, might work in the short term, but cannot be sustained without individuals breaking down or exiting (Hobfoll, 1988, 1998).

The COR theory comprises several key principles (summarised in Figure 2.5) that are supported in several studies of stress and trauma (Hobfoll, 1989, 1998, 2001; Hobfoll et al., 2018).

Principle 1: The primacy of resource loss – the first principle of COR theory is that resource loss is disproportionately more prominent than resource gain.

Principle 2: Resource investment. The second principle of COR theory is that people must invest resources in order to protect against resource loss, recover from losses and gain resources. A related consequence of this (Corollary 1) is that those with greater resources are less vulnerable to resource loss and more capable of orchestrating resource gain. Conversely, those with fewer resources are more vulnerable to resource loss and less capable of resource gain.

Principles 3 and 4 make the point that resource gain and loss cycles, respectively, occur in chronically stressful conditions or where individuals or organisations are resource-poor and when any major stressor occurs. These spirals move with increased strength and speed as individuals, groups and organisations either lose the resources they need to meet challenges or acquire resources so they can risk looking for new challenges to meet. Gain spirals have received considerably less attention than loss spirals in studies because psychologists have often been

interested in deviancy and psychopathology. Gain cycles are critical not only to workplaces but also to work–family interactions. Work and family are both jealous demanders of individuals’ resources, and to the extent that resources are built in one domain that facilitates the other domain, this ‘battle for resources’ could become a common agenda. This is especially the case when individuals are motivated for gain in their own right, as well as to prevent resource loss (Hakanen et al., 2011).

Figure 2.5

Conservation of Resources (COR) Theory

Principle 1	• Resource loss is more salient than resource gain.
Principle 2	• People must invest resources to gain resources and protect themselves from losing resource or to recover from resource loss.
Corollary 1	• Individuals with more resources are better positioned for resource gains. • Individuals with fewer resources are more likely to experience resource losses.
Corollary 2	• Initial resource losses lead to future resource losses.
Corollary 3	• Initial resource gains lead to future resource gains.
Corollary 4	• Lack of resources leads to defensive attempts to conserve remaining resources.

Source. Adapted from Hobfoll (2011)

An important premise of the COR theory is that in order to prevent stressful loss cycles of resources and to enhance motivating resource gain spirals, people need to invest in resources. The more resourceful people are, the better they are able to do so (Hobfoll, 2011).

By applying the COR theory to constructs related to career outcomes on self-perceived employability and career satisfaction, the following conclusions and connections are made.

- Career anchors and career values have important implications for careers as individuals strive to obtain, retain, foster and protect those things they centrally value (Hobfoll, 1988, 1998, 2001). Career satisfaction is the ultimate aim of work that individuals centrally value and is universal in the same way as other centrally valued aspects of human functioning, such as health, well-being, peace, family, self-preservation and a positive sense of self.
- Career success and satisfaction is more likely when individuals seek to create and maintain personal career characteristics (psychosocial career resources, self-perceived

employability) and social circumstances (sustained employability) that will increase the likelihood of receipt of reinforcement, and to avoid the loss of career resources and the lack of sustained employability.

- Individuals will therefore engage in key career resources in order to conduct the regulation of their careers (through career adaptability) which will determine how individuals construct their careers.

Vanhercke et al. (2015) provide important insights from the gain and loss cycles of COR theory, related to self-perceived employability, and concluded that self-perceived employability may trigger a gain cycle directed toward well-being among employed workers. Perceiving employment possibilities is valuable for an individual as it provides the individual with a feeling of choice and career opportunities, which is a critical feature for survival in today's labour market (Fugate et al., 2004; Marler et al., 2002; Schyns et al., 2007). Additionally, perceived employability helps workers to acquire other resources (Hobfoll, 1989) thus, mature, highly employable workers, who are likely to perceive themselves as highly employable, are also more likely to seek and find employment (de Coen et al., 2015).

Dispositional employability theory (Fugate et al., 2004) represents proactive adaptability behaviour and will be discussed as part of the theoretical models related to self-perceived employability.

2.2.2.3 Social cognitive career theory

The social cognitive career theory (SCCT) (Lent, 2004, 2013; Lent & Brown, 2006, 2008; Lent et al., 1994, 2000) is an approach to understanding educational and occupational behaviour, and seeks to create a unifying framework for explaining how people –

- develop vocational interests;
- make occupational choices;
- achieve varying levels of career success and stability; and
- experience satisfaction or well-being in the work environment.

The primary foundation of the SCCT lies in Bandura's (1986) general social cognitive theory, which emphasises the complex ways in which people, their behaviour and environments influence each other mutually. Similar to Bandura's (1986) general theory, the SCCT assumes that individuals have the capacity to exercise some degree of agency or self-direction and that they also contend with many factors (e.g. environmental supports and barriers) that could strengthen,

weaken or even override personal agency (Lent et al., 1994). The SCCT highlights the interplay among three cognitive person variables that partly enable the exercise of agency in career development: self-efficacy beliefs, outcome expectations, and personal goals (Lent et al., 1994).

- (a) Self-efficacy: refers to an individual's personal beliefs about his or her capabilities to perform particular behaviours or courses of action. Self-efficacy beliefs are relatively dynamic (i.e. changeable) and are specific to particular activity domains (Lent et al., 1994).
- (b) Outcome expectations: refer to beliefs about the consequences or outcomes of performing particular behaviours. The choices that individuals make about the activities in which they engage or will engage, and their effort and persistence at these activities, entail consideration of outcome as well as self-efficacy beliefs. For example, people are more likely to choose to engage in an activity where they see their involvement as leading to valued, positive outcomes (e.g. social and self-approval, tangible rewards, attractive work conditions) (Lent et al., 1994).
- (c) Personal goals may be defined as an individual's intentions to engage in a particular activity or to attain a certain level of performance. By setting goals, people help organise and guide their own behaviour and sustain it in the absence of immediate positive feedback and despite inevitable setbacks (Lent et al., 1994).

Lent and Brown (2006) applied the SCCT perspective (Lent et al., 1994) to develop a social cognitive career satisfaction model consisting of various variables: career satisfaction, personality and affective traits, goals and goal-directed activity, self-efficacy, work conditions and outcomes, and goal-relevant environmental supports, resources, and obstacles.

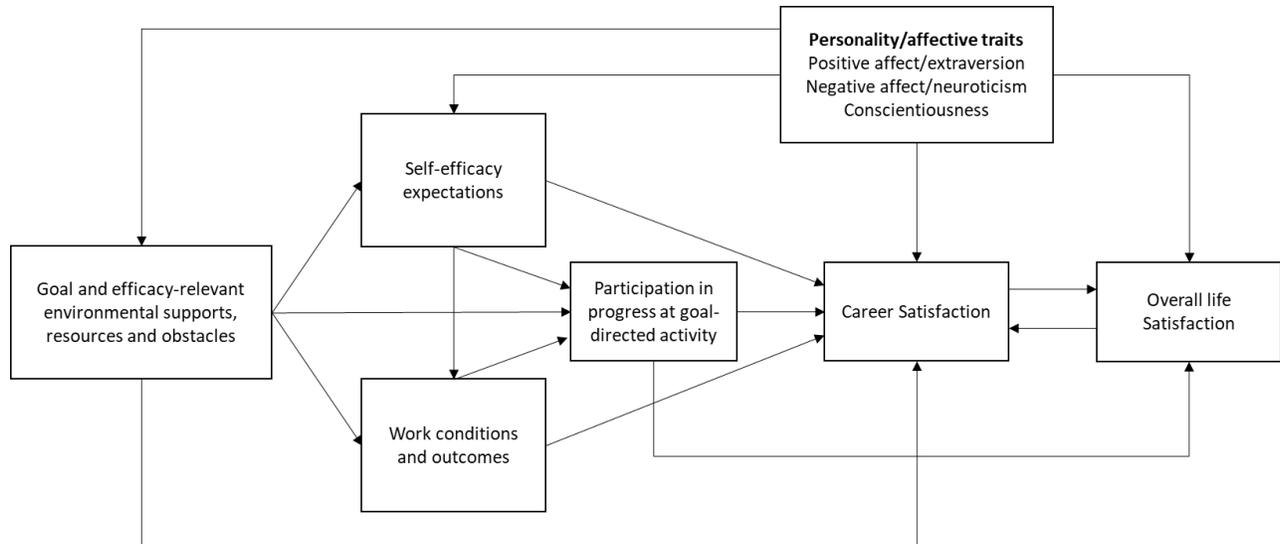
- (a) career satisfaction: relates to overall feelings about one's career reflecting feelings about career aspects or conditions related to the career itself, rewards, context and people (personal relationships) (Locke, 1976);
- (b) personality and affective traits: personality traits relate to certain genetic personality characteristics, such as neuroticism, extraversion and conscientiousness (Heller et al., 2004; Judge et al., 2002), while affective traits (positive affect and negative affect) (Connolly & Viswesvaran, 2000; Thoresen et al., 2003) have been found to relate to both career and life satisfaction;
- (c) goals and goal-directed activity: relates to goals in terms of one's determination to effect a particular outcome or to attain a certain level of performance (Bandura, 1986);

- (d) self-efficacy: refers to personal beliefs about one's capability to perform particular behaviours necessary to achieve valued career goals or, more generally, to perform tasks required to succeed in one's career (i.e. goal-related and task-specific self-efficacy);
- (e) work conditions and outcomes relate to
- role stressors (e.g. conflict, overload, ambiguity) (Beehr & Glazer, 2005);
 - affectively relevant work events (Weiss & Cropanzano, 1996);
 - expectancy-value beliefs (Mitchell, 1982); and
 - degree of fit between what persons want from work and what the environment provides them (needs–supplies fit) (Kristof-Brown et al., 2005);
- (f) goal-relevant environmental supports, resources and obstacles relate to specific environmental variables that are relevant in the pursuit of one's personal goals or to foster self-efficacy perceptions.

As shown in Figure 2.6, career satisfaction (i.e. the degree to which one likes or is content with one's work environment) is expected to be influenced by several sets of variables (Lent & Brown, 2006). In particular, the model posits that people are likely to experience career satisfaction and be satisfied at work to the extent that they are –involved in activities they value; see themselves as making progress at personally relevant goals; possess strong self-efficacy in performing necessary tasks and in achieving their career goals; and have access to resources in the environment for promoting their self-efficacy and aiding their goal pursuit (Lent & Brown, 2006).

Figure 2.6

A Social Cognitive Model of Career Satisfaction



Source. Lent and Brown (2008, p. 10).

Career satisfaction is seen as affected by aspects of one's personality and work conditions (person–environment fit). Certain personality (Big Five factors) and affective (positive and negative affect) traits have been found to be linked reliably to career satisfaction (Lent & Brown, 2006). However, this heritability estimate still leaves much room for non-genetic sources of job satisfaction and, indeed, situational and cognitive variables have been found to predict career satisfaction independently of traits (Watson & Slack, 1993; Weiss et al., 1999).

Career goals may range from meeting basic survival needs (e.g. putting food on the table), to achieving specific intrinsic or extrinsic goals (e.g. attaining a certain level of work productivity), to more self-actualising aims (e.g. realising one's full potential). The relevance of the goals for satisfaction depends largely on the extent to which the individual focuses on, cares about and marks progress in reaching them. The perception that one is making progress toward personally valued goals has received particular support as a precursor of well-being (Ryan & Deci, 2001).

Favourable working conditions and outcomes (e.g. favourable work characteristics, needs–supplies fit, perceived organisational support, work values and expectancy-value beliefs) have also been associated with career satisfaction (Lent et al., 1994). Work values and expectancy-value beliefs are included in this category because they are often assessed by indexing individuals' perceptions about the extent to which the work environment meets, or is likely to meet,

their preferences for workplace reinforcers (i.e. to provide valued outcomes and conditions). Several theories assume that career satisfaction depends on the degree to which people perceive that their work environment provides a general set of favourable conditions (e.g. Hackman & Oldham, 1976) or a set of reinforcers that are consistent with their personal work values (e.g. Dawis & Lofquist, 1984). A variety of work characteristics, conditions and outcomes have been linked to career satisfaction (Lent & Brown, 2006, 2008), reinforcing the relevance of person–environment fit models.

Goal-specific environmental supports and resources (e.g. social and material support for one’s central goals or fostering self-efficacy precepts) are likely to promote satisfaction, while the absence of supports, or the presence of environmental obstacles that impede goal progress, may diminish career satisfaction as a consequence of the incongruence between personal and environmental attributes. Particular environmental features, such as encouragement, provision of modelling, and performance feedback, also help to inform self-efficacy and outcome expectations (Lent & Brown, 2006; Lent et al., 1994) which, in turn, facilitate goal achievement.

Goal-directed behaviour is importantly affected by self-efficacy, outcome expectations, and environmental supports and resources (Bandura, 1986). Therefore, people are more likely to set and pursue goals that are consistent with their beliefs about their personal capabilities, the expected consequences of goal pursuit, and the availability or accessibility of contextual resources.

The SCCT model has been tested quite well in terms of occupational interests and choice; however, limited studies tested the satisfaction aspect, and focused mostly on the education satisfaction of students, instead of an adult working population in the knowledge-based economy (Dickinson et al., 2017; Ezeofor & Lent, 2014; Hui et al., 2013; Lent et al., 2005; Ojeda et al., 2011; Sheu et al., 2016). Only a few studies have examined the model using an adult working population consisting of –

- a sample of American teachers (Duffy & Lent, 2009);
- Italian teachers (Lent et al., 2011);
- Korean teachers (Lee & Shin, 2017); and
- teachers in Abu Dhabi (Badri et al., 2013).

Although the aim of the present research study was not to examine the SCCT exclusively in terms of the social cognitive model of career satisfaction (Lent & Brown, 2006, 2008), it is, however meaningful to clarify how the SCCT is relevant to the research constructs.

The research study considered the dynamics between career cognitions (career adaptability and psychosocial career preoccupations) and psycho-social career resources (employability attributes, career anchors and career values) and career outcomes (self-perceived employability and career satisfaction), and these constructs could also be linked to the SCCT. The focal point of the SCCT is framed on the career dynamics between individuals' personal attributes (e.g. interests, abilities, values), learning and socialisation experiences, and the resources, opportunities and barriers required by their environments (Lent, 2013). The following connections are therefore possible between the constructs relevant to the research study and the constructs associated with the SCCT:

- Career anchors and career values can be connected to personality or affective traits. Career anchors and career values could influence career satisfaction and life satisfaction directly.
- Career anchors and career values as personality or affective traits could influence employability attributes, which might be connected to self-efficacy.
- Individuals set relevant career goals to sustain their employability or to foster self-efficacy perceptions related to self-perceived employability.
- Psychosocial career preoccupations are connected to work conditions and outcomes. When working conditions enhance the person–environment fit in terms of career values and career anchors, the adequate fit produces positive career outcomes, such as career satisfaction. When the person–environment fit is inadequate, individuals will apply psychosocial career preoccupations related to career adaptation and work–life adjustment by developing or increasing certain employability attributes to enhance their ability to adapt to changing environments, therefore advancing their self-efficacy.
- Career adaptability is connected to participating in or progress at goal-directed activity, which relates to achieving career goals associated with sustained employability, affecting individuals' self-perceived employability.

The SCCT (Lent, 2013; Lent et al., 1994) highlights cognitive person variables, such as self-efficacy, and considers how they function, along with other person and environment factors (e.g. gender, culture, barriers, supports) in shaping individuals' occupational career paths. The

research constructs relevant to this study could therefore function as an extension of the SCCT by including contemporary career constructs. Career cognitions (psycho-social career preoccupations and career adaptability) along with psychosocial career resources (employability attributes, career anchors and career values) of individuals and environmental factors influencing self-perceived employability, and the way they function and shape individuals' career paths and career outcomes, such as career satisfaction. The way in which the career constructs are influencing each other could confirm and conclude that career behaviour is determined by the interaction between individuals' cognitive and emotional processes and their environments (Lent et al., 1994).

2.2.2.4 *Gattiker and Larwood's five dimensions of career success*

The five dimensions of Gattiker and Larwood's (1986) model focus on the individual's perception of career success in comparison to their peers. This model focuses on work-related aspects that will influence the experience of career success. This is in line with the traditional definition of subjective career success, which refers to positive outcomes from work-related experiences (Arthur et al., 2005). Gattiker and Larwood (1986) measure subjective career success in terms of five dimensions, namely job, interpersonal, financial, hierarchical and non-organisational success. These dimensions are explained as follows:

- job success – responsibility, performance at work, development opportunities, support from managers, and feeling happy and dedicated to his or her work;
- interpersonal success – enjoying the acceptance and respect of colleagues, supervisors' confidence, and receiving good work evaluations;
- financial success – earning a fair or higher income in comparison with others;
- hierarchical success – opportunities for promotion and achieving a career goal; and
- life success – being happy and content in other areas of life, which are not work-related (Gattiker & Larwood, 1986).

Gattiker and Larwood (1986) view career satisfaction through a holistic lens, taking cognitive, psychosocial and environmental factors into account.

2.2.2.5 *Parker and Chusmir's six dimensions of subjective career success*

Parker and Chusmir's (1992) six dimensions are in contrast to the traditional definition of subjective career success, but they are in line with the modern approach, which means more emphasis is placed on the individual's personal perspectives and interpretations of career

success achieved regardless of the norms and standards of society (Valcour & Ladge, 2008). This model focuses on aspects beyond the scope of work, which adds to the individuals' perception of success (Heslin, 2005).

Parker and Chusmir (1992) measure subjective career success on six dimensions, namely status or wealth, social contribution, family relationships, personal fulfilment, professional fulfilment, and security. These dimensions are explained as follows:

- status or wealth – public recognition, having a high income and influence;
- security – job-related security, long-term stability, regular pay increases and good benefits (Parker & Chusmir, 1991);
- social contribution – active involvement in society, being useful and helpful;
- family relationships – being happily married and skilled at parenting;
- professional fulfilment – commitment to work and satisfaction derived from the organisation and position, enjoying the respect of colleagues and superiors; and
- personal fulfilment – deriving personal meaning and happiness from non-work activities, having self-respect, inner peace and contentment.

Parker and Chusmir (1992) measure subjective career success from a personal perspective. This model has a high focus on non-organisational success. Such success refers to aspects that will enable the individual to experience a feeling of success beyond the scope of work.

It is of importance that both the individual and the organisation understand what predicts subjective career success in order to make the necessary adjustments that will ensure that employees experience the highest level of subjective career success (Eby et al., 2003; Zhou et al., 2013).

2.2.2.6 Shockley, Ureksoy, Rodopman, Poteat, and Dullaghan's eight dimensions of subjective career success

Shockley et al. (2015) argue that a person's career success is driven by objective factors in addition to those that are less tangible in nature and which require subjective interpretation. The study by Shockley et al. (2015) aimed to identify core subjective factors and to create a means to measure and facilitate comparisons across individuals.

Table 2.5*Subjective Career Success Inventory Dimension and Definitions*

Dimension	Definition
Authenticity	Shaping the direction of one's career according to personal needs and preferences
Growth and development	Growing in one's career through the development of new knowledge and skills
Influence	Having an influence on others within the organisation and on the organisation itself
Meaningful work	Engaging in work that is personally or socially valued
Personal life	Having a career that positively influences life outside of work
Quality work	Producing a high-quality product or providing high-quality service
Recognition	Being formally or informally acknowledged for your work by valued others
Satisfaction	Positive affect or feelings toward one's career in general not rated

Source. Shockley et al. (2015, p.139)

Although subjective career success can be seen as a multidimensional construct (Gattiker & Larwood, 1986; Parker & Chusmir, 1992; Shockley et al., 2015), the most common representation of subjective career success is found in Greenhaus et al.'s (1990) career satisfaction measure (Heslin, 2005; Ng et al., 2005; Shockley et al., 2015; Zhou et al., 2013). Arthur et al.'s (2005) review of career success journal publications from 1992 to 2002 revealed that approximately 50% of subjective career success studies focus on the one-dimensional means, most commonly known as 'career satisfaction' (Greenhaus et al., 1990). More recently, Shockley et al. (2015) reviewed studies between 2003 and 2014 and found a similar trend, namely that 46% of studies conceptualised subjective career success as career satisfaction. In the present study, career satisfaction was, therefore measured by utilising the one-dimensional career satisfaction scale developed by Greenhaus et al. (1990).

This one-dimensional subjective career success measuring instrument of Greenhaus et al. (1990), namely the Career Satisfaction Scale (CSS), assesses career satisfaction regarding progress toward personal career goals in four areas: overall career, income, advancement, and development of new skills (Greenhaus et al., 1990). Although there are many other factors beyond satisfaction, which researchers have noted as important to subjective career success, satisfaction still seems to be an important component of subjective career success and is appropriate to use as measurement (Shockley et al., 2015). The multidimensional subjective career success scale developed by Shockley et al. (2015) is significantly positively related to career satisfaction, which questions the utility of using longer scales when the same information could potentially be gained more efficiently through the five items of the career satisfaction scale of Greenhaus et al. (1990).

2.3 EMPLOYABILITY OF KNOWLEDGE WORKERS

The employability of knowledge workers is discussed in terms of the conceptualisation, theoretical models and various variables influencing employability.

2.3.1 Conceptualisation

Within the new career era, 'employability' is defined as a critical condition for career success (Fugate et al., 2004; Hall, 2002; van der Heijde & van der Heijden, 2006), i.e. the accomplishment of desirable work-related outcomes at any point in a person's work experiences over time (Arthur et al., 2005). It is crucial to understand that employability is a multidimensional construct (Fugate et al., 2004). The term 'employability' is used in a variety of contexts in a considerable volume of literature, which can be quite challenging (Rothwell, 2015). Therefore, any study related to employability first has to pay attention to certain standing problems encountered from the misuse of the term and uncertainty about its meaning, an issue that has been recognised for some time (Rothwell, 2015).

Rothwell (2015) proposes four broad notions of employability. The first notion is the policy perspective on employability, which normally relates to the aim of reducing unemployment and overcoming social disadvantage. As a result, international organisations – such as the European Union (Berkeley, 1995; Vielle, 2007), the United Nations (2001), and the OECD (1995, 1996, 1998), as well as government departments (Hillage & Pollard, 1998) – commissioned reports about the state of the labour market and the way public policy might respond to changing circumstances, or the way skills could be developed in the working population (National Committee of Inquiry into Higher Education [NCIHE], 1997; Tomé, 2007).

A second notion is employability in an educational context (Rothwell, 2015). Much of this work focuses on graduates with bachelor's degrees and how they have progressed in relation to the rapid expansion of the university sector and continuing concerns about the suitability of graduates for the world of work. Many studies have therefore described graduate attributes that enhance employability (Bezuidenhout, 2011; Botha, 2014; Potgieter & Coetzee, 2013; Stoltz, 2014).

A third notion is employability in the HR management field, which often has to do with proactive employer strategies to hire multi-skilled employees (Rothwell, 2015). Finally, a fourth notion deals with a body of research associated with individuals' self-perceptions of employability and how they perceive their current and future prospects in relation to employment (Rothwell, 2015). This is a perspective on employability from the point of view of the individual and the way they understand how well they are likely to perform in relation to employment prospects. Most of this

body of work developed from the rapid growth of literature in relation to the changing nature of work and careers in the 1990s (Rothwell, 2015). This body of research associated with individuals' self-perceptions of employability and the way they perceive their current and future prospects in relation to employment offers the greatest potential for development and the greatest potential value to psychologists, counsellors and employment advisers (Rothwell, 2015).

It is therefore appropriate that the present study will contribute towards self-perceived employability, an individual's perception of possibilities for maintaining employment and getting new employment in another organisation (Vanhercke et al., 2014). In addition, this research study will also contribute towards employability attributes, which relate to career resources or career meta-competencies, which enhance the fit between adult learners' subject-related knowledge and skills and the demands made in the working world (Coetzee, 2011) thereby increasing their self-perceived employability. It is perception rather than reality that triggers cognitions (e.g. perceiving many employment possibilities may lead the individual to consider specific jobs), behaviour (e.g. perceiving many employment opportunities may lead individuals to engage in an active job search), and career outcomes (e.g. perceiving many employment opportunities may cause individuals to feel valuable and satisfied) (Vanhercke et al., 2014).

Employability in the context related to the individual's self-perceptions of employability refers to such individual's ability to gain access to the workplace and to be effective and productive within the organisation continuously by optimally utilising his or her occupation-related and career meta-competencies (Beukes, 2010; Coetzee, 2009). Career meta-competencies include behavioural adaptability, identity awareness, sense of purpose, self-esteem and emotional intelligence (Beukes, 2010.) Employability attributes (as a set of essential career meta-competencies) enhance the fit between an adult learner's subject-related knowledge and skills and the demands made in the world of work (Coetzee, 2011). Career meta-competencies empower employees to be self-directed lifelong learners who proactively manage their own careers by acquiring either different or more career-specific competencies. Psychosocial career meta-capacities improve proactive career behaviour, which is critical for sustainable employment in the current labour market (Bezuidenhout, 2011; Botha, 2014; Coetzee, 2014b; Potgieter, 2012, 2014).

One of the most widely used definitions of employability is that of Hillage and Pollard (1998), who define employability as the ability to move independently within the work environment and to appreciate one's potential through sustainable employment. Fugate et al. (2004) define employability as a psychosocial construct that embodies individual characteristics, which foster adaptive cognition, behaviour and affect, and enhance the individual-work interface. This

definition refers to the adaptability of the individual to change between positions, both within one organisation and between organisations, the key being active adaptability consisting of three dimensions: personal adaptability, career identity, and social and human capital, which will be discussed further in the section on theoretical models.

van der Heijde and van der Heijden (2006) define employability as the continuous fulfilling, acquiring or creating of work through the optimal use of competencies. Rothwell and Arnold (2007) describe self-perceived employability as the ability to keep one's current employment or to get the ideal employment opportunity you desire. Forrier et al. (2015) define employability as an individual's chance of a job in the internal and/or external labour market. These definitions incorporate aspects of future success (van der Heijden, 2002) and of maintaining one's position (Iles, 1997).

Employability research assesses employability by considering the awareness of employment opportunities (i.e. job transitions), personal strengths that increase employment (i.e. movement capital) and concerns of employment (i.e. perceived employability) (Forrier et al., 2015). The employability of employees in the 21st century is determined by their unique attributes, knowledge, experience and transferable skills (Coetzee, 2009). In an ever faster-changing and more competitive global economic climate, a qualification, per se, no longer ensures that graduates will easily find and secure employment (Botha, 2014; Forrier et al., 2015; Pauw et al., 2008; Potgieter, 2012). It is, therefore, essential that employees ensure that they are and remain employable.

In the context of this research, employability was conceptualised as the ability of individuals to move independently (or adapt) within the work environment and to appreciate their potential through sustainable employment (Hillage & Pollard, 1998). It was also trusted that individuals can manage their employability appropriately by utilising their psychosocial career meta-capacities, which act as key transactional resources between the individual's inner (psychological) and external (social) environment (Coetzee, 2014a; Savickas & Porfeli, 2012). Psychosocial career meta-capacities improve proactive career behaviour, which is critical for sustainable employment in the current labour market (Bezuidenhout, 2011; Botha, 2014; Coetzee, 2014a; Potgieter, 2012, 2014). In the context of this study, Rothwell and Arnold (2007) describe self-perceived employability as the ability to keep one's current employment or to get the ideal employment opportunity one desires. This definition incorporates aspects of future success (van der Heijden, 2002), and of maintaining one's position (Iles, 1997).

2.3.2 Theoretical models

Various models of employability are discussed in this section. The heuristic model of employability developed by Fugate et al. (2004) consists of three dimensions: personal adaptability, career identity, and social and human capital. Based on their work done during 2004 and 2006, Fugate and Kinicki (2008) developed a dispositional employability model with a broad supply-side view, comprising: openness to changes at work, work and career resilience, work and career proactivity, career motivation, social and human capital, and career identity.

van der Heijde and van der Heijden (2006) developed a competency-based approach of employability in which the dimension of occupational expertise is complemented by four more general competencies: anticipation and optimisation, personal flexibility, corporate sense, and balance.

The career EDGE model, developed by Pool and Sewell (2007), focuses on graduate employability, although this model can also be adapted to use at any life stage. This model claims that providing graduates with opportunities to access and develop subject knowledge, understanding and skills; generic skills; emotional intelligence; career development learning, and work experience, and to reflect on and evaluate these experiences, will result in the development of higher levels of self-efficacy, self-confidence and self-esteem, which are key to employability.

Rothwell and Arnold (2007) developed a model on self-perceived employability with four dimensions: self-evaluation in the current organisation, perceived value of occupation in the current organisation, self-valuation outside the current organisation, and perceived value of occupation outside the current organisation.

Beukes' (2009) notion of employability is similar to Pool and Sewell's (2007) view of the construct of employability. Beukes' (2009) self-regulatory model proposes a series of reiterative stages to allow individuals to channel their employability competencies effectively in accessing and sustaining employment in a highly competitive and turbulent labour market. These stages involve the following five sets of development tasks: audit and alignment, career goal clarity, formal and informal learning, self-presentation, and competency trade-off.

Forrier et al.'s (2015) dynamic chain of employability advanced from the different notions of employability (job transitions, movement capital and perceived employability) which tie together in a dynamic chain to enable job transitions to affect movement capital, movement capital to affects perceived employability and perceived employability to affects job transitions.

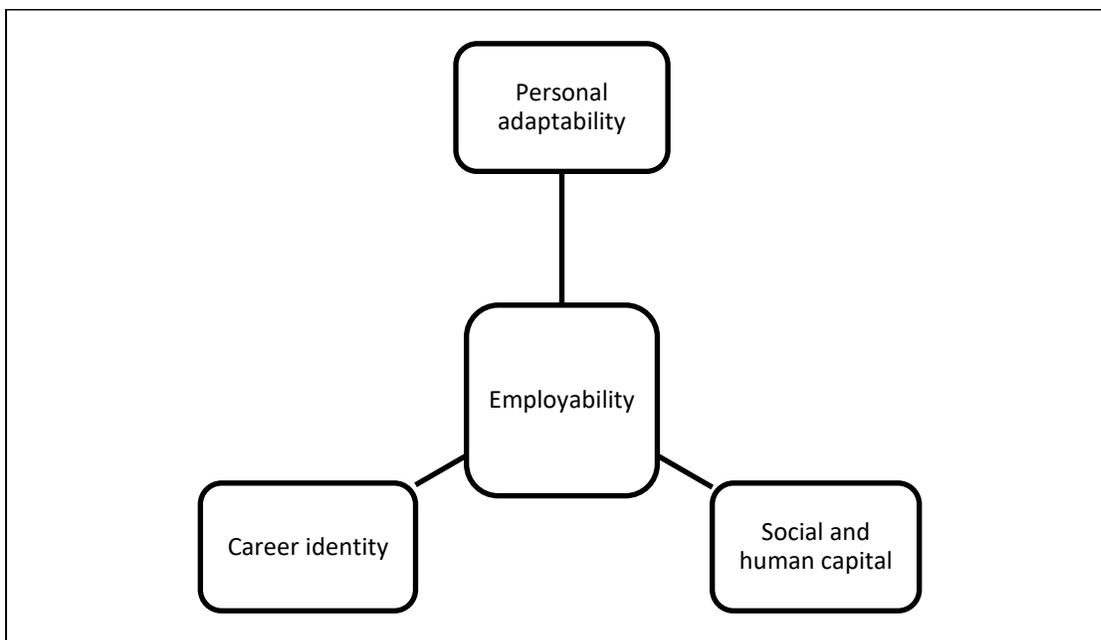
Finally, Bezuidenhout's (2011) employability attributes model identifies important employability attributes, which include a variety of psychosocial career meta-capacities.

2.3.2.1 Fugate, Kinicki and Ashforth: Heuristic model of employability

This model is based on the notion that individual employability encompasses a number of person-centred constructs that are essential in dealing effectively with the career-related changes that are characteristic of the new world of work, and consists of three dimensions: personal adaptability, career identity, and social and human capital as illustrated in Figure 2.7.

Figure 2.7

Heuristic Model of Employability



Source. Fugate et al. (2004, p.19)

Personal adaptability in this model is used as the conceptual foundation for employability and can be described as the willingness, capacity and competence to change. As such, it is an active and continuous process. Fugate et al. (2004) argue that personal traits, such as optimism, a propensity to learn, openness, internal locus of control and generalised self-efficacy combine at a cognitive and an affective level in those individuals who display high employability, leading to the ability to identify and secure work opportunities. According to Fugate et al. (2004), the interaction between the individual and the work environment reduces anxiety and uncertainty, resulting in improved adaptation outcomes, since the individual now has some form of perceived

control over the situation. Personal adaptability is the glue in the psychosocial construct of employability; hence, employability is a synergistic collection of individual characteristics that are directed by an individual's career identity.

Career identity relates to specific constructs, such as role identity, occupational identity and organisational identity, referring to how individuals define themselves in a certain work context (Fugate et al., 2004). It involves making sense of one's current and past situation, giving clear direction to one's future. Career identity addresses the question of *Who am I?* within the work context, allowing for the possibilities of the self at work. As such, career identities can be viewed as the "cognitive compass" of the individual. Career identity, therefore, serves as a navigational tool (Fugate et al., 2004) when individuals find themselves outside of the organisational boundaries, which is often the case in the protean and boundaryless careers of the new age. Career identities are, therefore, the cognitive plans that direct, guide and sustain behaviour in accordance with the desired self (in the working context).

The third and final dimension of employability comprises *human and social capital*. Fugate et al. (2004) argue that both social and human capital form an inherent part of career identities, entrenching it within the employability construct. 'Human capital' refers to a number of personal variables affecting an individual's career advancement. These variables may include age, education, job performance, tenure within an organisation, work experience and emotional intelligence. The variables as mentioned may also be influential in an individual's ability to meet the demands of a specific occupation, thereby contributing to the overall adaptability of the individual and the organisation (Fugate et al., 2004). Social capital is representative of the interpersonal aspects of employability (McArdle et al., 2007).

The importance of these interpersonal connections or social networks lies in the fact that they shape an individual's self-perceptions and are a source of social support that alleviates the stress associated with the fast-paced change of the working environment today.

2.3.2.2 *Dispositional employability model*

Fugate and Kinicki's (2008) dispositional employability model is founded on their work done during 2004 to 2006. Fugate (2006) defines dispositional employability as a collection of individual differences that predispose employees to adapt (pro)actively to their work and career environments. Perceived in this way, employability is fostered by individual characteristics that enable adaptive behaviours and positive employment outcomes. The dispositional approach includes a broad supply-side view. The rationale behind the dispositional approach is the

frequency and intensity of change, resulting in high levels of uncertainty and anxiety, and requiring employees (and organisations) to adapt in a proactive manner. Furthermore, employability research assumes that the required knowledge, skills and abilities for a given job have been clearly identified and remain stagnant, an assumption that is deemed too narrow and, as such, unrepresentative of today's turbulent labour market.

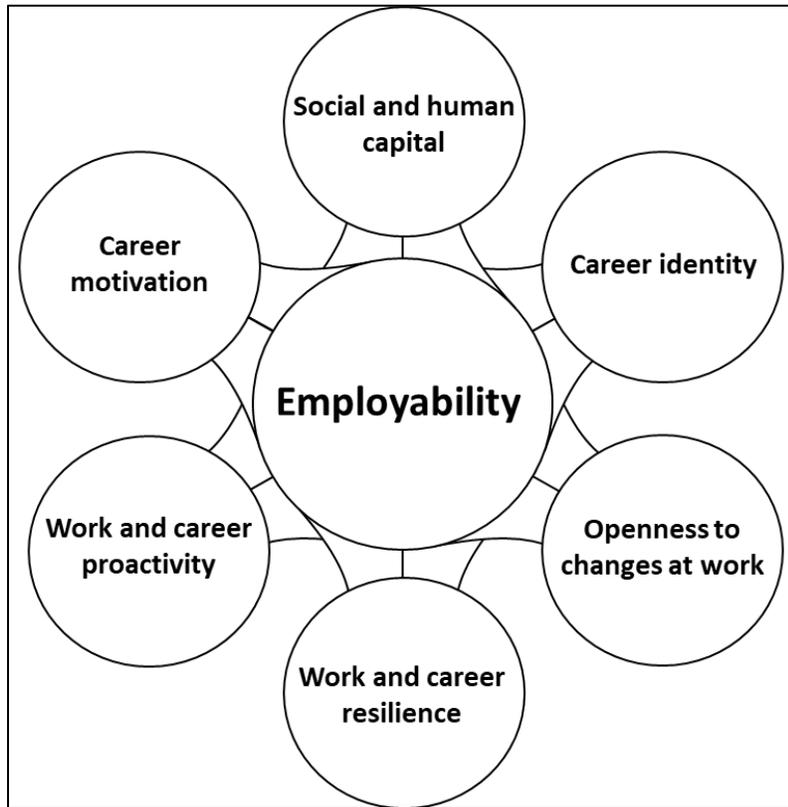
Fugate and Kinicki (2008) therefore developed a model that had to bridge some of the gaps as mentioned. In an attempt to represent the active and adaptable nature of employability further, Fugate and Kinicki (2008), developed this model to include

- openness to changes at work;
- work and career resilience;
- work and career proactivity;
- career motivation;
- social and human capital (Fugate et al., 2004); and
- career identity.

These dispositions were of relevance to the present study as they provide insight into the construct of employability. Figure 2.8 depicts these dispositions and show how they overlap to make up the construct of employability.

Figure 2.8

Dispositional Model of Employability



Source. Fugate (2006, p. 3)

Each dimension has its core settled in that of proactive adaptability, which was a prerequisite set by Fugate and Kinicki (2008) in their determination of each dimension. These dimensions are discussed briefly below.

Fugate and Kinicki (2008) argue that *openness to change* ultimately makes people more employable due to their active adaptability portrayed in any situation. According to Fugate and Kinicki (2008), individuals who are open to changes at work are receptive and willing to change, and/or feel that changes are generally positive once they occur. Openness to changes at work supports flexibility in uncertain situations and facilitates continuous learning. Fugate and Kinicki (2008) state that openness is fundamental to dispositional employability as it supports continuous learning and enables one to identify and realise career opportunities, hence enhancing individuals' personal adaptability.

Individuals with *work and career resilience* possess some combination of the following attributes: optimism about their career opportunities and work, a feeling that they have control over the destiny of their careers, and/or a feeling that they are able to make genuinely valuable contributions at work (Fugate & Kinicki, 2008). Career resilient individuals tend to have high self-evaluations and they are optimistic in terms of their work and careers. Fugate (2006) proposes that work and career resilience fosters the identification and realisation of career opportunities (employability) in turbulent environments. According to Fugate and Kinicki (2008), work and career resilience is a part of an individual's work identity and is reflective of his or her dispositional employability.

Work and career proactivity refers to individuals' tendency and actions to gain knowledge regarding the environment, career interests and even their employer, given that these aspects may potentially influence their career. Work and career proactivity facilitates the identification and realisation of opportunities (Fugate & Kinicki, 2008). An employable person is, therefore, one who purposely seeks out information relevant to his or her personal job interests and potential career opportunities.

Career motivation relates to career goals, planning and an orientation towards learning, and is seen as a determinant of continuous learning, ensuring self-management and future planning (Fugate & Kinicki, 2008). Career motivation provides many benefits to workers, including an enhanced drive for work-related endeavours, persisting during periods of boredom or frustration, and exerting a sustained effort in the face of challenges. Individuals with a high level of career motivation are also interested in mastering new skills, they approach new situations as opportunities, and are more willing to adapt to changing circumstances, which subsequently influence and determine dispositional employability. As a result, career motivation is a critical determinant of continuous learning – a critical aspect of employability (Fugate, 2006).

Social and human capital are regarded as important elements of employability (Fugate & Kinicki, 2008). Social capital consists of the resources available in social networks that could advance a person's interests. An individual's ability to identify and realise career opportunities is greatly influenced by such capital (Fugate, 2006). The size and diversity of an individual's social networks are directly related to the amount of information and influence available. Similarly, employability is influenced by human capital. Human capital refers to a host of more traditional factors that influence a person's career advancement, such as age and education, work experience and training, job performance and organisation tenure.

Career identity relates to how individuals view themselves in the work environment (Fugate & Kinicki, 2008). It is the cognitive and affective foundation of dispositional employability, relating to self-perceptions consistent with career-related actions. Therefore, career identity assembles past, present and future career experiences and aspirations into an understandable whole, and it also acts as the cognitive glue that integrates the other dimensions of employability. Career identity drives the career direction and goals needed to manage the boundaryless careers that characterise the new world of work. It is the guiding force for any individual career, as it provides a clear path and understanding of oneself in the working context, which supports active career adaptability and, as such, employability.

By applying the dispositional employability theory of Fugate et al. (2004) and Fugate and Kinicki (2008) to the constructs related to career outcomes such as career satisfaction and self-perceived employability, the following connections are made:

- Career adaptability and psychosocial career preoccupations can be connected to openness to changes at work as these constructs support flexibility in uncertain situations and facilitate continuous learning (Fugate & Kinicki, 2008).
- Employability attributes can be connected to career resilience, and career adaptability and psychosocial career preoccupations to proactivity that foster and facilitate the identification and realisation of career opportunities in turbulent environments (Fugate & Kinicki, 2008).
- Career anchors and values can be connected to career motivation that activates the mastering of new skills, approaching new situations as opportunities, and the willingness to adapt to changing circumstances (Fugate & Kinicki, 2008).
- Employability attributes can be connected to social capital that enhances individuals ability to identify and realise career opportunities congruent to individuals' human capital (Fugate et al., 2004).
- Career adaptability can be connected to career identity as career identity drives the career direction and goals needed to manage the boundaryless careers that characterise the new world of work; and it provides a clear path and understanding of oneself in the working context (Fugate et al., 2004).

The dispositional employability theory (Fugate & Kinicki, 2008; Fugate et al., 2004) as one of the overarching theoretical lenses will be further utilised in the empirical results to inform the construction of the proposed career satisfaction and self-perceived employability profile of knowledge workers.

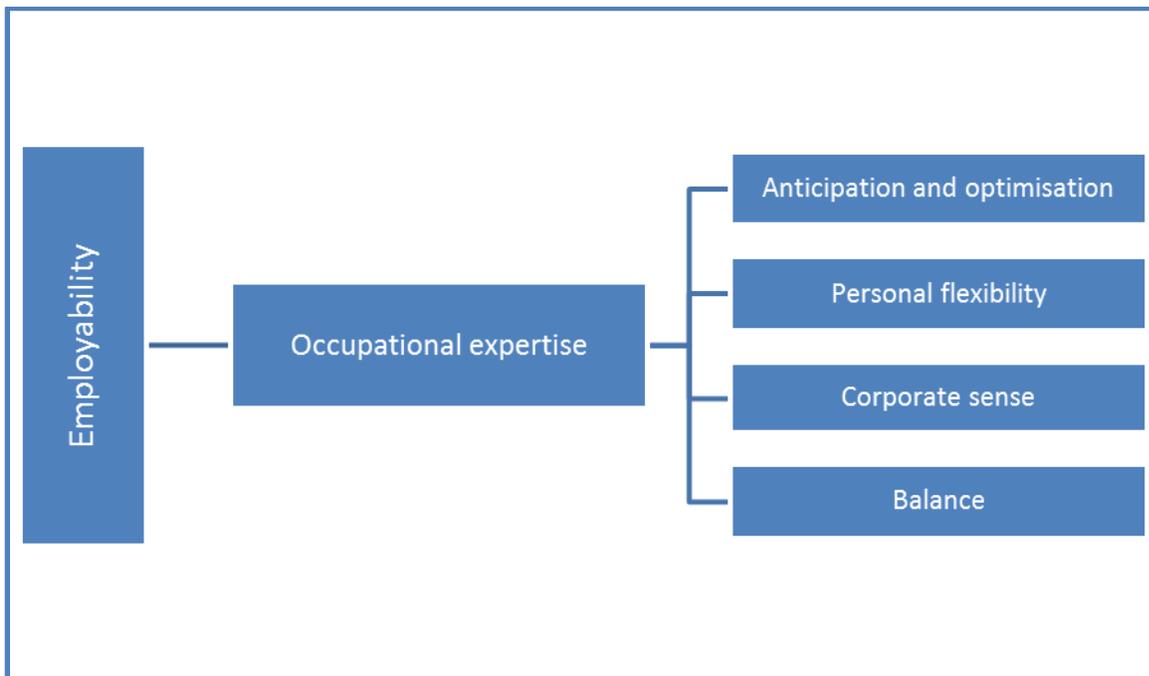
2.3.2.3 *van der Heijde and van der Heijden's competency-based employability model*

The competency-based approach of employability, in which the dimension of occupational expertise is complemented by four more general competencies – anticipation and optimisation, personal flexibility, corporate sense, and balance – as illustrated in Figure 2.9 is discussed here.

The first dimension of employability, *occupational expertise*, is considered to be a prerequisite for positive career outcomes of workers. A number of authors, including Boudreau et al. (2001) and Onstenk and Kessels (1999), claim that occupational expertise constitutes a substantial element of employability. Occupational expertise is seen as a significant human capital factor for the vitality of organisations and its importance is growing as a result of the intensification of knowledge (Enders, 2002; Schein, 1996; van der Heijden, 2005). In times of economic downturn, workers most likely to be jobless are the ones whose occupational expertise is lacking or outdated. According to DeFillippi and Arthur (1996), people with occupational expertise derive more benefit from inter-firm career opportunities. Besides a high degree of knowledge and skills related to a particular professional domain, experts need to be perceived as and labelled as high performers and excellent professionals if they are to have a basis for employability enhancement.

Figure 2.9

Competence-based Employability Model



Source: van der Heijde and van der Heijden (2006, p. 453)

The second and third dimensions of employability concern adapting to changes and developments at a job-content level and at other levels, such as the career as a whole, which is relevant in the light of performance outcomes. In the competency-based employability framework, two different types of adaptation are distinguished. The first one is a self-initiating proactive construct that is referred to as “anticipation and optimisation”, and one more passive, reactive construct entitled “personal flexibility”. Both types of adaptation function concurrently to enhance the employability of workers (van der Heijde & van der Heijden, 2006). Anticipation and optimisation do not concern adaptation in its basic form, but rather entail preparing for future work changes in a personal and creative manner in order to strive for the best possible job and career outcomes (Bhaerman & Spill, 1988; North et al., 1988). Increasingly, employees have to enact their jobs and their professional life themselves (Weick, 1996), owing to the complexity of work and difficulty of employers to predict future work content. In the present knowledge-based economy, employees certainly have an opportunity to fulfil labour requirements by creating a future for themselves instead of merely performing fixed tasks.

Personal flexibility does not relate to flexibility at the content level of a job. Besides creative adaptability, employees must adapt passively to changes, which they did not choose, occurring in their work and labour market environment. As well as referring to the capacity for smooth transitions between jobs and between organisations, personal flexibility encompasses adapting easily to all kinds of changes in the internal and external labour market. Numerous changes in organisations and their environments, such as mergers and acquisitions, call for flexible employees at multiple levels. In addition, they make great demands upon people’s resilience. Organisational restructuring requires employees who cope easily with and recover readily from disappointments (van der Heijde & van der Heijden, 2006).

The dimension of personal flexibility has been deemed an important ingredient of employability by other researchers (Boudreau et al., 2001; Fugate et al., 2004) and has been labelled ‘adaptability’. van der Heijde and van der Heijden (2006) consider personal flexibility to be the opposite of so-called ‘rigid behaviour’ and in that sense, it is a prerequisite for and ingredient of adaptability. Employees with high scores for personal flexibility will derive greater benefit and further their career development from different experiences because they welcome changes. Flexible employees expose themselves more easily to changes and have a better understanding of how to take advantage of changes (van der Heijde & van der Heijden, 2006).

The fourth dimension of employability is *corporate sense*. The erosion of the traditional dichotomy between managers and support staff means that employees have to participate increasingly as

members of an integrated team, identify with corporate goals, and accept collective responsibility for the decision-making process (Chapman & Martin, 1995). Besides that, corporate sense extends the organisational citizenship behaviour concept (Podsakoff et al., 2000) to participation and performance in different workgroups, such as the department, the organisation, working teams, the occupational community and other networks. The number of groups to which employees may belong has increased considerably in recent decades (Frese, 2000; Seibert et al., 2001). Besides departmental and organisational collaboration, employees may participate in project networks, occupational networks, industry networks and virtual networks, to mention but a few. Corporate sense builds on social capital (networks) (Nahapiet & Ghoshal, 1998), social skills, and emotional intelligence (Mayer & Salovey, 1997). It is about sharing responsibilities, knowledge, experiences, feelings, credits, failures and goals.

The last dimension of employability that is distinguished in the competency-based employability framework is termed *balance*. Balance is defined as compromising between opposing employers' interests as well as one's own opposing work, career and private interests (employee) and between employers' and employees' interests (van der Heijde & van der Heijden, 2006).

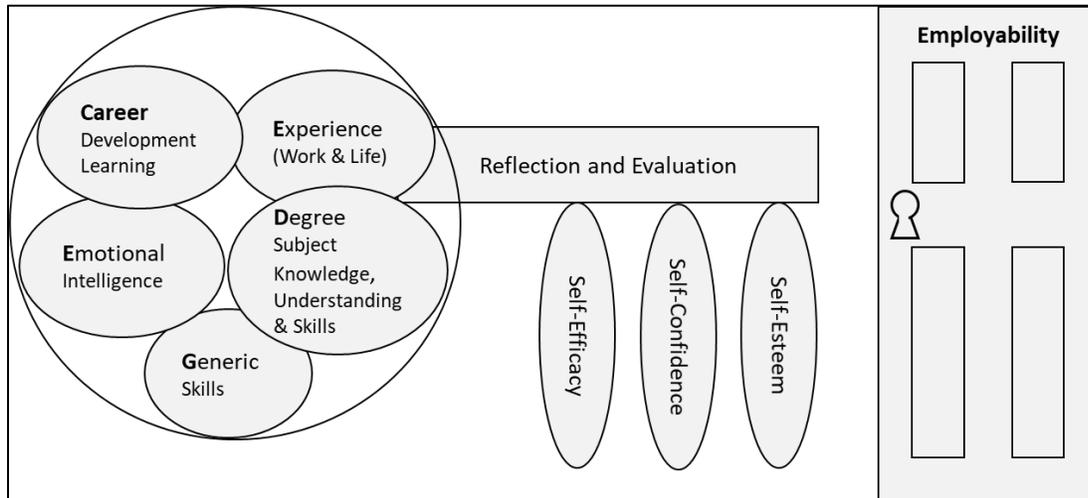
The competence-based approach of van der Heijde & van der Heijden (2006) provided some insights, and consider self-perceived employability in terms of occupational expertise, anticipation and optimisation, personal flexibility, corporate sense, and balance.

2.3.2.4 Pool and Sewell's The Career EDGE model

The Career EDGE model (Pool & Sewell, 2007) is displayed in the image of a key as reflected in Figure 2.10. This pictorial version of the Career EDGE model (Pool & Sewell, 2007) is a useful, practical way of explaining the concept of graduate employability, and indicates that it is the key to choosing and securing occupations in which graduates have the opportunity to achieve career satisfaction and career success. This model reflects that each component is vital, and one missing element will considerably reduce graduate employability (Pool & Sewell, 2007). The mnemonic "Career EDGE" is used as an aid to remembering the five components on the lower tier of the model. It is suggested that providing with opportunities for them to access and develop everything on this lower tier and, essentially, for reflecting on and evaluating these experiences, will result in the development of higher levels of self-efficacy, self-confidence and self-esteem – the crucial links to employability.

Figure 2.10

Career EDGE Model



Source: Pool and Sewell (2007, p. 281)

The model components are discussed further in the next paragraph.

A central conception of this model is degree subject knowledge, understanding and skills. The motivator to enter higher education is generally perceived to be to study a specific discipline in-depth, to gain a degree, get a higher qualification and hence get a good or better job, and it still remains the case that the better qualified have far greater employment opportunities (Johnes, 2006). It is essential to recognise that employers will judge graduates on how successfully they have completed their degree course (i.e. their degree classification) perhaps because this is often the sole measure available to employers. This tends to be the case whether or not graduates are entering an occupation with direct relevance to their degree. There is, therefore, a need to recognise the central importance of this particular element of graduate employability. However, even though subject-specific knowledge, understanding and skills are still extremely important in many cases, these alone are unlikely to secure graduate occupations where they can be satisfied and successful (Pool & Sewell, 2007).

Although employers want graduates with relevant subject-specific skills, knowledge and understanding, they are also looking for well-developed *generic skills* in a number of areas (Harvey et al., 1997). A considerable amount of work has been published, which lists the many

generic or transferable skills for which employers are looking. This will be discussed further in Chapter 4.

Goleman (1998) strongly supports the inclusion of *emotional intelligence* in any model of employability when he declares that emotional intelligence relates to prime qualities that make and keep individuals employable. Moynagh and Worsley (2005) support Goleman's (1998) view by declaring that in the knowledge-based economy, emotional intelligence is becoming increasingly important. Emotional intelligence (EI) is defined as the capacity to reason about emotions, and the capacity of emotions to enhance thinking. EI includes the abilities to perceive emotions accurately, to access and generate emotions to assist thought, to understand emotions and emotional knowledge, and to regulate emotions reflectively in order to promote emotional and intellectual growth (Mayer et al., 2004). Goleman (1998) provides a simplified definition of EI by referring to it as the capacity to recognise one's own feelings and those of others, to motivate oneself, and to manage emotions in oneself and in one's relationships well.

Career development learning (Law & Watts, 1977) should include activities that help students to become more self-aware to enable them to give real consideration to the things that they enjoy doing, in which they are interested, to motivate them and to suit their personalities. Students also need to learn how best to research the job markets to see which opportunities are available to them, how to present themselves effectively to prospective employers, and how to make informed decisions about their careers. In fact, as Foster (2006) states, there is little to be gained in developing employability if, at the end of the day, graduates cannot identify markets in which to advertise their newly developed employability. Moreover, after acquiring so much knowledge, understanding and skills at university, graduates need help and guidance to explain to potential employers (by way of application forms, CVs and interviews) their achievements and how they will be an advantage to organisations.

Much research relates to *work experience* as a key consideration for employers when recruiting graduates. According to Pegg et al. (2012), it is widely agreed that graduates with work experience are more likely to secure employment than graduates without such experience. It is also important to consider the wider life experiences that many students, particularly mature students, bring with them into higher education. There is a need, therefore, for students to be given this information and to be provided with guidance on how their life experience and work-related experience, either arranged as part of a course, carried out on a voluntary basis or gained through part-time work, could be utilised to enhance their levels of employability.

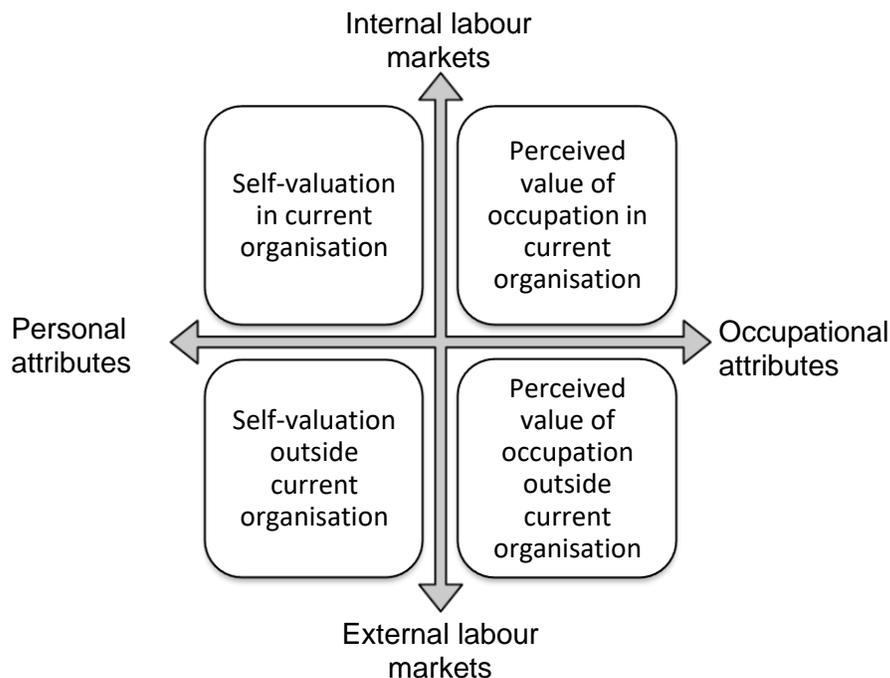
An important consideration is the *reflection and evaluation* of the skills, knowledge, understanding and attributes obtained and the learning experiences that have already taken place. Without opportunities to reflect and evaluate, graduates are unlikely to give full consideration to how far they have come in developing their employability and what they may need to do in order to develop it further. The element of reflection and evaluation is also the key to the development of self-efficacy, self-confidence and self-esteem (Pool & Sewell, 2007).

In conclusion, the career EDGE model (Pool & Sewell, 2007) provides insight on graduate employability in terms of information about what needs to be considered and included in choosing and securing occupations, that might lead to career satisfaction and career success. Although this model of employability may be adapted for use at any life stage, it is more appropriate for graduates.

2.3.2.5 Rothwell and Arnold's model of self-perceived employability

Rothwell and Arnold (2007) suggest that self-perceived employability relates to individuals' perceptions of the present and future as they concern individuals' self-perceptions of how well they expect to be able to deal with a number of circumstances that may present themselves in the future, whether positive (e.g. promotion, selection processes) or negative (e.g. redundancy, downsizing). Figure 2.11 illustrates the dimensions of employability in four quadrants.

Figure 2.11
Dimensions of Employability



Source. Rothwell and Arnold (2007, p. 27)

The first quadrant (top left) represents individuals' self-perceived valuation of their own utility to their employing organisation (Rothwell & Arnold, 2007). This implies the valuation they believe the organisation places on them as individuals. The second quadrant (top right) reflects how the organisation values their occupation or occupational group in the internal labour market. The third quadrant (bottom left) relates to individuals' self-perception of their worth (based more on their personal skills than on features of their occupation) in the external labour market, while the fourth quadrant (bottom right) relates to perceptions of the valuation by the external labour market of people with the individual's occupational experience (Rothwell & Arnold, 2007). This varies between occupations, and it could also change over time. The distinction between personal attributes and occupational attributes is important because one can expect that people with in-demand occupational training and experience will need fewer personal skills to be employable than people whose training and experience are less highly valued (Hall, 2004). Rothwell and Arnold (2007) acknowledge that even experiences that are prescribed by an occupation (e.g.

certain kinds of training) are likely to produce, for some people, learning and development that are somewhat specific to them. Furthermore, Rothwell and Arnold (2007) recognise that organisations differ from one another in varying degrees.

In conclusion, Rothwell and Arnold's (2007) approach provided insights to self-perceived employability and is more applicable to this study, as self-perceived employability relates to individuals' perceptions of the present and future, thus concerning individuals' self-perceptions of how well they expect to be able to deal with changes in the environment.

2.3.2.6 *Beukes's self-regulatory model of employability*

The employability model of Beukes (2009) promotes a self-regulatory approach to employability by focusing on the individual as the active agent in developing and sustaining his or her employability through a reiterative series of development stages.

Beukes's (2009) notion of employability is similar to Pool and Sewell's (2007) view of the construct of employability. Pool and Sewell (2007) provide a general description of employability from an individual's perspective while also including the benefits to the wider environment. According to Pool and Sewell (2007), employability is a set of skills, knowledge, understanding and personal attributes that make a person more likely to choose and secure occupations in which individuals' can be satisfied and successful, to the benefit of themselves, the workforce, the community and the economy. These skills, knowledge, understanding and personal attributes need to be regulatory and channelled in a direction that will best lead to maintaining suitable employment opportunities (Beukes, 2009).

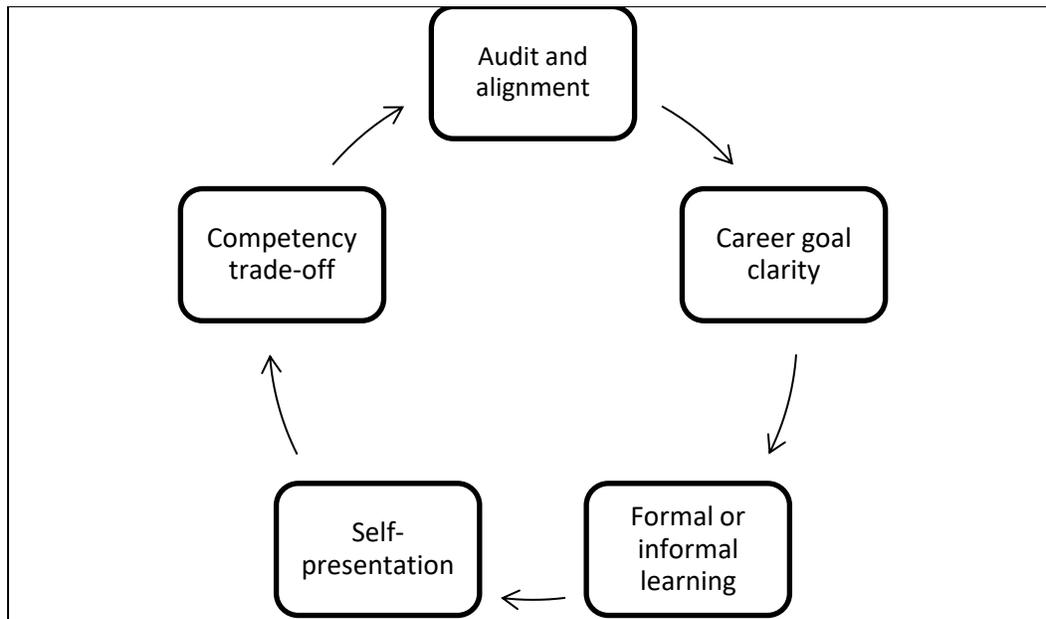
The series of reiterative stages proposed by Beukes (2009) allow individuals to channel their employability competencies effectively in accessing and sustaining employment in a highly competitive and turbulent labour market. These stages involve the following five sets of development tasks: audit and alignment; career goal clarity; formal and informal learning; self-presentation; and competency trade-off (Beukes, 2009). Each of these five development stages is supported by a set of competencies, such as –

- basic skills (audit and alignment);
- goal-driven behaviour (career goal clarity);
- creative learning skills (formal and informal learning);
- communication skills (self-presentation); and
- business acumen (competency trade-off).

As illustrated in Figure 2.12, by effectively channelling these supportive competencies, individuals accomplish certain outcomes that lead to the likelihood of them choosing and securing occupations in which they can be satisfied and successful (Beukes, 2009).

Figure 2.12

Model of Self-regulatory Employability



Source. Beukes (2009, p. 145)

The *audit and alignment stage* involves the process where individuals conduct an audit on their competencies in relation to labour demands and employment opportunities. The two critical outcomes for this stage are firstly the individuals' insight into their market value, and secondly, goal orientation. The audit and alignment stage is supported by a set of basic skills, which enhance the alignment process. These skills include the generally accepted employability skills such as –

- literacy (in order to read up on their own competencies and the demands of the labour market);
- numeracy (in order to do the necessary calculations to determine their market value);
- computer skills (to enhance the job search process);
- planning (to structure the audit and alignment process effectively);
- organising (the data into relevant information); and

- problem-solving (to overcome barriers to successful alignment) (Clarke, 1997; Spill, 2002; Zinzer, 2003).

The *career goal clarity* stage involves the process of setting specific career goals in order to achieve the main alignment purposes (Beukes, 2009) Goal-setting increases behaviour change, presumably through increasing motivation (the desire to act in a particular way). Kajs and McCollum (2007) explain that in school and at work, motivation is a key element for the success of an individual. Goal setting is therefore viewed as a critical step in self-regulatory employability. It is generally accepted that the development of effective goals should follow a basic framework. This framework is referred to by the acronym SMARTER (specific, measurable, attainable, realistic, time-based, ethical and recorded).

Goal-driven behaviour is the supporting competency of the career goal clarity stage. Beukes (2009) proposes that goal-driven behaviour involves the habit of recording, attempting, assessing and adjusting goals in such a way as to enable achievement of such behaviour. Pintrich (2000) states that a key assumption of all models of self-regulation is that some goal, standard or criterion exists that could serve as a gauge against which to assess development, and then to guide the regulatory processes. By knowing how to reach their goals effectively, individuals may then progress to further goals. This cycle of goal achievement could assist individuals in meeting the challenges of the labour market. The critical outcome of this stage is that the individual develops a detailed plan for effective action.

The *formal and informal learning* stage involves the lifelong learning that needs to take place in order for individuals to achieve their developed goals and purposes effectively. This learning is usually done in a formal manner, but it appears that informal learning could also provide an individual with sufficient advantage. Werquin (2008) importantly notes that there seems to be strong agreement that much learning takes place outside the formal education and training system and that making these other forms of education credible, will enable making lifelong learning for all a reality. The formal and informal learning stage integrates the concept of lifelong learning and directs that learning to achieve the desired career goals and purposes. This requires creativity to align further development with employment opportunities effectively, which can often change. It, therefore, seems necessary that this stage is supported by the competency of creative learning.

The *self-presentation stage* involves the stage in the process where the individual needs to negotiate a trade-off agreement between his or her competencies and the compensation package offered by the organisation. The critical outcome of this stage is mutual agreement on this trade-

off. This is achieved by the individual articulating his or her personal brand (Beukes, 2009). Personal branding could provide an advantage to the individual during the presentation process. Lair et al. (2005) suggest that in personal branding, success is not determined by an individual's internal sets of skills, motivations and interests but rather by how effectively these are arranged, crystallised and labelled – in other words, branded. The self-presentation stage is supported by the competency of communication. This entails both verbal and non-verbal communication actions.

The *competency trade-off* stage involves the actual trade-off between the individual's competencies and the remuneration package offered by the organisation. This competency trade-off (Coetzee, 2008) allows for the individual to receive the remuneration package of the organisation, and also allows for further opportunities to develop one's employability competencies in order to further maintain and develop your career. Periodically, or when the need arises, an individual could revert to stage one (the audit and alignment stage) in order to re-conduct a self-audit and realign him- or herself based on his or her newly acquired competencies (Beukes, 2009). This competency trade-off stage is supported by the competency of business acumen. Beukes (2009) suggests that business acumen is the clear understanding of what it takes to succeed in business (physically, mentally and financially).

In conclusion, the self-regulatory employability model provides a strategy for individuals to manage their employability. By having knowledge of the various stages in the cyclical model of employability, an individual can focus on specific stages and proactively manage those processes. This model also provides a cyclical process of renewal and development in order to assist individuals in maintaining their employability (Beukes, 2009).

2.3.2.7 *The dynamic chain of Forrier, Verbruggen and Cuyper*

Forrier et al. (2015) believe that the different notions of employability (job transitions, movement capital and perceived employability) tie together in a dynamic chain, as illustrated in Figure 2.13 to enable –

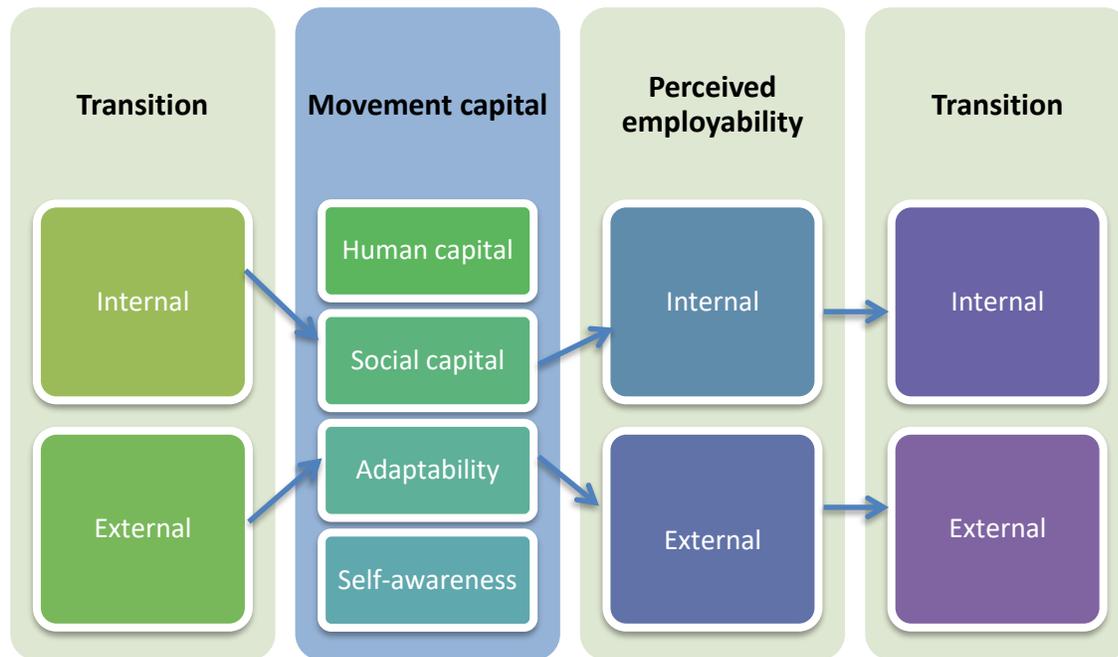
- job transitions to effect movement capital;
- movement capital to affect perceived employability; and
- perceived employability to affect job transitions.

These different notions of employability will be further discussed in the next paragraph.

Job transitions across organisational, functional and occupational boundaries are core features in new career models (Arthur & Rousseau, 1996) and share the assumption that job transitions reduce the risk of “concentration experience” (de Grip et al., 2004), and that they promote individual growth and development (Chudzikowski, 2012; Gesthuizen & Dagevos, 2008). The boundaryless career concept associates frequent job transitions with the accumulation of career capital (Arthur & Rousseau, 1996), in particular, human capital, social capital and self-awareness (DeFillippi & Arthur, 1996; Inkson, 2006). The protean career concept associates job transitions with the opportunity to enhance one’s protean career orientation, i.e. self-awareness and adaptability (Hall, 2004).

Figure 2.13

Theoretical Model of the Relationships Between Job Transitions, Movement Capital and Perceived Employability



Source. Forrier et al. (2009, p. 58)

Movement capital can be considered a collective of the four dimensions (human capital, social capital, adaptability and self-awareness) rather than be seen as separate dimensions (Forrier et al., 2015; Fugate et al., 2004). Forrier et al. (2015) claim that the four dimensions are influencing each other mutually and have a stronger influence on perceived employment opportunities, internal and external alike, when operating in concert:

- human capital and social capital are the building blocks that lay the foundation for one's value in the labour market;
- self-awareness is the motivational force that provides direction and facilitates the identification of alternatives; and
- adaptability adds the dynamic needed to evolve in response to changes in the labour market (Forrier et al., 2009).

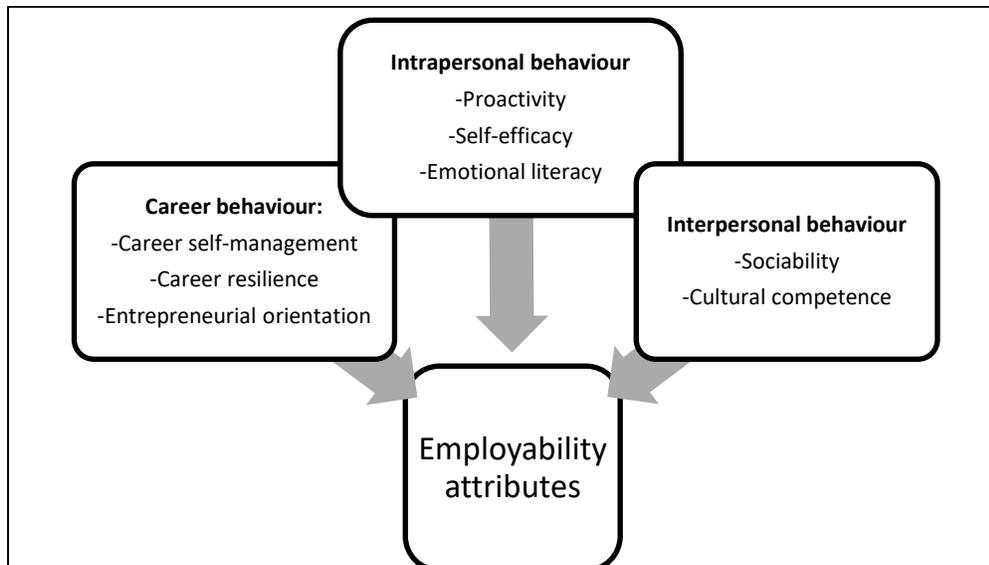
Finally, perceived employability is likely to affect job transitions. This aligns with the idea that perceptions drive behaviour (Katz & Kahn, 1978). Individuals first appraise potential employment opportunities and then act upon the opportunities they perceive. If employees perceive these opportunities in the internal labour market, they may be likely to pursue and then make internal job transitions. Therefore, perceived external employment opportunities may trigger external job transitions.

In conclusion, the dynamic chain of Forrier et al. (2015) provided insight into employability, from the perspective of individuals' chance to find a job in the internal or external market. This non-recursive approach provided further insight into employability through the integration of three notions of employability which is largely in line with their employability process model (see Forrier et al., 2009), namely – job transitions influence movement capital; movement capital affects perceived employability; and perceived employability triggers job transitions, which transpired as a dynamic chain.

2.3.2.8 *Employability attributes of Bezuidenhout*

Bezuidenhout (2011) identifies important employability attributes, which include a variety of psychosocial career meta-capacities. These attributes consist of psychosocial meta-capacities relating to the career (career self-management, career resilience and entrepreneurial orientation), as well as an individual's intrapersonal behavioural domain (proactivity, self-efficacy and emotional literacy) and interpersonal behavioural domains (sociability and cultural competence) as reflected in Figure 2.14 (Botha, 2014). The career meta-capacities that relate to these three behavioural domains are briefly outlined below as employability attributes, and will be discussed in detail in Chapter 4.

Figure 2.14
Employability Attributes



Source. Adapted from Bezuidenhout (2011)

(i) *Attributes relating to the individual's career behaviour*

Career self-management is an important aspect of career development of knowledge workers (Pool & Sewell, 2007) and comprises the following attributes: willingness to set career goals, reflection on career goals, identification of the competencies required to achieve career goals, and the implementation of appropriate actions to achieve career goals (Botha, 2014). *Career resilience* refers to a person's ability to bounce back and to demonstrate a high degree of adaptability, flexibility, self-confidence and competence regardless of adverse career circumstances (Bezuidenhout, 2011). *Entrepreneurial orientation* refers to a person's ability to create employment by taking advantage of career opportunities and profiting from his or her own connections and skills (Bezuidenhout, 2011). Obschonka (2014) furthermore views entrepreneurial skills as essential for sustainable employment.

(ii) *Attributes relating to the individual's intrapersonal behaviour*

To be proactive means to ascertain active role orientations and future-oriented and self-initiated actions in order to change and improve oneself and one's career situation (Bezuidenhout, 2011). A *proactive personality* is positively related to active adaptability and employability (Mihail, 2008; van der Heijde & van der Heijden, 2006). *Self-efficacy* involves the belief in one's ability to cope

with a range of challenging or stressful demands in a variety of contexts (Bezuidenhout, 2011). Efficacy beliefs have been correlated with employability, career satisfaction and positive career development (Pool & Sewell, 2007; van der Heijde & van der Heijden, 2006). *Emotional literacy* involves the adaptive use of emotions in the management of one's career (Bezuidenhout, 2011).

(iii) *Attributes relating to the individual's interpersonal behaviour*

Sociability involves exhibiting networking behaviours and openness to building social contacts and networks in the advancement of one's career (Bezuidenhout, 2011). *Successful networking* has been related to increased job opportunities, career advancement and satisfaction (Forret & Sullivan, 2002). *Cultural competence* denotes the ability to use knowledge about other cultures and their customs, beliefs and interaction rules and values to build positive intercultural relationships in the workplace (Bezuidenhout, 2011).

Employability attributes explain proactive career management behaviour in changing environments, as well as the career-related attributes and skills (meta-capacities) individuals employ to enhance their suitability for appropriate and sustainable employment (Bezuidenhout, 2011; Potgieter, 2014).

In conclusion, the perspective on employability from the individual's point of view relates to individuals' self-perceptions of employability and the way they perceive their current and future prospects in relation to employment (Rothwell & Arnold, 2007). Since this perspective offers the highest potential for development and the highest possible utility to psychologists, counsellors, and employment advisers (Rothwell, 2015), the findings of the present study will contribute towards employability in this field of research.

From the individual context, employability refers to individuals' ability to gain access to the workplace and to be continuously effective and productive within the organisation by optimally utilising their occupation-related and career meta-competencies (Beukes, 2010; Coetzee, 2009). Therefore, the three models most relevant to this research were the self-perceived employability model of Rothwell and Arnold (2007), dispositional employability model of Fugate and colleagues (Fugate & Kinicki, 2008; Fugate et al., 2004) and the employability attributes framework of Bezuidenhout (2011).

The self-perceived model (Rothwell & Arnold, 2007) provides a framework to view employability from an individual's perspective. In contrast, Fugate et al. (2004), provides a framework to view employability as a psychosocial construct and the employability attributes model (Bezuidenhout,

2011) provides a variety of career meta-capacities for sustainable employment, which were both relevant to this research.

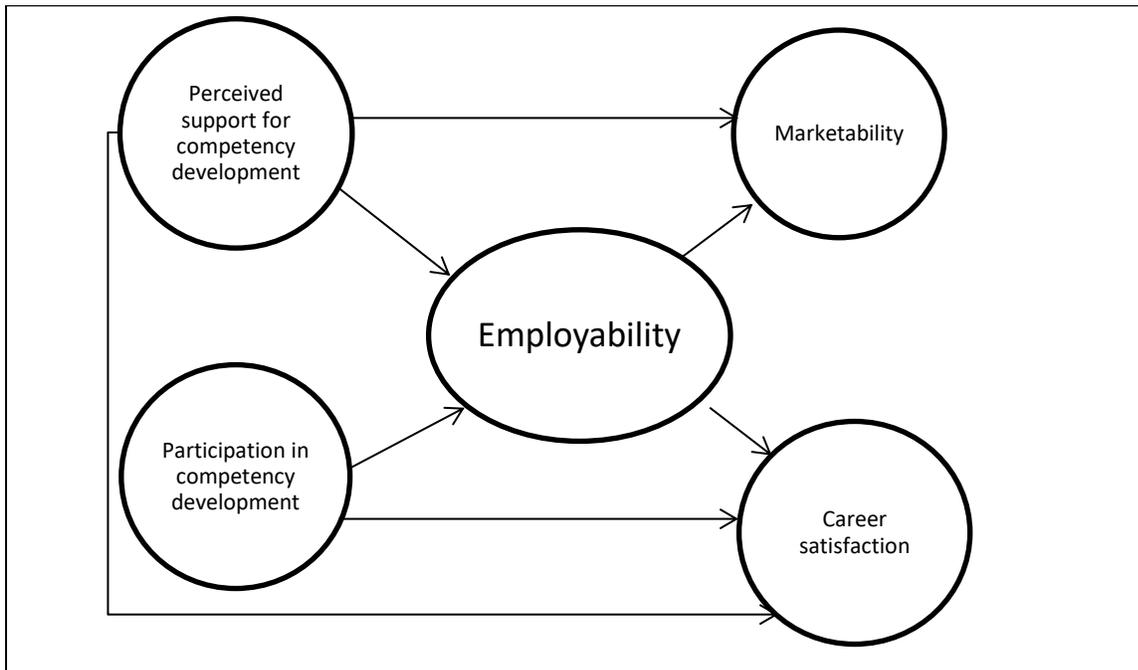
2.3.2.9 Career satisfaction and perceived marketability as predictors of subjective career success

In a study by de Vos et al. (2011), two indicators of subjective career success were included consistently with the distinction between past accomplishments and future prospects, namely career satisfaction, and perceived marketability. Firstly, career satisfaction is widely used as one of the most relevant indicators of subjective career success (Eby et al., 2003; Heslin, 2005), and is defined as a feeling of pride and personal accomplishment that comes from knowing that one has done one's personal best (Hall, 1996). Surprisingly, despite the wide research interest in the antecedents of career satisfaction, empirical research on the relationship between self-perceived employability and career satisfaction is lacking (Ng et al., 2005).

Secondly, perceived marketability is defined as the belief one has that you are valuable to the current or to other employers (Eby et al., 2003). In the current career context, which is characterised by instability and uncertainty, the extent to which individuals believe they are regarded as marketable by their current or future employers is a relevant indicator of subjective career success (Bird, 1994; de Vos & Soens, 2008; Eby et al., 2003). Marketability is conceptually distinct from employability in that *employability* comprises the employee's competencies (in terms of knowledge, skills and abilities), i.e. their potential to fulfil, acquire or create new work if necessary, while *marketability* refers to a positive career outcome of this potential, namely the perceptions of the value one adds to the (internal or external) labour market. de Vos and Soens (2008) address both individuals' feelings of career satisfaction and their feelings about being employable. The results of de Vos and Soens's (2008) suggest that the extent to which individuals are proactive in managing their careers does not automatically imply increased feelings of career success or perceptions of employability.

Figure 2.15

Relationship Between Competency Development, Employability and Career Success



Source. de Vos et al. (2011, p. 441)

The pathways for the model are represented in Figure 2.15, and illustrate that employee participation in competency development initiatives and perceived support for competency development initiatives are positively associated with self-perceived employability. Self-perceived employability is positively associated with career satisfaction and with perceived marketability (de Vos et al., 2011).

The absence of significant direct associations between participation in competency development initiatives on the one hand, and career satisfaction and perceived marketability, on the other, suggests a full mediation effect of self-perceived employability in case employee participation in competency development initiatives is the predictor variable. For perceived support for competency development, self-perceived employability partially mediated the relationship between career satisfaction and perceived marketability (de Vos et al., 2011).

The study by de Vos et al. (2011) provided important implications for practitioners who are interested in finding ways to stimulate workers' employability, and who want to capitalise on the benefits of employability for both the organisation and the individual employee. de Vos et al. (2011) emphasise the importance for organisations to invest actively in the development of the

competencies of their employees. This investment involves both the creation of a supportive environment for developing competencies and stimulating individuals to make active use of the opportunities for competency development present within the organisation. The benefit for the organisation relates to the enhanced expertise and flexibility of employees, i.e. competencies that are generally considered critical for sustained competitive advantage (van der Heijde & van der Heijden, 2006). Furthermore, when employees participate in competency development initiatives offered by their organisation is important for enhancing their employability perceptions, and through this, also for their feelings of career satisfaction and beliefs in their own marketability.

Moreover, the direct relationship between organisational support for development and career success outcomes implies that by actively working on the sustainable development of their employees, organisations not only serve themselves but also express a form of caring for their employees' careers. From a societal perspective, this means that, especially in times when it becomes painfully clear that organisational success and employment security should never be taken for granted, both organisations and individuals should be actively encouraged to take up the responsibility for their employability thus enhancing their chances for sustainable employment. These psychosocial employability attributes have been related to self-directed behaviour (Botha, 2014), personal initiative and openness to change (van Dam, 2004), career satisfaction (Coetzee & Beukes, 2010) and individuals' career motives and interests (Oosthuizen et al., 2014). The attributes are also seen to promote adaptive cognition, behaviour, and affect (Bezuidenhout, 2011).

The most important theoretical models relate to Rothwell and Arnold's (2007) self-perceived employability, Fugate and Kinicki's (2008) dispositional approach of employability and Bezuidenhout and Coetzee's (2010) employability attributes. Self-perceived employability signals employment possibilities that individuals perceive they have by applying a future-oriented perspective in line of individuals' qualifications to facilitate sustained employability (Rothwell & Arnold, 2007). Dispositional employability (Fugate & Kinicki, 2008) is viewed as a multidimensional psychosocial construct that embodies individual characteristics in terms of work and career resilience, openness to changes at work, work and career proactivity, career motivation, and work identity. These five dimensions represent a 'constellation of individual differences that predispose individuals to (pro)active adaptability specific to work and careers' (Fugate & Kinicki, 2008, p. 503). The dispositional approach to employability is therefore important to consider as an overarching theory in the context of this research study, as those knowledge workers who are able to adapt to the changing career environment will be more likely be able to

facilitate sustainable employability and career satisfaction, by adjusting the situation to fit their own needs (Fugate & Kinicki, 2008). Finally, knowledge workers who engage in employability attributes (as meta-competencies) in terms of career self-management, cultural competence, self-efficacy, career resilience, sociability, entrepreneurial orientation, proactivity will, even more, enhance their chances for sustainable employability and career satisfaction (Bezuidenhout & Coetzee, 2010).

2.4 VARIABLES INFLUENCING CAREER SATISFACTION AND SELF-PERCEIVED EMPLOYABILITY

In this sub-section, various variables such as age, gender, race, language, and other variables influencing career satisfaction and self-perceived employability are discussed.

2.4.1 Career satisfaction

The most prevalent demographical predictors of subjective career success (satisfaction) are age, gender, language groups, and marital status (du Toit, 2014; Judge et al., 1995; Nabi, 1999; Ng et al., 2005; Park, 2010).

2.4.1.1 Age

As for the variable 'age', Judge et al. (1995) found that it is related negatively to career satisfaction. A possible reason could be that priorities change over time, and work is not considered important.

Another predictor, age, was found for career satisfaction. The age group 18–25 years old had significantly higher levels of job success, interpersonal success and non-organisational success than the group of 26–35 years (baseline group). In contrast, the group 36–45 years old and 46 years and older showed significantly lower experiences of interpersonal success and non-organisational success and personal fulfilment, respectively than the age group of 26–35 years old. This is in accordance with previous research (Judge et al., 1995). The ages represent different career stages (Levinson et al., 1978). A possible explanation for these results may be that the needs and challenges required during these stages are (or are not) met accordingly, which results in higher (or lower) levels of career satisfaction. Judge et al. (1995) and Ng et al. (2005) found that the variables age and job tenure are related negatively to career satisfaction. The reason postulated is that an individual may have set goals for him- or herself that had not been reached within the expected timeframe. Nabi (2003), however, found that long tenure at an organisation could predict higher levels of career satisfaction; however, in that case, the individual has to feel loyal towards the organisation.

A statistical model for the human capital variables was found to predict career satisfaction (du Toit, 2014). More specifically, those participants with a qualification below Grade 12 experienced significantly lower levels of non-organisational success, and those with a qualification equivalent to the interpersonal success of a diploma also scored significantly lower than those who only had Grade 12. In contrast, those with a degree experienced significantly higher levels of security than those with Grade 12. This is in agreement with findings by Ng et al. (2005), Traavik and Richardson (2010) and Wayne et al. (1999) who found the level of education to be positively related to career satisfaction. That means, the higher the individual's qualification, the higher the experiences of career satisfaction, especially regarding security. Conversely, the lower the qualification level, the greater the chances not experiencing non-organisational success and interpersonal success.

2.4.1.2 Gender

With regard to gender it was found that women are perceived to experience lower levels of career satisfaction, due to gender discrimination (Oliver & Karim, 2012). This condition may lead to lower aspirations and less career satisfaction (Blair-Loy, 2003; Settles et al., 2006). From a different angle, Bradley et al. (2009), as well as Maintier et al. (2011), found that both men and women hold the same career aspirations, but women experience success at lower hierarchical levels than men, and this experience manifests differently.

2.4.1.3 Race and language

The study by du Toit (2014) found that language groups were also seen as a predictor of career satisfaction. The Sotho group (the baseline) showed significantly higher non-organisational success and personal fulfilment than the Western-Germanic group. Traavik and Richardson (2010) found that language competency is highly correlated with overall career satisfaction.

2.4.1.4 Other variables

With regard to career satisfaction, research has found positive relationships between extraversion, conscientiousness, agreeableness, and openness to experience and career satisfaction, and a negative relationship between neuroticism and career satisfaction (Ng et al., 2005). Just as career satisfaction, career adaptability resources are closely linked to employees' work roles and their career context (Savickas & Porfeli, 2012). Zacher's (2014) study showed that overall career adaptability significantly correlates with education, all of the Big Five personality traits, core self-evaluations, as well as career satisfaction and self-rated career performance. Zacher (2014) furthermore found that individual career adaptability dimensions were moderately

to strongly inter-correlated and had a very similar pattern of correlations with the other variables as overall career adaptability. Career concern was additionally negatively correlated with age, and career control was positively correlated with age. Demographic variables, the Big Five personality traits, and core self-evaluations had small to moderate correlations with career satisfaction and self-rated career performance, and the two outcome variables were positively and moderately inter-correlated. Dries et al. (2008) found significant positive correlations between career satisfaction and career anchors.

Other variables that contribute significantly to the level of career satisfaction experienced by the individual have been categorised by Ng et al. (2005) as follows: human capital, organisational, and motivational variables. Variables for human capital entail hours worked, work experience, willingness to transfer, and social capital (Ng et al., 2005), occupational tenure, international experience and accomplishment rating (Judge et al., 1995), as well as a calling that directs work orientation (Park, 2010). In light of these findings, Ng et al. (2005) and Judge et al. (1995) agree that job tenure and level of education are particularly strong predictors of career satisfaction. Ng et al. (2005) and Park (2010) added the variable of career planning to this list.

Numerous organisational variables predict career satisfaction, such as –

- career sponsorship, supervisor support, organisational resources (Ng et al., 2005);
- whether the organisation is a public firm, and the perception of a successful career and the number of employees employed by the organisation (Judge et al., 1995);
- the level of employment security experienced as the progression of possibilities (Nabi, 1999); and
- the learning climate within the organisation (Park, 2010).

Ng et al. (2005), Nabi (1999) and Park (2010) consider training and development opportunities as well as perceived organisational support as strong predictors of career satisfaction (Ballout, 2007; Chen, 2010).

Lastly, motivational variables that predict career satisfaction include: number of after-hours per month, hours worked per week, and hours desired to work (Judge et al., 1995), networking (Nabi, 1999) and ambition (Judge et al., 1995; Nabi, 1999).

2.4.2 Self-perceived employability

Research has found that person-related characteristics, such as age, gender and race may influence individuals' employability (Clarke, 2008). However, Coetzee et al.'s (2015) study found

no association between the biographical variables of age, gender and race and the participants' employability capacities and career adaptability although that could be due to their relatively small sample size (196 participants). The study by Oosthuizen et al. (2014) also found no significant difference in terms of the four race groups regarding their employability attributes.

2.4.2.1 Age

A few studies have found employability and age to be negatively correlated (DeArmond et al., 2006; Neilsen, 1999; Rothwell & Arnold, 2007; van der Heijden, 2002; van Rooy et al., 2005). Many older employees find themselves in the same position as new job applicants due to the rapid changes in the market environment, which have resulted in retrenchments and job changes for individual workers (van Rooy et al., 2005). The studies of DeArmond et al. (2006) and van der Heijden (2002) found that employability decreases with age, especially when an individual moves into a new job field or to a more senior job in the field concerned. Furthermore, DeArmond et al. (2006) found that older workers are probably less likely to search for new challenges, are less flexible, have less desire for variation in their work, and are less motivated to learn new skills. These commonly held stereotypes have a negative influence on the employability of older workers when they seek new employment. On the other hand, van der Heijden et al. (2009) found that age were strongly related to self-perceived employability.

Moreover, Lee (2001) argues that graduates are discriminated against on the basis of their age. This perception is based on graduates' lack of practical experience when applying for new positions. However, Coetzee et al.'s (2015) study found no association between the biographical variables of age and participants' employability capacities and career adaptability.

2.4.2.2 Gender

Various authors have reported that women are less employable than men, in other words, women tend to have a lower employability than men (Clarke, 2008; Lee, 2001; Scandura & Lankau, 1997). These authors explain that many organisations discriminate against women because of gender stereotypes and family responsibilities. In addition, organisations tend to perceive women as less committed to their careers and organisations than men. Alfrassa (2001) confirms that after graduation, men are more likely to obtain employment than women. Lee (2001) reports that women still face the glass ceiling and are, therefore, disadvantaged in terms of their gender.

However, Coetzee et al.'s (2015) study found no association between gender and participants' employability capacities and career adaptability. Rothwell and Arnold (2007) also indicate that, at that time, gender had no significant statistical relationship with self-perceived employability.

2.4.2.3 Race

Contrasting results were found regarding the influence race has on employability. Rothwell et al. (2009) found no significant differences in self-perceived employability and ethnicity. Lee (2001) and Mancinelli et al. (2010) reported that high levels of education have a positive influence on the advancement of minority groups. As a result, such individuals are more likely to obtain satisfying jobs, earn higher incomes and have better career prospects. Beukes (2010) adds that macroeconomic policy issues, specifically black economic empowerment (BEE), influence ethnic demand in industries and therefore result in ethnic differences in employability. However, Coetzee et al.'s (2015) study found no association between race and participants' employability capacities and career adaptability. Oosthuizen et al.'s (2014) study also found that the four race groups (black African, mixed-race, Indian and white) did not differ significantly regarding their employability attributes.

2.4.2.4 Other variables

Employability is a predictor of career satisfaction (de Vos et al., 2011; Forrier & Sels, 2003; Hall, 2002; van der Heijde & van der Heijden, 2006). Pool and Sewell (2007) found that employability attributes (such as self-esteem) relate significantly to personality attributes and employability. Bandura (1995) explains that individuals' self-esteem influences the way in which they think, feel, motivate themselves and act. It is furthermore suggested that individuals who feel and think that they can achieve anything are more likely to succeed in whatever occupation they choose than are people who do not have a high self-esteem (Yorke & Knight, 2004). Therefore, the development of a healthy, high self-esteem relates positively to employability (Coetzee, 2008) and career satisfaction.

Coetzee and Schreuder (2011) also found positive associations between career anchors and people's self-perceived employability. As a career meta-capacity, a career anchor is seen as an internal resource that functions as a set of driving and constraining forces on individuals' career decisions and choices (Coetzee & Schreuder, 2014). Based on their career anchors, individuals will either be attracted to or pulled back into environments more congruent with the stable self-concept or career identity represented by the career anchor (Chang et al., 2012; Feldman & Bolino, 1996). Career-related change, growth and movement will occur within some circumscribed area and will not be random (Feldman & Bolino, 1996).

Oosthuizen et al. (2014) explored the association between employees' career anchors and their psychosocial employability attributes and found a significant positive relationship between the

participants' career anchors and their psychosocial employability attributes. Ndzube (2013) found significant correlations between the sub-constructs of career anchors and employability.

According to McArdle et al. (2007), employable individuals take a proactive approach to engage in the labour market. Morrison and Hall (2002) also found that employability facilitates movement between jobs both within and between organisations. As such, employability skills could assist employees to adjust themselves towards various changes and to increase working abilities, which suit the working environmental needs (Kazilan et al., 2009). de Guzman and Choi (2013) argue that people who have better employability skills can adapt effectively to any situation in the ever-changing workplaces. Various authors found positive associations between employability and career adaptability (Ashford & Taylor, 1990; Fugate et al., 2004; Savickas & Porfeli, 2012). The study of de Guzman and Choi (2013) found that employability skills could help individuals adapt effectively to the countless work-related changes occurring in today's world of work.

2.5 SYNTHESIS AND EVALUATION

Presently, the perception of the nature of career satisfaction differs from what previously was regarded as being successful (du Toit, 2014). During agricultural times, hard work and survival were considered career success (Savickas, 2000), whereas, during times of industrialisation, loyalty to organisations and advancement up the organisational hierarchy indicated success (Heslin, 2005). However, the contemporary work environment is characterised by agility, globalisation, economic uncertainty and fast-changing technological advancements that are shaping the world of work in the Fourth Industrial Revolution (Coetzee & Schreuder, 2021, Maree, 2020, WEF, 2018, 2019, 2020). Task disruption leads to new skills required to thrive in the new world of work, and give rise to new business models, leading to changing demographics and more distributed workforces. All these drivers shaping the future of work in Industry 4.0 create new societal expectations, favouring a human-centric customised approach (WEF, 2019).

The form and shape of careers shifted from having a stable professional career where the organisation was responsible for employees' career development, to a more dynamic and complex environment where employees are faced with uncertainty, and ultimately a lack of career satisfaction and employment (Maree, 2020; Savickas, 2019). Individuals need to, therefore take responsibility for their own career development, and navigate the new world of work to thrive in the new reality. Individuals, and especially knowledge workers, need to be encouraged to focus on life-long learning, especially during all career stages (van der Horst et al., 2017); being gig-economy oriented; carrying out internet-work (wirk), and even to change their career strategies completely to avoid failure, in order to craft positive career paths that may lead to sustainable

employment and career satisfaction (Coetzee & Schreuder, 2021; Donnelly, 2009; Hall, 2013; Maree, 2020; Savickas, 2013).

Furthermore, knowledge workers need to apply a long-term perspective towards sustainable employability by achieving a meaningful balance between their work and families which are congruent with their core work, career and life values (Coetzee & Schreuder, 2021). Only then will individuals be able to achieve a sustainable career characterised by happiness, health and optimal productivity (de Vos et al., 2020).

Technological changes in the Fourth Industrial Revolution demonstrated that educated and highly skilled workers have become more valuable, and therefore the role of knowledge workers and knowledge work in Industry 4.0 has become increasingly important (Barley, 1996; Frenkel et al., 1995; Rasouli et al., 2014; Shandler, 2014; Thompson & Heron, 2005). The growing demand for “digital” and “human” factors in Industry 4.0 give rise to the seven key professional clusters related to data and artificial intelligence; engineering; cloud computing; people and culture; product development; marketing; sales and content; green economy; and care economy (WEF, 2020).

The main difference between knowledge work in Industry 4.0 and conventional work is that the main tasks of knowledge work in the Fourth Industrial Revolution revolved around advanced technologies in the digital era, and the development of advanced cognitive competencies of human capital, thus knowledge workers (Davenport, 2005; Fisher & Fisher, 1998; Reinhardt et al., 2011; Shandler, 2014; WEF, 2020.). Knowledge workers are employees who have an extensive educational background and experience and who are considered people who “think for a living” (Davenport, 2005; Shandler, 2014). The focus of knowledge work is on performing complex tasks that require the processing of information, problem solving and the production of knowledge (Barley, 1996; Fleming et al., 2004; Reed, 1996; Reich, 1991; Shandler, 2014; Tam et al., 2002). Knowledge workers consequently add value through their ideas, their analyses, their judgement, their synthesis, and their designs by utilising advanced technologies (Horibe, 1999; Shandler, 2014; WEF, 2020).

To empower knowledge workers to succeed and to remain employable in the digital era, they should first become aware of their own personal strengths, values and career anchors through self-examination and building self-awareness (Coetzee & Schreuder, 2021; Drucker, 2005; Maree, 2020). Knowledge workers should develop their employability attributes, be sensible to psychosocial career preoccupations, and increase their career adaptability in order to contribute to organisations and society in Industry 4.0; thus, achieving the ultimate aim of career satisfaction and sustained employability.

For individuals to sustain their employability, they need to change, which requires adaptation. This gave rise to specific career concerns that preoccupy the minds of individuals at a specific point in their career life (Coetzee, 2014b; Savickas, 2005, 2013; Sharf, 2010). To enhance individuals' suitability for sustainable employment further, employability attributes (metacapacities) are required for proactive career management behaviour (Bezuidenhout, 2011; Di Fabio, 2017; Potgieter, 2014).

Only a few studies on career satisfaction have been conducted in South Africa. These studies were undertaken amongst –

- professionals in public and private sectors (Lemmer & de Villiers, 2004);
- academic staff (Riordan & Louw-Potgieter, 2011);
- executives (Visagie, 2012);
- HR management practitioners (Botha, 2011);
- the South African National Defence Force (Ditsela, 2012); and
- the South African Police Service (SAPS) (du Toit, 2014).

Therefore, Dries et al. (2008) urge that more studies are needed on career satisfaction. In addition, research in South Africa is also needed in order to capture the diversity of perspectives in the current South African workforce. Recently, Blokker et al. (2019), Haenggli and Hirschi (2020), and Spurk et al. (2019) emphasised the need for further research internationally on the predictors of career satisfaction and self-perceived employability, the relative importance of different predictors, the relationship dynamics among different predictors (career resources), and the circumstances under which different career resources are activated. Duarte et al. (2017) also called for sophisticated research that captures the unique and complex role of employability.

Since no existing study on the relationship dynamics between the constructs of career satisfaction, self-perceived employability, career cognitions (career adaptability and psychosocial career preoccupations), psychosocial career resources (employability attributes, career anchors and career values) could be found in a single study, this study has the potential to assist industrial psychologists and HR professionals to develop a better understanding of the relevant constructs.

2.6 CHAPTER SUMMARY

This chapter contextualised the present study by outlining the meta-theoretical context of the study by first explaining career development in the knowledge economy. Career development of

knowledge workers in the agile, fast-changing and technology-driven knowledge economy was discussed in terms of the changing nature of work, which focused on drivers that shaped the future of work in Industry 4.0. Several HR 4.0 strategies were identified to navigate the transition to the new world of work successfully. The features of knowledge work in Industry 4.0 were explored and compared with traditional work. Furthermore, the nature of knowledge work in the knowledge economy was explored with specific emphasis on important knowledge actions, roles and virtues of knowledge workers. The changing career context in the digital era was discussed in terms of how careers progressed from traditional to contemporary theories linked to sustainable careers. The challenges for career development and factors influencing the career development of knowledge workers were also discussed.

This chapter further aimed to conceptualise the variables relevant to the research, specifically career satisfaction and self-perceived employability and forms part of the first research aim related to the literature review.

The career satisfaction and self-perceived employability of knowledge workers in the 21st century were therefore conceptualised, theoretical models were explained, and variables influencing career satisfaction and employability of knowledge workers were discussed.

Chapter 3 will further aim to address the first research aim related to the literature review by conceptualising the variables of relevance to the research, specifically career adaptability and psychosocial career preoccupations (career cognitions).

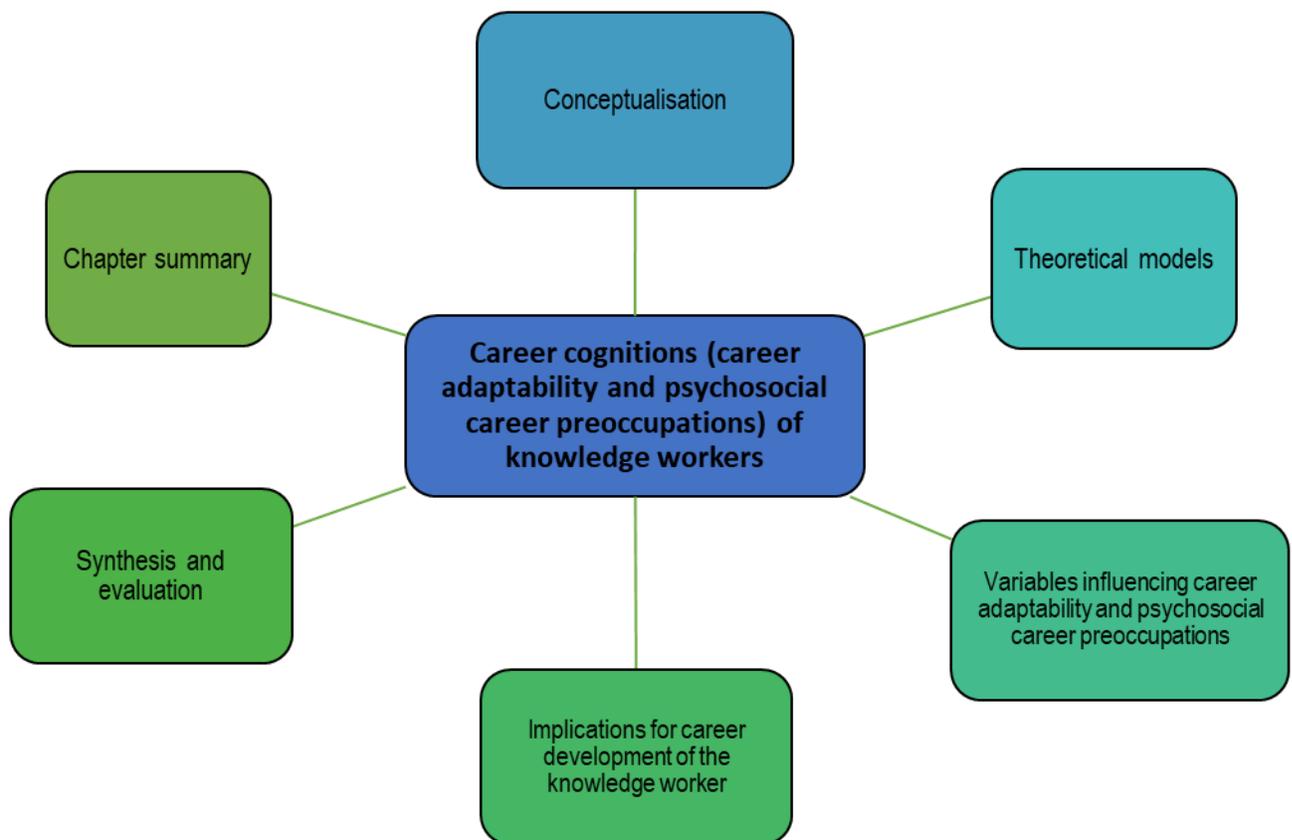
CHAPTER 3: CAREER COGNITIONS (CAREER ADAPTABILITY AND PSYCHOSOCIAL CAREER PREOCCUPATIONS) OF KNOWLEDGE WORKERS

This chapter aims to present a conceptualisation of career cognitions, such as the career adaptability and psychosocial career preoccupations of knowledge workers from a theoretical perspective, to explain theoretical models and variables related to these constructs and finally to discuss implications for career development.

Figure 3.1 illustrates the layout of this chapter.

Figure 3.1

Layout of Chapter 3



Source. Author's own work

3.1 CONCEPTUALISATION

This section presents a conceptualisation of career adaptability and psychosocial career preoccupations.

3.1.1 Career cognitions

Career cognitions denote individuals' awareness, perceptions and self-evaluations and signal individuals' psychological readiness to adapt and respond to changes in the career environment (Coetzee, 2014a; Fugate et al., 2004). This view further builds on the basic premise of person-environment fit theory that individuals seek optimal congruence with their environment, which results in career satisfaction (van Vianen, 2018). The present research regards career satisfaction and self-perceived employability as important outcomes of knowledge workers' career cognitions of career adaptability and psychosocial career preoccupations.

3.1.2 Career adaptability

Career adaptability has developed into a key construct because of the ongoing change in vocational psychology towards assisting individuals to cope with the more dynamic and boundaryless work context (Chan et al., 2015).

Savickas (1997) conceptualises career adaptability as individuals' ability to cope with current and anticipated developmental tasks, occupational transitions, and complex career and work traumas and challenges that, to some degree large or small, alter individuals' social integration. An individual's capacity to adapt revolves, therefore around their perceptions and interpretations of the environment and their reaction to it (Savickas & Porfeli, 2012). Career adaptability is, therefore, a psychosocial construct that denotes individuals' resources for managing career tasks and challenges (Zacher, 2014), and for adjusting to change, especially in unpredictable and stressful situations (Coetzee & Harry, 2014). This set of self-regulatory cognitive-affective behavioural capacities or psychosocial resources on which individuals may draw, are not merely performance or core traits of an individual, but manifests according to multiple environmental and personal attributes (Hamtaux et al., 2013), and are thus positioned at the intersection of person-in-environment (Lent & Brown, 2013; Savickas, 2013; Spurk et al., 2016). Career adaptability is, therefore, a multidimensional construct that involves a combination of the attitudes, competencies and behaviours that individuals utilise in fitting themselves to work that suits them (Savickas, 2013). These psychosocial resources can therefore mediate the relationship between observed goals and career outcomes, such as career success, satisfaction and stability (Havenga, 2011; Koen et al., 2010).

It is evident that the construct 'career adaptability' relates to concepts such as having a boundaryless mindset to career planning and career exploration, career decision-making and

career confidence as well as utilising information and realism (common sense) (McArdle et al., 2007; Skorikov, 2007; Zikic & Klehe, 2006).

Career adaptability enables individuals to cope with and manage unexpected change and ambiguity proactively, tackle challenges rather than contemplate barriers and utilise reflection and self-awareness in order to assess personal progress and overall career effectiveness (Creed et al., 2009). Career adaptability provides an operational framework for understanding how individuals' view their future and enhance the development of appropriate supportive career development strategies (Chan et al., 2015; Rottinghaus et al., 2012). Brown et al. (2012) highlight the need for individuals to self-regulate in order to accommodate employment-related change, yet acknowledge that change can also be driven by individuals' either seeking new challenges or wishing to adopt new perspectives associated with engagement in substantive personal development. Career adaptability, therefore, relates to career satisfaction and employability.

In summary, career adaptability is considered as career cognitions that can be utilised as transactional, self-regulatory resources (independently of more stable dispositions) that connects the person to the environment; in much the same fashion that identity connects the self-concept to a social role. Career adaptability is thus seen as an important resource for attaining career satisfaction and sustaining employability throughout the lifespan (Savickas, 2011a; Zacher, 2014).

3.1.3 Psychosocial career preoccupations

The term 'psychosocial career preoccupations' refers to a mental state of having certain concerns relating to one's career at the forefront of one's mind at a specific time (Coetzee, 2014b). These concerns reflect individuals' cognitive judgements regarding which specific adaptive behaviours to apply during career-life transitioning, in an attempt to regain a state of career equilibrium (Coetzee, 2016). Psychosocial career preoccupations reflect cognitive appraisals that give rise to certain vocational developmental tasks of adaptability that individuals have to face in their career–life cycle and are predominant in the career–life story (Savickas, 2005; Sharf, 2010).

Preoccupations are defined by Rapoport and Rapoport (1975) as mental absorption, less or more conscious, which arises from the psycho-biographical development, maturation and ageing processes as people interact with social and environmental conditions. According to Rapoport and Rapoport (1975), although people have needs, their needs change as they progress from one life stage to another. Preoccupations can be described as key concepts, which reflect the developmental nature of the changes in the life cycle, and include mental absorption, interests

and activities. Preoccupations arise at a deep level of motivation. Some preoccupations might be present throughout the life cycle but tend to become particularly prominent at a given stage. Preoccupations are attributed to each stage in the life cycle. They are worth considering since they are of fundamental importance if providers are to make the most important provisions for different segments of the population (Coetzee & Roythorne-Jacobs, 2012; Super, 1990).

Rapoport and Rapoport (1975) believe that recreational activities arise out of interests, and interests arise out of preoccupations. There is no one-to-one relationship between preoccupations and interests, and particular interests can be satisfied through different activities. However, it appears that specific clusters of interests are related to each major life cycle stage. All people have a quest for personal identity. At the root of their search, people have fundamental preoccupations. Specific preoccupations can be experienced through a variety of interests and expressions of interest, and these expressions of interest may be facilitated through specific activities.

Individuals are seen as having a career consisting of separate but interrelated elements. Three major elements relate to family, work and leisure (Rapoport & Rapoport, 1975). Each life element, therefore, produces changes in preoccupations, interests and activities, often as a result of life changes or major events, such as marriage and the birth of a child. Horna's (1985) findings indicate that the change in leisure is the most profoundly affected by changes in family circumstances or by changes in the career. These changes are most apparent in the amount of discretionary time available, but are also found in the types of leisure activities, their frequency and individuals' preferences. Moreover, there would seem to be a persistent preoccupation with the family, familial obligations and marital leisure and sociability, which is found in differing degrees among men and women.

Finally, the construct psychosocial career preoccupations in this study denotes three specific dimensions related to career establishment, career adaptation, and work-life adjustment preoccupations; that individuals face in the career–life cycle and that are predominant in the career–life stories of knowledge workers (Coetzee, 2014b; Savickas, 2005; Sharf, 2010). Psychosocial career preoccupations is an under-researched construct (Coetzee, 2016), with only a few studies that were conducted during the past five years (Bester, 2018; Coetzee, 2015, 2016; Coetzee & Govender, 2020; Potgieter et al., 2018; Takawira, 2018). Further research on the ever-changing nature of individuals' vocational developmental tasks across the lifespan in relation to other career-related constructs is required (Coetzee & Govender, 2020).

Career cognitions denote individuals' awareness, perceptions, and self-evaluations (Coetzee, 2014a). Career adaptability is an important career cognition and acts as a transactional, self-regulatory resource that enhances individuals' ability to mentally cope with the changing career environment through cognitive tasks related to concern, control, curiosity, and confidence (Savickas, 2013; Zacher, 2014). The construct psychosocial career preoccupations can also be considered as an important career cognition as it relates to certain matters concerning individuals' career concerns which are prominently occupying their minds; and therefore reflects individuals' cognitive judgment regarding which specific career adaptive behaviours (relevant to career establishment, career adaptation, and work-life adjustment) to apply. Career adaptability and psychosocial career preoccupations, as career cognitions, therefore, signal individuals' psychological readiness and ability to adapt and cope in the changing environment.

3.2. THEORETICAL MODELS

The theoretical models related to career cognitions (career adaptability and psychosocial career preoccupations) will be discussed in terms of the fundamental theories of Super's (1953, 1990) developmental, life stage theory and career construction theory of Savickas (2013). These two theories underlie career adaptability (Savickas & Porfeli, 2012) and the under-researched concept of contemporary psychosocial career preoccupations (Coetzee, 2014b, 2016; Coetzee & Govender, 2020).

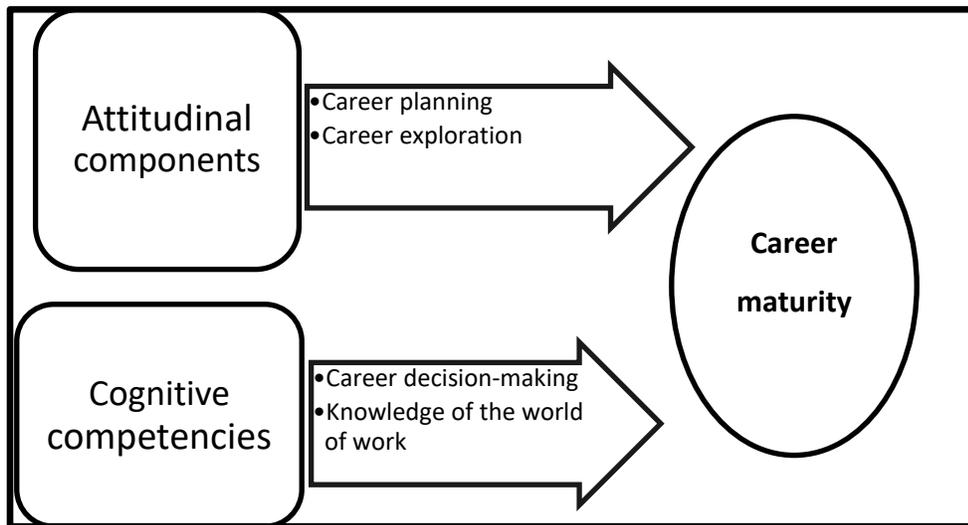
An overview of the movement from career maturity to career adaptability is discussed first.

3.2.1 Moving from career maturity to career adaptability

Super (1953) launched the psychology of careers and proposed a developmental theory of vocational behaviour. Within Super's (1953) model was a core construct, termed career maturity. Career maturity can be described as the readiness to make effective career decisions during adolescence (Super & Knasel, 1979). Super (1953) assessed career maturity by measuring two attitudinal components and two cognitive competencies, as illustrated in Figure 3.2. The attitudinal components are attitudes toward career planning and attitudes toward career exploration. The cognitive competencies are career decision-making and knowledge of the world of work. These components are discussed in Figure 3.2.

Figure 3.2

Career Maturity



Source. Adapted from Super (1953)

- *Career planning* reflects the degree to which individuals have thought about and planned for future occupational or educational decisions. Individuals who engage in career planning might discuss plans with others, participate in part-time employment or volunteer activities, and find out when they need to make decisions that will affect their educational and vocational future (Super, 1953).
- *Career exploration* reflects the degree to which individuals have explored the world of work using quality sources of information. Individuals who engage in career exploration might explore occupations by seeking information from quality sources, including career counsellors, professors, teachers and professionals working in one's occupation of interest (Super, 1953).
- *Decision-making* reflects individuals' ability to apply principles of reasoning to make sound educational and occupational decisions. Individuals who know how to make good decisions collect, analyse, and critique career-related information before making decisions (Super, 1953).
- *Knowledge of the world of work* reflects individuals' fund of information regarding the world of work. Individuals who possess a breadth of knowledge understand the requirements, routines and rewards of a variety of occupations. Adolescents who develop these requisite

attitudes and cognitive competencies are considered career mature, that is, ready to make career choices (Super, 1953).

Super and Knasel (1979) introduced career adaptability when they distinguish between career maturity and career adaptability. Career maturity focuses on the readiness to make career decisions during adolescence, whereas career adaptability focuses on adults' readiness to cope with changing work conditions. However, Savickas (1997) moves away from the distinction between career maturity and adaptability when he indicates that adolescents face different challenges with transitioning into adulthood. He, therefore, recommends that rather than master career maturity, adolescents should be required to develop career adaptabilities. Savickas (1997, 2005, 2013) further proposes that one integrates the four lifespan perspectives through career adaptability.

In summary, career adaptability first emerged within the developmental career tradition as a construct to understand and advance adult career development in a way that would enhance career maturity as a construct applied to career development processes during adolescence (Savickas, 1997; Super & Knasel, 1981). The construct career adaptability has, therefore replaced career maturity as a construct for conceptualising coping resources for making changes in self and situation to manage a life-career effectively. Career adaptability in the VUCA world of work is a cardinal construct that fits the contemporary career landscape and represents a central goal for life-career satisfaction and success (Maree, 2020; Savickas et al., 2009).

3.2.2 Super's life stage theory

A brief overview of Super's (1990) life stage theory will promote an understanding of career preoccupations related to the different stages of the individual's lifespan. These stages enable individuals to make career-related choices, which influence psychological career resources (Coetzee, 2008) and career adaptability (Savickas, 2005). Super's (1990) life stage theory adds to the understanding of how individuals go through different stages or experiences in their career development process and how each stage has certain elements that enable the individual to strive towards a successful, satisfying career.

- Growth (between ages 4 and 14)

During the growth period, the child develops physically and psychologically in four major career developmental tasks, namely becoming concerned about the future, increasing personal control over one's own life, convincing oneself to achieve in school and at work, and acquiring competent work habits and attitudes (Stead & Watson, 1999).

- Exploration (ages 14–25)

In the exploration period, individuals encounter the career development tasks of crystallising, specifying and implementing a career choice, which could lead to trial activities, new choices, self-identity changes, and increased adaptability (Smart & Petersen, 1997). Career preoccupations related to the clarification of what individuals may want to do, how they learn about entry-level jobs, how they did in their part-time positions, and whether they want more education (Coetzee, 2015; Sharf, 2010) may arise during this life stage.

- Establishment (ages 25–45)

The establishment stage begins with searching for work, being accepted by ones' peers, learning the job, and gaining work experiences of success and failure in a work environment (Haider & Supriya, 2007). Generally, the establishment stage is a period where individuals are in actual work situations, and it involves learning new tasks and being exposed to different career choices which could lead to enhancing the self-concept (Smart & Petersen, 1997). Career preoccupations related to concerns about advancing in one's work, feeling a sense of stability on the job, knowing the basic requirements of the job, and thinking about the job on a long-term basis (Coetzee, 2015; Sharf, 2010) may arise during this life stage.

- Maintenance (ages 45–65)

During the maintenance period, individuals spend time continuing to develop their career identity and acquiring new skills in order to improve their situation in a chosen career (Hall & Mirvis, 1995). Career preoccupations related to improving one's performance, and dealing with new technological advances (Coetzee, 2016; Sharf, 2010) may arise during this life stage.

- Disengagement (age 65 and over)

During the disengagement stage, individuals may find that their physical and mental powers are declining and are therefore selectively engage in certain work roles and tasks or are encouraged to start disengaging from their work roles and move towards retirement (Smart & Petersen, 1997). This life stage involves career development tasks where individuals decelerate working experiences and move into retirement plans. Career preoccupations related to concerns about losing a job due to health or physical limitations, slowing down one's work or working part-time or retiring (Coetzee, 2015; Sharf, 2010) may arise during this life stage.

Super's (1990) notions of career stages are particularly helpful during the career development process in developing individuals' career adaptability across the lifespan. As career maturity

develops, individuals learn to manage their motives and crystallise their self-concepts, which enables them to enact their career intentions (Coetzee & Roythorne-Jacobs, 2012).

3.2.3 Career construction theory

The career construction theory (Savickas, 1997, 2005, 2013), is a post-modern career theory, that follows an inclusive, narrative approach and believes that individuals can construct their own careers (Coetzee & Schreuder, 2021; Maree, 2020). It is important to review this theory as it provides an important perspective in measuring individuals traits through psychometric testing, a framework to examine ways in which specific traits can be developed to facilitate and promote adaptive career behaviour and elicits individuals' key life themes and indicates how individuals can move forward in specific directions (Hartung, 2013; Maree, 2020; Savickas, 2013). The career construction theory (Savickas, 1997, 2005, 2013), utilises both an objective and subjective perspective to facilitate career development (Maree, 2020).

According to Savickas's (1997, 2005, 2013) career construction theory, career development is driven by adaptation to a series of transitions from school to work, from job to job, and from occupation to occupation, with the goal being person–environment integration. People develop different levels of psychological resources to manage critical tasks, transitions, and traumas in their career development.

The career construction theory (Savickas, 2005, 2013) seeks to be comprehensive in its scope and takes three perspectives on vocational behaviours into account:

- the *differential perspective*, which examines the content of vocational personality types and *what* different individuals prefer to do;
- the *developmental perspective*, which examines the process of psychosocial adaptation and *how* individuals cope with vocational development tasks, occupational transitions, and work traumas; and
- the *dynamic perspective*, which examines the dynamics by which life themes impose meaning on vocational behaviour, and *why* individuals fit work into their lives in distinct ways.

Savickas (2005, 2013) presents the *what*, *how* and *why* of career development through the following key components, namely life themes, vocational personality and finally career adaptability:

(a) *Life themes*

Life themes is a narrative component and address the subject matter of work-life and focuses on the *why* of vocational behaviour (Savickas, 2005, 2013). The essence of a career and the dynamics of its construction are revealed in the self-defining stories of individuals about the vocational development tasks, occupational transitions, and work traumas that an individual had to face during his or her work life. To reveal the recursive interplay between the self and society, career stories explain why individuals make the choices that they do, and the private meaning that guides these choices. From these stories, industrial psychologists can understand the life themes that construct careers and understand the motives and meaning that pattern work-life (Savickas, 2005, 2013).

The life theme perspective highlights the view that careers are about *mattering*. In career construction theory (Savickas, 2005, 2013), the theme is what matters in the life story. The life theme consists of what is at stake in that individual's life. On the one hand, the theme matters to individuals in that it gives meaning and purpose to their work. It makes them care about what they do.

On the other hand, what they do and contribute to society, matters to other people. The belief that what they do matters to others sharpen identity and promotes a sense of social meaning and relatedness. What individuals, therefore, choose to do is the subject matter of vocational personality (Savickas, 2005, 2013).

(b) *Vocational personality*

The component *vocational personality* can be defined as an individual's career-related abilities, needs, values and interests (Savickas, 2005, 2013). This component examines the content of career construction by using Holland's (1997) work on interests in relation to the self-organisation of individuals and the social organisation of occupations and regards vocational personality types and occupational interests as relational phenomena that reflect emergent and socially constituted meanings. For this reason, career construction theory views vocational personality as an individual's *reputation* among a group of people. Accordingly, the theory concentrates on what individuals can become in doing work, not what they are before they enter the world of work. Work, as a context for human development, provides the outer form of something intensely private; it is the bridge between public and private. Crossing the bridge between self and society is called adaptation (Savickas, 2005, 2013).

(c) *Career adaptability*

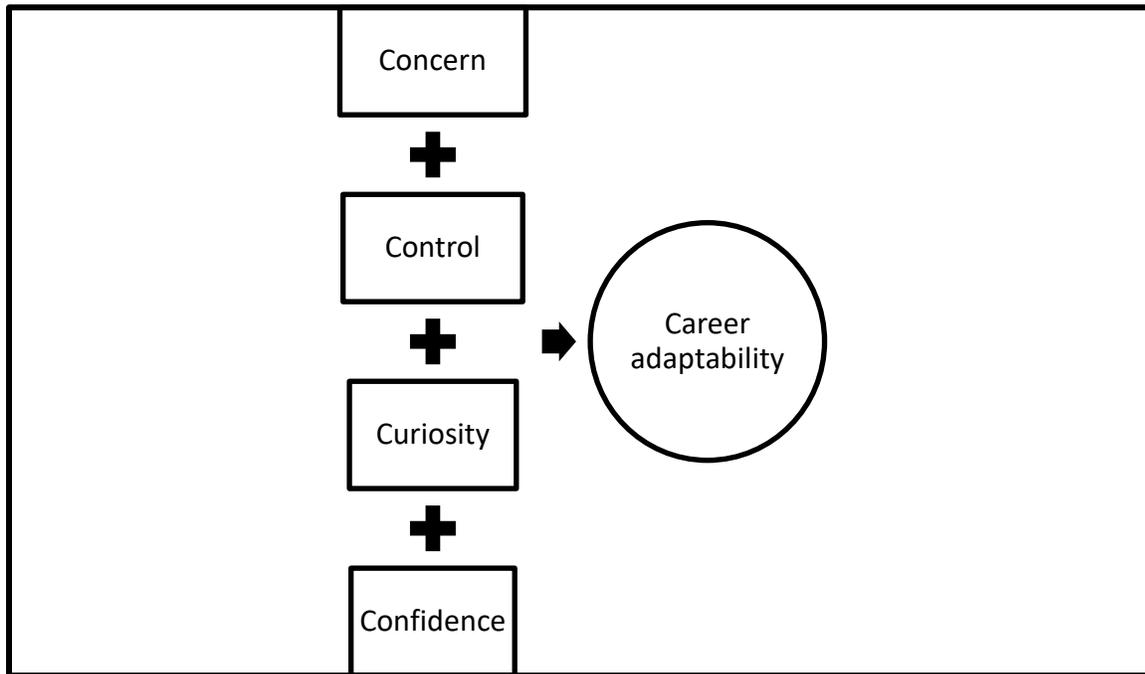
The component career adaptability deals with *how* individuals construct a career, whereas vocational personality deals with *which* career their construct (Savickas, 2005, 2013). Career adaptability is defined as a psychosocial construct that denotes an individual's readiness and resources to cope with current and forthcoming vocational developmental tasks, occupational transitions and personal traumas (Savickas, 2005, 2013). The term 'career adaptability' is, therefore, more reflective of a knowledge-based society than Super's (1953) construct of career maturity (Savickas, 2005).

The stages and developmental tasks of Super's (1990) theory are a key feature of career adaptability across the lifespan. The stages of growth, exploration, establishment, management and disengagement, may be regarded as a mega-cycle across an individual's career. However, the career stages may also be regarded as mini-cycles, which revolve around each of the many transitions from school to work, from job to job, and from occupation to occupation (Savickas, 2005, 2013).

In considering adaptability, career construction theory (Savickas, 2005, 2013) highlights a set of specific **a**ttitudes, **b**eliefs and **c**ompetencies – the ABCs of career construction – which shape the actual problem-solving strategies and coping behaviours that individuals use to synthesise their vocational self-concepts with work roles. The ABCs are grouped into four dimensions of adaptability: concern, control, curiosity and confidence (Savickas, 2005, 2013). These four dimensions are presented in Figure 3.3.

Figure 3.3

Career Construction Theory



Source. Adapted from Savickas (2005)

The first dimension of career adaptability, *career concern*, refers to the degree to which individuals are involved in their own career planning and think about their career future (Savickas, 2005, 2013). As career concern represents a future orientation, it disposes university students to engage in activities that prepare them to meet the challenges of a job search. As a result, graduates with a higher level of concern are likely to be more ready for the tasks involved in job search and thus have a better chance to gain employment.

The second dimension of career adaptability, *career control*, refers to the degree to which individuals feel responsible for managing and building their own careers. Control involves self-discipline and being conscientious, deliberate, organised and decisive in performing developmental tasks and making occupational transitions. Its opposite is career confusion and not dependence (Savickas, 2013). This wilful working style is beneficial in setting clear goals and taking assertive actions in the job search process, and will also increase the likelihood of securing employment. When individuals do not develop career control, they find making decisions in a thoughtful and disciplined way challenging (Savickas & Porfeli, 2012).

The third dimension of career adaptability, *career curiosity*, refers to the degree to which individuals explore the world of work and make an effort to gain as much information as possible

about the requirements, practices and rewards related to specific careers and occupations. When individuals do not develop career curiosity, they may not develop an open attitude to new experiences, will have limited information available, and will find it challenging to make quality career decisions (Savickas & Porfeli, 2012).

The last dimension of career adaptability, *career confidence*, refers to the degree to which individuals believe in their ability to make and implement good career decisions. When individuals do not develop career confidence, they may miss out on new opportunities and activities owing to a lack of aspiration and initiative (Glavin, 2015; Savickas & Porfeli, 2012). Moreover, individuals with strong efficacy beliefs tend to apply more efforts and show higher levels of determination when encountering situations that are difficult or demanding (Bandura, 1977). Guan et al. (2013) propose that a higher level of career confidence will motivate individuals to persist when facing problems in job search.

In conclusion, adaptive individuals are conceptualised as –

- being *concerned* about their career future;
- increasing personal *control* over their career future;
- displaying *curiosity* by exploring possible selves and future scenarios; and
- strengthening the *confidence* to pursue their career aspirations.

3.2.4 Five-fold career adapt-abilities competency framework

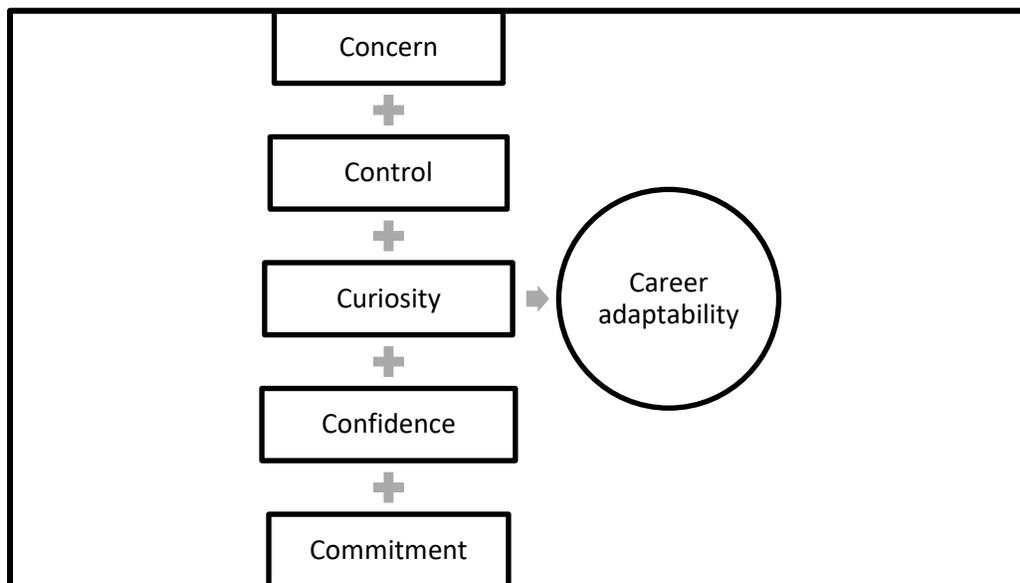
Based on the four Cs of the career construction theory of Savickas (2005), Brown et al. (2012) use the five-fold career adapt-abilities competency framework to motivate adults to adopt behaviours that would help them through successful transitions and positive change. The five-fold career adapt-abilities competency framework consisting of control, curiosity, commitment, confidence and concern is illustrated in Figure 3.4. These five separate but interrelated competencies are crucial for increasing individuals' career adaptive responses to transitions and are outlined below.

- *Control* is defined as the degree to which individuals exert influence on their situations.
- *Curiosity* refers to the value in broadening horizons by exploring social opportunities and possibilities.

- *Commitment* refers to how individuals should experiment with new and different activities in order to create new possibilities.
- *Confidence* emphasises believing in oneself and having the ability to achieve what is necessary for career goal achievement.
- *Concern* relates to developing a positive attitude towards the future.

Figure 3.4

Five-fold Career Adapt-abilities Competency Framework



Source. Adapted from Brown et al. (2012)

The results of the study by Brown et al. (2012) demonstrate the utility of the adapt-abilities competency framework, as well as how adaptive adults utilise both formal and informal learning to develop career adapt-ability competencies over time and across occupations and occupational sectors.

Four key dimensions emerged from the study by Brown et al. (2012) relating to the role of learning in developing career adapt-abilities at work:

- learning through challenging work (including mastering the practical, cognitive and communicative demands linked with particular work roles and work processes);

- updating a substantive knowledge base (or mastering a new additional substantive knowledge base);
- learning through (and beyond) interactions at work; and
- being self-directed and self-reflexive.

These four key dimensions that emerged from research on the role of learning in developing career adapt-abilities at and beyond work could be mapped against the five career adapt-able competencies (Brown et al., 2012; Savickas, 2005, 2013; Savickas & Porfeli, 2012; Savickas et al., 2009). In particular, learning through challenging work could help individuals develop –

- control (increasing influence on their career situations);
- commitment (as they experiment with a wider set of new and different activities and projects);
- confidence (in terms of self-belief) and
- concern (a positive and optimistic attitude to the future).

Learning through updating a substantive knowledge base or mastering a new additional substantive knowledge base, including engaging with formal education and training provision, could help individuals develop control, curiosity (in broadening horizons by exploring a wider range of opportunities and possibilities), confidence and concern. Learning through (and beyond) interactions at work could facilitate the development of curiosity, commitment and concern. Learning to become more self-directed and self-reflexive could help individuals develop control, confidence and concern (Brown et al., 2012).

During the active process of changing, adaptability is required from individuals. This tends to lead to their minds being preoccupied with certain issues relating to psychosocial aspects of their careers (Coetzee, 2016). Individuals are often concerned about sustaining their employability by adapting to changing environments by means of career changes and changing their interests, talents and competencies to suit employment opportunities (Coetzee, 2015). Learning how to learn and adapt has become an essential skill in contemporary career development and is key to sustain one's employability (Hall, 2013) and to attain a successful satisfying career (Shandler, 2014). It is therefore important that industrial psychologists understand how important it is that people at all stages of their career progression are ready to continue their development in increasingly demanding contexts.

The social cognitive career theory (Lent & Brown, 1996), which was already discussed in Chapter 2, section 2.2.2.3 emphasises the complex ways in which individuals, their behaviour and their environments influence one another mutually. This theory further assumes that individuals have the capacity to exercise some degree of agency or self-direction and that they also contend with many factors (e.g. environmental supports and barriers) that could strengthen, weaken or even override personal agency. The social cognitive career theory highlights the interplay among three cognitive person variables that partly enable the exercise of agency in career development: self-efficacy beliefs, outcome expectations, and personal goals (Lent & Brown, 2006).

Lent and Brown (2013) recently developed a social cognitive model of career self-management and offer examples of the adaptive, process behaviours to which it can be applied (e.g., career decision-making or exploration, job searching, career advancement, negotiation of work transitions and multiple roles). The new model of career self-management (Lent & Brown, 2013) focuses on a wide array of adaptive career behaviours that people employ to adjust to and thrive in the work environments across the career lifespan (Lent & Brown, 2013). These behaviours are considered mechanisms of personal agency in that they allow individuals to take part in their own career development, adaptation and renewal. Examples of such adaptive behaviours include career exploration, decision-making, job searching, identity management, and navigation of normative (e.g., work entry, retirement) and unpredictable (e.g., job loss) transitions (Lent et al., 2016).

The career self-management model of Lent and Brown (2013) complements the career construction theory (Savickas, 1997, 2005, 2013) in the sense that career development is driven by adaptation to a series of transitions from school to work, from job to job and from occupation to occupation, with the goal being person–environment integration. People develop different levels of psychological resources to manage the critical tasks, transitions and traumas in their career development.

In summary, the career construction theory is fundamentally an extension of Super's theory of vocational development (Savickas, 2002, 2005, 2011a, 2013) underpinned by personal and social constructionism (Savickas, 2005). The notion that careers do not simply unfold but are rather constructed by individuals by imposing meaning on their vocational behaviour and occupational experiences is central to this theory (Savickas, 2002, 2005, 2011a, 2013).

3.2.5 Coetzee's psychosocial career preoccupations

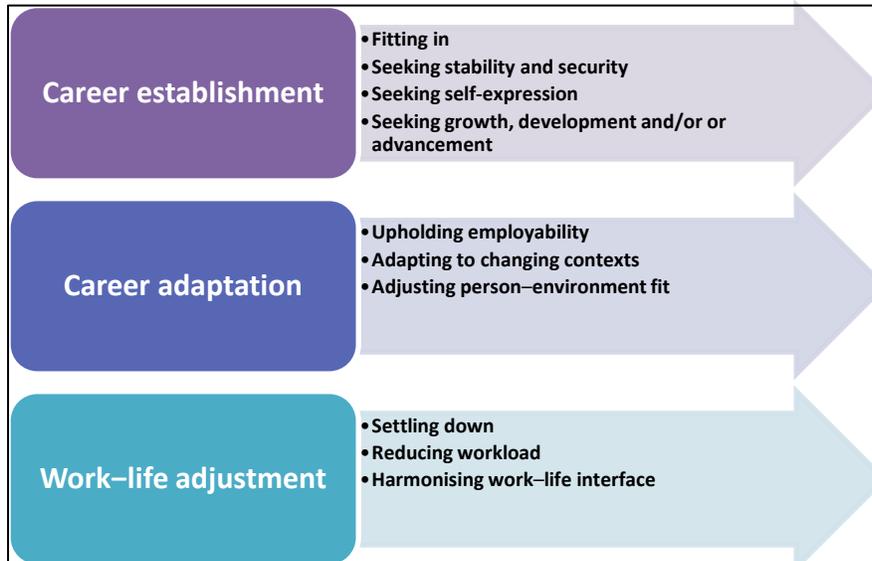
Coetzee (2014b) coined the construct psychosocial career preoccupations, as important psychosocial developmental tasks of career adaptability that resulted from increasingly organisational and career-related changes and career transitions (Coetzee, 2015, 2016; Savickas, 2005, 2013).

Coetzee (2014b, 2015, 2016) identified three core dimensions of psychosocial career preoccupations (see Figure 3.5):

- (i) *career establishment preoccupations* – involve concerns about fitting in in a group, career and economic stability and security, establishing opportunities for self-expression and personal growth and development, and advancing in one's career in the present organisation;
- (ii) *career adaptation preoccupations* – involve employability-related concerns about adapting to changing contexts, which might involve career changes and adjusting one's interests, talents and capabilities to fit with opportunities in the employment market; and
- (iii) *work–life adjustment preoccupations* – involve concerns about settling down, reducing one's workload and achieving greater harmony between one's work and personal life, which might also involve withdrawing from paid employment altogether.

Figure 3.5

Contemporary Psychosocial Career Preoccupations



Source. Coetzee (2016, p. 68)

Table 3.1 provides an overview of the five career stages and the preoccupations relating to the developmental tasks of adaptability. The developmental tasks of adaptability within each career stage (exploration, establishment, management and disengagement) provide guidance in terms of how to re-establish stability and maintain continuity in a broader, uncertain social context (Savickas, 2002, 2005).

Table 3.1*Career Stages and Preoccupations Relating to the Developmental Tasks of Adaptability.*

Career stage	Characteristics	Work-related career developmental tasks	Developmental adaptability tasks	Preoccupations (dominant life themes)
Exploration	Crystallising, specifying and implementing self-concept	Identify types of work through part-time jobs, and job shadowing Make transition from school to work or further education	Gain knowledge and information about society, how to cope with work issues in the process of exploring career options and making occupational choices that fit within the relevant sociocultural environment (Sullivan & Crocitto, 2007)	Clarification of what individuals may want to do, how they learn about entry-level jobs, how they did in their part-time positions, and whether they want more education (Coetzee, 2015; Sharf, 2010)
Establishment	Stabilising, consolidating and advancing period of trial in the late twenties and a period of stabilisation in the thirties and early forties	Pursue advancement (e.g. responsibility) Economic stability Succession of job changes before a final choice (trail) During stabilisation, security and advancement become priorities	Become part of a work organisation and the larger community in the process of finding one's occupational niche (Sullivan & Crocitto, 2007)	Concerns about advancing in one's work, feeling a sense of stability on the job, knowing the basic requirements of the job, and thinking about the job on a long-term basis (Coetzee, 2015; Sharf, 2010)
Maintenance	Holding, updating and innovating	Maintain levels of achievement despite challenges of competition, rapid changes in technology and family	Maintain one's occupational choice and self-concept in the process of noting changes in the work environment, reassessing the self and family issues, and comparing oneself to other workers (Sullivan & Crocitto, 2007)	Concerns about holding onto one's job while at the same time learning more about what is required on the job, improving one's performance, and dealing with new technological advances (Coetzee, 2015; Sharf, 2010)
Disengagement	Decelerating, retirement, planning and retirement living	Decline in work activity – greater activity in roles involving family, volunteer work and leisure Community service	Forge a new life structure outside an occupation and work organisation in the process of reflecting on one's life (Sullivan & Crocitto, 2007)	Concerns about losing a job due to health or physical limitations, slowing down one's work or working part-time, or retiring (Coetzee, 2015; Sharf, 2010)

Source. Coetzee (2016, p. 66)

During the career exploration stage, individuals' self-concept is formed. They focus on obtaining knowledge about society, explore career options and make career choices based on their abilities, personality and values that fit within the relevant socio-cultural environment (developmental

adaptability tasks). Individuals are therefore concerned about what they might want to do, how to get a job, or they might consider further education. During the career establishment stage, individuals tend to stabilise and focus on advancing in their careers. Individuals adapt and become part of an organisation and the larger community, and they try to find their occupational niche. Individuals are therefore concerned about advancing in their careers and about knowing the requirements of a specific job. They then stabilise and think about their careers in the long term (Coetzee & Roythorne-Jacobs, 2012).

According to Coetzee and Roythorne-Jacobs (2012) and Super (1990), individuals under the age of 25 are regarded as being in their early life and career stage and, generally, harbour career preoccupations relating to the personal freedom to explore life and career possibilities. Individuals between the ages of 26 and 45 are generally regarded as being in the establishment life and career stage. Typical career preoccupations include settling down in one's career, working to find one's place in a chosen field of work, thinking about the job on a long-term basis, and advancing in one's work, job and career (Coetzee & Roythorne-Jacobs, 2012; Super, 1990). Individuals older than 45 years are seen as being in the maintenance (45–65) and retirement (≥ 65) stages of their lives and careers. They are either preoccupied with updating their skills and adjusting to new technology to maintain their positions (45–65) or preparing for retirement (≥ 65) (Coetzee & Roythorne-Jacobs, 2012; Super, 1990).

Recent research related to psychosocial career preoccupations suggested:

- positive links between individuals' cognitive receptivity to technological change and innovation (Coetzee, 2016);
- links with lower levels of career satisfaction (Bester, 2018; Takawira, 2018);
- links with lower levels of organisational commitment (Coetzee, 2015);
- positive links between job embeddedness and satisfaction with retention practices through perceptions of workplace friendship when psychosocial career preoccupations were low (Potgieter et al., 2018);
- explanatory mechanisms — career preferences and career values explained higher levels of psychosocial career preoccupations (Coetzee & Govender, 2020);
- explanatory mechanisms — career drivers and harmonisers explained lower levels of psychosocial career preoccupations (Coetzee & Govender, 2020).

Moreover, as suggested by Coetzee and Govender (2020), there is a need for more research concerning additional career-related constructs and measures. This research, therefore, aims to address this gap and request for more research by further exploring the dynamic relations between the constructs career satisfaction, self-perceived employability, career cognitions and psychosocial career resources.

Finally, career management in the contemporary workplace gives rise to certain psychological career preoccupations that manifest as proactive, adaptive behaviours relating to individuals' need to achieve better fit or congruence between the self and the environment (Coetzee, 2015; Savickas, 2013). As career cognitions, career adaptability and psychosocial career preoccupations are important contemporary career constructs influencing the career satisfaction and self-perceived employability of individuals.

3.3 VARIABLES INFLUENCING CAREER ADAPTABILITY AND PSYCHOSOCIAL CAREER PREOCCUPATIONS

The most prevalent variables, such as age, gender, race, and other variables influencing career adaptability and career psychosocial career preoccupations, are discussed in this section.

3.3.1 Career adaptability

Various variables; such as age, gender, race, and other variables including tenure, and job level, influencing career adaptability, are discussed below.

3.3.1.1 Age

Conflicting statements were found during the literature review, with some researchers stating that career adaptability decreases with age while other researchers found that career adaptability could increase with age. Rostami et al. (2012) are some of the researchers who found that motivation to change decreases with age and that middle-aged or younger individuals should be more adaptable than the elderly. Peeters and Emmerick (2008) reported similar findings in their research, and stated that the adaptation to changes in work settings might become more difficult with age. These researchers explain that more mature adults may have negative attitudes toward the developmental experiences that are required in order to become adaptable, because such experiences may be taking place at an unexpected time in their lives (Rostami et al., 2012). This view is further supported by Koen et al. (2012) who found that career exploration, a dimension of career adaptability, decreases as individuals grow older and that career adaptability, therefore, has a general tendency to decrease with age. It also seems as if younger individuals or newcomers to the labour market require career adaptability to a greater extent than older

individuals or regular job seekers (Eurostat, 2012) due to the important school-to-work transition that they need to make (Koen et al., 2012).

Contrary to the above, other researchers state that career adaptability may change in response to different situations, and found that the transition from work to retirement prompted the display of career adaptability (Ebberwein et al., 2004; Johnston et al., 2013). Heckhausen et al. (2010) support the view that career adaptability could increase with age, and explain their finding by using theories and findings from the lifespan developmental literature. Specifically, the motivational theory of lifespan development suggests that individuals' primary control capacity decreases with age, and that ageing individuals compensate for this decline by enhancing their secondary control striving. This may manifest in increases in self-esteem, perceptions of personal control and self-efficacy, which positively predicts changes in control, confidence and overall career adaptability over time. Consistent with this finding, an empirical study found that self-esteem gradually increases throughout adulthood (Robins et al., 2002). Thus, the motivational theory of lifespan development suggests that older individuals experience greater increases in control and confidence over time than younger individuals (Zacher, 2014).

Other researchers (Creed et al., 2009; Julien, 1999) have found that young adults do not know where to find the information needed to be able to make a career decision, and that the poor self-exploratory processes lead to negative outcomes for the individual, such as not being able to settle on a career. It would seem that career adaptability skills, such as career decision-making and self-exploration, are important career developmental tasks that influence the level of career adaptability in individuals (Savickas, 1997; Whiston & Keller, 2004; Zikic & Klehe, 2006). Coetzee et al.'s (2015) study found no association between the biographical variables of age and participants' career adaptability.

3.3.1.2 Gender

Various researchers differ in their findings on the effect of gender on career adaptability. O'Connell et al. (2008) found a significant relationship between gender and adaptability, with women being more adaptable than men. A study conducted by Ferreira (2012) supports this finding, and reports that women showed higher levels of career adaptability than their male counterparts. The females in the study experienced a higher level of career purpose and career venturing, which means that they showed a tendency to move from one career to the next much more easily than the male participants. The results also suggest that the female participants were far more open to new career opportunities (Ferreira, 2012). In another study, Hartung et al. (2008)

found that adolescent girls scored higher on the construct 'career maturity/adaptability' than did their male counterparts.

On the other hand, Carless and Arnup (2011) argue that males are more likely to change careers, which seems to suggest that males are more flexible than females. Another researcher reported that their research pointed to the presence of career adaptability with both female and male participants (Havenga, 2011), whilst Kenny and Bledsoe (2005) found a modest or no significant contribution of gender to career adaptability (Kenny & Bledsoe, 2005). Lastly, Hirschi (2009) and Coetzee et al. (2015) found no association between gender and participants' career adaptability. All of this is evidence that research findings or results are lacking regarding gender differences in career adaptability, as stated by a number of researchers (Carless & Arnup, 2011; Havenga, 2011; Patton & Lokan, 2001; Patton et al., 2004).

3.3.1.3 Race

There seems to be a lack of research on the influence of race on career adaptability. The only findings derived from the literature review, refer to the impact of culture and the influence of relationships with other individuals and races. Del Corso and Rehfuss (2011) highlight that individuals' career adaptabilities do not reside completely within themselves, but can also be affected, influenced, formulated and developed through relationships with others. In particular, individuals from deep-rooted cultural backgrounds, with distinctive cultural attributes and strong adherence to tribal traditions might think differently about their problem-solving skills, which could influence their career adaptability (Asian Development Bank, 2007; de Guzman & Choi, 2013). However, the study of Coetzee et al. (2015) found no association between race and participants' career adaptability.

3.3.1.4 Other variables

Zacher (2014) found that career adaptability could be utilised as a transactional, self-regulatory resource (independently of more stable dispositions) that could enable knowledge workers to attain career satisfaction. The results of Coetzee et al. (2015) showed positive associations between the employability capacities and career adaptability constructs. The study of de Guzman and Choi (2013) showed significant relationships between career adaptability and employability skills and therefore supports the belief that individuals who possess high levels of employability could be predicted to reap the benefits of active adaptability (Fugate et al., 2004).

Career adaptability has been shown to relate to personality (Teixeira et al., 2012), employability skills (de Guzman & Choi, 2013), orientations to happiness and work stress (Johnston et al.,

2013), and general and professional well-being (Hartung & Taber, 2008; Hirschi, 2010; Maggiori et al., 2013; Skorikov, 2007). Research (Guan et al., 2014; Guan et al., 2015; Zacher, 2014) has further shown that career adaptability correlates positively with indicators of career success and that employability is a predictor of career success (de Vos et al., 2011; Forrier & Sels, 2003; Hall, 2002; Hartung & Taber, 2008; Hirschi, 2010; Rothwell & Arnold, 2007; Skorikov, 2007; van der Heijde & van der Heijden, 2006).

3.3.2 Psychosocial career preoccupations

Limited research is available on psychosocial career preoccupations (Coetzee, 2015, 2016; Coetzee & Govender, 2020). Mahoney (1987) found that career concerns were not limited to any one age group. Furthermore, no significant differences were found between career preoccupations and different age, gender and race groups (Coetzee, 2015). However, Bester (2018) found significant differences in terms of race, age, job level, and tenure.

Research done by Coetzee (2015) provided evidence of links between individuals' preoccupations with career adaptation, career renewal and employability, and job-related attitudes, such as lowered commitment to the job and career in the present organisation, and heightened interest in external opportunities in the job market.

Coetzee (2015) explored the link between individuals' psychosocial career preoccupations and their cognitive receptivity to technological change and innovation. These constructs relate to adaptive behaviour in the workplace and assume a measure of proactivity and initiative in making changes in one's career and work environment. Bester (2018) and Takawira (2018) found evidence that psychosocial career preoccupations are associated with lower levels of career satisfaction.

Coetzee's (2015) study measured individuals' psychosocial career preoccupations in relation to their work-related commitment, including their job or career commitment and external interests (attachment to interests outside the job and career). Potgieter et al. (2018) found positive links between job embeddedness and satisfaction with retention practices through perceptions of workplace friendship when psychosocial career preoccupations were low. In addition, Coetzee (2015) also found significant positive relationships between the career establishment and work-life adjustment preoccupations and work-related commitment. Finally, Coetzee and Govender (2020) explored individuals' psychological resources as explanatory mechanisms of their adaptive career concerns and found that career preferences and career values explained higher levels of psychosocial career preoccupations; while career drivers and harmonisers explained lower levels of psychosocial career preoccupations.

In summary, research related to career cognitions (career adaptability and psychosocial career preoccupations) indicate relationships with self-perceived employability. Career adaptability, as a well-research construct, relates further positively to career satisfaction and psychosocial career resources. New research related to the understudied construct 'psychosocial career preoccupations', especially in the multi-cultural South African context, is in high demand. Psychosocial career preoccupations relate to career adaptation, work commitment, cognitive receptivity to technological changes and innovation. It is expected that psychosocial career preoccupations will relate to career satisfaction.

Furthermore, although positive relationships exist between career cognitions and psychosocial career resources, and career satisfaction and self-perceived employability, theoretical models do not clarify the relationship dynamics between career satisfaction and self-perceived employability as consequences of the interaction between individuals' career cognitions and psychosocial career resources of knowledge workers jointly and in a single study such as this research.

3.4 IMPLICATIONS FOR CAREER DEVELOPMENT OF KNOWLEDGE WORKERS

In the context of the present research, career adaptability and psychosocial career preoccupations are career cognitions that signal individuals' psychological readiness to adapt and respond to changes in the environment. This view builds on the basic premise of person-environment fit theory that individuals seek optimal congruence with their environment, which results in career and job satisfaction (van Vianen, 2018). The present research regards career satisfaction and self-perceived employability as important outcomes of knowledge workers' career cognitions. Career development interventions for the knowledge worker need to assess career cognitions, that is, their psychological readiness to adapt and respond to changes in the environment to ensure their career satisfaction and self-perceived employability. Career adaptability relates to career cognitions that reflect individuals' readiness to engage in self-regulatory career management behaviours (i.e. taking control of their careers, developing a positive attitude or concern towards the future, becoming curious about career opportunities and possibilities, and having confidence in one's ability to achieve career goals) that would help them move through successful transitions and positive change (Brown et al., 2012).

Psychosocial career preoccupations signal individuals' cognitive appraisals of the adaptive behaviour required to achieve or regain career equilibrium when people transition through career adaptation. These adaptive responses may include getting established and fitting into a new job role, staying employable by searching for opportunities to upskill, and making adjustments in

terms of work/life balance (Coetzee & Govender, 2020). Career development counselling could, for example, assess the type of current psychosocial career preoccupations and the strength of individuals' career adaptability. Individuals could be made aware of the extent to which their career adaptability levels and predominant career preoccupations explain their current level of career satisfaction and self-perceived employability. Career guidance could be provided in terms of career self-management behaviours that support their career adaptability and ability to process career preoccupations.

3.5 SYNTHESIS AND EVALUATION

In organisational career psychology research, employability and adaptability are becoming increasingly important themes (Fugate et al., 2004; van der Heijde & van der Heijden, 2006), and reflect the changing nature of the world of work and careers. This requires people to develop the career meta-competencies they will need to design a meaningful career for life in an uncertain, increasingly chaotic world of work (Schreuder & Coetzee, 2016).

Career adaptability is seen as an important resource throughout the lifespan for sustaining employability and career satisfaction (Coetzee et al., 2015; du Toit, 2014; Savickas, 2011b; Zacher, 2014). Psychosocial career preoccupations related to individuals' employability, continuous learning and development, personal growth and adaptability will prepare individuals for adaptive behaviour, and will also enable them to engage in proactive behaviours that will bring about change to themselves and their career environment (Savickas & Porfeli, 2012). It will further satisfy inner psychological needs (e.g. autonomy, competence and relatedness) that enable them to function optimally and develop to their fullest potential, which will lead to a successful career (Coetzee, 2015; du Toit, 2014). It is evident that the conception of a career and the accompanying possibilities of success have changed dramatically (du Toit, 2014).

Today's workforce is challenged by innovation, flexibility, technological changes, globalisation, increasing instability and high productivity demands, constant uncertainty, organisational restructuring and difficulty in finding a new or adequate job (Kalleberg, 2009; Rasouli et al., 2014; Ribeiro, 2015; Rudisill et al., 2010). Workers need to enhance their adaptation skills and their flexibility and they have to adapt continuously in the current dynamic and uncertain world of work, where both job insecurity and the number of transitions throughout the working life have increased (Coetzee & de Villiers, 2010; Rudisill et al., 2010; Savickas, 2005, 2011c; Savickas & Porfeli, 2012). In a knowledge-based economy, employees who possess the ability to develop, adapt and apply knowledge in unusual, creative and innovative ways increase their value to the organisation

and also their own employability (Coetzee et al., 2015; Potgieter et al., 2012; Prinsloo, 2009; Stafford, 2001).

3.6 CHAPTER SUMMARY

This chapter aimed to conceptualise the variables of relevance to the research, specifically career adaptability and psychosocial career preoccupations and forms part of the first research aim related to the literature review.

Career adaptability and psychosocial career preoccupations of knowledge workers in the 21st century were therefore conceptualised, theoretical models were explained, and variables such as age, gender, race, and other factors influencing the career adaptability and psychosocial career preoccupations were explained.

The chapter concluded with a discussion of the implications for the career development of knowledge workers.

Chapter 4 will further aim to address the first research aim related to the literature review by conceptualising the variables of relevance to the research, specifically psychosocial career resources (employability attributes, career anchors and career values) from a contemporary theoretical perspective.

CHAPTER 4: PSYCHOSOCIAL CAREER RESOURCES (EMPLOYABILITY ATTRIBUTES, CAREER ANCHORS AND CAREER VALUES) OF KNOWLEDGE WORKERS

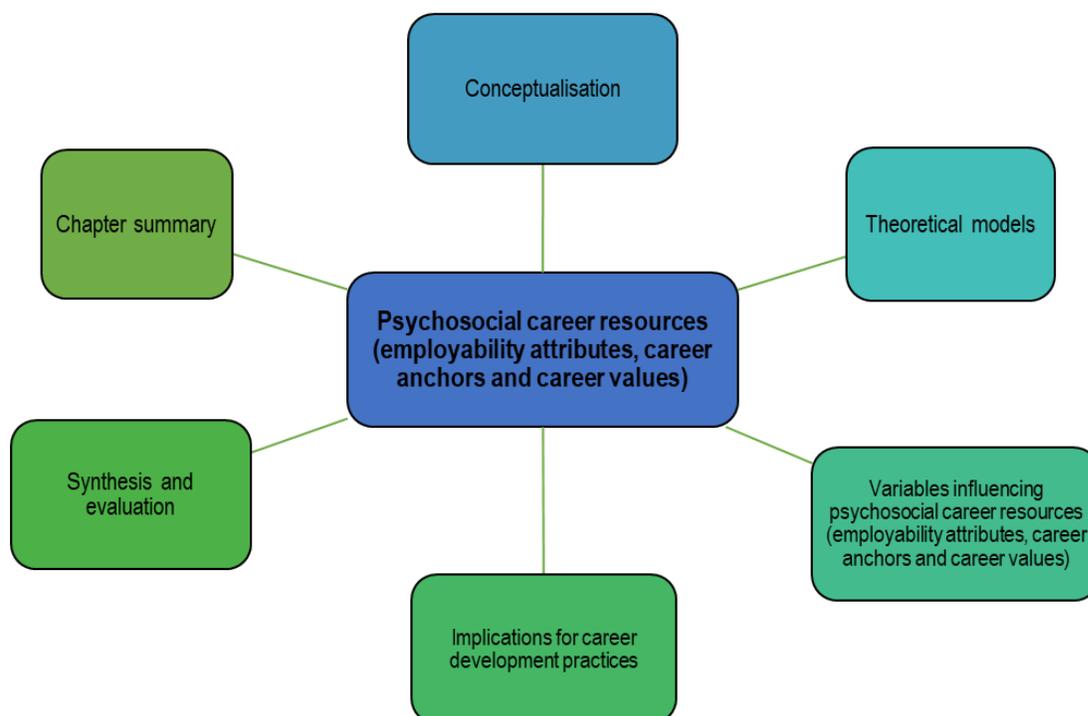
This chapter focuses on psychosocial career resources, including employability attributes, career anchors and career values. The conceptualisation of employability attributes, career anchors and career values are described and the theoretical models, as well as variables influencing psychosocial career resources, are explained. Lastly, the implications of psychosocial career resources on career development of knowledge workers in the context of the knowledge economy are outlined.

This chapter, therefore, addresses the first research aim related to the literature review and conceptualises psychosocial career resources (employability attributes, career anchors and career values) from a contemporary theoretical perspective.

Figure 4.1 illustrates the layout of this chapter.

Figure 4.1

Layout of Chapter 4



Source. Author's own work

4.1 CONCEPTUALISATION

This section conceptualises employability attributes, career anchors and career values as psychosocial career resources.

4.1.1 Psychosocial career resources

Conservation of resources theory (Hobfoll, 1988, 1998, 2001) underwrites the importance of psychosocial resources in coping successfully with demanding environments. Psychosocial career resources denote individuals' unique views, motivations and skills set in navigating their careers (Coetzee & Govender, 2020). Psychosocial resources are seen as those capacities that help individuals influence their environment effectively and regulate their behaviour in order to succeed in work and non-work settings (Coetzee, 2014a). In the careers context, individuals' employability attributes, career anchors and career values are seen as valuable personal resources that enable the achievement of important career goals, career satisfaction and sustained employability (Abessolo et al., 2017; Blokker et al., 2019; Coetzee, 2014a; Coetzee & Schreuder, 2014; Potgieter, 2014).

Building on the basic premises of the dispositional theory of employability (Fugate & Kinicki, 2008; Fugate et al., 2004) (see Chapter 2), employability attributes, career anchors and career values denote individual dispositions that interact with their career cognitions of career adaptability and psychosocial career preoccupations in predicting their career satisfaction and self-perceived employability. The present research proposes that the career cognitions of career adaptability and psychosocial career preoccupations represent in terms of dispositional employability theory (Fugate & Kinicki, 2008; Fugate et al., 2004) individuals' openness to changes at work, aspects of individuals' career identity (i.e. how individuals view themselves at work), and their work and career proactivity (i.e. their tendency to gain knowledge regarding the environment and potential career opportunities). In a similar vein, individuals' employability attributes represent their work and career resilience and social and human capital while career anchors and career values reflect their career motivation. The present study extends the dispositional employability theory (Fugate & Kinicki, 2008; Fugate et al., 2004) by exploring the extent to which individuals' dispositional career cognitions are dependent upon their dispositional psychosocial career resources (i.e. employability attributes, career anchors and career values) in influencing their career satisfaction and self-perceived employability.

4.1.2 Employability attributes

Chapter 2 deliberated aspects of self-perceived employability; this chapter, therefore, focuses specifically on employability attributes as psychosocial career resources that explain the link between career cognitions, career satisfaction and self-perceived employability. The complex and continually changing world of work resulted in blurred and uncertain career paths. Individuals therefore rely increasingly heavily on their own employability competencies, which provide the psychosocial resources they need to navigate their own way through a complex and continually changing work of world (Coetzee, 2014a).

Resources, such as personal motivation, flexibility, a protean career attitude, career adaptability, career identity, proactivity, emotional control and social competence, are some of the psychosocial capacities that lead to employability competencies (Coetzee, 2014a).

Employability is a psychosocial construct representing a combination of career-related attributes (dispositions, values, attitudes and skills) that promote proactive adaptability in changing environments and which enhance an individual's suitability for appropriate and sustainable employment and the likelihood of obtaining career success (Bezuidenhout, 2011; Coetzee, 2011; Fugate et al., 2004; Yorke & Knight, 2007). This definition is further enriched by Rothwell et al. (2009), as well as Schreuder and Coetzee (2016), who define employability as an attribute that includes self-directedness or personal agency in retaining or securing a job or form of employment. Employability uses a range of personal career-related attributes that are generally regarded as alternatives to job security in an unstable world of work and which integrate to assist workers in adapting successfully to work-related changes (Botha, 2011). In terms of Fugate et al.'s (2004) dispositional model of employability (see Chapter 2), dispositional employability attributes are valuable psychosocial career resources that reflect individuals' social and human capital, and their work and career resilience. As a result, Bezuidenhout and Coetzee's (2010) employability attributes framework was relevant to this study as it clarifies employability attributes, such as career self-management, cultural competence, self-efficacy, career resilience, sociability, entrepreneurial orientation, proactivity and emotional literacy.

4.1.3 Career anchors

Career anchors are defined by Schein (1985) as the set of individuals' self-perceptions pertaining to motives and needs, talents and skills, and personal values that individuals' would not give up if they were forced to make a choice. In terms of Fugate et al.'s (2004) dispositional model of employability (see Chapter 2), career anchors are psychosocial career resources that reflect

individuals' career motivation (i.e. the drive to pursue work or careers that help them achieve important career goals and enhance their career satisfaction and employability).

The concept of career anchors allows a distinction to be drawn between career decision-making and initial vocational choice, and acknowledges the impact of the formation of a career self-concept (Feldman & Bolino, 1996). Career anchors are based on self-knowledge, while initial vocational choice is based on career path information, which may be inaccurate at times (Feldman & Bolino, 2000). The self-concept continues to develop based on the self-insight gained through knowledge and experience (Schein, 2006).

Career anchors provide a framework against which individuals can measure themselves. This framework allows for differences between people and between careers (Coetzee & Schreuder, 2009; Kanye & Crous, 2007). Career anchors can also be seen as the work values that people hold, which are associated with the meaning people find in their careers and their preferences in terms of the direction their careers should take (Coetzee & Schreuder, 2009).

Career anchors are nonmonetary factors that drive individuals to make certain career choices. These factors include individuals' career values, preferences and interests, which are important for individuals' career decision-making processes (Schein, 1990, 2006).

4.1.4 Career values

Career values reflect individuals' preferences and relevant importance of self-determination, social and economic aspects of work. Thus, career values signal and indicate individuals' preferences related to working with others, self-expression, and the specific rewards their value (Macnab et al., 2005). Furthermore, career values refer to individuals' general belief about careers and are deeply rooted in vocational behaviour theories that emphasise the concept of the self (Super, 1976, 1980; Super & Šverko, 1995). In terms of this, the *self* is defined as a set of perceptions of the person's characteristics. Within the context of work and career, an individual develops and implements a vocational self-concept through which they attempt to fulfil their career values. Values are those things that are important to an individual. They are a set of underlying desirability criteria that determine one's preference for a subset of work values that are important to assess one's career success (Wils et al., 2014). Building on Fugate et al.'s (2004) dispositional theory of employability (see Chapter 2), career values, like their career anchors, are psychosocial career resources that reflect individuals' career motivation (i.e. the drive to pursue work or careers that help them achieve important career goals and enhance their career satisfaction and employability).

The definition by Super (1973, 1995) indicates that traits, values and interests are derived from needs. The need leads to action, and action leads to modes of behaviour or traits that seek objectives formulated in generic terms (values) or in specific terms (interests). Traits are ways (styles) of acting to meet a need in a given situation. Values are objectives that one seeks to attain to satisfy a need. Interests are the specific activities and objects through which values can be obtained and met. Most career development theorists describe career values as a subset of more global life or personal value systems (Patton, 2000). In career development theory, career values relate to and influence many other aspects of career development, including interests, attitudes, goals, beliefs, ethics, standards and decision-making criteria (Dose, 1997).

Career values related to working with others (service orientation, teamwork and influence), self-expression (creativity, independence, excitement and career development) and extrinsic rewards (financial rewards, prestige and security) were applicable to this study (Macnab et al., 2005).

In conclusion, psychosocial career resources are important personal resources — reflecting individuals' motivations, views and intrinsic self-regulatory competencies. Well-developed psychosocial career resources enhance individuals' ability to achieve career satisfaction and self-perceived employability. Employability attributes can be seen as a set of social and human capacities, that enhance proactive behaviour and resilience in order to achieve career satisfaction and self-perceived employability. Career anchors and career values reflect individuals' self-perceived motives and needs, talents and abilities, attitudes and values. Career anchors and values provide a good indication of what will motivate and enhance individuals' career outcomes. Thus, it is expected that psychosocial career resources will provide a reservoir of resources that will enhance individuals' positive career outcomes.

4.2 THEORETICAL MODELS

The most prevalent theories relevant to the psychosocial career resources related to employability attributes, career anchors and career values are discussed. It was previously mentioned that the assumptions of psychosocial career resources build on some of the basic premises of Fugate et al.'s (2004) dispositional theory of employability. In this chapter, psychosocial career resources are further evaluated within the context of the conservation of resources theory, person–environment fit theory and the social cognitive self-management model.

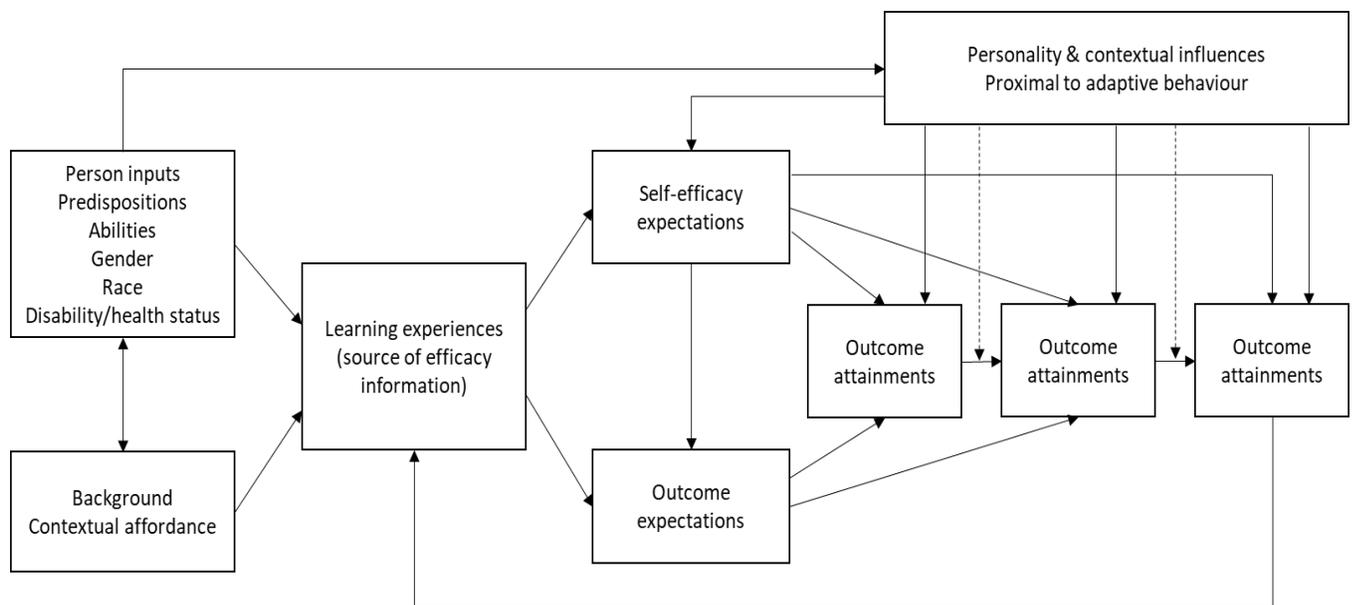
Psychosocial resources represent an individual's self-awareness regarding career behaviour and employability attributes, career anchors and values, which an individual will conserve in order to manage the career development process proactively in a turbulent and uncertain work-career

context (Coetzee, 2014a). Employability attributes, career anchors and values can be seen as psychosocial resources individuals want to protect. As individuals do not act in isolation and constantly interact with the career environment, these psychosocial career resources act as a powerful buffer against the negative impact of job demands on burnout (Salanova et al., 2005; Salanova et al., 2000). Psychosocial career resources are related to better health, better self-development and better social integration, which ultimately influence the individual's career satisfaction and self-perceived employability.

A model of career self-management (presented in Figure 4.2), developed by Lent and Brown (2013) as an extension of the social cognitive career theory (Lent et al., 1994), which was originally constructed based on the person–environment fit theory, acts as a useful framework for how individuals could engage their psychosocial career resources.

Figure 4.2

Social Cognitive Career Model of Career Self-management



Source. Lent and Brown (2013, p. 562)

Figure 4.2 presents the variables connected to predict adaptive career behaviours related to self-management and the positive outcomes that may result from them.

These predictors include the social cognitive variables of self-efficacy, outcome expectations, and goals (basic building blocks of the social cognitive career theory); person inputs, such as personality traits; and both distal and proximal contextual influences on adaptive career

behaviours. Within this model, 'self-efficacy' refers to individuals' perceived ability to perform specific tasks necessary for career preparation, entry or adjustment (Lent & Brown, 2013). 'Outcome expectations' refers to the anticipated (positive or negative) consequences of engaging in adaptive behaviours, and 'goals' involves people's intentions to perform these behaviours (Lent & Brown, 2013).

In conclusion, the new social cognitive career theory model of career self-management focuses on a wide array of adaptive career behaviours, which individuals employ to adjust to and thrive in the career environments across the career lifespan (Lent & Brown, 2013). These behaviours are considered mechanisms of personal agency in that they allow individuals to take part in their own career development, adaptation and renewal. Examples of such adaptive behaviours include career exploration, decision-making, job-searching, identity management and navigation of normative (e.g. work entry, retirement) and unpredictable (e.g. job loss) transitions (Lent et al., 2016).

4.2.1 Employability attributes

Bezuidenhout's (2011) employability attributes model includes a variety of psychosocial career resources, which promote adaptive cognition, affect and behaviour, and enhance an individual's suitability for appropriate and sustained employment opportunities. Bridgstock's (2009) conceptual model of employability was used as a framework for the development of the employability attributes model (Bezuidenhout, 2011). Coetzee's (2008) psychological career resources model is also included in this section as career-related preferences, values, attitudes and attributes often lead to self-empowering, proactive career behaviour that promotes general employability.

4.2.1.1 Coetzee's psychological career resources model

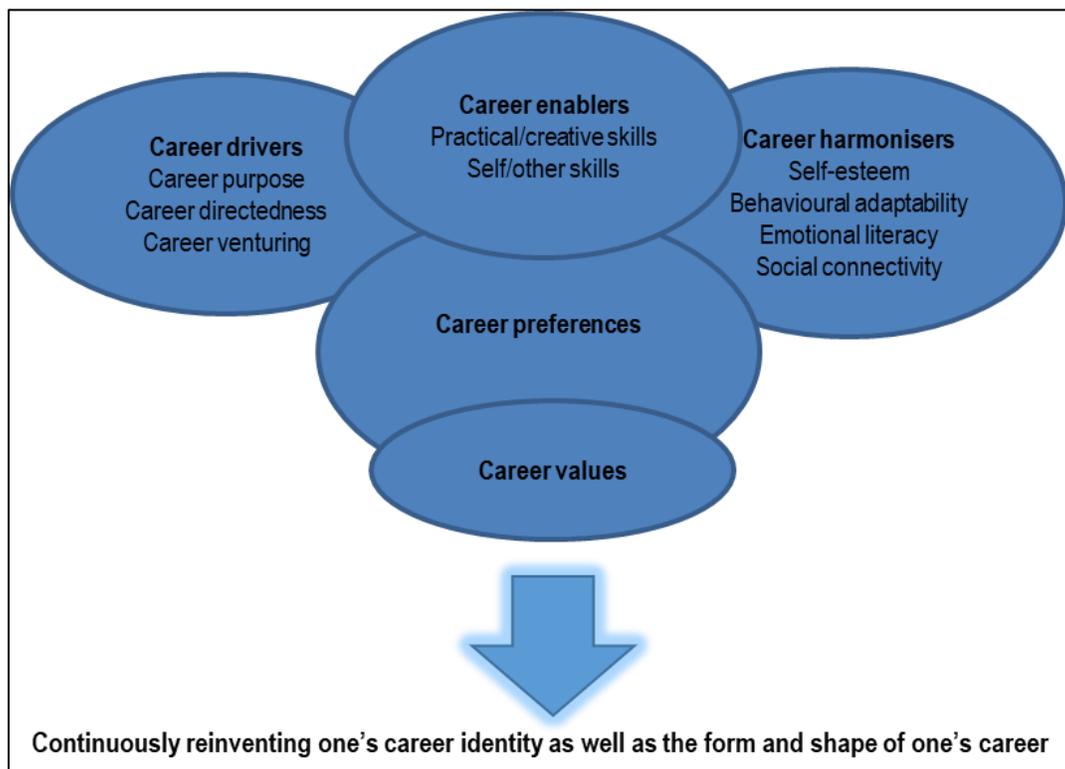
Coetzee (2008) claims that individuals within the contemporary career context are seen as competency traders and their knowledge, transferable skills, distinctive attributes, experiences and achievements are all important for their employability. Employability is viewed as the ability for gaining access to, adjusting to, and being productive in the employment situation (Coetzee & Roythorne-Jacobs, 2012). In order for individuals to adapt to changing work and career environments and attain career success, they need to leverage their psychological career resources or meta-competencies to the maximum.

Coetzee (2014a) views psychological career resources as the arrangement of career-related orientations, values, attitudes, abilities and attributes that result in self-empowering career

activities and which advance general employability. Figure 4.3 illustrates how the various psychological career resources fit together.

Figure 4.3

Psychological Career Resources



Source. Coetzee (2006, 2008, 2014a)

Coetzee (2008, 2014a) describes the psychological career resources model, based on Coetzee (2007), as comprising four broad dimensions, namely career preferences and career values, career drivers, career enablers and career harmonisers.

Individuals' career preferences and career values direct their decisions about their careers. *Career preferences* are regarded as the stable cognitive or conceptual structures underpinning the thinking about one's career (Coetzee, 2008, 2014a), whilst *career values* are those beliefs that give meaning to specific career preferences. Essentially, these two psychological career resources guide the long-term decisions that individuals make regarding their career, and are the definitive factors in the meaning of a career to an individual (Coetzee & Bergh, 2009).

The *drivers* are individuals' career motivation, career commitment, career maturity, career self-efficacy, career self-management skills, and intentionality, which invigorate individuals and drive

them to try out various career and employment possibilities. The *enablers* are individuals' transferable skills and talents, self-knowledge, work engagement, self-concept, and career identity that help people to be successful in their careers (Coetzee, 2008, 2014a).

The *harmonisers* (individuals' self-esteem, behavioural adaptability, emotional literacy and social connectivity) refer to the psychological attributes that help to advance flexibility and resiliency. They also act as controls and help to balance the career drivers to prevent people from burning themselves out in the process of practising and reinventing their careers (Coetzee, 2008; Coetzee & Roythorne-Jacobs, 2012).

In order to facilitate the enactment of proactive career activities, the various facets of a person's psychological career resources need to be well developed. If any of these aspects are in truth out of balance, none of the career resource aspects can optimally function to enact self-empowering career activities (Coetzee, 2008, 2014a; Coetzee & Schreuder, 2009).

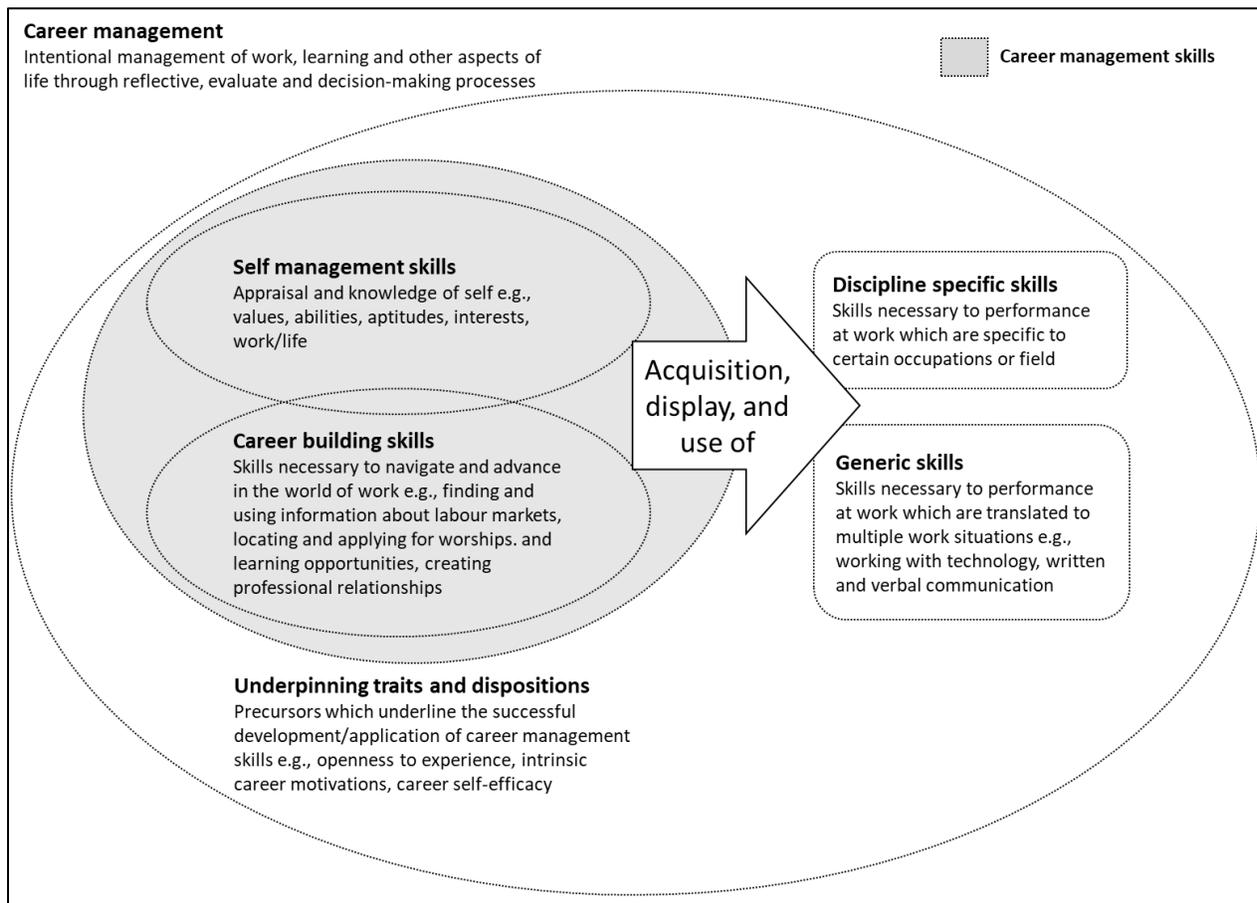
In summary, the value of this model is not only that it is based on the South African environment, but also that it is sufficiently comprehensive to include many of the important attributes to sustain employability. Bester (2018) found that when individuals have well-developed psychological career resources, there are more likely to achieve career satisfaction. As such, the model includes concepts such as adaptability, career identity and social and human capital as described by Fugate et al. (2004), and career resilience, career proactivity, career motivation and work identity as described by Fugate and Kinicki (2008). The model furthermore relates to Bridgstock's (2009) model of graduate attributes for employability as it includes career self-management skills, career-building skills and underpinning dispositions and traits.

4.2.1.2 *Bridgstock's model of graduate attributes for employability*

Bridgstock (2009) developed a comprehensive model of graduate attributes for employability, which is illustrated in Figure 4.4. Each dimension of the model, namely career management, self-management skills, career-building skills, generic skills, discipline-specific skills, employability skills and underpinning traits and dispositions is described (Bridgstock, 2009).

Figure 4.4

Conceptual Model of Graduate Attributes for Employability



Source. Bridgstock (2009, p. 36)

Career management entails a continuous process of drawing on reflective, evaluative and decision-making processes by utilising self-management and career-building skills (that are founded on a choice of core dispositions and traits) to attain, demonstrate and make use of generic and discipline-specific skills successfully in contemporary employment landscapes. Such career management activities include creating meaningful career goals, recognising and taking part in learning opportunities and strategic employment decisions, becoming familiar with the work–life divide, and realising the interaction between work, the economy and society. It also holds a short-term meaning in its focus on obtaining and maintaining employment (Bridgstock, 2009).

Self-management skills, which relate to the career identity concept (Fugate et al., 2004), refer to individuals' perception and judgement of their values, abilities, interests and goals. Jones and

DeFillippi (1996) are of the opinion that people's identities, interests and meanings in contemporary career systems are integrated into the status and roles of certain occupations, professions and industries. In boundaryless careers, where secure employment is increasingly less certain, it is necessary to develop a clear sense of one's personal values and career goals in addition to a greater amount of self-direction and motivation (Bridgstock, 2009).

Career-building skills involve those skills necessary for finding and using data about careers, the labour market and the employment landscape and then locating, obtaining and maintaining a job. These skills also include using career opportunities optimally for promotional or other desirable career outcomes. Bridgstock (2009) describes career-building skills as including the following:

- Knowledge of one's industry. Individuals have to know which opportunities and threats are present and which aspects are essential to be successful. This involves knowledge of 'the rules of the game', such as the structure of the industry, its beliefs, norms, values and culture, as well as labour market information, such as salary averages and unemployment rates.
- Individuals must have the capability to identify possibilities for advancement successfully and to decide on the best possible prospects for advancement relating to roles, projects and location.
- Individuals must know how long to stay in a specific role, and when new employment or training opportunities must be pursued, and should have the capability to move swiftly when opportunities emerge.
- Individuals must know how to apply for and obtain a job by demonstrating their skills and abilities in an attractive manner to employers or clients.
- Individuals must generate strategic relationships (both personal and professional) with people who may offer opportunities and significant resources as part of creating social capital.

'Generic skills' refers to transferable skills, key competencies or employability skills described in the literature (Bridgstock, 2009). 'Discipline-specific skills' refers to skills derived from specific domains, subject areas or disciplines, which are conventionally included in university curricula to deal with particular job-related requirements (Bridgstock, 2009). Employability skills comprise generic and discipline-specific skills as well as career management skills, which consist of self-management and career-building skills.

In summary, this model of graduate attributes for employability provides valuable insight into the attributes that individuals need to acquire in order to be employable. Great emphasis is placed on the importance of career self-management, particularly in the light of the growing need for individuals to deal proactively with the contemporary world of work and to prepare for the future by managing their careers effectively.

4.2.1.3 Bezuidenhout's employability attributes framework

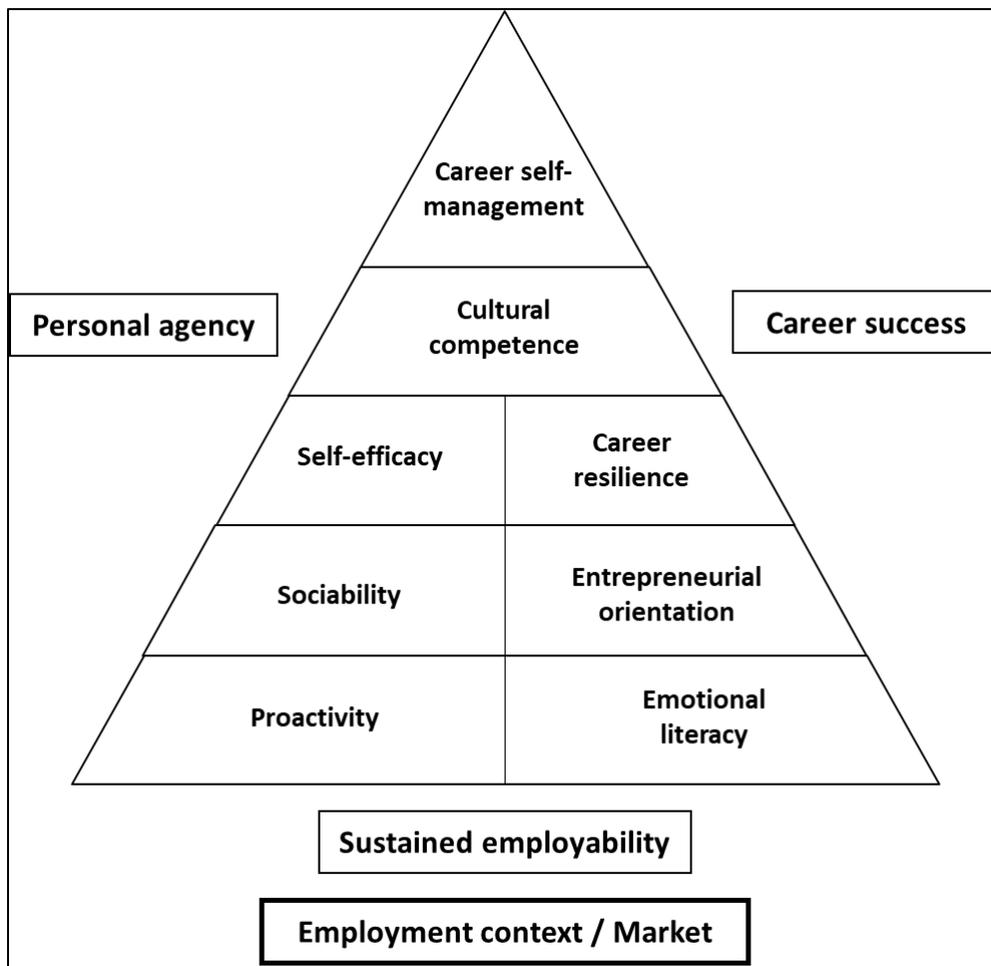
Bezuidenhout (2011) and Coetzee (2010) developed an employability attributes framework that consists of eight core career-related employability attributes deemed important for increasing an individual's likelihood of securing and maintaining employment opportunities (Bezuidenhout, 2011; Coetzee, 2010). Figure 4.5 illustrates the employability attributes framework. The framework comprises the following attributes: career self-management, cultural competence, self-efficacy, career resilience, sociability, entrepreneurial orientation, pro-activity and emotional literacy which are discussed below.

- 'Career self-management drive' refers to a tendency to manage one's career proactively by regularly collecting career-related information to enhance knowledge of the self (e.g. career identity, career aspirations, values, abilities) and the external environment (including the world of work) to develop realistic career goals and action plans to achieve these goals, obtain feedback to enhance career decision-making, updating one's skills and seeking job opportunities. Career self-management drive consists of self-, environmental and job opportunity exploration; feedback seeking; and formulating career goals and action plans (Bezuidenhout, 2011).
- 'Cultural competence' refers to a person's effectiveness in understanding and working effectively with people across different groups (Bezuidenhout, 2011).
- 'Self-efficacy' refers to an individual's perception of the extent of difficulty of career-related or performance-related tasks that they believe they are going to attempt as well as their perception of how well they will be able to execute the required actions in order to deal with those tasks. In addition, 'self-efficacy' refers to the extent to which that perception will persist, despite obstacles (Schreuder & Coetzee, 2016). 'Self-efficacy' also refers to the estimate that an individual makes of his or her ability to cope, perform and thrive (Bezuidenhout, 2011).

- ‘Career resilience’ is a personal disposition that facilitates a high degree of adaptability, flexibility, self-confidence and competence, regardless of adverse career circumstances (Bezuidenhout, 2011).
- ‘Sociability’ refers to being open to establishing and maintaining social contacts and utilising formal and informal networks to the advantage of one’s career (Bezuidenhout, 2011).
- ‘Entrepreneurial orientation’ refers to a preference for innovation and creativity, a propensity to take risks, a need for achievement, tolerance for ambiguity, and a preference for autonomy in exploiting opportunities that exist in the career environment (Bezuidenhout, 2011).

Figure 4.5

Conceptual Overview of the Skills and Attributes Underlying Students’ Employability



Source. Coetzee (2011, p. 18)

- 'Proactivity' refers to a person's disposition towards engaging in active role orientations, and implies future-oriented and self-initiated action to change and improve oneself and/or one's situation (Bezuidenhout, 2011).
- Emotional literacy is the adaptive use of emotions, and refers to the extent to which individuals perceive themselves as able to recognise, understand and manage emotions in themselves and in other people. People with emotional literacy are generally aware of their own emotions, have empathy with others, can regulate their own and others' emotions, use emotions when making decisions, and are able to express a range of affect (Bezuidenhout, 2011).

Coetzee's (2008, 2014a) psychological career resources model relates to career-related preferences, values, attitudes and attributes, which often lead to self-empowering, proactive career behaviour that promotes general employability, and which were fundamental in the development of Bezuidenhout's (2011) employability attributes model.

Bezuidenhout's (2011) employability attributes model was relevant to the research as this model includes a variety of psychosocial career resources relating to the career (career self-management, career resilience and entrepreneurial orientation), as well as to an individual's intrapersonal (proactivity, self-efficacy and emotional literacy) and interpersonal (sociability and cultural competence) behavioural domains. These domains promote adaptive cognition, affect and behaviour (career satisfaction), and enhance an individual's suitability for appropriate and sustained employment opportunities.

Bridgstock's (2009) model provides valuable insight into the attributes that graduates need to acquire in order to become employable. Although considerable emphasis is placed on the importance of self-management, this model focuses on the development of skills important to obtain employment, whereas Bezuidenhout's (2011) model focuses on a variety of attributes related to the career, intrapersonal and interpersonal domains, that reflect individuals that reflect individuals' social and human capital, and their work and career resilience (Fugate et al., 2004).

Knowledge workers should strive to conserve employability attributes as psychosocial career resources, which facilitate proactive career management behaviours (Coetzee, 2014a; Potgieter, 2014) and reduce the effect of stress on the individual. In the dynamic career environment, employability attributes relate to resources that will prepare an individual for cognitive adjustments of goals and behaviours in order to enhance the person–environment congruence (Botha, 2014;

Lent, 2013), which will relate to individuals' career satisfaction and self-perceived career employability.

4.2.2 Career anchors

Career anchors theory is led predominantly by Schein's career anchors theory (Schein, 1990) and was also relevant to the present study. For this reason, Schein's career anchors theory is deliberated in detail.

4.2.2.1 Schein's career anchors theory

Schein (1978) coined the term 'career anchor' to describe a collection of self-observed attitudes, values, needs and talents that develop over time, and which when developed, shape and guide individual career choices. This normally refers to a set of talents, values and motives that a person would not give up when forced to make a choice (Schein, 1990), and thus reflect individuals' career motivation in term of Fugate et al.'s (2004) dispositional employability theory.

Schein (1978) identified the following eight career anchors that could assist individuals in making the right career choices, namely technical/functional competence, general managerial competence, autonomy/independence, security/stability, entrepreneurial creativity, service/dedication to a cause, pure challenge, and lifestyle (Ellison & Schreuder, 2000; Schein, 2006).

(a) Technical/functional competence

According to Schein (1978), people with a preference for a technical/functional career anchor gets satisfaction from being experts in a particular field and from being given maximum autonomy in the execution of their goals. People organise their careers around particular technical/functional competencies. When these people are moved to other areas of work, they will most probably be less satisfied and less skilled, and they may even feel pulled back to their areas of competence and enjoyment because their identity is built around their work content. Technical/functional people generally dislike being restrained by facilities, budgets, resources, and unnecessary bureaucracies that prevent them from performing their jobs properly. It is desirable for this group of people to do challenging work. If the work does not challenge their skills and abilities, it quickly becomes tedious and demeaning, resulting in them seeking other challenging assignments elsewhere. Because their self-esteem hinges on them exercising their talents, they need tasks that permit such exercise. Promotion for this group does not necessarily have to be in terms of the rank. Being promoted into a more general job is viewed as entirely undesirable because it forces them out of the specialities with which they identify (Lee & Wong, 2004).

Technical/functional people desire to be remunerated for their expertise, which is regularly defined by their level of education and work experience. They check whether their salaries are market-related in terms of people of the same profession in the industry. They are oriented towards external equity, meaning that they will compare their salaries to what others of the same skill level earn in other organisations. Technical/functional people are oriented towards absolute pay level rather than towards special incentives, such as bonuses or stock options as forms of recognition. Retention of this group of people is very important to the organisation because they are regarded as highly mobile and they leave if they feel they are not remunerated fairly (Schein, 1990). Recognition from peers is more valued by technical/functional people. They feel their peers understand better in terms of what the employee achieved than the uninformed recognition from a supervisor or manager. Top of the list of valued recognitions in terms of priority are (1) opportunity for advanced learning and self-development in that functional area; (2) organisation sponsored sabbaticals; (3) encouragement to attend professional meetings and so forth (Schein, 1990).

(b) General managerial competence

People with a preference for general managerial competence want to become general managers. They find that managing others, advancement, more responsibility, leadership and income are all vital to them. This group views specialisation as a way of gaining appropriate experience (Kniveton, 2004). Important values and motives for this group of people are advancements up the corporate ladder to higher levels of responsibility, leadership opportunities, contribution to the success of their organisations, and high income (Schein, 1990).

According to Schein (1990), the three basic skills needed by people with general managerial competence are analytical competence, interpersonal and intergroup competence, and emotional competence.

- analytical competence: the ability to identify, analyse, synthesise, and solve problems using incomplete information and under uncertainty;
- interpersonal and intergroup competence: the ability to influence, supervise, lead, handle and control people at all levels of the organisation to achieve organisational goals. This skill is about eliciting valid information from others, getting them to collaborate to achieve synergistic outcomes, motivating people to contribute what they know to the problem-solving process, communicating clearly the goals to be achieved, facilitating the decision-

making process and implementation, monitoring progress, and instituting corrective action if necessary; and

- emotional competence: the capability to be inspired by emotional and interpersonal issues and crises rather than to be exhausted or incapacitated by them. It is the ability to withstand high levels of responsibility without becoming paralysed. It is the capacity to exercise power and make tough decisions without guilt or shame. Most general managers referred to the painful process of learning as to make tough decisions, such as laying off a valued older employee, committing huge sums of money to a project, asking subordinates to perform a very difficult task that they might not want to do, or inspiring a demoralised organisation (Schein, 1990).

People with general managerial competence get attracted to varying and challenging work (Schein, 1990). They measure their success through organisational success. The success or failure of the organisational goals reflects on their managerial competence. Since they are the drivers of organisational objectives, this group of people expect higher salaries than their subordinates. They have high regard for a company that has good retirement benefits. They insist on promotion based on merit, measured performance and results (Schein, 1990). Even though they acknowledge that personality style, seniority, politics and other factors play a role in determining promotions, general managers believe that the ability to get results is the critical criterion (Schein, 1990). The most valued kind of recognition for the managerially anchored group is a promotion to a position of higher responsibility. According to Schein (1990), such positions are measured by things such as the rank, title, salary and number of subordinates, size of the budget, and the importance of the project or department or division to the future of the company. This group also values recognition in the form of raises and bonuses. They enjoy status symbols, such as large offices, cars and, most importantly, approval by their superiors.

(c) *Entrepreneurial creativity*

Entrepreneurially anchored people are primarily inspired by a high need for creating or building something with which they can be identified. They are more interested in starting up new projects than in managing current ones (Kniveton, 2004). This group is not interested in running businesses for the sake of autonomy; they are obsessed with proving that they can create businesses. For them, making money is the number one key to success. Entrepreneurially anchored people typically began to pursue their dreams relentlessly early in life, maybe by making a small amount of money in high school. These individuals have a high need for making something

on their own, either by developing a new product or service, building a new business enterprise through financial manipulation, or even by starting their own business (Schein, 1990). Entrepreneurially anchored people are obsessed with the need for challenging work where they have to create or continue to invent new products or services. Ownership is ultimately the most important thing for entrepreneurs. If they develop a product, owning the patent is the most important thing to them than paying themselves salaries. Schein (1990) continues to say that entrepreneurs want to accumulate wealth, not so much for their own sake but as a way of showing the world what they have accomplished. Benefit packages are probably not a meaningful issue to them. They also value high personal visibility and public recognition. They display this need by placing their own names on their products and companies. Schein (1990) maintains that large organisations that attempt to retain entrepreneurs often misunderstand the intensity of their need to have their names on products they invented. Unless given control of the new enterprise with patents and 51% of the stock, an entrepreneurially anchored person will not stay with an organisation.

(d) Autonomy/Independence

This anchor is about an individual's independence and freedom from an organisation. People with a preference for the autonomy/independence anchor cannot tolerate being bound by rules, procedures, working hours, dress codes and other norms (Schein, 1990). They prefer further development in a technical area rather than in general management. This group finds organisational life to be restraining, unreasonable and interfering with their private lives. These individuals search for work situations where they will be outstandingly liberated from organisational constraints, in order to pursue their professional competence (Kniveton, 2004).

According to Schein (1990), extreme autonomy needs a high degree of education and professionalism, where the educational process itself teaches the person to be entirely self-reliant and responsible. Individuals with a strong autonomy/independence anchor are to be expected to have higher levels of entrepreneurial goals. If interested in business or management, they may go into consulting. Woo et al. (1991) maintain that in organisations, people with a preference for the autonomy/independence anchor would go for jobs such as research and development, market research and financial analysis, where autonomy is relatively possible. This group of people prefer clearly delineated time-bound project work. It can be part-time, full-time or even temporal kind of work, they do not mind. Since they are autonomy/independence-anchored, they should be given goals and targets and be left alone, as they do not close supervision. Autonomy/independence-anchored people prefer merit pay for performance, immediate payoffs, bonuses and other forms

of compensation with no strings attached. They prefer portable, cafeteria-style benefits that permit them to select the options most suitable for their life situations at given points in time. This group values promotion that reflects past accomplishments. In other words, promotion should bring more autonomy to them than the previous job. Portable recognition, such as awards, prizes and letters of commendation mean more to this group than promotions, title changes or even financial bonuses (Schein, 1990).

(e) *Security/stability*

According to Schein (1990), people with a preference for security/stability competence have a high need for organising their careers in order to feel safe and secure. They are highly driven by long-term job security and attachment to one organisation and are more than keen to acclimatise to norms and standards of their organisation. They are devoted to their organisation and they want to secure ties with the organisation. These are people who do not mind to be in one specific place for all of their working life, especially if the other members of their families also reside in a similar place. These employees can stay anywhere as long as they are with their families or their next of kin. High-level jobs and important positions do not matter much; what is of utmost importance to them is their association with the organisation (Schein, 1990).

These individuals are afraid of taking risks, so they associate with organisations that provide them with job security and long-term career stability. The highly talented reach high levels in the organisation. They become content when they find security and they are more comfortable with steady and predictable jobs. They become socialised into the values and norms of the organisation, to the extent of being labelled a 'conformist' or 'organisation man'. Working conditions matter much to security/stability-oriented people rather than the type of work. They prefer stability in the kind of work they do since security is of more concern to them than other intrinsic motivational factors in a job. Because of their loyalty to the organisation, these people want to be sure that their length of service in the company will guarantee them steady increases for each year of completed service. Tenure is very important to this group; hence, they value promotion to senior positions based on tenure in a certain position. However, according to Schein (1990), this group prefers distributed grade and rank systems that properly explain how long a person should serve in any given grade before being promoted to the next grade. Reassurance with further stability and continued employment is some kind of recognition for a security/stability-anchored person. They want to be assured that their loyalty makes a real input to the organisation's performance (Schein, 1990).

(f) *Lifestyle*

According to Schein (1990), this anchor is predominantly concerned with different facets of life, striking a balance between the career, with the family and with other personal interests. Individuals with this orientation desire to develop a lifestyle that integrates family concerns, career concerns and concerns for self-development. These individuals tend to be more concerned with the possibility of incorporating work, family and self-concerns into a comprehensive lifestyle. They are conscious of choosing careers that strike a balance between their professional and private lives. According to Schein (2006), more and more people are searching for meaningful careers that can accommodate other lifestyle factors. Unlike the autonomy-anchored person, these individuals are willing to work for organisations as long as the organisation provides the right options at the right time. Such options include travelling when situations permit, sabbatical leave, paternity and maternity leave, day-care facilities and flexible working hours (Schein, 1990).

(g) *Service/dedication to a cause*

Employees with a sense of service dedicate their services to people and they want to make the world a better place in which to live and work. This anchor is mainly concerned with improving the world and helping society. People with a sense of service are anxious to work in a field that meets their values, rather than their skills (Kniveton, 2004). This group is more interested in fulfilling certain values than in their talents and areas of competence when they occupy positions. Helping people and improving the world are what matter most to people with a preference for a service/dedication competence. They are normally interested in helping professions such as medicine, nursing, social work, teaching and ministry. In the business environment, they are more interested in positions such as HR consultants, labour lawyers and medical research. They want work that is going to allow them to influence their employing organisations or social policies to meet their values. They want fair pay for their contributions and portable benefits. People with a sense of the service/dedication anchor value promotional systems that recognise their contribution. They want value promotional systems that are going to move them into positions of more influence and freedom to operate autonomously. This group values appreciation and support both from their professional counterparts and from their superiors (Schein, 1990).

(h) *Pure challenge*

This anchor is primarily concerned with overcoming difficulties or problems. Competition and winning are of the greatest importance to people with this anchor. People with a preference for pure challenge competence prefer jobs that present them with a challenge. They take pride in

solving what seem to be unsolvable problems. Some high-level strategy/management consultants seem to fit this pattern in that they enjoy difficult assignments. Some of these people are attracted to general management positions because they present a variety of intense challenges. People with a pure challenge competence seek opportunities that are going to test their ability to solve problems, and they want to prove that they can overcome obstacles. With regard to the typical jobs in which the pure challenge person would be interested, there is no generalisation; this would depend on the pay, benefits, career growth and other forms of recognition (Schein, 1990).

A career anchor is a mixture of perceived areas of competence, motives and values that pull a person towards specific role types in his or her work life and is formed whenever the individual experiences any work-related successes in a particular area of work (Schein, 1990). The career anchor is important because it can either hinder or enhance individual career choices, and decisions to move from one job to another. It shapes the intrinsic motivation an individual has towards life, his or her views of the future, his or her choices of specific occupations and work settings, as well as his or her reaction to work experiences (Schein, 1990).

4.2.2.2 Octagonal model of career anchors

Feldman and Bolino (1996) reviewed Schein's career anchor model, and propose the octagonal model as an alternative. Feldman and Bolino (1996) argue that the centrality of career anchors applies within each of the three groups of anchors (talents and abilities, motives and needs, and attitudes and values), as opposed to within the entire anchor as per Schein's proposition (Wils et al., 2010).

According to Feldman and Bolino (1996), the **talent-based anchors** consist of –

- managerial competence (willingness to solve complex, whole-of-organisation problems and undertake subsequent decision-making);
- technical/functional competence (the achievement of expert status among peers); and
- entrepreneurial creativity (opportunity for creativity and identification of new businesses, products or services).

The same authors argue that **needs-based anchors** consist of –

- security and stability (long-term employment for health benefits and retirement options);
- autonomy and independence (personal freedom in job content and settings); and
- lifestyle motivations (balancing one's personal and family welfare with work commitments).

The **value-based anchors** according to Feldman and Bolino (1996), consist of –

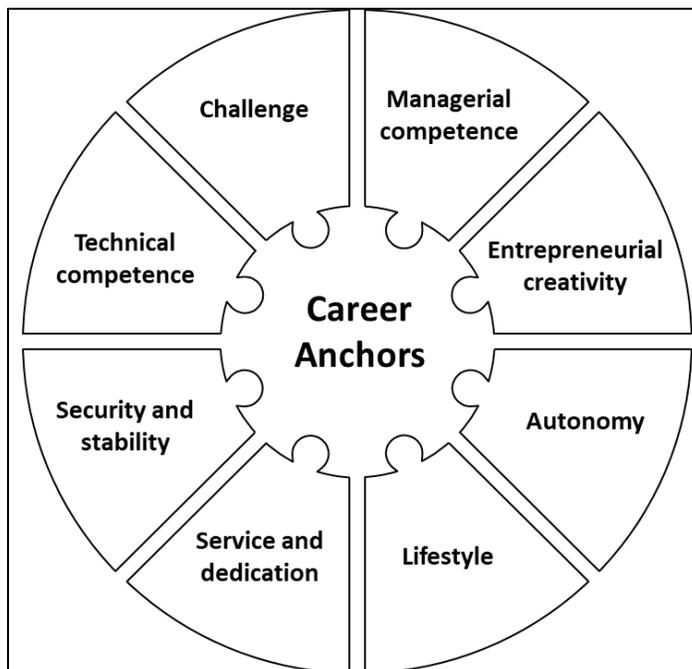
- pure challenge (testing personal endurance through risky projects or physically challenging work); and
- service or dedication to a cause (working for the greater good of organisations or communities).

According to Feldman and Bolino (1996), an individual can have a dominant career anchor in each of these three categories. They argue that there is a primary and a secondary anchor and these are complementary. Feldman and Bolino are adamant that an individual can possess more than one anchor owing to personal ambivalence towards certain career choices or objectives.

The octagonal career anchor model (Figure 4.6) illustrates the proximity of compatible career anchors (i.e. technical competence and challenge), and an opposition between career anchors that are considered to be incompatible (i.e. in diametrically opposed corners, such as security and stability and entrepreneurial creativity).

Figure 4.6

Octagonal Model of Career Anchors



Source. Feldman and Bolino (1996, p. 106)

Table 4.1 provides an integrated overview of the concept of career anchors.

Table 4.1*Career Anchors*

Talents-based career anchors	Needs-based career anchors	Values-based career anchors
Technical/functional competence Achievement of expert status among peers	Autonomy/independence Personal freedom in job content and settings	Service/dedication to a cause Working for the greater organisations or communities
Managerial competence Willingness to solve complex, whole-of-organisation problems and undertake subsequent decision-making	Security and stability Long-term employment for health benefits and retirement options	Pure challenge Testing personal endurance through risky projects or physically challenging work
Entrepreneurial creativity Opportunity for creativity and identification of new businesses, products or services	Lifestyle Obtaining balance between personal and family welfare and work commitments	

Source. Adapted from Coetzee et al. (2010)

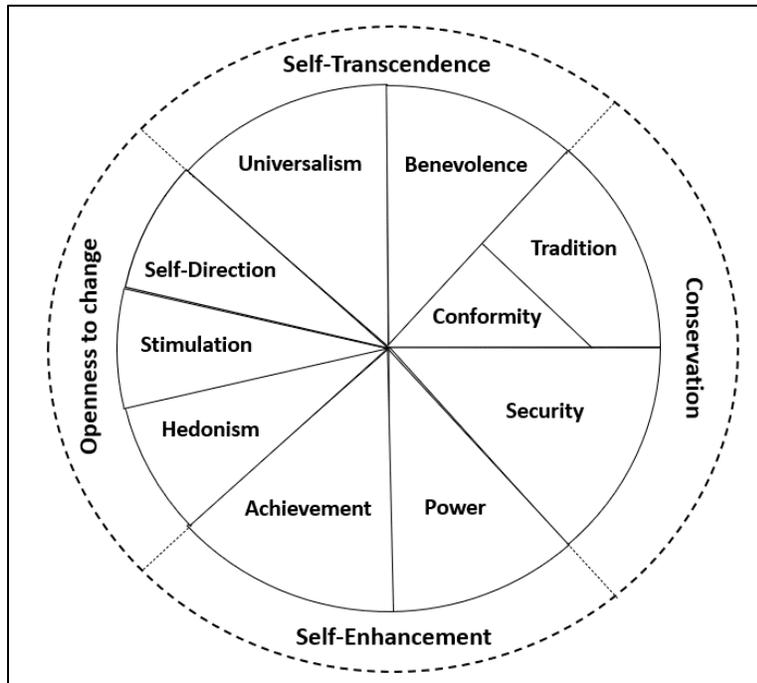
Finally, individuals need to be aware of their dominant career anchors. When people know their career anchors, they are empowered to face career choices and decisions in a way that is consistent with their values; and are driven to pursue career goals to enhance their career satisfaction and self-perceived employability where (Schein, 1990).

4.2.2.3 The value structure model

Schwartz (1992) introduced the theory of the universality of value structure. Values are said to be universal because they depend on common requirements, such as the satisfaction of needs of individuals as biological organisms, requisites of coordinated social interaction, and survival welfare and need of groups (Wils et al., 2010). Schwartz (1992) explains the dynamics of values on two levels, as illustrated in Figure 4.7.

Figure 4.7

The Value Structure Model



Source. Wils et al. (2010, p. 242) adapted from Schwartz (1992)

4.2.2.4 Circular model of career anchors

Wils et al. (2010) compared Schwartz's (1992) model to that of Feldman and Bolino (1996), and found that some motivational domains were directly linked to career anchors.

- The domain of self-direction is associated with the anchors of autonomy/independence and entrepreneurial creativity because this motivational domain and these career anchors share common values, namely independence, freedom and creativity.
- The domain of stimulation is linked to the anchor of challenge because this domain and anchor rest on the same values, namely varied life and exciting life.
- The power value domain corresponds to the anchors of managerial competence and identity because they rest on the same values, namely social power, authority, wealth and social recognition.
- The domain of security is linked to the anchors of security, stability and lifestyle because they share common values, namely family security and health.

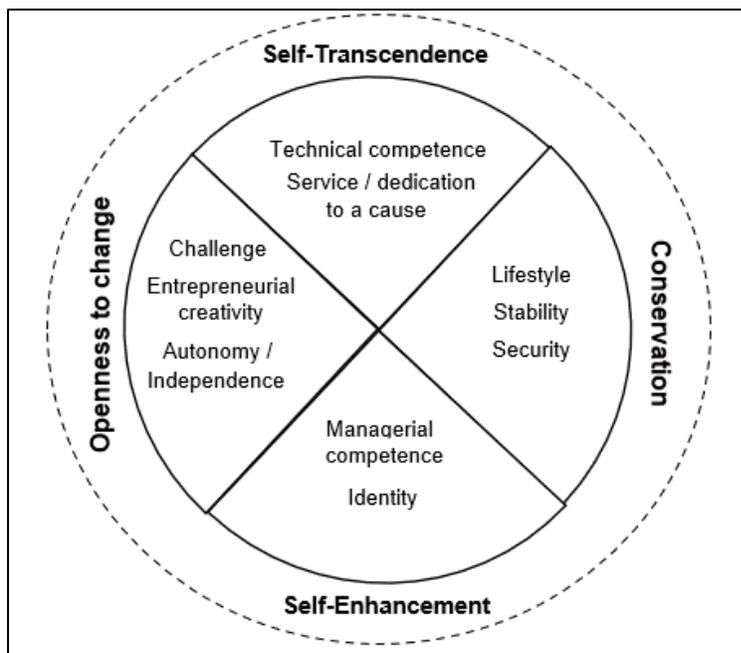
- The domain of benevolence is linked to the service/dedication to a cause anchor because both concepts encompass common fundamental values, such as the meaning of life and mature love.
- The domain of quest for technical knowledge (rational intellectual truth), which encompasses the value of knowledge and reason, is paired tentatively with the technical competence anchor.

Wils et al. (2010) found that career anchors are not divided into only three distinct categories (talents and abilities, motives and needs, and attitudes and values) as indicated by Feldman and Bolino (1996), but rather into several different motivational domains. The dynamics of career anchors can therefore be observed within each motivational domain, which could comprise several complementary career anchors (principle of compatibility) and between orthogonal motivational domains, which oppose other conflictual anchors (principle of incompatibility).

The circular model of career anchor structure (Wils et al., 2010) illustrates that career anchors can be structured using the four quadrants of Schwartz's (1992) model. The dynamics between the two axes of Schwartz and the ten career anchors are shown in Figure 4.8.

Figure 4.8

Circular Model of Career Anchors Structure



Source. Wils et al. (2010, p. 243)

In summary, Schein (1978) argues that individuals can only have one career anchor that will guide their career decisions, and that anchor will remain stable throughout their career life. However, Feldman and Bolino (1996), in their octagonal model of career anchors, argue that one to three anchors cluster together to form an individual's career preferences. Schwartz (1992) incorporated career anchors in his circular value model structure, as values universal. His main assumption is that, if values are universal, and career anchors can be directly linked to the values, then career anchors are also universal and the theory of career anchors can be applied anywhere in the world and across workplaces.

Career anchors thus relate to individuals' career patterns of self-perceived talents, abilities, motives, needs, attitudes and values; therefore, the career anchors model of Schein (1990) was relevant to this study. Career anchors are psychosocial career resources that will allow individuals to maintain a sense of mastery in their lives, feel in control and able to influence their environment successfully (Hobfoll et al., 2003). Career anchors can, therefore, be considered a resource that individuals will conserve in order to increase career satisfaction and self-perceived employability. Individuals rely on psychosocial resources to be engaged in the adaptation to the new career environment, which reflects the interplay between personal characteristics and the available resources in the environment (Bakker et al., 2003; Hakanen et al., 2006).

4.2.3 Career values

Together with talents, abilities, motives, needs, attitudes, norms and interests, values reside within a constellation of psychological constructs posited to affect individual adjustment to the social world (Greenhaus & Callanan, 2006). Career values will be discussed from the perspective of Super's (1995) work values, the circular model of career values (Wils et al., 2014) Blustein's (2006) core work functions and Macnab et al.'s (2005) career values.

4.2.3.1 Super's work values

Super (1995) believed that people seek to meet basic human needs through involvement in work, and sought to measure what people want to accomplish through involvement in work by utilising the construct of career or work values.

Super (1995) proposes fifteen values, which are summarised in Table 4.2. In Super's (1995) model, interests are thought to be more specific than values and reflect activities a person can undertake to satisfy a need. Super (1995) argues that values are more fundamental than interests for career guidance since values provide a sense of purpose. Interests, in his view, are secondary to and develop from values.

Table 4.2
Super's Work Values

Work value	Description
1 Altruism	Work in which you help others
2 Aesthetics	Work in which you need to have artistic ability
3 Creativity	Work in which you try out new ideas and suggestions
4 Intellectual stimulation	Work in which you have to keep solving new problems
5 Achievement	Work in which you get the feeling of having done a good day's work
6 Independence	Work in which you have freedom in your own area
7 Prestige	Work in which you gain prestige in your field
8 Management	Work in which you have authority over others
9 Economic return	Work in which you can get a raise
10 Security	Work in which you know your job will last
11 Surroundings	Work in which you like the setting in which your job is done
12 Supervisory relationships	Work in which you have a boss who gives you a square deal
13 Associates	Work in which you are part of the team
14 Way of life	Work in which you can be the kind of person you would like to be
15 Variety	Work in which you look forward to changes in your job

Source. Adapted from Super (1995)

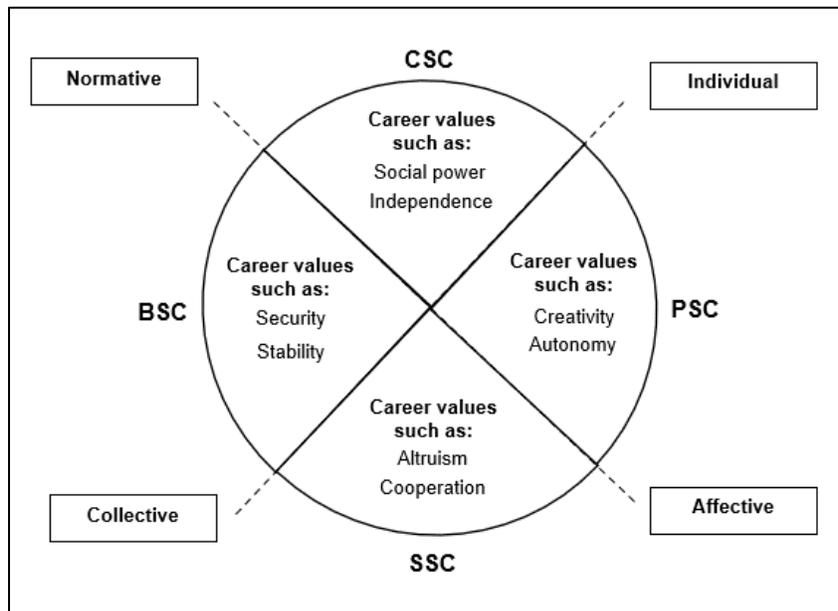
Most career values stem from the stream of research on vocational behaviour and career choice (Dawis & Lofquist, 1984; Super, 1970). Wils et al. (2014) believe that the number of career values is infinite. Given that these values form a continuum, it is possible to partition them into a finite number of subsets of values within which all career values can be categorised. This partition of career values thus becomes a pattern that specifically guides individuals' career decisions.

4.2.3.2 Circular model of career values

According to Wils et al. (2014), career values can be organised according to circular logic, and may thus be grouped into four large groups of values (or quadrants), which are opposed in pairs by the axes that structure the circular model of career values. Horizontally, the bureaucratic self-concept (BSC) quadrant is opposed to the protean self-concept (PSC) quadrant, whereas on the vertical axis, the careerist self-concept (CSC) quadrant is opposed to the social self-concept (SSC) quadrant, as Figure 4.8 illustrates.

Figure 4.8

Career Value Structure Model



Source. Wils et al. (2014, p. 817)

Note. BSC: bureaucratic self-concept; CSC: careerist self-concept; PSC: protean self-concept; SSC: social self-concept.

The quadrants identify four self-concepts related to career success (Wils et al., 2014). The BSC emphasises stability, as opposed to the PSC, in which flexibility is the priority. CSC places personal interests above those of others, as opposed to the SSC, which gives precedence to the interests of others (Wils et al., 2014). The four quadrants are summarised below:

- The **bureaucratic self-concept** (BSC) rests on the concept of objective career success expressed in terms of stability, and it allows individuals to envision their career based on a long-term organisational perspective (bureaucratic model). Accordingly, individuals see their career as a succession of positions in an organisation, and they willingly obey organisational rules, display loyalty and make sacrifices in exchange for advantages, such as job security. Their motivation comes from satisfying their need for security. This self-concept comprises 10 values that reflect security, stability and conformity (Wils et al., 2014).

- The **protean self-concept** (PSC) rests on the concept of subjective career success expressed in terms of self-development, and it emphasises individuals' careers in an individual learning perspective. Thus, individuals see their career as a succession of projects that allow them to develop professionally in keeping with their personal priorities (Lavelle, 2010). Individuals' derive motivation from satisfying their self-actualisation needs. This self-concept emphasises 14 values related to self-actualisation (e.g. stimulation, creativity and hedonism) (Wils et al., 2014).
- The **careerist self-concept** (CSC) rests on the concept of objective career success expressed in terms of wage increases and prestige, and refers to individuals who see their career from a competitive individual perspective. Accordingly, individuals' perceived career success as a hierarchical progression from company to company that lets them satisfy their need for domination and social esteem. Individuals, therefore, place importance on personal success, social status and control of resources and people. This self-concept is translated by 16 values anchored in three concepts: personal interests, social power and accomplishments (Wils et al., 2014).
- The **social self-concept** (SSC) is based on the concept of career success expressed in relationship terms. It situates individuals' careers in a social context (social interactions). Accordingly, individuals see their careers as an opportunity to help others, which allows them to maintain internal harmony. Their main motivation comes from satisfying their needs for affiliation. This self-concept comprises 11 values related to two concepts: well-being and universalism (e.g. internal balance, dedication to a cause) (Wils et al., 2014).

These four self-concepts are defined by two axes whose poles link contiguous self-concepts (Wils et al., 2014). The first axis comprises two poles, namely individual and collective orientation, whereas the second axis comprises two poles of normative and affective orientation. On the individual–collective axis, the CSC and the PSC have an individual self-concept in common: individuals with a CSC rely on individualistic interests to stand out from others in society, whereas individuals with a PSC use flexibility to flourish as an individual. Thus, the CSC and the PSC belong to a person-centred perspective based on self-directed career values (Wils et al., 2014).

In contrast, the SSC and the BSC are based on a collective self-concept (Brewer & Gardner, 1996). The SSC implies alignment with others (teamwork or contribution to society), while the BSC refers to the organisation. On the second axis, the CSC and the BSC focus on the normative (external perspective based on extrinsic or instrumental values) whereas the SSC and the PSC

place importance on the affective (internal perspective centred on intrinsic or cognitive values) (Wils et al., 2014).

The CSC and the BSC focus on societal and organisational standards, which emphasise calculated organisational commitment (van Vuuren et al., 2007). Individuals with a CSC see their career as a short-term transaction. They build a career in a given organisation as long as extrinsic rewards, such as promotions (and related rewards, such as money or power), are forthcoming. By comparison, individuals with a BSC see their career as a long-term transaction. They loyally build their whole career in a given organisation in exchange for extrinsic rewards, such as job security and good employee benefits. In contrast, the SSC and the PSC reflect intrinsic values: the SSC favours values resulting from social relationships, whereas the PSC emphasises values resulting from the work itself (learning) (Wils et al., 2014).

Wils et al. (2014) propose that the self-concepts in the theoretical model of career values should be associated with career anchors because career anchors, like career values, refer to deeply rooted motivations that guide behaviours. Wils et al. (2010) argue that the career anchor motives are related to career values. Table 4.3 provides an overview of the relationship between career anchors and career values.

Table 4.3

Relationship Between Career Anchors and Career Values

Career anchor	Key concept	Self-concept	Career value
Autonomy/ independence	Autonomy	PSC	Autonomy Self-organisation
	Freedom	CSC	Independence Freedom Individualism
Entrepreneurial creativity	Entrepreneurship	PSC	Innovation Vision
	Creativity	PSC	Creativity Originality Curiosity
Pure challenge	Professional challenge	PSC	Passion at work Pleasure Varied work Audacity Stimulating work
Managerial competence	Management skills	CSC	Managerial competence Social power Hierarchical authority
	Managerial position	CSC	Money Material comfort
Identity	Recognition	CSC	Social identification Prestige Social recognition

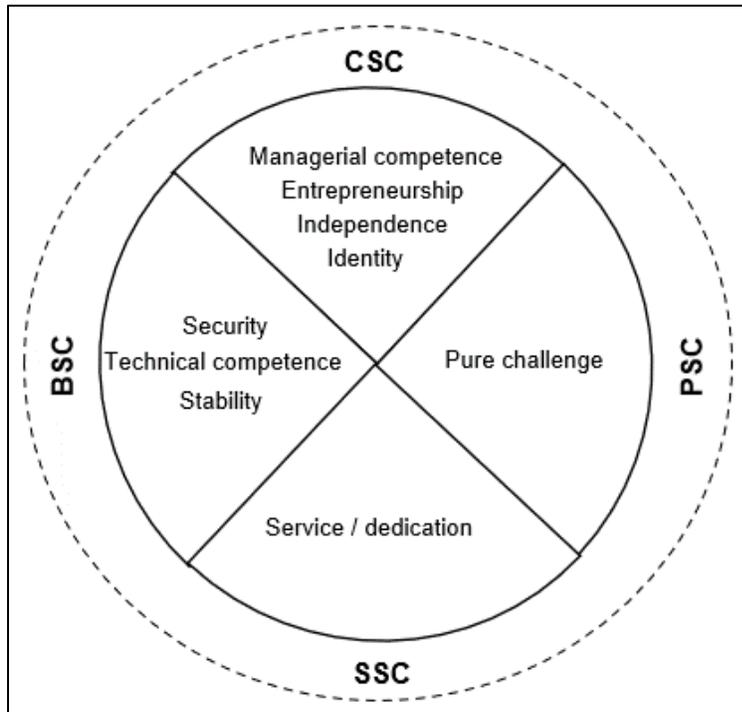
Career anchor	Key concept	Self-concept	Career value
	Hierarchical success	CSC	Social valorisation Ambition Competition Professional success Personal success
Security/stability	Organisational security	BSC	Job security Security at work
	Geographical stability	BSC	Geographical stability Attachment to the position
Service/dedication	Cause	SSC	Collective wellbeing Devotion Engagement Sense of duty
	Service to others	SSC	Help to others Altruism Cooperation Team spirit Generosity
Technical/functional competence	Technical competence	BSC	Specialisation
	Professional competence	PSC	Expertise
Lifestyle	Work-life balance	PSC	Lifestyle
	Personal balance	SSC	Happiness at work Internal balance
Other items	Sacrifice	BSC	Self-sacrifice
	Loyalty	BSC	Organisational loyalty
	Conservation	BSC	Prudence Acceptance of rules Self-discipline

Source. Wils et al. (2014, p. 820)

Wils et al.'s (2014) new model of career values structure finally organises career values in a circular logic, according to the phenomena of attraction and repulsion, and groups them in career value quadrants as illustrated in Figure 4.9.

Figure 4.9

Career Anchors and Value Structure Quadrants



Source. Wils et al. (2014, p. 828)

The number of anchors is different within each quadrant because Schein's (1990) anchors do not reflect a representative set of career values. The managerial competence anchor can be grouped with the identity, independence and entrepreneurship (MIIE) anchors because they are associated with the CSC. The security, stability and technical/functional competence (SST) anchors can be grouped because they are linked to the BSC. The pure challenge (PC) anchor is associated with the PSC, whereas the service/dedication (SD) anchor is associated with the SSC.

4.2.3.3 Blustein's core work functions

David Blustein (2006) created a theoretical model to provide a pragmatic, socially just framework for understanding and studying the psychological functions of work. By integrating multiple perspectives on work motivation from vocational psychology, career counselling and industrial or organisational psychology, Blustein (2006) proposed a taxonomy of three core psychological functions that work may serve to fulfil. These functions are work as a means for survival and power, work as a means of social connection, and work as a means of self-determination. His

taxonomy provides a framework for understanding why people work and for exploring how contextual variables may influence people's reasons for working.

(a) *Work as a means of survival and power*

This function emphasises the importance of work as a means to provide the goods and services essential for survival, economic and social status (Blustein, 2006). Historically, in the early 20th century, survival and power were key themes in the vocational literature as extrinsic rewards, primarily money, were seen as the main source of employee motivation (Latham & Ernst, 2006). This belief was based on the principles of behaviourism, assuming that extrinsic rewards act in a reinforcing way on behaviour (Lepper et al., 1999). Humanistic theories of the psychological functions of work, such as Maslow's (1954) hierarchy of needs, also proposed the focus of human energy, and action is initially directed at satisfying the basic survival needs of food, shelter and safety. Siegrist (2002) proposes that the work role serves to fulfil basic self-regulatory needs namely self-efficacy, self-esteem and self-integration. Using the concept of social reciprocity, Siegrist (2002) proposes in his effort–reward imbalance model that a worker expects and sets goals to obtain rewards (conceptualised as money, esteem and security) from his or her investment of effort.

(b) *Work as a means of social connection*

This function emphasises the importance of work as a means to interact with others, form relationships, provide social support, and build social bonds (Blustein, 2006). Work as a form of social connection also enables people to be connected to the broader cultural, economic and political systems of their society. Blustein (2006) notes the social aspects of work are diverse and complex and that literature in this important area is in an exploratory stage.

(c) *Work as a means of self-determination*

The third function of work in Blustein's taxonomy is work as a means of self-determination. As proposed by Maslow (1954) in his hierarchy of human needs, this function of work emphasises the role of work in finding self-actualisation and fulfilment. Blustein (2006) asserts that this work function has been the central focus of career development theories as theorists and researchers have focused on the process of how people can find meaningful and satisfying careers to suit their personal characteristics and situational needs. Blustein (2006) adopts the concepts of self-determination theory (SDT) proposed by Deci and Ryan (2000) for describing this third work function. The SDT proposes that people are intrinsically motivated to learn and develop and seek

to fulfil three innate psychological needs of autonomy, competence and relatedness. Deci and Ryan (2000) define *autonomy* as a desire to self-organise behaviours. *Competence* is defined as a desire to have an effect on the environment and attain valued outcomes from it, and *relatedness* is defined as a need to be connected to and cared for by others. Deci and Ryan (2000) assert workers will set goals and objectives that help them meet these three basic needs (Baard et al., 2004; Deci et al., 1999; Gagné & Deci, 2005).

Blustein's (2006) conceptualisation of three core work functions is supported by the research literature on career values. Career values thus provide a concrete way of assessing how people rate the importance of economic, social, and self-determination aspects of work. In this way, career values can provide a practical way to evaluate theories of why people work by assessing what people report they wish to achieve through their involvement in work.

4.2.3.4 Macnab, Bakker and Fitzsimmons career values scale

Macnab and Fitzsimmons (1987) compared three work values inventories, the Minnesota Importance Questionnaire, the Work Values Inventory, and the Work Aspect Preference Scale with the Canadian version of the Values Survey they developed for use in the Work Importance Study. They found, through confirmatory factor analysis (CFA), that these instruments measured very similar constructs. Subsequently, they revised their earlier values scale developed for the Work Importance Study into an instrument called the Career Values Scale (CVS) (Macnab et al., 2005). The CVS is subdivided into three factors: working with others, self-expression and extrinsic rewards, and measures ten career values: service orientation, teamwork, influence, creativity, independence, excitement, career development, financial rewards, prestige and security. Table 4.4 illustrates how the scales are organised.

Table 4.4
Career Values Scale Factors and Scales

Career Value Factor	Career value scale
Working with others	Service orientation
	Teamwork
	Influence
Self-expression	Creativity
	Independence
	Excitement
	Career development
Extrinsic rewards	Financial rewards
	Prestige
	Security

Source. Adapted from Macnab et al. (2005)

(a) *Factor 1: Working with others*

Every career involves some interaction with people. Personal values strongly influence both the type and quality of interaction individuals prefer to have with others. Some individuals prefer an environment that is outgoing and warm, while others prefer a more formal and independent workplace (Macnab et al., 2005).

- Service orientation: work objectives related to helping and providing direct benefits to others. Central to this value are relationships, personal service and providing direct benefits to others.
- Teamwork: work objectives related to having collaborative and positive working relationships with others. Central to this value are teamwork, good co-worker relationships and working in a collaborative work unit.
- Influence: work objectives related to controlling and managing the work efforts of others. Central to this value are the level of responsibility, taking control, influencing people and events.

(b) *Factor 2: Self-expression*

Each individual approaches work in a unique way (Macnab et al., 2005). Differences in self-expression can be attributed to how individuals value creativity, independence, excitement and personal development. Values in these areas will influence both the types of tasks and work environments that individuals will find enjoyable and satisfying.

- Creativity: work objectives related to developing new ideas and being innovative. Central to this value are solving problems, being creative and original.
- Independence: work objectives related to making independent decisions and setting one's own goals. Central to this value are making independent decisions and being free from the influence of others.
- Excitement: work objectives related to having variety, taking risks, and trying new things. Central to this value are variety, risk and fast-paced work.
- Career development: work objectives related to engaging in personal and professional growth. Central to this value are personal and professional development and growth.

(c) *Factor 3: Extrinsic rewards*

This factor focuses on the things that motivate people. It examines how individuals value financial rewards, job security and prestige. Recognising what motivates them is an important step in identifying ideal occupations and making career exploration and analysis easier (Macnab et al., 2005).

- Financial rewards: work objectives related to receiving a high salary and financial incentives for performance. Central to this value are high salary and financial security.
- Prestige: work objectives related to obtaining recognition and status. Central to this value are recognition, admiration and status.
- Security: work objectives related to having steady and predictable work and a sense of job security. Central to this value are security, stability and predictability.

Macnab et al.'s (2005) model of career values was relevant to this research, as it reflects values related to working with others, self-expression and extrinsic rewards, which offer and relate to satisfaction because they hold substantial meaning for the knowledge worker. These career values relate to the dynamics of the person and the career environment.

Career values are thought to influence how individuals practice an occupational choice rather than the occupation an individual chooses (Greenhaus & Callanan, 2006). Individuals will prioritise values in order of relative importance and use them to explain, coordinate and justify behaviour. Career values as a psychosocial resource will, therefore, be conserved by individuals in order to increase career satisfaction and self-perceived employability.

It is important for individuals to discover and prioritise their career values, as these values are regarded as the enduring cognitive or conceptual structures underlying individuals' thoughts about their career and which define the meaning of a career to them (Coetzee, 2014a). Having a clear sense of one's career values, reflect individual's career motivation and will enable individuals to make effective career decisions, and to achieve important career goals which enhance career satisfaction and employability (Coetzee, 2014a; Fugate et al., 2004; Schein, 1990; Wils et al., 2014).

4.3 VARIABLES INFLUENCING PSYCHOSOCIAL CAREER RESOURCES (EMPLOYABILITY ATTRIBUTES, CAREER ANCHORS AND CAREER VALUES)

The most prevalent variables, such as age, gender, race, and other variables influencing employability attributes, career anchors and career values are discussed in this subsection.

4.3.1 Employability attributes

Various variables, such as age, gender, race, and other variables influencing employability attributes are discussed.

4.3.1.1 Age

The study of van Rooy et al. (2005) found a positive relationship between age and employability, while DeArmond et al. (2006) and van der Heijde and van der Heijden (2006) found that employability decreases with age, especially when a person moves into a new field or to a higher position. Furthermore, DeArmond et al. (2006) also found that older workers are less likely to search for new challenges, are less flexible, have less desire for variation in their work and are less motivated to learn new skills. Consequently, these common stereotypes have a negative effect on their employability when they look for new employment. This contradicts the findings of de Lange et al. (2005), who report that older employees are not less inclined to acquire new knowledge and skills compared with their younger colleagues.

Lee (2001) argues that graduates face discrimination because of their age and their lack of practical experience. However, Potgieter (2012) reports that many older employees find themselves in the same position as new job applicants owing to the rapid changes that are taking place in the market environment. Meanwhile, a study conducted by van der Heijden et al. (2009) found that self-reported employability is positively related to overall promotions for both younger workers and over-forties. In their study, these researchers concluded that age moderates the relationship between employability and objective career success.

4.3.1.2 Gender

Women have a lower self-perception of their employability than their male counterparts (Clarke, 2008; Lee, 2001; Potgieter, 2012). According to Beukes (2010), men seem to be more skilled in the utilisation of technology, which contributes to their self-perceived employability. It also seems as if men have more confidence in their ability to manage their careers and therefore show higher levels of confidence in their employability attributes (Clarke, 2008; Lee, 2001; Potgieter, 2012). It appears from the research literature that these differences in perceptions may be attributed to organisations discriminating against women because of gender stereotypes and perceptions of

family responsibilities. In addition, organisations tend to perceive women as being less committed to their careers and organisations (Potgieter, 2012). Zikic and Hall (2009) support this view by adding that such prejudices are not only in terms of women reaching specific occupations but also in their perceived value in the labour market as compared to their male counterparts. Alfrassa (2001) confirms that men are more likely to find work than women after graduating, and Clarke (2008) reports that women still face the glass ceiling and are disadvantaged because of their gender. This is supported by van der Heijden et al. (2009), who found some significant gender effects to the disadvantage of women during their study on the employability–career success relationship.

4.3.1.3 Race

There are contradictory findings of the influence of race on employability. Research has shown that person-related characteristics, such as age, gender and race may influence individuals' employability (Clarke, 2008). However, the study of Coetzee et al. (2015) found no association between the biographical variables of age, gender and race and participants' employability capacities and career adaptability, although that could have been due to the relatively small sample size. Oosthuizen et al.'s (2014) study also indicated that the four race groups (black African, mixed-race, Indian and white) did not differ significantly regarding their employability attributes. Rothwell et al. (2009) found no significant differences between self-perceived employability and ethnicity.

Further, Lee (2001) and Mancinelli et al. (2010) reported that, in their studies, high levels of education had positive effects on the advancement of previously disadvantaged groups (Africans, coloureds, Indians and women). As a result, previously disadvantaged groups were more likely to find satisfying jobs, earn higher incomes and have better career prospects (Potgieter, 2012). Beukes (2010) added that macroeconomic policy issues, specifically black economic empowerment (BEE), influence ethnic demand in industries and therefore result in ethnic differences in employability.

4.3.1.4 Other variables

In a study conducted by Ottino (2010), no statistically relationships were found between respondents' tenure and their perceived employability skills. It can, therefore, be assumed that longer years of service in a company do not equate to an inability to change. In addition, Ottino's (2010) research findings did not significantly separate the respondents in terms of their overall

employability. However, length of service appears to be negatively related to both supervisor and self-rated employability, as found in a study by van der Heijden et al. (2009).

Separate studies conducted by Potgieter (2012) and Puffer (2011) found that individuals at staff level are likely to be able to display greater confidence in their employability attributes, especially on career self-management, career resilience, sociability, entrepreneurial orientation and proactivity. These findings are in contrast with the findings of other researchers who found that individuals in the second half of their careers and on a higher job level display higher employability attributes (van der Heijden et al., 2009).

4.3.2 Career anchors

Various variables, such as age, gender, race, and other variables influencing career anchors, are discussed in this subsection.

4.3.2.1 Age

Career anchors tend to develop over time and individuals generally only become aware of their career anchors after working for a period of time (Coetzee & Schreuder, 2009; Ellison & Schreuder, 2000; van Vuuren & Fourie, 2000).

Findings reported by Coetzee and Schreuder (2007) indicate that people from various age groups tend to differ in terms of their career orientations. These authors found that individuals aged 25 and younger are significantly more driven by their personal needs in terms of their career anchors than their older counterparts, showing a strong preference for the autonomy and independence career anchor. By contrast, individuals aged 26 and older showed a higher preference for the service or dedication to a cause, pure challenge and managerial competence career anchors than their younger counterparts.

The variable of age appears to play an important role within the career context. Different life and career stages have significant influences on career orientations, and preferences vary across age groups (Coetzee & Schreuder, 2008). Ellison and Schreuder (2000) suggest that the mid-career or midlife stage is frequently of great significance. This stage is sometimes referred to as 'the midlife crisis'. The mid-career or midlife phase generally involves self-assessment, and individuals tend to evaluate their level of success or failure against their set career goals. This phase may result in stress and anxiety, but also provides an opportunity for an individual to assess his or her career anchor based on experience gained. The mid-career or midlife phase is also the stage where an individual tries to find a balance between individuals' internal and external careers (Ellison & Schreuder, 2000).

4.3.2.2 Gender

Research regarding career anchors or orientations shows that males and females tend to associate with different career anchors (Coetzee et al., 2007; Danzinger & Valency, 2006; de Villiers, 2009; Marshall & Bonner, 2003).

4.3.2.3 Race

In the multicultural South African workplace, race is an important variable that could influence career orientation. This is specifically important when race is used as a criterion for making decisions about individuals or groups. Coetzee and Schreuder (2008) found that, with the exception of the entrepreneurial career orientation, the career anchors were similar for the different race groups within their South African sample.

4.3.2.4 Other variables

Coetzee and Schreuder (2008) found significant differences between the career orientations of single, married and widowed individuals. Single participants were attracted to opportunities to develop skills, and preferred opportunities that provided freedom and power. Married participants favoured steady employment and benefit packages, while widowed participants appeared to have a need to pursue careers where they can create new products and present new ideas. However, Erdogmus (2004) found no differences in the career orientations of individuals with differing marital status.

Research suggests that career orientations influence individuals' motivations to pursue self-employment and influence on the satisfaction they derive from their self-employment (Feldman & Bolino, 2000). It is important to consider the differences between the career orientations of groups with differing employment status as this could potentially relate to the career decisions made. Danzinger and Valency (2006) found a significant difference in the distribution of career anchors of salaried and self-employed individuals.

Ndzube (2013) found significant correlations between the sub-constructs of career anchors and employability. Oosthuizen et al. (2014) explored the association between employees' career anchors and their psychosocial employability attributes and found a significant positive relationship between the participants' career anchors and their psychosocial employability attributes.

4.3.3 Career values

Various variables, such as age, gender, and other variables influencing career values are discussed in this section.

4.3.3.1 Age

Traditionally it has been assumed that career values, representing the objectives sought by engagement in work, are relatively stable across the lifespan (Dose, 1997; Feldman, 2002; Patton & McMahon, 2014). In a study done by Dunning (2010), age, gender and education differences accounted for a small but significant amount of variance in the career values component scores.

4.3.3.2 Gender

Gender has been identified as an important antecedent of value orientations (Marini et al., 1996; Schwartz, 1992). Previous studies have found that young men had higher extrinsic work values, while young women had higher intrinsic work values (Johnson, 2001, 2002). These gender differences are consistent with Schwartz and Rubel's (2005) findings on personal value priorities: across cultures, men attribute more importance to values related to power (status, dominance) and achievement (demonstrate own competence) than women do.

4.3.3.3 Other variables

Research conducted by Sortheix et al. (2013) indicated that intrinsic career values comprise an important personal resource when young people enter the workforce and consequently give rise to more engaged individuals at work.

4.4 IMPLICATIONS FOR CAREER DEVELOPMENT PRACTICES

In the context of the present research, employability attributes, career anchors, and career values are valuable psychosocial career resources that enhance individuals ability to gain more valuable resources related to career satisfaction and self-perceived employability. This view builds on the basic premise of conservation of resources (Hobfoll, 1988, 1998, 2001) that individuals seek to obtain, retain and protect valuable resources, and that those with a bigger pool or reservoir of resources are better equipped to make resource gain possible. The present research regards knowledge workers' psychosocial career resources as important resource investments to protect individuals against resource loss and give rise to resource gain cycles that enhance career satisfaction and self-perceived employability. Career development interventions for knowledge workers need to enhance individuals' employability attributes, that is, their proactive career management behaviour to enhance career satisfaction and self-perceived employability.

Employability attributes relates to psychosocial career resources that reflect individuals' capacity that influences their environment effectively by regulating their career behaviour (i.e. managing their careers proactively, becoming aware of different cultures, and having self-efficacy, resilience, a sense of creativity and entrepreneurial orientation, well-developed sociability skills, and emotional literacy and being proactive) in order to succeed in work settings (Bezuidenhout, 2011; Bezuidenhout & Coetzee, 2010). Employability attributes enhance adaptation behaviour (career resilience, proactivity, and social and human capital) and improve person-environment fit.

Career anchors relate to a collection of self-observed attitudes, values and talents that develops, shapes and guides individual's careers. Knowledge workers need to become aware of their dominant career anchors to establish what is important and valued and seek an optimal fit with their environment.

Career values provide a concrete way of assessing how individuals' rate the importance of economic, social and self-determination aspects of work. Career values indicate how individuals prefer to working with others, how they want to express themselves and which rewards their value. Being aware and having self-knowledge of one's career values will enhance the person-environment congruence and influence individuals career motivation and enhance career satisfaction and self-perceived employability. Career development interventions should thus be aimed to assess and identify career anchors and values. When knowledge workers are aware of their dominant career anchors and most prominent career values, they will be motivated to engage in proactive, adaptive career behaviour, that enhances the person-environment fit.

4.5 SYNTHESIS AND EVALUATION

Psychosocial employability attributes (Bezuidenhout, 2011), career anchors (Schein, 1990) and career values (Super, 1995) are important psychosocial career meta-capacities in contemporary career development (Coetzee & Schreuder, 2014; Potgieter, 2012, 2014).

Research has shown that employability attributes provide employees with a constant ability to perform (Coetzee & Roythorne-Jacobs, 2012). More specifically, employability attributes, such as career resilience and entrepreneurial orientation or openness to change, influence the retention of employees and ultimately, their well-being. According to Fugate et al. (2004), career resilience fosters optimism, while openness to change facilitates continuous learning. High levels of employability allow individuals to reap the benefits of active career adaptability (Fugate et al., 2004), whilst they also positively contribute to person-job match, career satisfaction, career-enhancing behaviours, career prospects and improved career opportunities and career success

(Coetzee & Beukes, 2010; Gutman & Schoon, 2012; McKee-Ryan & Harvey, 2011). The positive contribution of employability to career satisfaction, commitment and psychological attachment consequently reduces retention risks (Ferreira & Coetzee, 2010; Mitchell et al., 2001).

Coetzee and Schreuder (2014) view people's career anchors as important career meta-capacities in contemporary career development. Career meta-capacities denote individuals' career-related psychological capital and social resources and strengths that enable them to be self-directed learners and proactive agents in the construction and design of their careers and employability in the contemporary turbulent occupational world (Coetzee, 2014a; Savickas & Porfeli, 2012). Ndzube (2013) notes that in the unstable labour market conditions of the 21st century, the external career is bound to take different shapes and forms, and individuals may be forced to make decisions that have not been carefully considered. Ndzube (2013) further argues that individuals need a deeper sense of career identity and self-awareness to enact appropriate career choices under these conditions. The career anchor develops in the process of career development and enables the careerist to make choices congruent with the individual's career identity (Ndzube, 2013; Schein, 1990). Career anchors are thus seen to lead to deeper self-awareness and a clear career identity (Ellison & Schreuder, 2000; Ndzube, 2013).

Traditionally, it has been assumed that career values, representing the objectives sought by engagement in work, are relatively stable across the lifespan (Dose, 1997; Feldman, 2002; Patton & McMahon, 2014). In a study done by Dunning (2010), however, age, gender and education differences accounted for a small but significant amount of the variance in the career values component scores. A study done by Sortheix et al. (2015) revealed that intrinsic work values predicted a higher degree of person–job fit two years later, whereas rewards work values predicted lower chances of being unemployed, and security work values predicted higher chances of being unemployed later on.

Research has shown positive relationships between psychosocial career resource and career satisfaction and self-perceived employability, and positive relationships between career cognitions and career satisfaction and self-perceived employability. However theoretical models do not clarify the relationship dynamics between career satisfaction and self-perceived employability as consequences of the interaction between individuals' career cognitions (career adaptability and psychosocial career preoccupations and as antecedents) and psychosocial career resources (employability attributes, career anchors, and career values as moderators) of knowledge workers jointly and in a single study such as the present research.

To conclude, it can be stated that knowledge of the factors and issues affecting the career development of knowledge workers is essential for retaining, developing and motivating knowledge workers. The major findings linked to the literature consulted indicate that even though knowledge workers require more knowledge just to enable them to perform their jobs, their knowledge still provides them with a competitive advantage in their careers and in the knowledge economy (van Staden & du Toit, 2012). In the same manner, knowledge workers acknowledged that they are personally responsible for their own career development and attempt to ensure that they partake in lifelong learning and training. The result of being able to match personal goals with organisational goals generates a sense of accomplishment for knowledge workers, which is required to build a fulfilling career (Gedro, 2017; van Staden & du Toit, 2012).

4.6 CHAPTER SUMMARY

This chapter aimed to address the first research aim related to the literature review, namely, to conceptualise the variables of relevance to the research, specifically psychosocial career resources including employability attributes, career anchors and career values. The conceptualisation of employability attributes, career anchors and career values was described from a contemporary theoretical perspective. The three overarching theoretical lenses of person-environment fit (PE-fit) (Holland, 1997; van Vianen, 2018), conservation of resources (COR) (Hobfoll, 1988, 1998, 2001), and dispositional employability (DE) (Fugate et al., 2004) were also discussed in relation to psychosocial career resources and integrated with previous research findings. The variables, such as age, gender, race, and other factors influencing employability attributes, career anchors and career values, were explored. Finally, implications for career development practices of knowledge workers were also discussed.

The first literature review research aim was accordingly achieved in Chapters 2, 3 and 4.

Chapter 5 will further aim to address the second research aim related to the literature review by postulating a psychosocial career satisfaction and employability profile (based on the theoretical relationship dynamics among the constructs) for enhancing the career satisfaction and self-perceived employability of knowledge workers. Furthermore, the implications of the hypothesised psychosocial profile for the career development of knowledge workers in the contemporary employment context will be evaluated to address the third research aim related to the literature review.

CHAPTER 5: TOWARDS CONSTRUCTING A THEORETICAL CAREER SATISFACTION AND EMPLOYABILITY PROFILE FOR THE KNOWLEDGE WORKER

Chapters 2, 3 and 4 provided a comprehensive review of the literature on the independent variables, career adaptability and psychosocial career preoccupations, the moderator variables, employability attributes, career orientations and career values and the dependent variables, career satisfaction and self-perceived employability. Chapters 2, 3 and 4 addressed literature research aim 1.

Research aim 1: To conceptualise the variables of relevance to the research (career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors and career values).

This chapter addresses literature research aims 2 and 3:

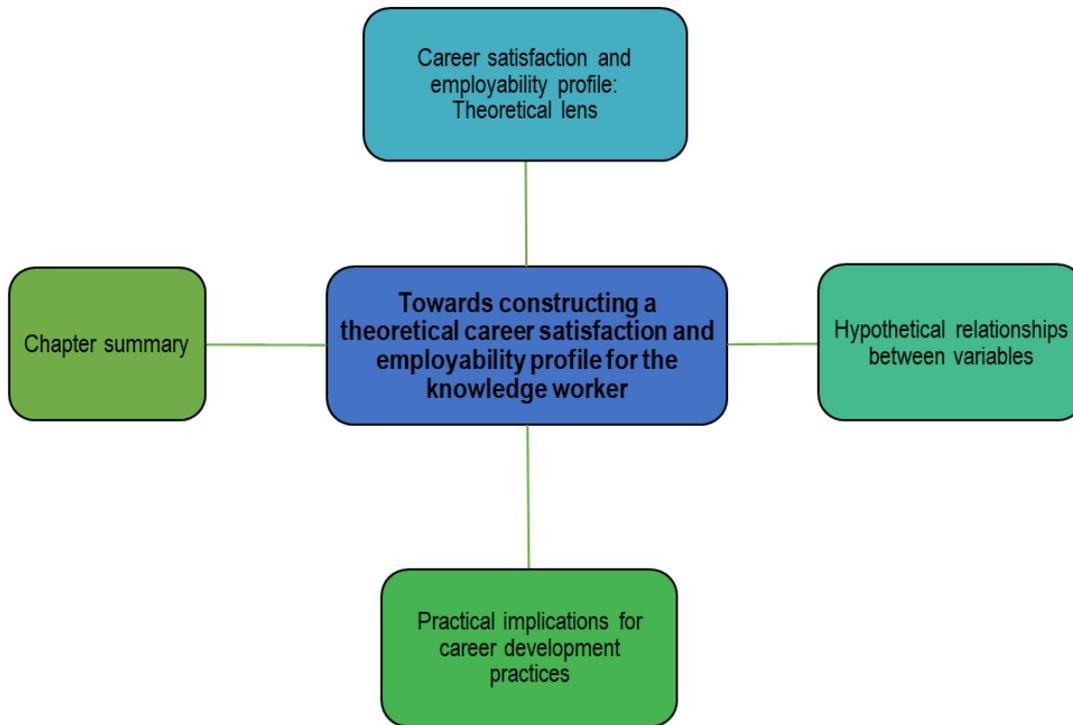
Research aim 2: To postulate a theoretical psychosocial career satisfaction and employability profile (based on the theoretical relationship dynamics among the constructs) for enhancing the career satisfaction and self-perceived employability of knowledge workers.

Research aim 3: To evaluate the implications of the hypothesised psychosocial profile for the career development of knowledge workers in the contemporary employment context.

Figure 5.1 illustrates the layout of this chapter.

Figure 5.1

Layout of Chapter 5



Source. Author's own work

5.1 CAREER SATISFACTION AND EMPLOYABILITY PROFILE: THEORETICAL LENS

This section aims to address the call for future research directions by Spurk et al. (2019) to dissect the theoretical assumptions underlying three theoretical perspectives relevant to the present study. The research adopted the basic premises of the person-environment fit (PE-fit) theory (Holland, 1997; van Vianen, 2018); conservation of resources (COR) theory of Hobfoll (1988, 1998, 2001) and Fugate et al.'s (2004) dispositional employability (DE) theory as overarching lenses in exploring the assumed theoretical dynamics among the constructs.

The central hypothesis of the research assumed that the main effects of and the interaction (moderating) effects between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents of their career satisfaction and self-perceived employability) and their employability attributes, career anchors and career values (as psychosocial career resources acting as moderator variables), in relation to their career satisfaction and self-perceived employability (as consequences or outcomes) will constitute a

psychosocial profile that may potentially inform career development interventions for knowledge workers.

The core premise of the present research is that individuals' career cognitions (career adaptability and psychosocial career preoccupations) will be dependent upon (moderated by) their psychosocial career resources (employability attributes, career anchors and career values) in predicting their career satisfaction and self-perceived employability.

The three overarching theoretical lenses of person-environment fit (PE-fit) (Holland, 1997; van Vianen, 2018), conservation of resources (COR) (Hobfoll, 1988, 1998, 2001), and dispositional employability (DE) (Fugate et al., 2004) were especially relevant to this study because they relate to individuals' adaptation responses to challenging environments in order to achieve person-environment congruence.

Person-environment fit theory (Holland, 1997; van Vianen, 2018) assumes that people strive toward optimal congruence and the achievement of such congruence or perceived fit, results in higher levels of career satisfaction. Knowledge workers are exposed to constantly changing and uncertain employment environments that demand proactive career adaptive behaviours to sustain employability and career satisfaction (Akkermans et al., 2020; Blokker et al., 2019; Coetzee & Schreuder, 2021; Fugate et al., 2004; Haenggli & Hirschi, 2020; Hirschi et al., 2017; Spurk et al., 2019). Research shows that career cognitions such as career adaptability and psychosocial career preoccupations signal individuals' psychological readiness to engage in career adaptive behaviours in the attempt to regain optimum person-environment fit or congruence (Coetzee, 2015, 2016; Coetzee & Govender, 2020; Maree, 2020; Potgieter et al., 2018; Savickas, 2019). Research further indicates that individuals' employability attributes, career anchors and career values function as valuable psychosocial career resources in helping individuals' adapt and achieve their career goals in the process of regaining fit with their environments (Abessolo et al., 2017; Blokker et al., 2019; Coetzee, 2014a; Coetzee & Schreuder, 2014; Potgieter, 2014).

In agreement with the **conservation of resources theory** (Hobfoll, 1988, 1998, 2001), individuals need to invest in psychosocial career resources that give impetus to career cognitions. The investment in psychosocial career resources may increase individuals' reservoirs of resources, and protect them against resource loss, thus enabling them to invest more resources to acquire additional resources (Hobfoll, 1988, 1998, 2001). Individuals with less psychosocial career resources may be more vulnerable to resource loss and therefore, less capable of resource gain in terms of being ready for cognitive career adjustment to help attain goals that facilitate career

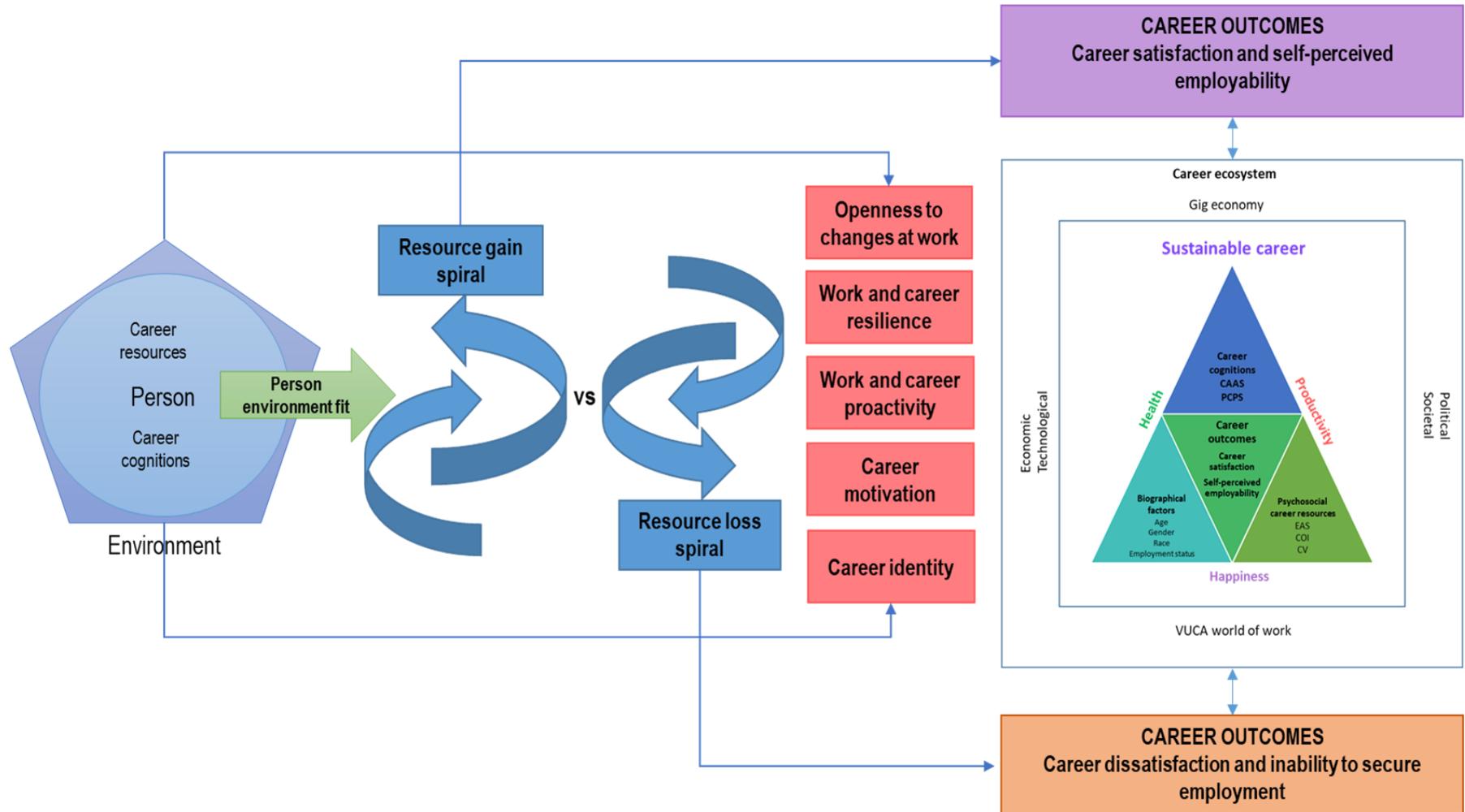
satisfaction and self-perceived employability (Halbesleben et al., 2014; Hobfoll, 2011; Malo et al., 2016; Spurk et al., 2019). Resource gain cycles directed towards achieving sustainable careers will be a result of resourcefulness and may be triggered by self-perceived employability (and by implication, career satisfaction) (Vanhercke et al., 2015). Psychosocial career resources may thus either strengthen or weaken career cognitions (i.e. psychological readiness for career adaptation) which may positively or negatively influence individuals' career satisfaction and self-perceived employability.

Fugate et al.'s (2004) **dispositional theory of employability** postulates that employability (and by implication, individuals' career satisfaction) is a function of the dynamic interaction between cognitions, behaviours and attributes of proactive adaptability. In this research, dispositional career cognitions are studied in interaction with dispositional psychosocial career resources. The premise is made that career cognitions are not sufficient on their own to predict individuals' career satisfaction and self-perceived employability.

Figure 5.2 presented the three overarching theoretical lenses of person-environment fit (PE-fit) (Holland, 1997; van Vianen, 2018), conservation of resources (COR) (Hobfoll, 1988, 1998, 2001), and dispositional employability (DE) (Fugate et al., 2004) that were utilised to inform career development interventions aimed at positive career outcomes and to facilitate a sustainable career.

Figure 5.2

Theoretical Integration of PE-fit, COR and DE to Facilitate Sustainable Career Development



Source. Author's own work

Building on the basic premises of the three overarching lenses, the next section explores the tentative expectations pertaining to the various research hypotheses.

5.2 HYPOTHETICAL RELATIONSHIPS BETWEEN VARIABLES

The research stated five research hypotheses. Each of these research hypotheses will now be explored.

5.2.1 Research hypothesis 1

H1: There are statistically significant relationships among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables).

Based on prior research, it is expected that significant positive relationships will emerge between career adaptability and career satisfaction (Coetzee & Stoltz, 2015; Guan et al., 2014; Guan et al., 2015; Haenggli & Hirschi, 2020; Rudolph et al., 2017; Zacher, 2014) and self-perceived employability, as career adaptability is recognised as an important resource for sustaining employability (Chan et al., 2015; Maree, 2020; Savickas, 2011a). Although limited research is available regarding psychosocial career preoccupations (Coetzee, 2016; Coetzee & Govender, 2020), significant negative relationships are expected between career satisfaction (Bester, 2018; Takawira, 2018), and thus by implication with self-perceived employability. Employability attributes, career anchors and career values are important psychosocial career resources to enhance positive career outcomes related to career satisfaction and self-perceived employability (Gunz & Heslin, 2005; Hirschi, 2012; Hirschi et al., 2017; Hobfoll et al., 2018). Based on previous research, it is expected that significant positive relationships will emerge between employability attributes and career satisfaction and self-perceived employability (Botha, 2014; Coetzee & Beukes, 2010; Coetzee et al., 2015, 2016; Potgieter, 2014). Significant positive relationships are expected between individuals career anchors, career values and career satisfaction and self-perceived employability (Abessolo et al., 2017; Coetzee & Schreuder, 2011, 2021; Coetzee et al., 2010; Oosthuizen et al., 2014; Wils et al., 2010).

5.2.2 Research hypothesis 2

H2: Individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values),

as a composite set of independent variables, significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables.

Prior research on components of career adaptability and psychosocial career resources (employability attributes, career anchors and career values) as separate constructs have shown to be significant positive predictors of career satisfaction and self-perceived employability (Abessolo et al., 2017; Akkermans et al., 2013; Bester, 2018; Coetzee, 2014a; Coetzee & Harry, 2015; Coetzee & Stoltz, 2015; Guan et al., 2015; Haenggli & Hirschi, 2020; Hirschi et al., 2017; Järlström et al., 2020; Maree, 2020; Rudolph et al., 2017; Takawira, 2018; Zacher, 2014).

The construct psychosocial career preoccupations has been linked with career adaptability (Coetzee, 2015), though it is still under-researched (Coetzee, 2016; Coetzee & Govender, 2020) and has shown negative links with career satisfaction (Bester, 2018; Takawira, 2018). Depending on the level of contribution of psychosocial career preoccupations to career satisfaction and self-perceived employability, it is expected that career cognitions and psychosocial career resources, as a composite set of independent variables, will significantly and positively predict career satisfaction and self-perceived employability, as a composite set of dependent variables. Fugate et al.'s (2004) dispositional theory of employability will be enhanced, strengthened and extended to career satisfaction. The theoretical extension of Fugate et al.'s (2004) theory will thus postulate that career satisfaction, and self-perceived employability is a function of the dynamic interaction between cognitions (career adaptability and psychosocial career preoccupations), behaviours and attributes of proactive adaptability (employability attributes, career anchors and career values). This theory extension will further accept that career cognitions on their own, are not sufficient to predict individuals' career satisfaction and self-perceived employability, but need proactive, adaptive behaviour such as employability attributes (proactivity, resilience and openness to change), well-developed career anchors and values (strong identity) to help attain goals that facilitate career satisfaction and self-perceived employability.

However, when considering the contradicting results of Haenggli and Hirschi (2020) who assessed the predictive power of various combined career resources for career satisfaction, and found that each of the career resources contributed differently, this research hypothesis will address an important gap in research to explore the links between different resources and career outcomes.

5.2.3 Research hypothesis 3

H3: The relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is moderated by individuals' psychosocial career resources (employability attributes, career anchors and career values). The relationship is more positive when individuals' psychosocial career resources are well developed or strongly crystallised than when these resources are not well developed or strongly crystallised.

Knowledge workers utilised advanced knowledge, education, skills, and capabilities (human capital), to contribute across organisational boundaries (WEF, 2020). However, knowledge workers need a set of career cognitions (career adaptability and psychosocial career preoccupations) to signal individuals readiness for adaptive career behaviour, to invest, retain and obtain new psychosocial career resources (employability attributes, career anchors and career values) to enhance career satisfaction and self-perceived employability (Chan et al., 2015; Coetzee & Govender, 2020; Coetzee & Stoltz, 2015; Haenggli & Hirschi, 2020; Hobfoll et al., 2018; Maree, 2020; Rudolph et al., 2017; Zacher, 2014). Therefore individuals still require career capital or psychosocial career resources (capital or competencies) to help them navigate the dynamic career context and to be successful with high levels of self-perceived employability (Abessolo et al., 2017; Akkermans et al., 2013; Coetzee & Schreuder, 2011, 2021; Coetzee et al., 2015, 2016; Hirschi et al., 2017; Hobfoll et al., 2018; Oosthuizen et al., 2014; Potgieter, 2014; Wils et al., 2010).

Moreover, recent research findings emphasised the importance of psychological capital as career resources over human (skills, knowledge, education) and social (social contacts and networks) capital (Järlström et al., 2020). Some components (resilience and self-efficacy) of employability attributes correspond with components of psychological capital (Järlström et al., 2020), and it is therefore expected that individuals with higher levels of employability attributes may enhance strong career cognitions related to resilience and adaptability (Zacher, 2014). Furthermore, it is important to determine the circumstances under which different psychosocial career resources are activated (Blokker et al., 2019; Haenggli & Hirschi, 2020; Spurk et al., 2019), to enhance individuals' to adapt and achieve their career goals in the process of regaining fit with their environments (Abessolo et al., 2017; Blokker et al., 2019; Coetzee, 2014a; Coetzee & Schreuder, 2014; Potgieter, 2014). It is finally expected that psychosocial career resources may increase individuals' reservoirs of resources significantly (Järlström et al., 2020) and may thus strengthen

the relationship between career cognitions and career satisfaction and self-perceived employability.

5.2.4 Research hypothesis 4

H4: Individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations), psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability.

Prior research indicated contradicted results associated with significant differences among the career cognitions, psychosocial career resources, career outcomes and biographical variables related to age, gender, race and employment status. When considering the diverse South African context, it is thus expected that individuals will differ significantly in terms of age, gender, race and employment status related to self-perceived employability (Coetzee & Schreuder, 2007; Järlström et al., 2020; Rothwell & Arnold, 2007), psychosocial career preoccupations (Bester, 2018), career anchors (Coetzee et al., 2007; Danzinger & Valency, 2006; de Villiers, 2009; Marshall & Bonner, 2003), and career values (Bester, 2018; Dunning, 2010). In agreement with previous research, no significant differences are expected in terms of age, gender, race and employment status related to career satisfaction (Järlström et al., 2020), career adaptability (Coetzee et al., 2015) and employability attributes (Coetzee et al., 2015; Oosthuizen et al., 2014).

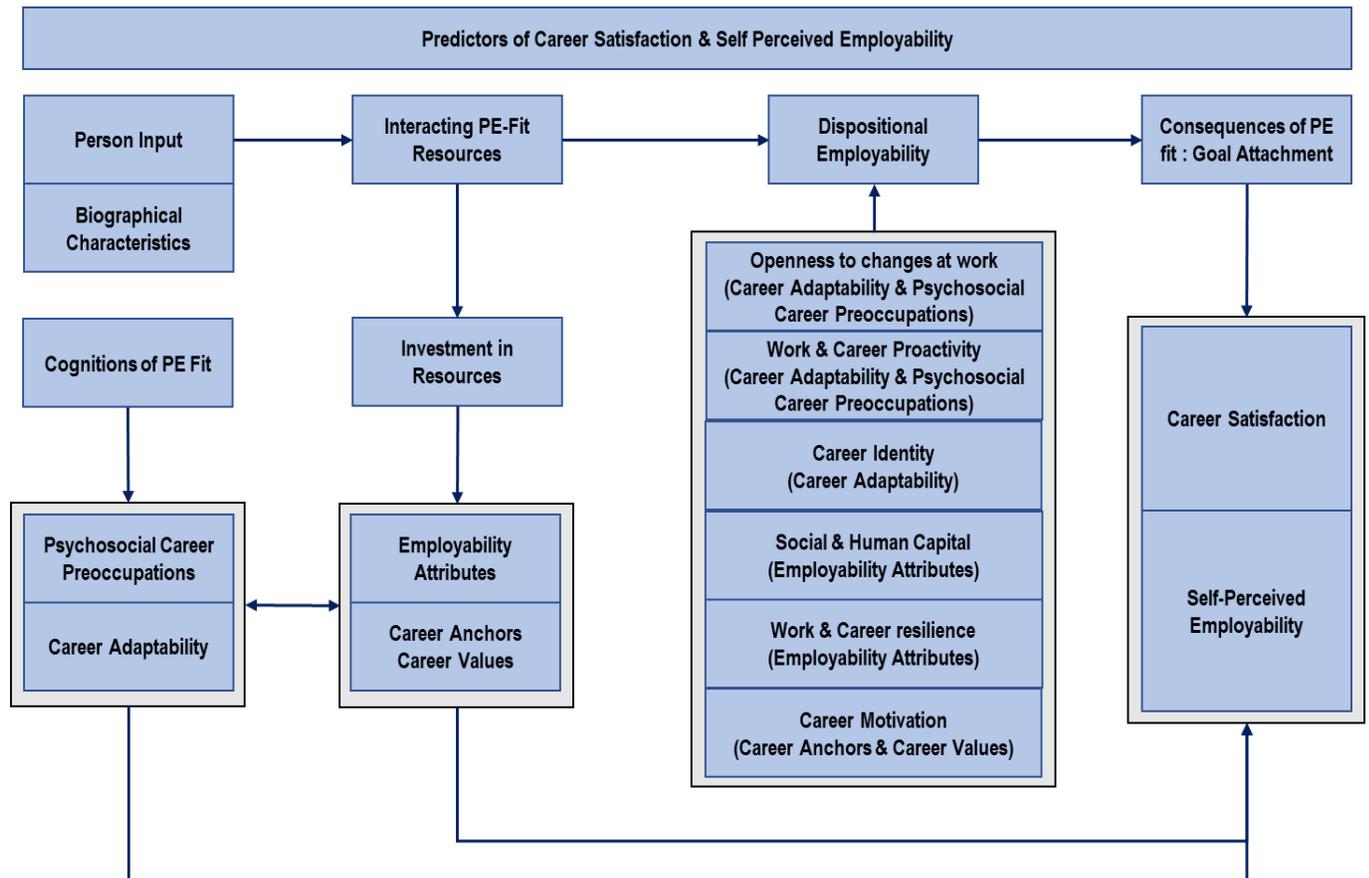
5.2.5 Research hypothesis 5

H5: The empirically manifested relationship dynamics among the variables constitute a psychosocial profile for enhancing the career satisfaction and employability of knowledge workers.

The expected relationship dynamics of the theoretical psychosocial profile is illustrated in Figure 5.2. The theoretical psychosocial profile reflects the expected relationship dynamics between the biographical characteristics, and career cognitions (career adaptability and psychosocial career preoccupations) as independent variables, psychosocial career resources (employability attributes, career anchors and career values) as moderator variables, and career satisfaction and self-perceived employability as dependent variables.

Figure 5.3

Social Cognitive Career Development Framework of Career Satisfaction and Self-perceived Employability of Knowledge Workers



Source. Author's own work

Based on the core expectations and research trends, it is expected that the empirical relationship dynamics will help identify core links that may inform the career development of knowledge workers.

Theoretically, based on person-environment fit theory (Holland, 1997; van Vianen, 2018), conservation of resources (Hobfoll, 1988, 1998, 2001), and dispositional employability theories (Fugate & Kinicki, 2008; Fugate et al., 2004), individuals are active agents of their career management in order to establish optimum congruence by adapting to changing environments. Career cognitions (career adaptability and psychosocial career preoccupations) trigger the psychological readiness to activate psychosocial career resources in managing and evaluating

person-environment fit. This process help enhance career satisfaction and self-perceived employability. Furthermore, individuals need to obtain, retain, foster, and protect their career satisfaction and self-perceived employability. Therefore, they need to invest in psychosocial career resources to enhance their career satisfaction and self-perceived employability to create resource gain cycles and prevent resource losses. Career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors, career values) are a collection of individual differences that predispose knowledge workers to adapt proactively to their career environments.

It is assumed that knowledge workers are proactive individuals that value career satisfaction and employability (Coetzee & Schreuder, 2021; Maree, 2020; Savickas, 2019; Savickas & Porfeli, 2012; Spurk et al., 2014; Vanhercke et al., 2014). It stands to reason that individuals' may demonstrate high levels of career adaptability (career concern, career control, career curiosity, career confidence), as well as strong career preoccupations (career establishment, career adjustment and work-life adjustment). The career cognitions related to career adaptability may be positively linked to career satisfaction, and self-perceived employability as career adaptability enhances individuals' adaptive coping behaviour mechanisms in the dynamic and boundaryless work context to facilitate sustainable careers (Chan et al., 2015; Coetzee & Stoltz, 2015; de Vos et al., 2020; Guan et al., 2014; Guan et al., 2015; Haenggli & Hirschi, 2020; Rudolph et al., 2017; Savickas, 2011a; Zacher, 2014). The positive link between career adaptability and career satisfaction and self-perceived employability may be strengthened by employability attributes, and either strengthened or weakened by certain career anchors and career values.

Psychosocial career preoccupations may be negatively linked to career satisfaction and self-perceived employability, as it is expected that individuals will be less concerned and anxious when they are experiencing career satisfaction and self-perceived employability (Bester, 2018; Coetzee & Govender, 2020; Takawira, 2018). The negative link between psychosocial career preoccupations and career satisfaction and self-perceived employability may be strengthened by a loss and deficit in employability attributes and either strengthened or weakened by certain career anchors and career values.

5.3 PRACTICAL IMPLICATIONS FOR CAREER DEVELOPMENT PRACTICES

Several interventions aimed at individual and organisational level can be developed to enhance the career satisfaction and self-perceived employability of knowledge workers. Furthermore, interventions on individual level should be developed to enhance career adaptability, address

psychosocial career preoccupations, develop employability attributes, and establish well-developed career anchors and career values. Career cognitions signal individuals psychological readiness to engage in adaptive behaviour that enhances career motivation, career proactivity and resilience, career identity, and openness to changes at work. When knowledge workers engage in adaptive career behaviour and invest in important career behaviour by developing employability attributes, it will enhance resource gain cycles and prevent resource losses, thereby enhancing the PE fit and facilitating sustainable careers with high levels of career satisfaction and self-perceived employability. Knowledge workers should also become aware of their dominant career anchors and their most prominent career values to build a strong career identity. Self-knowledge will create self-awareness and enhance individuals ability to make better career decisions in order to create an optimal person-environment fit. Knowledge workers need to enhance their technological, human, social and psychological capabilities by applying a continuous improvement and lifelong learning mindset, thus investing in resources that build up a reservoir of resources to facilitate and enhance resource gain spirals (increasing career satisfaction and sustainable employment), that protect individuals from resource losses. Finally, knowledge workers need to engage in individual characteristics (dispositions) that enhance their ability of openness to changes at work, career resilience, career proactivity, career motivation, social and human capital and career identity, which are all important dispositions that enable adaptive behaviour and facilitate positive career outcomes.

Table 5.1 provides an overview of the suggested career development interventions and practices for enhancing the career satisfaction and self-perceived employability of knowledge workers. The table outlines individual and organisational level interventions and practices for enhancing career satisfaction and self-perceived employability as well as career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values). The consequences for the three overarching theories (person-environment fit, conservation of resources and dispositional employability (adaptive behaviour) for enhancing career satisfaction and self-perceived employability as career outcomes and career cognitions and psychosocial career resources are also outlined.

Table 5.1

Overview of Suggested Career Development Interventions and Practices for Enhancing the Career Satisfaction and Perceived Employability of Knowledge Workers

Variables	Individual-level interventions	Organisational-level practices	Consequences – PE fit, COR and adaptive behaviour
Career satisfaction	<ul style="list-style-type: none"> • Development of new skills • Set specific goals related to career, income, and personal mastery • Self-management • Personal mastery • Enhance psychological capital (optimism, resilience, self-efficacy and sense of hope) 	<ul style="list-style-type: none"> • Encourage a culture of life-long learning and shared responsibility • Interventions aimed at creating self-awareness and conditions for career satisfaction • Interventions on goal setting and mindfulness • Interventions on how to achieve career satisfaction in a VUCA world of work • Create awareness regarding sustainable careers to create a meaningful balance and a career with purpose and meaning (satisfaction) • Interventions aimed to increase happiness, health and productivity-enhancing sustainable careers • Create a human-centric, holistic and purposeful employee experience • Rethink and invest in employee well-being by creating awareness for sensing balance, peace and harmony 	<ul style="list-style-type: none"> • Life-long learning, goal-setting processes, and self-management enhancement promote PE fit and adaptive behaviour • Individuals are active agents, need to invest in resources, protect resources to gain new resources (career satisfaction) • Enhance personal clarity and create meaningful career experiences • Sustainable careers as a result of resource gain cycle (career satisfaction) • Career coaching and counselling assist in developing a career identify, clarify career decisions, enhance skills and confidence and facilitate goal attainment lead to sustainable careers

Variables	Individual-level interventions	Organisational-level practices	Consequences – PE fit, COR and adaptive behaviour
Self-perceived employability	<ul style="list-style-type: none"> • Create a sustainable employability mindset with a continuous lifelong learning attitude • Build confidence, skills and personal skills • Establish personal networks, be visible, and foster network behaviour • Be curious, not afraid, be mindful • Develop a variety of skills E.g. Digitally smart literacy skills High-level human skills, critical thinking, problem-solving, collaboration, teamwork, empathy, communication • Improve qualifications • Analyse career values and career anchors • Build on knowledge, skills and ethical behaviour • Build self-confidence in one's ability to find employment • Enhance confidence in knowledge, skills and experience 	<ul style="list-style-type: none"> • Foster a culture of lifelong learning (learn, unlearn and relearning mindset) • Foster and build a personalised and agile learning culture • Interventions aimed at self-awareness and identify resources needed for high levels of self-perceived employability • Interventions related to enhancing personal network and being mindful of social media (enhance social capital) • Use technology to engage employees and create awareness of changes in Industry 4.0 • Create awareness of possibilities for sustaining individual employability • Align employee experience with the agile operating model • Provide career support in terms of career coaching and in-depth individual counselling 	<ul style="list-style-type: none"> • Enhance network behaviour -important for building employability resource of social capital • A mindset of lifelong learning builds intellectual curiosity that enhances PE fit and facilitate adaptive behaviour. • Career coaching to boost (invest) employability related resources of human capital (such as career planning) and adaptive psychological career resources (optimism and self-efficacy)

Variables	Individual-level interventions	Organisational-level practices	Consequences – PE fit, COR and adaptive behaviour
		Antecedents -person inputs	
Career adaptability	<p>Career concern</p> <ul style="list-style-type: none"> Enhance individual involvement in career planning and create a sense of planfulness Vision, career planning and reflection on current and future career <p>Career control</p> <ul style="list-style-type: none"> Take responsibility for managing and building one's career Manage one's career by planning, organising, leading and control Keep motivation Enhance feelings of agency and self-determination <p>Career curiosity</p> <ul style="list-style-type: none"> Explores the world of work Gain as much info as possible about requirements, practices and rewards Increase self-knowledge <p>Career confidence</p> <ul style="list-style-type: none"> Enhance the degree to which individuals believe in their ability to make and implement good career decisions. Increase self-efficacy to deal with barriers 	<ul style="list-style-type: none"> Create a culture of self-awareness and enhancement of self-knowledge Create a culture of career development support by establishing enabling career development policies and support practises and procedure guidelines Develop career discussion guidelines to enhance vision, career planning and reflection on career adaptability Provide career coaching and assesses the developmental status of individuals in terms of their current situation, goals, and competencies Provide career coaching to orient individuals to opportunities, challenges, and barriers Provide career coaching to assist individuals to develop the needed knowledge and skills Assist individuals to create career development plans, and the need to adjust plans when needed Provide executive coaching to increase confidence Provide executive coaching to enhance individuals ability to adapt and change 	<ul style="list-style-type: none"> Self-awareness and career development support enhance PE fit and adaptive behaviour related to career identity Reflection on career cognitions (career adaptability and psychosocial career preoccupations) signal individuals' psychological readiness to engage in adaptive behaviours in an attempt to regain optimum PE fit, and to prevent resource losses Executive coaching enhances intellectual curiosity and establish confidence in adaptive behaviour in terms of career motivation, being proactive and openness to change

Variables	Individual-level interventions	Organisational-level practices	Consequences – PE fit, COR and adaptive behaviour
Psychosocial Career preoccupations	<p>Career establishment preoccupations</p> <ul style="list-style-type: none"> • Create opportunities for self-expression and personal growth and career advancement • Being mindful of concerns related to career establishment <p>Career adaptation preoccupations</p> <ul style="list-style-type: none"> • Revise and adjust career strategy • Adjust interests, talents and capabilities to fit with employment opportunities <p>Work-life adjustment preoccupations</p> <ul style="list-style-type: none"> • Being mindful of concerns related to work-life adjustment • Adjust the career-life strategy according to concerns related to settling down • Consider reducing workload and withdrawal from paid employment 	<ul style="list-style-type: none"> • Address concerns related to: <ul style="list-style-type: none"> - fitting in with a group and career; - economic stability and security; - employability; - adapting to the changing career context - work-life adjustment • Co-create solutions and engage in career development discussions to address psychosocial career preoccupations by utilising positive career affirmations to create a sustainable career 	<ul style="list-style-type: none"> • Career preoccupations give rise to adaptive behaviour (proactivity, and openness to changes) to enhance the PE fit, and to prevent resource losses

Variables	Individual-level interventions	Organisational-level practices	Consequences – PE fit, COR and adaptive behaviour
		Moderators Resources	
Employability attributes	<ul style="list-style-type: none"> • Enhance career self-management skills • Create awareness regarding different cultures • Enhance self-efficacy • Enhance resilience • Enhance a sense of creativity and a sense of entrepreneurial orientation • Enhance sociability skills, proactivity, emotional literacy and emotional intelligence 	<ul style="list-style-type: none"> • Provide opportunities for mentoring and coaching • Provide interventions to enhance self-management, self-efficacy, resilience, creativity, proactivity, emotional intelligence, and sociability • Provide career coaching that identifies strengths and weaknesses, develops the needed knowledge and skills to enhance employability attributes. • Provide career counselling that improved individuals' self-awareness and career self-directedness • Provide interventions aimed at diversity and inclusivity 	<ul style="list-style-type: none"> • Career coaching that enhances employability attributes can help to build career identity and enhance social and human capital. These resources are important investments for individuals to create gain cycles (career satisfaction and high levels of self-perceived employability) and to prevent loss cycles • The development of employability attributes enhances adaptation behaviour (career resilience, proactivity, and social and human capital) and improve PE fit
Career anchors and Career values	<ul style="list-style-type: none"> • Enhance self-knowledge related to career anchors and career values • Reflect and evaluate dominant career anchors and establish what is important and valued in terms of career-life values • Reflect on the most valued and prominent career values • Reflect on the congruence between own career anchors and values and organisational needs and values 	<ul style="list-style-type: none"> • Create awareness for organisational needs and values and how individuals can enhance the PE fit • Provide opportunities to assess career anchors and career values • Create environments conducive for individuals to fit, while still being authentic 	<ul style="list-style-type: none"> • Enhance the sense of career identity and PE fit

Source. Author's own work

5.4 CHAPTER SUMMARY

Based on the integration of the literature review, a theoretical psychosocial career satisfaction and employability profile was conceptualised (based on the theoretical relationship dynamics among the constructs) for enhancing the career satisfaction and self-perceived employability of knowledge workers.

Furthermore, the integration of the three overarching theoretical lenses of person-environment fit (PE-fit) (Holland, 1997; van Vianen, 2018), conservation of resources (COR) (Hobfoll, 1988, 1998, 2001), and dispositional employability (DE) (Fugate et al., 2004) provided insights on the implications of the hypothesised psychosocial profile for the career development of knowledge workers. The implications of the hypothesised psychosocial profile were evaluated, and career development interventions were recommended for knowledge workers in the contemporary employment context.

This chapter, therefore, addressed research aims 2 and 3 related to the literature review.

In terms of the literature review, the following research aims were accordingly achieved.

Research aim 1: To conceptualise the variables of relevance to the research (career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors and career values).

Research aim 2: To postulate a theoretical psychosocial career satisfaction and employability profile (based on the theoretical relationship dynamics among the constructs) for enhancing the career satisfaction and self-perceived employability of knowledge workers.

Research aim 3: To evaluate the implications of the hypothesised psychosocial profile for the career development of knowledge workers in the contemporary employment context.

Chapter 6 will describe the empirical research process by focusing on the research approach, population and sample, psychometric battery, ethical considerations adhered to, the data gathering process, the formulation of the research hypotheses and finally, the statistical processing of the data.

CHAPTER 6: RESEARCH METHOD

This chapter focused on the empirical approach that was applied in the study to investigate the nature of the psychosocial profile that manifested from the relationship dynamics among individuals' career cognitions (career adaptability and psychosocial career preoccupations, their psychosocial career resources (employability attributes, career anchors and career values) and their career satisfaction and self-perceived employability as outcome variables.

Firstly, a summary of the research approach and the population and sample of the research study are presented. The measuring instruments utilised to gather the data are discussed, and the choice of each is motivated and justified. The ethical considerations adhered to, how the psychometric battery was administered and the data gathering and capturing of criterion data are explained. The formulated research hypotheses are stated, and finally, the statistical processing methods are explored.

Figure 6.1 illustrates the layout of this chapter.

Figure 6.1

Layout of Chapter 6



Source. Author's own work

The empirical research phase followed consists of the following ten steps:

Step 1: Research approach

Step 2: Determination and description of the sample

Step 3: Choosing and motivating the psychometric battery

Step 4: Ethical considerations and administration of the psychometric battery

Step 5: Capturing of criterion data

Step 6: Formulation of research hypotheses

Step 7: Statistical processing of the data

Step 8: Reporting the results

Step 9: Interpretation and integration of the research findings

Step 10: Formulation of research conclusions, limitations and recommendations.

Steps one to seven are discussed in this chapter, and steps eight to ten are addressed in Chapters 7 and 8.

6.1 RESEARCH APPROACH

A quantitative cross-sectional research approach was followed using primary data. The end goal of the research was to draw conclusions on the relationship dynamics (magnitude and direction) between the constructs of relevance to the study to finally construct an empirically tested career satisfaction and employability profile for knowledge workers. This exploratory cross-sectional research design created a snapshot of the research participants, as data were gathered at one point in time (Neuman, 2014).

Cross-sectional research was appropriate because new, under-researched links and dynamics between the various constructs were explored in order to assess the viability of potential future longitudinal studies. Furthermore, the research study aimed to show connections among various constructs, with the ultimate aim to understand the dynamics and to expand on existing theory, therefore, contributing to the body of knowledge on career satisfaction and self-perceived employability. Spector (2019) confirmed the importance of knowledge related to various constructs associated by means of cross-sectional studies, which is valuable as a basis for theory

and targeted intervention. A cross-sectional research design strategy was appropriate for the research study, as it was less expensive, was conducted over a short period of time, and created a snapshot of the relationship between the variables, and examines differences rather than change over time (Salkind, 2018).

The concerns related to cross-sectional research designs are related to common-method variance, and the inability to draw causal conclusions. The Harman's single factor test and confirmatory factor analysis (CFA-one factor solution) were applied to determine whether the relationships between the variables of the various scales were due to common method bias. As indicated in Chapter 7 section 7.1.2, common method variance was not a potential threat for the research findings, and the results of the statistical analysis could, therefore, be interpreted with confidence. Cross-sectional research designs are not suitable to study developmental patterns and causality unless it is repeated over time, as there is a time dimension involved in causality.

Despite the mentioned disadvantages and limitations, cross-sectional research designs have been well utilised throughout the history of organisational research. They remain an efficient and invaluable design strategy to investigate important under-researched organisational phenomena (Spector, 2019).

6.2 DETERMINATION AND DESCRIPTION OF THE SAMPLE

A population refers to a group of individuals about whom a researcher wants to conclude, however, since it is almost impossible to study all individuals of interest, a researcher will choose a sample of individuals from which data might be collected and studied (Babbie, 2013; Gravetter & Forzano, 2018). A sample thus refers to individuals who are chosen from a population and can be seen as a portion of the whole population that has been selected (Gravetter & Forzano, 2018; Hair et al., 2019).

Probability sampling is a technique that involves the selection of a random sample from a list containing the names of everyone in the population being sampled. In most social science research settings, this sophisticated sampling technique is too costly, too time-consuming and even practically impossible (Gravetter & Forzano, 2018; Neuman, 2014; Rubin & Babbie, 2016). Since there is no recognised list or database available of knowledge workers available in South Africa (du Toit, 2014), the research situation did not allow for probability sampling; therefore, a non-probability sampling technique was chosen.

Although probability sampling can be seen as the golden standard to create a representative sample with accuracy and to generalise the results to the entire population of knowledge workers, it was practically impossible to apply (Rubin & Babbie, 2016). Therefore a nonprobability sampling technique was utilised. Although non-probability sampling is not based on a random sample, where members of the population have an equal chance of being selected, which can be considered more precise and scientific, non-probability sampling can still be logical and provide useful samples for social inquiry (Gravetter & Forzano, 2018; Rubin & Babbie, 2016). A non-probability sampling technique was applied as it was practical and appropriate for the research context, cost-effective and less time consuming than probability sampling techniques.

A non-probability, purposive or judgmental sampling technique was applied in this research study to discover as many participants as possible of this highly specific and difficult to reach population, the knowledge worker (Gravetter & Forzano, 2018; Neuman, 2014; Rubin & Babbie, 2016). Purposive sampling is especially appropriate to select difficult-to-reach individuals from a specific population, such as knowledge workers. To locate knowledge workers for possible inclusion, the researcher approached several professional boards with whom knowledge workers associate. Purposive sampling is a non-probability sampling technique whereby the sample of participants was selected for a specific purpose and based on the judgement of the researcher (Gravetter & Forzano, 2018; Maree, 2016; Rubin & Babbie, 2016).

The larger the sample, the better (Leedy & Ormrod, 2015) as a larger sample size will allow for utilising more sophisticated multivariate analysis techniques (Rubin & Babbie, 2016). However, to determine the most appropriate sample size can be complicated; therefore, the guidelines of Gay et al. (2012, p. 139) for selecting the sample size were utilised. For population sizes of:

- 100 or less, the entire population needs to be surveyed;
- +- 500, sample size 50%;
- +-1500, sample 20%;
- Beyond 5000, the population size is almost irrelevant, and a sample size of 400 should be adequate.

In this study, the population consisted of a sample of knowledge workers working in various industries in the South African context. A purposive sample of (N = 5000) knowledge workers registered at the following professional boards in South Africa was targeted: South African Institute of Chartered Accountants (SAICA), the Engineering Council of South Africa (ECSA), South African Society of Industrial and Organisational Psychology (SIOPSA) and the South

African Board for Personnel Practice (SABPP). Individuals were invited via email to complete the measuring instruments online via the SurveyMonkey platform. A total of (n = 404) useable completed questionnaires were received. A low response rate of 8.08% was obtained. A limitation is that the findings can therefore only be generalised to the sample of respondents and not the general population of knowledge workers in South Africa.

Descriptive statistics were utilised to describe the characteristics of the sample of knowledge workers in terms of the biographical variables. The biographical variables, namely, age, gender, race, job level, employment status, qualification level, occupation, employment sector, and professional board registered, were included in the research questionnaire.

6.2.1 Composition of age groups in the sample

Table 6.1 and Figure 6.2 illustrate the composition of age groups. The age of the respondents was measured in categories ranging from 18 years to 60 years and older. The frequencies seemed to be concentrated mostly around the 31 – 45 age group (42.6%) and the 46 – 60 age group (29.7%). The predominant career stages represented in the sample relate to the established (31 – 45 years) and maintenance (46 – 60 years) career stages.

Participants aged 18 to 30 years comprised 17.8%; those between the ages of 31 to 45 years 42.6%; those aged between the ages of 46 and 60 years 29.7%; those aged 60 years and older 9.9% of the total sample (N = 404).

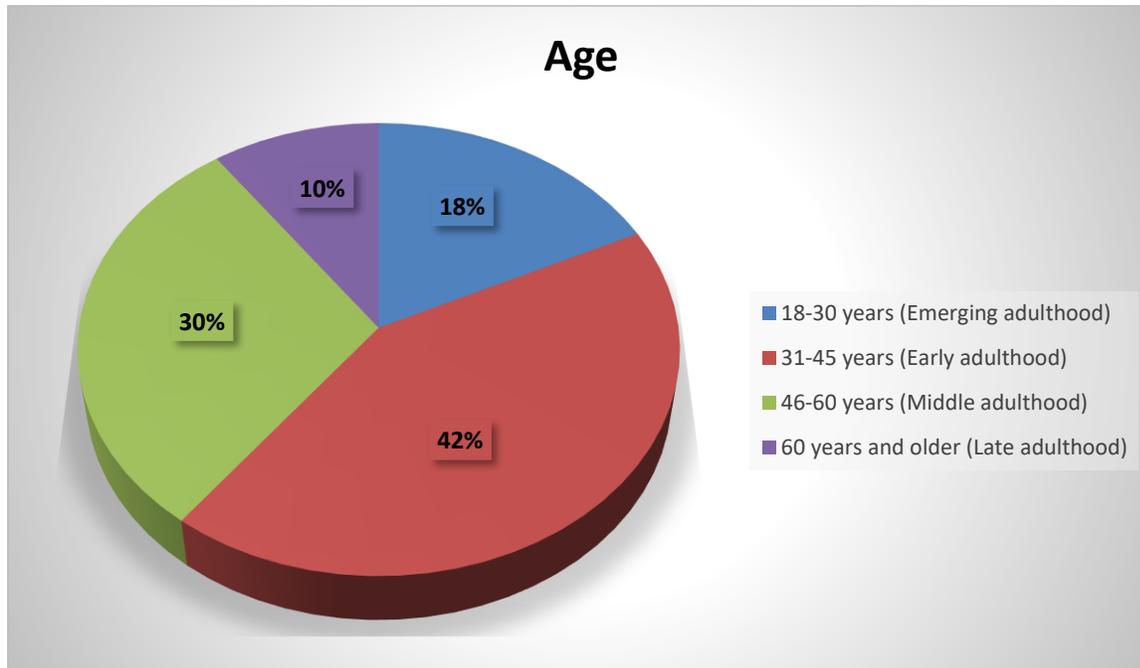
Table 6.1

Age Distribution of the Sample

Age	Frequency	Percent	Valid Percent	Cumulative Percent
18-30 years (Emerging adulthood)	72	17.8	17.8	17.8
31-45 years (Early adulthood)	172	42.6	42.6	60.4
46-60 years (Middle adulthood)	120	29.7	29.7	90.1
60 years and older (Late adulthood)	40	9.9	9.9	100.0
Total	404	100.0	100.0	

Note. N = 404.

Figure 6.2
Sample Distribution by Age



Note. N = 404.

6.2.2 Composition of gender groups in the sample

Table 6.2 and Figure 6.3 illustrate the gender distribution of participants in the sample. Males comprised 54%, and females comprised 46% of the participants (N = 404).

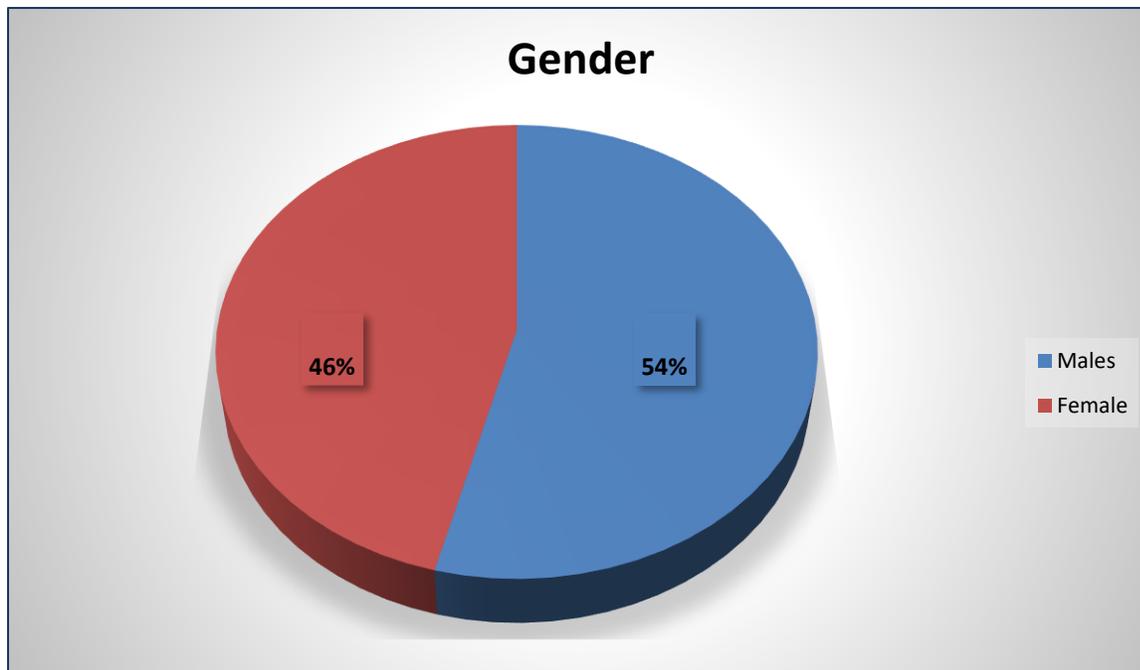
Table 6.2
Gender Distribution of the Sample

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	218	54.0	54.0	54.0
Female	186	46.0	46.0	100.0
Total	404	100.0	100.0	

Note. N = 404.

Figure 6.3

Sample Distribution by Gender



Note. N = 404.

6.2.3 Composition of racial groups in the sample

Table 6.3 and Figure 6.4 illustrate the race distribution of the sample. The distribution of the sample indicated that white comprised 69.3%, African comprised 20.5%, coloured comprised 2.5%, and Indian comprised 6.2% of the entire sample of research participants (N = 404). The frequencies seemed to be concentrated mostly around the white race group (69.3%), whereas the African race group represented only 30.7 % of the sample.

Table 6.3

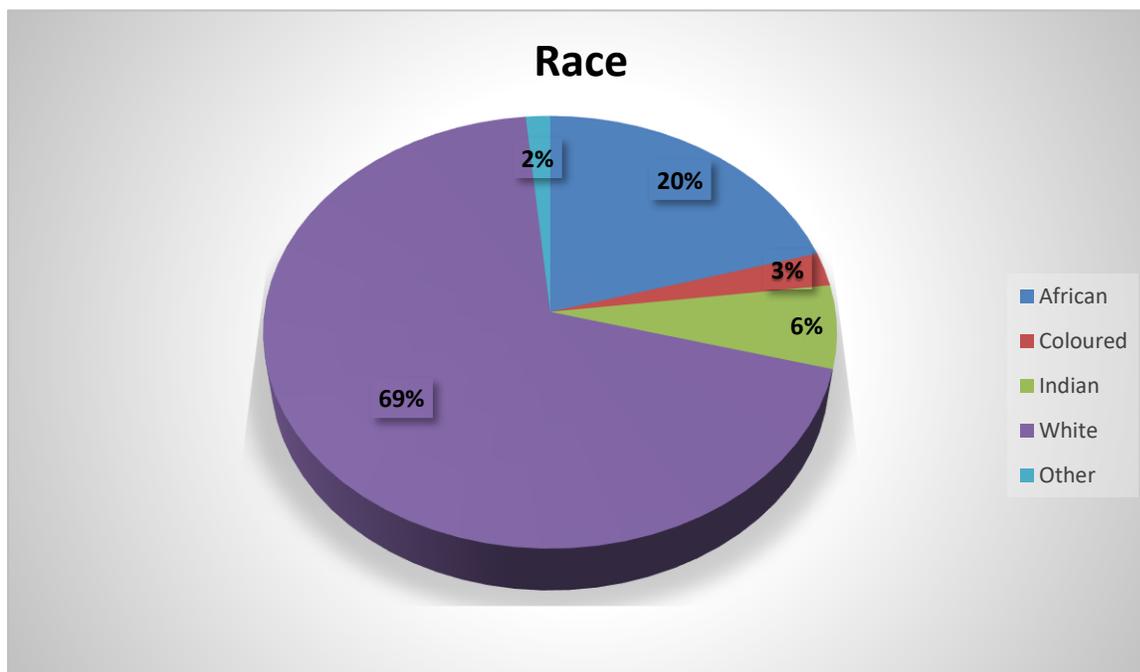
Race Distribution of the Sample

Race	Frequency	Percent	Valid Percent	Cumulative Percent
African	83	20.5	20.5	20.5
Coloured	10	2.5	2.5	23.0
Indian	25	6.2	6.2	29.2
White	280	69.3	69.3	98.5
Other	6	1.5	1.5	100.0
Total	404	100.0	100.0	

Note. N = 404.

Figure 6.4

Sample Distribution by Race



Note. N = 404.

6.2.4 Composition of job level groups in the sample

Table 6.4 and Figure 6.5 illustrate the job-level distribution of the sample. The distribution of the sample showed that 1.7% of participants (N = 373) indicate none of the different job levels. The rest of the sample distribution indicated that 9.9% of the participants were employed on first-level

supervision, 12.4% of the participants were independent contractors, 15.6% of the participants classified themselves as staff, 24.8% of participants were employed at middle management level, and 35.6% on senior/executive management level. The frequencies seemed to be concentrated mostly around the senior/executive management level (35.6%). Management levels (senior/executive, middle management and supervisor level) predominate the sample (70.3%).

Table 6.4

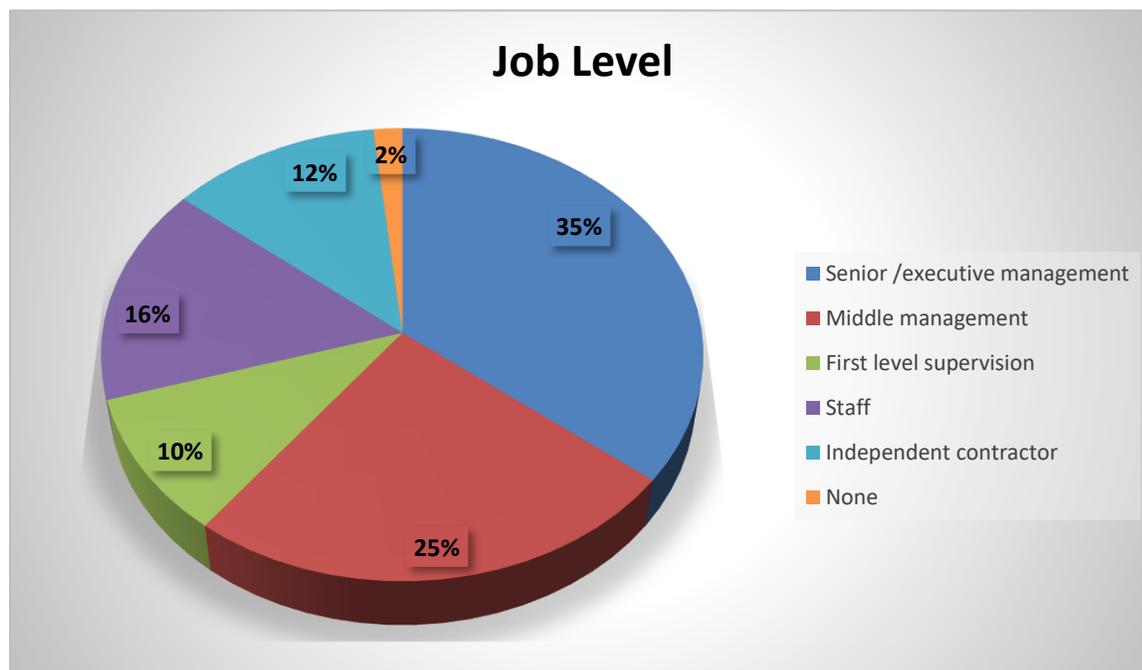
Job Level Distribution of the Sample

Job Level	Frequency	Percent	Valid Percent	Cumulative Percent
Senior /executive management	144	35.6	35.6	35.6
Middle management	100	24.8	24.8	60.4
First level supervision	40	9.9	9.9	70.3
Staff	63	15.6	15.6	85.9
Independent contractor	50	12.4	12.4	98.3
None	7	1.7	1.7	100.0
Total	404	100.0	100.0	

Note. N = 404.

Figure 6.5

Sample Distribution by Job Level



Note. N = 404.

6.2.5 Composition of employment status in the sample

Table 6.5 and Figure 6.6 illustrate the employment status distribution of the sample. The majority of participants were permanently employed (71%) or self-employed (21.5%). Only 6.2% were employed on a fixed-term contract, and 1.2 % unemployed.

Table 6.5

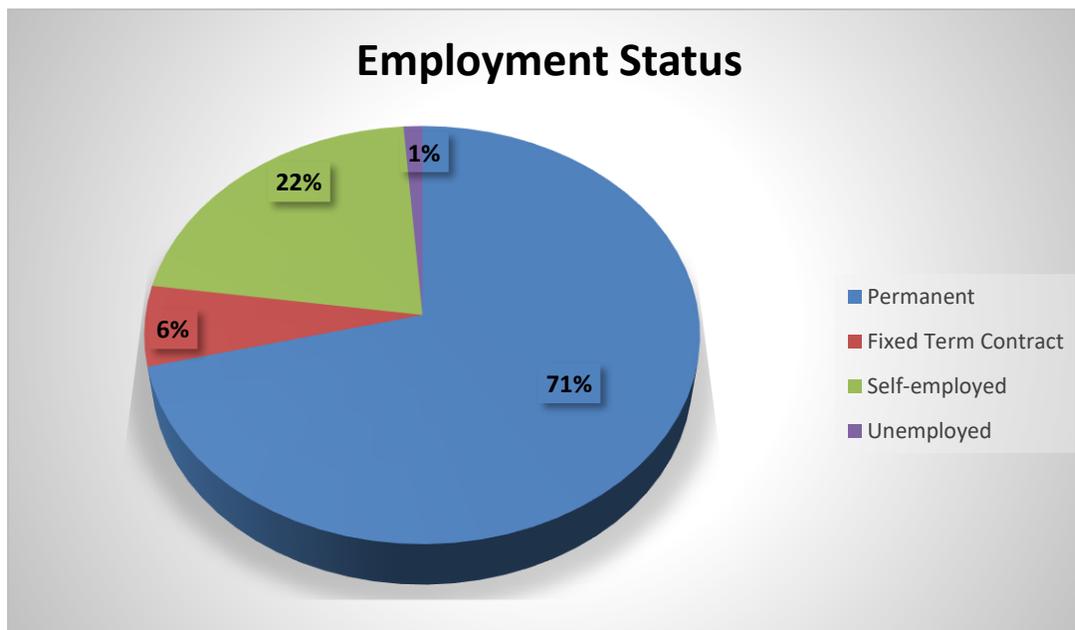
Employment Status Distribution of the Sample

Employment status	Frequency	Percent	Valid Percent	Cumulative Percent
Permanent	287	71.0	71.0	71.0
Fixed Term Contract	25	6.2	6.2	77.2
Self-employed	87	21.5	21.5	98.8
Unemployed	5	1.2	1.2	100.0
Total	404	100.0	100.0	

Note. N = 404.

Figure 6.6

Sample Distribution by Employment Status



Note. N = 404.

6.2.6 Composition of qualification levels in the sample

Table 6.6 and Figure 6.7 illustrate the highest qualification level distribution of the sample. The distribution of the sample indicates that 41.6% of the participants (N= 404) hold an honours degree, 31.7 % a masters degree, 12.6% a bachelors degree and 7.2% a doctoral degree. Only 5.4% of participants hold a diploma and 1.5% a certificate. The frequencies seemed to be concentrated mostly around an honours degree (41.6%). Post-graduate level qualifications (honours / masters / doctorate degrees) predominate the sample (80.5%).

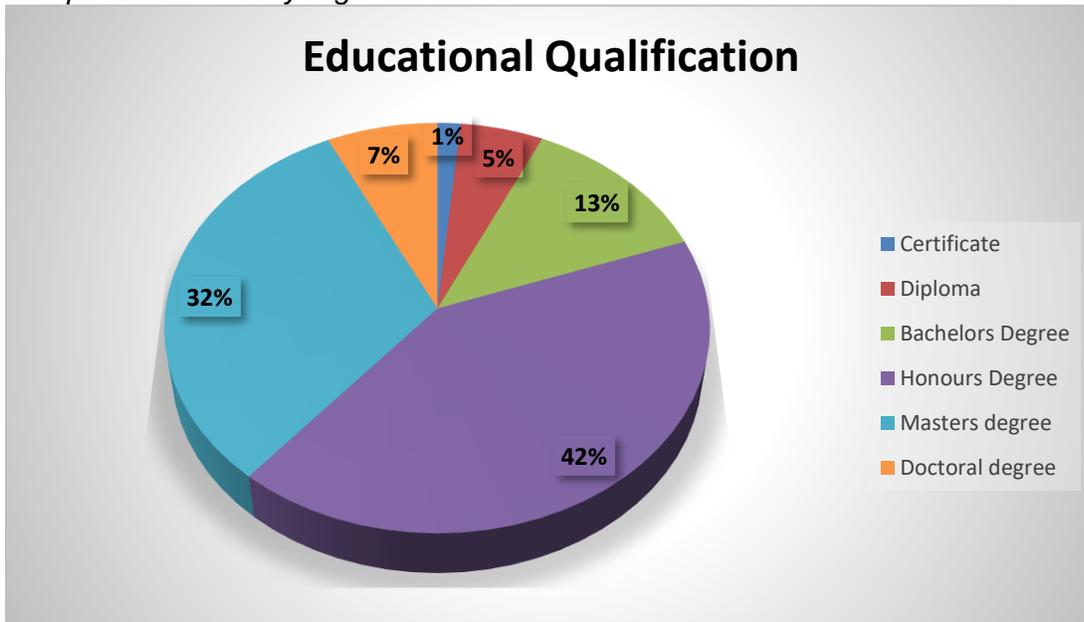
Table 6.6
Highest Qualification Distribution of the Sample

Highest qualification	Frequency	Percent	Valid Percent	Cumulative Percent
Certificate	6	1.5	1.5	1.5
Diploma	22	5.4	5.4	6.9
Bachelors Degree	51	12.6	12.6	19.6
Honours Degree	168	41.6	41.6	61.1
Masters Degree	128	31.7	31.7	92.8
Doctoral degree	29	7.2	7.2	100.0
Total	404	100.0	100.0	

Note. N = 404.

Figure 6.7

Sample Distribution by Highest Qualification



Note. N = 404.

6.2.7 Composition of occupational groups in the sample

Table 6.7 and Figure 6.8 illustrate the occupational group distribution of the sample. The distribution of the sample indicated that 17.6% of the participants (N= 404) were employed as Chartered Accountants, 9.9% HR/D Managers, 8.4% Internal Auditors, 8.2 % University Lecturers, 7.9% Geoscience Information Professionals, 7.9% Quantity Surveyors, 5.4% HR practitioners, 5.2% Architects, 4% Consultants, 3.7% General Managers, 3.5% HR Professionals, 3% Chartered Accounts and Registered Auditors, 2% Engineers, 2% Psychometrists, 1.5% Researchers, 1% Tax professionals, and less than 1% as Town Planner and Veterinarian.

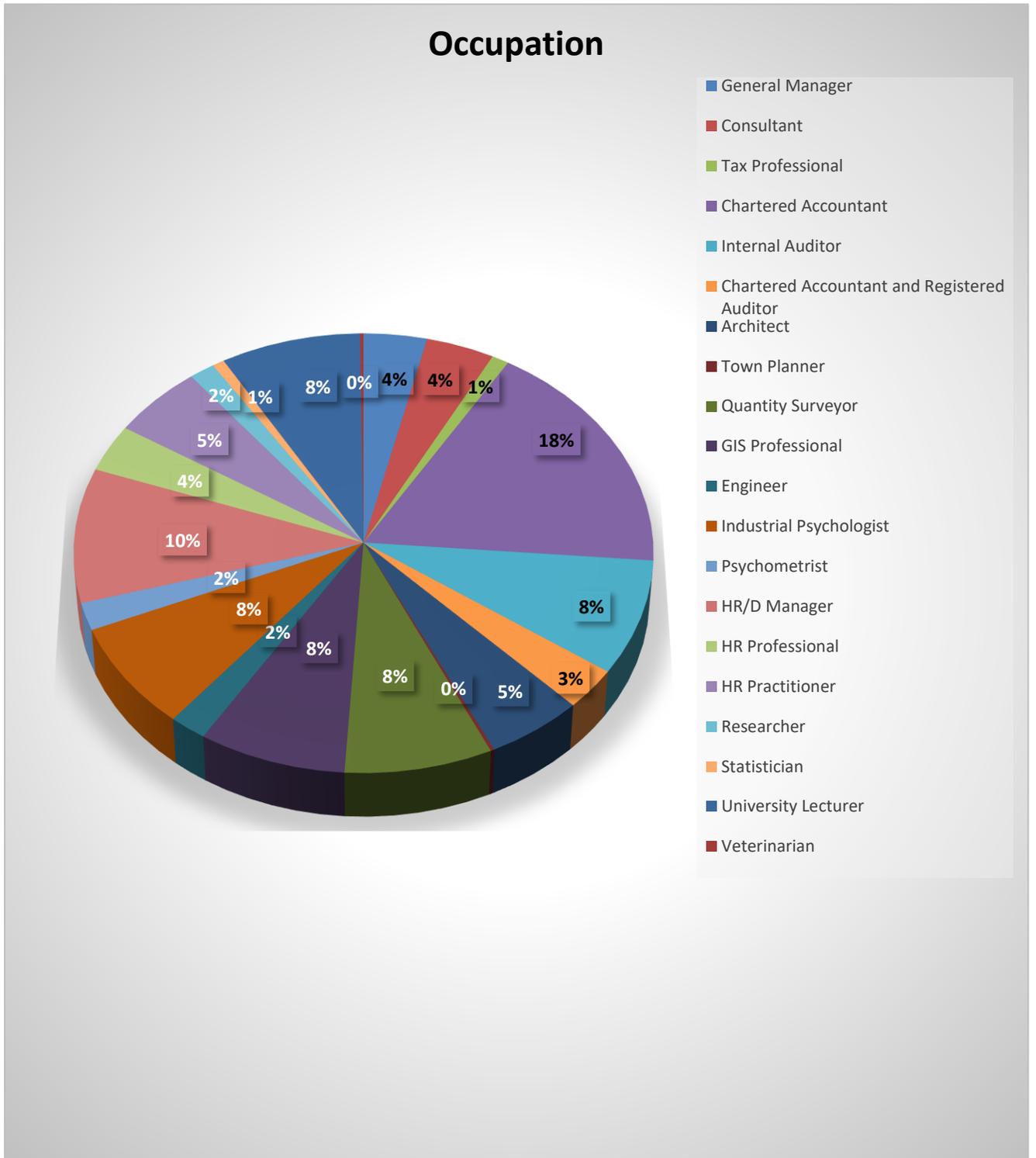
Table 6.7*Occupational Distribution of the Sample*

Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
General Manager	15	3.7	3.7	3.7
Consultant	16	4.0	4.0	7.7
Tax Professional	4	1.0	1.0	8.7
Chartered Accountant	71	17.6	17.6	26.2
Internal Auditor	34	8.4	8.4	34.7
Chartered Accountant and Registered Auditor	12	3.0	3.0	37.6
Architect	21	5.2	5.2	42.8
Town Planner	1	.2	.2	43.1
Quantity Surveyor	32	7.9	7.9	51.0
GIS Professional	32	7.9	7.9	58.9
Engineer	8	2.0	2.0	60.9
Industrial Psychologist	31	7.7	7.7	68.6
Psychometrist	8	2.0	2.0	70.5
HR/D Manager	40	9.9	9.9	80.4
HR Professional	14	3.5	3.5	83.9
HR Practitioner	22	5.4	5.4	89.4
Researcher	6	1.5	1.5	90.8
Statistician	3	.7	.7	91.6
University Lecturer	33	8.2	8.2	99.8
Veterinarian	1	.2	.2	100.0
Total	404	100.0	100.0	

Note. N = 404.

Figure 6.8

Sample Distribution by Occupation



Note. N = 404.

6.2.8 Composition of the occupational sector in the sample

Table 6.8 and Figure 6.9 illustrate the occupational sector distribution of the sample. The distribution of the sample indicated that 36.16% of the participants (N= 404) were employed in the services sector, 30% in the financial sector, 15.8% in the mining sector, 10.4% in the education sector, 7.2% in the engineering sector and 0.5% as other. The frequencies seemed to be concentrated mostly on the services and financial sector (36.16% & 30.6%).

Table 6.8

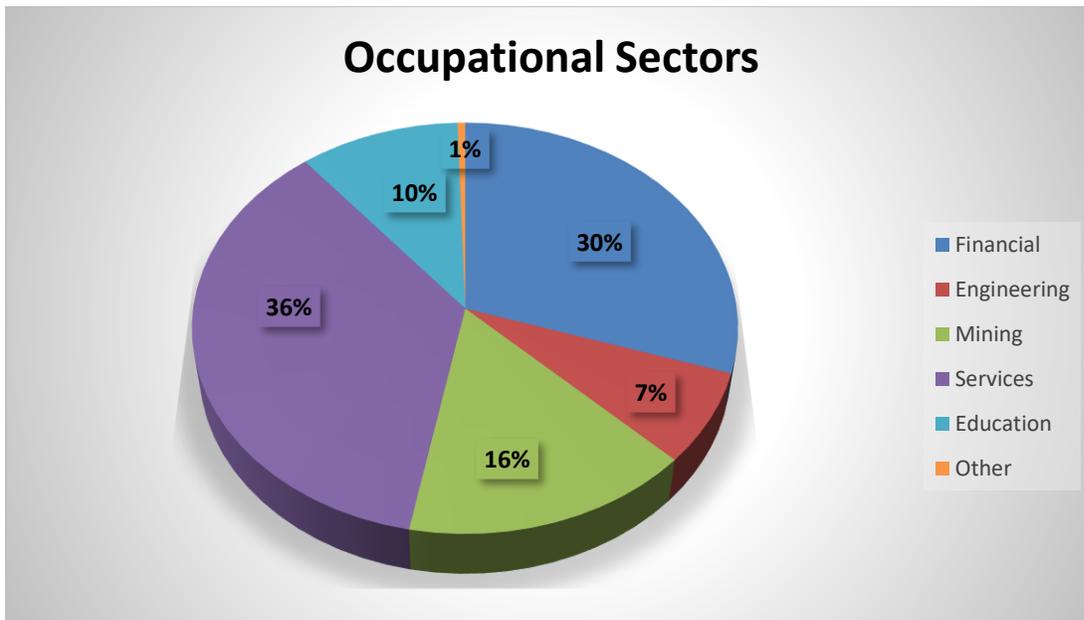
Occupational Sector Distribution of the Sample

Occupational sector		Frequency	Percent	Valid Percent	Cumulative Percent
Financial	Financial and Accounting Services	121	30	30	30
Engineering	Architectural and Engineering services	29	7.2	7.2	37.2
Mining	Mining Sector	64	15.8	15.8	53
Services	Industrial psychologists, Psychometrists, HR Managers and Professionals	146	36.1	36.1	89.1
Education	University Lecturers, researchers and statisticians	42	10.4	10.4	99.5
Other	Veterinarian, and Town Planner	2	.5	.5	100
		404	100	100	

Note. N = 404.

Figure 6.9

Sample Distribution by Occupation



Note. N = 404.

6.2.9 Composition of the professional board in the sample

Table 6.9 and Figure 6.10 illustrate the registered professional board distribution of the sample. The distribution of the sample indicated that 20.8% of the participants (N= 404) were registered with the South African Board for Personnel Practice (SABPP), 19.6% with the South African Institute of Chartered Accountants (SAICA), 9.7% with the South African Geomatics Council (SAGC), 8.2% with the South African Council for the Quantity Surveying Profession (SACQSP), 7.9% with the South African Society of Industrial and Organisational Psychology (SIOPSA), 5.2% with the South African Council for the Architectural Profession (SACAP), 3% with the Health Professions Council of South Africa (HPCSA), 2.7% with the Engineering Council of South Africa (ECSA), 0.7% with the Independent Regulatory Board for Auditors (IRBA) and 0.5% with the South African Council for Natural Scientific Professions (SACNASP). Only 2% of the participants indicated that they were not registered, and 3.2% indicated that they were registered at other professional boards. Participants registered with more than one professional board comprise of 12.4% registered with SAICA and IRBA, 2.7% with the SABPP and SIOPSA, 1.5% at SIOPSA and the HPCSA. The frequencies seemed to be concentrated mostly around the SABPP and SAICA (20.8% & 19.6%).

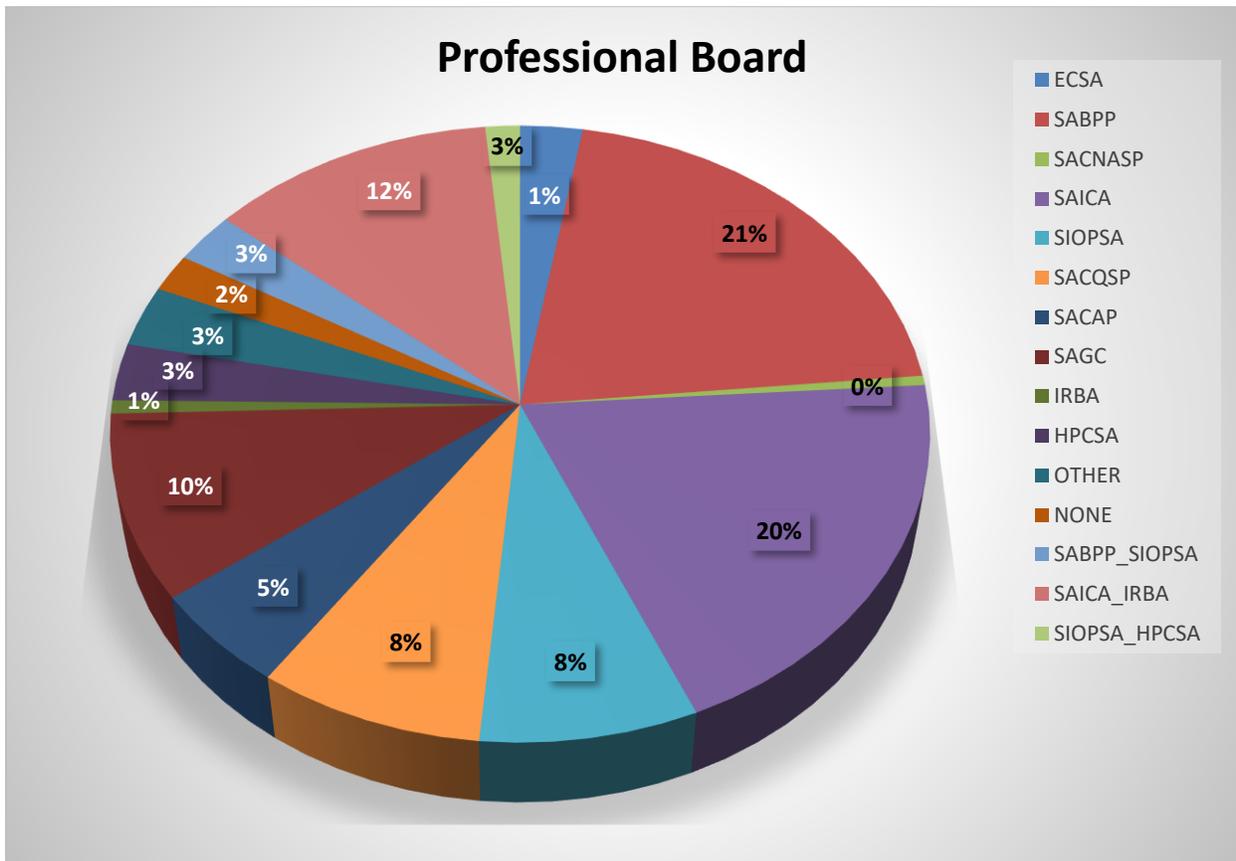
Table 6.9*Professional Board Distribution of the Sample*

Professional Board	Frequency	Percent	Valid Percent	Cumulative Percent
ECSA	11	2.7	2.7	2.7
SABPP	84	20.8	20.8	23.5
SACNASP	2	.5	.5	24.0
SAICA	79	19.6	19.6	43.6
SIOPSA	32	7.9	7.9	51.5
SACQSP	33	8.2	8.2	59.7
SACAP	21	5.2	5.2	64.9
SAGC	39	9.7	9.7	74.5
IRBA	3	.7	.7	75.2
HPCSA	12	3.0	3.0	78.2
OTHER	13	3.2	3.2	81.4
NONE	8	2.0	2.0	83.4
SABPP_SIOPSA	11	2.7	2.7	86.1
SAICA_IRBA	50	12.4	12.4	98.5
SIOPSA_HPCSA	6	1.5	1.5	100.0
Total	404	100.0	100.0	

Note. N = 404.

Figure 6.10

Sample Distribution by Professional Boards



Note. N = 404.

6.2.10 Summary of sample socio-demographic profile

In summary, the biographical profile obtained for the sample reports that the primary sample characteristics that require further investigation and interpretation of the empirical results were as follows: age, gender, race, job level, employment status, qualification level, occupation, employment sector, and professional board registered with.

The participants in the sample were predominantly white (69%), male (53%) and female (46%) permanently employed professionals in the services sector on management-level holding a post-graduate level qualification, aged between 31 – 45 years (early adulthood life stage/established career stage).

6.3 CHOOSING AND MOTIVATING THE PSYCHOMETRIC BATTERY

The choice of the relevant psychometric battery was guided by the literature review and was chosen based on the appropriateness related to the models and theories of the research study. The validity, reliability, cost-effectiveness and suitability of the psychometric battery to measure the relevant constructs were especially considered.

6.3.1 Measurement of biographical variables

The biographical characteristics of the respondents were measured with a short biographical questionnaire intended to ascertain the different age, gender, race, job levels, employment statuses, level of qualifications and occupations.

6.3.2 Measurement of career satisfaction

The degree to which respondents felt satisfied with their career was assessed by utilising the career satisfaction scale (CSS) developed by Greenhaus et al. (1990). This scale is the most widely utilised instrument to assess subjective career success (Abele et al., 2016; Barnett & Bradley, 2007; Cesinger, 2011; Chan et al., 2016; Dries, 2011; Eby et al., 2003; Enache et al., 2011; Guan et al., 2015; Hagmaier et al., 2018; Herrmann et al., 2015; Heslin, 2005; Hirschi et al., 2016; Jawahar & Liu, 2016; Joo & Lee, 2017; Ng et al., 2005; O'Shea et al., 2014; Shockley et al., 2015; Spurk et al., 2014; Xie et al., 2016; Zhou et al., 2013) and is further discussed in terms of the rationale, description, administration, interpretation, validity, reliability and the motivation for choosing the career satisfaction scale as a measuring instrument in this research study.

(a) Rationale for the career satisfaction scale

The CSS (Greenhaus et al., 1990) is a self-report inventory consisting of only five items and aims to measure overall career satisfaction regarding progress toward meeting different career-related goals related to overall career, income, advancement, and new skills.

(b) Dimensions of the career satisfaction scale

The CSS (Greenhaus et al., 1990, p. 86) consisted of the following five items:

- (1) "I am satisfied with the success I have achieved in my career."
- (2) "I am satisfied with the progress I have made toward meeting my overall career goals."
- (3) "I am satisfied with the progress I have made toward meeting my goals for income."
- (4) "I am satisfied with the progress I have made toward meeting my goals for advancement."

(5) "I am satisfied with the progress I have made toward meeting my goals for the development of new skills".

These five items provided an overall impression of the career satisfaction of an individual in terms of overall career, income, advancement, and development of new skills.

(c) *Administration of the career satisfaction scale*

Clear instructions were provided for completing the CSS measure. Although there was no time limit, the questionnaire could be completed within less than one minute. No supervision was required since the questionnaire is self-explanatory. Respondents were required to indicate their level of agreement with each of the statements. The score was calculated by adding up the total responses and determining the total average score.

(d) *Interpretation of the career satisfaction scale*

Each respondent's test form was scored electronically. A higher score indicated that an individual might experience higher levels of career satisfaction. Responses were measured in terms of the following scale:

- 1 = Strongly disagree
- 2 = Disagree to some extent
- 3 = Uncertain
- 4 = Agree to some extent
- 5 = Strongly agree

(e) *Reliability and validity of the career satisfaction scale*

The Cronbach alpha coefficient for this scale has been reported as .88 by Greenhaus et al. (1990) and more recently as .86 (Chan et al., 2016), .90 (Guan et al., 2015) and .85/.83 at T1/T2 (Abele et al., 2016).

(f) *Motivation for using the career satisfaction scale*

The CSS is quick and easy to administer and has been proven to be a valid and reliable instrument. This widely utilised instrument measures overall career satisfaction and the items were answered concerning self-set standards (i.e., career-related personal goals related to overall career, income, advancement, and development of new skills) (Abele et al., 2016). Shockley et

al. (2015) recently developed a new longer instrument on career satisfaction and finally called into question using their longer scale while the same information could potentially be gained more efficiently through the five items of the career satisfaction scale of Greenhaus et al. (1990). The inclusion of the five-item career satisfaction measure is, therefore, justified and would provide more insight into the construct of subjective career success in the current research.

6.3.3 Measurement of self-perceived employability

Self-perceived employability relates to the perspective on employability from the individual's point of view on how individuals perceive their current and future prospects of employment and were measured through the use of the Graduate Employability Measure (GEM) (Rothwell & Arnold, 2007). The GEM is further discussed in terms of the rationale, description, administration, interpretation, validity, reliability and the motivation for choosing the GEM as a measuring instrument in this research study.

(a) Rationale for the GEM

The GEM is a self-report inventory consisting of eleven items. The purpose of the GEM is to evaluate an individual's perception of skills and abilities concerning how organisations may react to them in terms of employment as a unique individual; therefore, self-perceived employability is measured as a unitary construct.

(b) Dimensions of the GEM

The GEM consisted of the following 11 items measuring self-perceived employability as a unitary construct:

- (1) "Even if there was downsizing in this organisation I am confident that I would be retained."
- (2) "My personal networks in this organisation help me in my career."
- (3) "I am aware of the opportunities arising in this organisation even if they are different to what I do now."
- (4) "The skills I have gained in my present job are transferable to other occupations outside this organisation."
- (5) "I could easily retrain to make myself more employable elsewhere."
- (6) "I have a good knowledge of opportunities for me outside of this organisation even if they are quite different to what I do now."
- (7) "Among the people who do the same job as me, I am well respected in this organisation."
- (8) "If I needed to, I could easily get another job like mine in a similar organisation."

(9) "I could easily get a similar job to mine in almost any organisation."

(10) "Anyone with my level of skills and knowledge, and similar job and organisational experience, will be highly sought after by employers."

(11) "I could get any job, anywhere, so long as my skills and experience are reasonably relevant".

These eleven items provided an overall impression of individuals' self-perceived employability as a unitary construct.

(c) *Administration of the GEM*

Clear instructions were provided for completing the GEM. There was no time limit for the questionnaire, and it was expected to be completed by an individual within less than 5 minutes. No supervision was required since the questionnaire is self-explanatory. Respondents were required to indicate their level of agreement with each of the statements. The score was calculated by adding up the total responses and determining the total average score.

(d) *Interpretation of the GEM*

Each respondent's test form was scored electronically. A higher score indicated that an individual might experience higher levels of self-perceived employability. Responses were measured in terms of the following scale:

1 = Strongly disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly agree

(e) *Reliability and validity of the GEM*

Rothwell and Arnold (2007) reported a Cronbach's alpha (internal consistency reliability) of .83, which means that the instrument has overall good internal reliability.

(f) *Motivation for using the GEM*

The GEM scale is quick and easy to administer, cost-effective and has been proven to be a valid and reliable instrument.

6.3.4 Measurement of career adaptability

Savickas and Porfeli (2012) developed the career adapt-abilities scale (CAAS) to measure career adaptability; a psychosocial strategy that involves an individual's inner resource (capacity) to successfully manage the present and prospected developmental vocational tasks, occupational transitions, and work traumas and challenges. The CAAS is further discussed in terms of the rationale, description, administration, interpretation, validity, reliability and the motivation for choosing the CAAS as a measuring instrument in this research study.

(a) Rationale for the CAAS

The CAAS is a multifactorial self-rating measure consisting of 24 items and four subscales which measure (a) concern, (b) control, (c) curiosity and (d) confidence (overall career adaptability) as psychosocial resources for managing developmental tasks, occupational transitions and work traumas (Savickas & Porfeli, 2012).

(b) Dimensions of the CAAS

The following is a detailed description of the four dimensions.

- career concern (6 items)

Career concern refers to the degree of an individual's involvement in their career planning and thinks about their career future. An example of an item includes the following: "Thinking about what my future will be like".

- career control (6 items)

Career control refers to the degree to which an individual feels responsible for managing and building their career. An example of an item includes the following: "Keeping upbeat".

- career curiosity (6 items)

Career curiosity refers to the degree to which an individual explores the world of work and makes an effort to gain as much information as possible about the requirements, practices and rewards related to specific careers and occupations. An example of an item includes the following: "Exploring my surroundings".

- career confidence (6 items)

Career confidence refers to the degree to which an individual believes in their ability to make and implement good career decisions. An example of an item includes the following: “Performing tasks efficiently”.

(c) *Administration of the CAAS*

Clear instructions were provided for completing the CAAS. There was no time limit for the questionnaire, though it was expected that the CAAS be completed within 5-10 minutes. No supervision was required since the questionnaire is self-explanatory. Individuals were required to respond to each question by indicating their preference. The score was calculated by adding up the total responses and determining the total average score of each subscale to determine individuals' overall career adaptability.

(d) *Interpretation of the CAAS*

A five-point Likert-type scale is utilised for rating the responses of the questionnaire. Each subscale (career concern, career control, career curiosity and career confidence) is measured separately and reflects the overall career adaptability related to these four dimensions. Each respondent's test form was scored electronically. A higher score indicates a higher level of career adaptability. Responses were measured in terms of the following scale:

1 = Not strong

2 = Somewhat strong

3 = Strong

4 = Very strong

5 = Strongest

(e) *Reliability and validity of the CAAS*

According to Savickas and Porfeli (2012), the CAAS has good internal reliability with a Cronbach alpha coefficient for the overall scale of .92 and the subscales a Cronbach alpha coefficient ranging between .74 and .85 (high internal consistency reliability). Maree (2012) has confirmed the construct validity and internal consistency reliability of the CAAS in the South African context. Coetzee and Stoltz (2015) recently reported a reliability coefficient of .94 for the overall scale and Cronbach's Alpha coefficients (internal consistency) for the four subscales ranging between .82

and .89. It can be concluded that the CAAS has good reliability and suitable measurement equivalence across countries (Savickas & Porfeli, 2012).

(f) *Motivation for using the CAAS*

The CAAS has been proven to be a valid and reliable measuring instrument across several countries, is quick and easy to administer and cost-effective.

6.3.5 Measurement of psychosocial career preoccupations

The aim of the psychosocial career preoccupations scale (PCPS) developed by Coetzee (2014b, 2015) is to measure working adults' general degree of concern with specific vocational developmental tasks. The PCPS is further discussed in terms of the rationale, description, administration, interpretation, validity, reliability and the motivation for choosing the PCPS as a measuring instrument in this research study.

(a) *Rationale for the PCPS*

The PCPS is a self-report inventory consisting of 24 items. The purpose of the PCPS is to determine an individual's career preoccupations and concerns related to specific developmental tasks across the following three dimensions: career establishment, career adaptation, and work-life adjustment preoccupations.

(b) *Dimensions of the PCPS*

The following is a detailed description of the three dimensions.

- career establishment preoccupations (13 items)

This dimension includes concerns related to advancing in one's career in the currently employed organisation, career and economic stability and security, establishing opportunities for self-expression and personal growth and development and fitting-in in a group. An example of an item includes the following: "To what extent are you concerned about establishing a degree of job security?"

- career adaptation preoccupations (5 items)

This dimension involves employability-related concerns related to adapting to changing situations which might involve career changes and adjustment of one's interests, talents and capabilities to

fit with opportunities in the employment market. An example of an item includes the following: “To what extent are you concerned about changing your current career field?”

- work/life adjustment preoccupations (6 items)

This dimension involves concerns related to settling down, reducing one’s workload and achieving greater harmony between one’s work and personal life, which might also involve withdrawing from paid employment altogether. An example of an item includes the following: “To what extent are you concerned about balancing work with family responsibilities?”

(c) *Administration of the PCPS*

Clear instructions were provided for completing the PCPS. There was no time limit for the questionnaire though it can be completed within 5 minutes. No supervision was required since the questionnaire was self-explanatory. Individuals were required to respond to each question by indicating their level of concern. The score is calculated by adding up the total responses and determining the overall average rating of each sub-scale to assess an individual’s career preoccupations and concerns.

(d) *Interpretation of the PCPS*

A five-point Likert-type scale is utilised for rating the responses of the questionnaire. Each subscale (career establishment preoccupations, career adaptation preoccupations, work/life adjustment preoccupations) is measured separately and reflects the degree of concern of the respondents related to these three dimensions. Each respondent’s test form was scored electronically. A higher score indicates a higher degree of concern related to certain career preoccupations. Responses were measured in terms of the following scale:

- 1 = Not concerned
- 2 = Somewhat concerned
- 3 = Much concerned
- 4 = Highly concerned
- 5 = Extremely concerned

(e) *Reliability and validity of the PCPS*

According to Coetzee (2014b), the PCPS has good internal consistency, with a Cronbach alpha coefficient ranging between .72 and .95 (high internal consistency reliability). Coetzee (2014b)

has found evidence of the validity, and the factor analysis confirms the construct validity of the PCPS.

(f) Motivation for using the PCPS

Although the PCPS is recently developed and research on this scale is limited, the PCPS is quick and easy to administer, cost-effective, and proven to be a valid and reliable instrument.

6.3.6 Measurement of employability attributes

Bezuidenhout and Coetzee (2010) developed the employability attributes scale (EAS) to measure individuals' level of confidence in their psychosocial employability attributes. The EAS is further discussed in terms of the rationale, description, administration, interpretation, validity, reliability and the motivation for choosing the EAS as a measuring instrument in this research study.

(a) Rationale for the EAS

The EAS (Bezuidenhout & Coetzee, 2010) has been developed for the South African context and is a self-rated, multifactorial measure to assess employability attributes. The EAS consists of 56 items and eight subscales: career self-management, career resilience, entrepreneurial orientation, proactivity, self-efficacy, emotional literacy, sociability, and cultural competence.

(b) Dimensions of the EAS

The following is a detailed description of the eight employability attributes (dimensions).

- Career self-management (11 items)

Career self-management drive refers to the tendency to manage one's career proactively by collecting career-related information to enhance (1) knowledge of oneself (e.g. career identity, abilities, values and career aspirations) and the (2) external environment (e.g. the world of work, developing career goals and action plans to achieve these goals) and to (3) obtaining feedback to enhances career decision-making, and updating skills and seeking job opportunities regularly.

An example of an item includes the following: "I regularly reflect on what my career aspirations are".

- Cultural competence (5 items)

Cultural competence refers to personal effectiveness in understanding and effectively working with people across different groups (Bezuidenhout, 2011). An example of an item includes the following: “I know the customs of other cultures”.

- Career resilience (6 items)

Career resilience denotes a personal attribute that facilitates a high degree of flexibility, self-confidence, adaptability and competence regardless of adverse career circumstances (Bezuidenhout, 2011). An example of an item includes the following: “I have many good qualities”.

- Proactivity (7 items)

Proactivity refers to individuals’ attributes towards engaging in active role orientations which imply future-orientated and self-initiated actions in changing and improving one’s situation or oneself. (Bezuidenhout, 2011). An example of an item includes the following: “I take responsibility for my decisions”.

- Entrepreneurial orientation (7 items)

Entrepreneurial orientation refers to the preference for creativity and innovation, need for achievement, tendency to take risks, tolerance for ambiguity, and for autonomy in exploiting opportunities that exist in the career environment (Bezuidenhout, 2011). An example of an item includes the following: “I tend to think about how things can be done differently”.

- Sociability (7 items)

Sociability refers to being open to establishing and maintaining social contacts and utilising formal and informal networks to the advantage of one’s career (Bezuidenhout, 2011). An example of an item includes the following: “I am generally satisfied with myself”.

- Self-efficacy (6 items)

Self-efficacy refers to individuals’ perception of the extent of the difficulty of career-related or performance-related tasks that they believe they are going to attempt as well as their understanding of how well they will be able to execute the required actions to deal with those tasks (Bezuidenhout, 2011). An example of an item includes the following: “I enjoy discovering original solutions to tasks”.

- Emotional literacy (7 items)

Emotional literacy denotes the adaptive use of emotions and refers to the extent to which individuals perceive themselves as able to recognise, understand and manage emotions in themselves and in other people (Bezuidenhout, 2011). An example of an item includes the following: "I generally know what emotions I am feeling".

(c) *Administration of the EAS*

Clear instructions were provided for completing the EAS. There was no time limit for the questionnaire, though the expected completion time was between 10 to 15 minutes. No supervision was required since the questionnaire is self-explanatory. Individuals were required to rate each statement on a six-point Likert-type scale. The score was calculated by adding up the total responses and determined the overall average rating of each subscale to determine individuals' self-perceived employability attributes.

(d) *Interpretation of the EAS*

Each respondent's test form was scored electronically. Total scale scores were calculated by summing all items for each subscale. The higher the score, the higher the level of self-perceived ability of individuals', which was demonstrated through employability attributes. Responses were measured in terms of the following scale:

- 1 = Never true for me
- 2 = Somewhat true for me
- 3 = Occasionally true for me
- 4 = Often true for me
- 5 = More than often true of me
- 6 = Always true for me

(e) *Reliability and validity of the EAS*

Coetzee (2010) provided evidence that the EAS items meet the psychometric criteria of construct validity. The EAS has good internal consistency, with a Cronbach alpha coefficient for each subscale ranging between .78 and .90 (high) (Coetzee, 2010). The EAS has proven reliability and validity in the South African context (Coetzee, 2010; Coetzee et al., 2016; Oosthuizen et al., 2014; Potgieter & Coetzee, 2013).

(f) *Motivation for using the EAS*

The EAS is the only known instrument developed and tested in the South African context to measure adults' psychosocial attributes to enable sustained employability. The EAS is quick and easy to administer, cost-effective and has been proven to be a valid and reliable measuring instrument in the South African context.

6.3.7 Measurement of career anchors

Schein (1990) developed the career orientations inventory (COI) to measure career anchor orientations, which relate to the self-perceptions concerning individuals' motives and needs, talents and skills, and personal values. The COI is further discussed in terms of the rationale, description, administration, interpretation, validity, reliability and the motivation for choosing the COI as a measuring instrument in this research study.

(a) *Rationale for the COI*

The COI is a self-rated, multifactorial measure that contains 40 items and consists of eight subscales: technical/functional, general managerial competence, autonomy, security/stability, entrepreneurial creativity, service/dedication to a cause, pure challenge and lifestyle.

(b) *Dimensions of the COI*

The following is a detailed description of the career orientation anchors (dimensions).

- Technical/functional competence (5 items)

Individuals with the technical/functional career anchor place primary value on their talents and skills within their area of specialisation and the achievement of expert status among peers. An example of an item includes the following: "I will feel successful in my career only if I can develop my technical or functional skills to a very high level of competence".

- General managerial competence (5 items)

Individuals with the managerial competence career anchor prefer a more generalist role involving power and responsibility to solve complex organisational problems and apply effective decision-making with a strong desire to integrate the efforts of different individuals. An example of an item includes the following: "I dream of being in charge of a complex organisation and making decisions that affect many people".

- Autonomy (5 items)

The principal motive for individuals with the autonomy career anchor is the desire for personal freedom in terms of organisational rules and regulations as these individuals want to manage their own time, and want to work according to their own standards and in their own ways. An example of an item includes the following: "I am most fulfilled in my work when I am completely free to define my own tasks, schedules and procedures".

- Security/stability (5 items)

Individuals with the security/stability career anchor have a strong desire to organise their careers in such a way to feel safe and secure and to attain long-term employment with good health benefits and retirement options. An example of an item includes the following: "I would rather leave my organisation altogether than accept an assignment that would jeopardise my security in that organisation".

- Entrepreneurial creativity (5 items)

Individuals with the entrepreneurial creativity anchor have a strong desire for opportunities to be creative by developing new businesses, ideas, products or services to their own specifications. An example of an item includes the following: "Building my own business is more important to me than achieving a high-level managerial position in someone else's organisation".

- Service/dedication to a cause (5 items)

Individuals with the service/dedication to a cause anchor have a strong desire to make the world a better place and are therefore working for the greater good of organisations or communities. An example of an item includes the following: "I am most fulfilled in my career when I have been able to use my talents in the service of others".

- Pure challenge (5 items)

Individuals with the pure challenge career anchor are determined to excel and have the perception that they can only achieve success by overcoming challenging obstacles. These individuals pursue variety, are extremely competitive, and winning is everything. An example of an item includes the following: "I will feel successful in my career only if I face and overcome very difficult challenges".

- Lifestyle (5 items)

Individuals with the lifestyle career anchor have a strong desire for balancing one's personal and family commitments and value flexibility. An example of an item includes the following: "I dream of a career that will permit me to integrate my personal, family and work needs".

(c) *Administration of the COI*

Clear instructions were provided for completing the COI. There was no time limit for the questionnaire, and individuals were expected to complete this COI within 10 – 20 minutes. No supervision was required since the questionnaire is self-explanatory. Individuals were required to rate each statement on a six-point Likert-type scale. The score was calculated by adding up the total responses and determining the overall average rating of each subscale to determine individuals' career anchors.

(d) *Interpretation of the COI*

Each respondent's test form was scored electronically. Each subscale was measured separately and reflected the participants' perception and feelings on different anchors. Total scale scores were calculated by summing all items for each subscale. The higher the score, the truer the statement was for the individual. Subscales with the highest mean scores were regarded as individuals' dominant career anchor. Responses were measured in terms of the following scale:

- 1 = Never true for me
- 2 = Somewhat true for me
- 3 = Occasionally true for me
- 4 = Often true for me
- 5 = More than often true of me
- 6 = Always true for me

(e) *Reliability and validity of the COI*

The COI is an established instrument that has been utilised to measure career anchors both internationally and in South Africa. The COI has shown overall acceptable and good psychometric validity and reliability for the subscales; technical/functional (.39 – .64); lifestyle (.46 – .73); entrepreneurial creativity (.65 – .86); pure challenge (.61 – .80); service/dedication to a cause (.45 – .81); general managerial competence (.55 – .82); security/stability (.61 – .83); and autonomy

(.71 – .76) in South African multicultural samples (Coetzee & de Villiers, 2010; Coetzee & Schreuder, 2008, 2009, 2011, 2012; Coetzee et al., 2014; Oosthuizen et al., 2014).

(f) Motivation for using the COI

The COI has been proven to be a valid and reliable measuring instrument and is appropriate to the study and is quick and easy to administer, and cost-effective.

6.3.8 Measurement of career values

Macnab et al. (2005) developed the career values scale (CVS) to provide individuals with information about what is essential in their careers, therefore providing a standardised description of individuals values. The CVS is further discussed in terms of the rationale, description, administration, interpretation, validity, reliability and the motivation for choosing the CVS as a measuring instrument in this research study.

(a) Rationale for the CVS

The CVS consists of 88 items measuring ten career values on a five-point Likert scale with participants indicating how important the statement is for planning their life and career. The ten career values measured by the CVS are service orientation, influence, independence, creativity, financial rewards, career development, prestige, teamwork, security, and excitement.

(b) Dimensions of the CVS

The following is a detailed description of the career values (dimensions). Due to the copyright of the CVS, no examples of items are provided below.

- Service orientation

Individuals scoring high on service orientation prefer helping people with their problems by evaluating the thoughts and feelings of others.

- Teamwork

Individuals scoring high on teamwork prefer working closely with co-workers and clients and cherish encouragement and encouraging others.

- Influence

Individuals scoring high on influence prefer being directive rather than collaborative and prefer having high levels of responsibility where they can control and manage the work that they are involved with.

- Creativity

Individuals scoring high scores on creativity prefer working in an organisation that promotes ingenuity and creativity. They have a strong desire for developing new ideas, exploring unconventional approaches and using their imagination.

- Independence

Individuals scoring high on independence prefer self-reliance and autonomy to set their own goals and schedule. They prefer working without supervision, independently without having to seek advice from co-workers.

- Excitement

Individuals scoring high on excitement value variety, risk and fast-paced work. They prefer environments where there is uncertainty and where change is expected.

- Career development

Individuals scoring high on career development prefer developing both personally and professionally. They have a strong desire for learning new skills and expanding their expertise and will flourish in an organisation promoting a culture of life-long learning.

- Financial rewards

Individuals scoring high on financial rewards have a strong desire to earn enough income to afford a luxurious lifestyle and prefer working in organisations that provide excellent financial incentives.

- Prestige

Individuals scoring high on prestige value recognition, admiration and status. These individuals have a strong desire to be openly recognised as an outstanding performer and will prefer working for a well-known or prestigious organisation.

- Security

Individuals scoring high on security value a consistent career path where they can plan for the future within a stable and predictable career.

(c) *Administration of the CVS*

Clear instructions were provided for completing the CVS. There was no time limit for the questionnaire, and it was expected that the CVS be completed within 15 – 20 minutes. No supervision was required since the questionnaire is self-explanatory. Individuals were required to rate each statement on a five-point Likert-type scale. The score was calculated by adding up the total responses and determining the total average score of each subscale to determine individuals' primary career values.

(d) *Interpretation of the CVS*

Each respondent's test form was scored electronically. Each subscale was measured separately and reflected the participants' perception and feelings on different values dimensions. Total scale scores were calculated by summing all items for each subscale. The higher the score, the more important the statement was for the individual. Responses were measured in terms of the following scale:

- 1 = Not at all Important
- 2 = Unimportant
- 3 = Neutral (the statement is neither important nor unimportant to you)
- 4 = Important
- 5 = Very Important

(e) *Reliability and validity of the CVS*

The CVS has high internal consistency, with a Cronbach alpha coefficient for each subscale ranging between .75 to .89, with the majority of scales being above .80 (Dunning, 2010; Macnab et al., 2005). Validity analyses demonstrated the CVS discriminated between occupational groups.

(f) *Motivation for using the CVS*

The CVS has been proven to be a valid and reliable measuring instrument and is appropriate for the present study.

6.3.9 Limitations of the psychometric battery

All the research instruments chosen for this study were self-report instruments. Self-report instruments measure individuals' views and feelings towards their interests, attitudes, preferences or concerns, and are the most widely utilised in social sciences (McDonald, 2008). However, the structure of the questionnaires anticipated that the reported information accurately measures the constructs under consideration. Self-report instruments are subject to measurement errors such as response biases, acquiescent and extreme responding (McDonald, 2008). Individuals may have a lack of self-awareness and may have a distorted attitude of themselves, thus, providing incorrect responses (Hoskin, 2012; McDonald, 2008). Individuals may also respond in a socially desired manner and present themselves in a certain way (Hoskins, 2012; McDonald, 2008). This limitation was taken into account in the statistical analysis of the data. The psychometric battery of this research study had eight sub-sections with numerous items, which could have discouraged individuals to provide accurate answers (Maree, 2016). It, therefore, may account for the low response rate.

6.4 ETHICAL CONSIDERATIONS IN THE ADMINISTRATION OF THE PSYCHOMETRIC BATTERY

Ethics may be defined as a set of moral principles that refers to the quality of the research procedures concerning the adherence to the professional, legal and social obligations one has to the research participants (Foxcroft & Roodt, 2005; Rubin & Babbie, 2016). To comply with ethical requirements, the researcher adhered to the following basic principles of social research: avoiding physical harm, psychological abuse and legal jeopardy of participants; obtaining informed consent; honouring all guarantees of privacy, confidentiality and anonymity; using research methods that were appropriate for the topic; removing undesirable consequences for participants; releasing the details of the study design with the results; making interpretations of results consistent with the data; and using high methodological standards (Neuman, 2014).

In addition to the basic principles of social research, the specific moral and general ethical principles outlined in the policy on research ethics of the particular institution where the research was conducted were adhered to (Unisa, 2014). The institution's moral-ethical principles, which were utilised as the basis for the research, include autonomy, beneficence, non-maleficence and

justice. In addition to the moral principles, the following ten general ethical principles were equally important and were adhered to (Unisa, 2014):

- essentiality and relevance
- maximisation of public interest and social justice
- competence, ability and commitment to research;
- respect for and protection of the rights and interests of participants and institutions
- informed and non-coerced consent
- respect for cultural differences
- justice, fairness and objectivity
- integrity, transparency and accountability
- risk minimisation
- non-exploitation.

Ethical clearance was obtained from the CEMS/IOP Ethics Review Committee (see Ethics certificate in Appendix A) of the university under whose auspices this research was conducted. In order to identify the participants, informed consent and permission from the relevant professional bodies were obtained to conduct the research. Subsequently, an online questionnaire was made available to the knowledge workers for completion in order to gain relevant information for this study. Informed consent was obtained, and knowledge workers were invited to participate voluntarily in the study utilising a participation invitation letter that was emailed to them. Thereafter, individuals decided whether they wanted to participate in the study by clicking on the survey link. Anonymity was ensured as participants were not asked to identify information, and no one could connect individuals to the answers provided. Completed questionnaires were automatically captured on the Survey Monkey platform. Individuals' participation was voluntary, specific and based on written informed consent. In terms of the POPI Act, 2013, reasonable security measures were applied to protect the stored data; therefore, the data were stored on a secure platform, which only the researcher had access to.

The instruments included in the psychometric battery were scientifically valid and reliable, could be applied fairly to all participants, and were not biased against any participant or group, and therefore also adhered to Employment Equity Act 55 of 1998 related to the requirements for applying psychological tests.

6.5 CAPTURING OF CRITERION DATA

The researcher combined the eight questionnaires into a research booklet and created an online survey via the Survey Monkey platform. Participants were required to complete the survey via a Survey Monkey – link. Data from the Survey Monkey platform were directly downloaded to a Microsoft Excel spreadsheet where each row represented a participant, and each column represented a question. The researcher verified that the data were transferred correctly from the Survey Monkey platform. The Microsoft Excel spreadsheet containing the data was imported and analysed employing the services of an independent statistician proficient in statistical software programmes such as SPSS (Statistical Package for Social Sciences) Version 25 (IBM Corp, 2017) and SAS version 9.4 (SAS Institute, 2013).

6.6 FORMULATION OF THE RESEARCH HYPOTHESES

A research hypothesis is often considered as an educated guess (Salkind, 2018); however, it is much more. A research hypothesis is a definite statement that describes a relationship between variables that is empirically verifiable and expressed in terms of operationalised variables (Gravetter & Forzano, 2018). A research hypothesis further reflects the problem statement and guides the researcher to answer the research questions by collecting empirical evidence to test the research hypothesis. The results of the empirical investigation will indicate whether the research hypothesis is supported or rejected (Salkind, 2018). Several research hypotheses (directional and non-directional) were formulated to capture the complexity of the research phenomenon. The research hypotheses are presented in Table 6.10, which provides a summary of the research aims, hypotheses and statistical procedures involved.

It is important to note that for the purpose of the Doctoral study, only overarching research hypotheses were formulated in order to achieve the core aim of the research. Because of the large number of constructs to consider, it was considered inappropriate to formulate detailed sub-research hypotheses as one would expect in a research article. The overarching research hypotheses abided by the principles of parsimony and fit-for-purpose.

Table 6.10*Research Hypotheses*

Research aim	Research hypothesis	Statistical procedure
Research aim 1: To assess the relationship dynamics among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables).	Ha1: There are statistically significant relationships among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables).	Correlations
Research aim 2: To assess whether individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables, significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables.	Ha2: Individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables, significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables.	Canonical correlation
Research aim 3: To assess whether the relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is more positive when their psychosocial career resources (employability attributes, career anchors and career values) are well developed or strongly crystallised than when these career resources are not well developed or strongly crystallised.	Ha3: The relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is moderated by their psychosocial resources (employability attributes, career anchors and career values). The relationship is more positive when their psychosocial career resources are well developed or strongly crystallised than when these career resources are not well developed or strongly crystallised.	Stepwise regression analysis Structural equation modelling (SEM) Hierarchical moderated regression
Research aim 4: To assess whether individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career	Ha4: Individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career	Tests for significant mean differences: Parametric

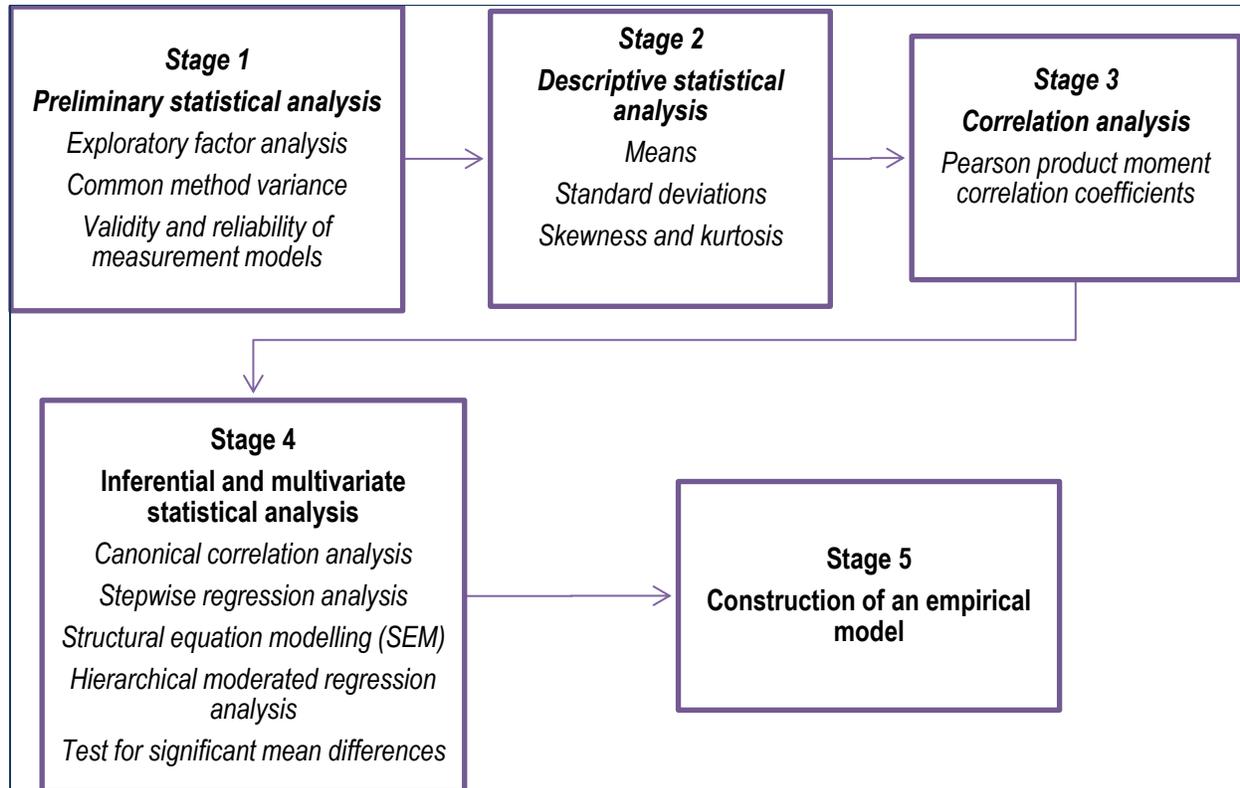
Research aim	Research hypothesis	Statistical procedure
resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability.	anchors and career values), and career satisfaction and self-perceived employability.	
Research aim 5: To construct a psychosocial profile for enhancing career satisfaction and employability based on the empirical results.	Ha5: The empirically manifested relationship dynamics among the variables constitute a psychosocial profile for enhancing the career satisfaction and employability of knowledge workers.	Qualitative analysis of empirically manifested profile elements
Research aim 6: To draw conclusions and make recommendations for future research and practice regarding the career development of knowledge workers.	n/a	n/a

6.7 STATISTICAL PROCESSING OF DATA

The statistical analysis and procedures relevant to this study were applied in four stages: preliminary statistical analysis, descriptive statistical analysis, correlational statistical analysis and inferential and multivariate statistical analysis. The preliminary statistical analysis (stage 1) consisted of exploratory factor analysis of the Career Values Scale, common method variance, and determining the validity and reliability (internal consistency) of measurement models. The descriptive statistical analysis (stage 2) consisted of means, standard deviations, kurtosis, skewness, and frequency data. The correlational statistical analysis (stage 3) consisted of determining the strength and direction of the Pearson product-moment correlation coefficient for each construct. Finally, stage 4 consisted of inferential and multivariate statistical analysis, which includes canonical correlation analysis, stepwise regression analysis, structural equation modelling (SEM), hierarchical moderated regression analysis and test for significant mean differences. Figure 6.11 presents the four stages that were involved in the data analysis.

Figure 6.11

Statistical Procedure and Analysis Process



Source. Author's own work

6.7.1 Stage 1: Preliminary statistical analysis

The preliminary statistical analysis was done first to determine the underlying factors of the career values scale by conducting exploratory factor analysis, followed by testing for common method variance or bias, and finally to determine whether the psychometric battery was valid and reliable.

6.7.1.1 Step 1: Exploratory factor analysis

Limited research has been conducted on the career values scale in South Africa. Therefore the career values scale was subjected to exploratory factor analysis in order to determine the underlying factorial structure of the items in the career values scale (Woods, 2018). Exploratory factor analysis condenses the number of factors or dimensions of the scale by summarising the underlying patterns of item correlation and groups closely related items together (Hair et al., 2019; Pallant, 2013). The EFA was conducted in SPSS version 25 (IBM Corp, 2017).

Figure 7.2 in Chapter 7 illustrates the steps the researcher followed in conducting the EFA, and Section 7.1.1 discussed the steps in detail.

The following measures and criteria were applied in the EFA:

Determine the appropriateness of the data for EFA: The sample size (number of cases or respondents selected for inclusion in a sample) should be as large as possible. Criteria for sample size include:

n = 50: Very poor

n = 100: Poor

n = 200: Fair

n = 300: Good

n = 500: Very good

n = 1 000: Excellent

Other recommendations to determine whether the sample size is appropriate, relate to the number of respondents per item of the instrument. Thompson (2004) recommended sample size of 10 – 20 respondents per item.

An alternative measure of sampling adequacy is Kaiser-Meyer-Olkin (KMO), as it measures the suitability of the data for EFA. The measure indicates the strength of relationships between variables in the correlation matrix. It is determined by calculating the correlations between each pair of variables after controlling for the effects of all other variables.

KMO value criteria include:

.00 – .49: unacceptable

.50 – .59: miserable

.60 – .69: mediocre

.70 – .79: middling

.80 – .89: meritorious

.90 – 1.00: marvellous

A KMO-value $\geq .6$ indicates that the data is suitable for factor analysis.

Bartlett's Test of Sphericity was utilised to test the null hypothesis that the correlation matrix of the variables is an identity matrix (i.e. each variable is perfectly correlated with itself, and the

variables are uncorrelated with each other). The null hypothesis must be rejected (i.e. should be significant, $p < .05$) for the EFA to be considered appropriate.

Factor extraction method: The principal axis factoring (PAF) extraction method was utilised as the aim of the EFA was to determine underlying factors or latent variables for a set of variables that reflect what the variables share in common (Templin & Bradshaw, 2014).

Factor retention criteria: The Kaiser-Guttman criterion, classic technique to determine the appropriate number of factors based on eigenvalues was utilised. Eigenvalues measure the amount of variation in the total sample accounted for by each factor. Factors based on eigenvalues > 1 were retained and can be considered significant. The cumulative percentage of variance was applied as a criterion for factor retention; factors that explained at least 60 per cent of the total variance was retained. The scree test criterion was also applied as factor retention criteria; the sharp descent or elbow (point of inflexion) in the plot slopes was the cut-off point for selecting factors.

Factor rotation method: The oblique rotation method (Promax with Kaiser Normalisation) was utilised to determine factors that were correlated.

Results of factor loadings: Factor loadings obtained in factor analysis are utilised to interpret the results of the factors. Factor loadings are similar to regression coefficients and indicate the strength and association between each variable and each factor. The higher the factor loading, the closer the association of the item is with the group of items that make up the factor. Factor loadings of $>.32$ were interpreted. Squared factor loadings indicate the percentage of variance in an original variable explained by a factor.

Cross loadings exist when a variable has two more factor loadings exceeding the threshold value deemed necessary for inclusion in the factor interpretation process. Variables that load significantly on two factors (both $\geq .30$) were retained only when the discrepancy between the primary and secondary factor loadings was sufficiently large ($\geq .25$).

6.7.1.2 Step 2: Common method variance

To control for common method variance several procedural and statistical remedies can be applied to remove the potential impact of common method variance, as it can significantly influence the research findings (Tehseen et al., 2017). It was especially important to test for common method variance, due to the cross-sectional and self-report nature of the research

approach. When a survey is conducted to measure the independent and dependent variables as in the case with the cross-sectional research approach applied, there is a risk that the estimated impact of the variables on each other may be biased due to the systematic variance shared among the variables (common method variance) (Jakobsen & Jensen, 2015). When a self-report survey is utilised, the individual survey responses may also cause common method variance due to the social desirability of respondents, a tendency of being too lenient or harsh when responding, or even a desire of being consistent (McGonagle, 2017).

The Harman's single factor test (the most commonly utilised) and confirmatory factor analysis (CFA-one factor solution) were applied to test for common method variance. The Harman one-factor analysis was conducted in SPSS version 25 (IBM Corp, 2017) by utilising the principal component analysis. This post hoc procedure aims to establish whether one single factor accounts for the variance in the data (i.e. > 50% Tehseen et al., 2017), which indicates the presence of common method variance. When no single factor emerges and accounts for the majority of the covariance, this means that common method variance is absent and not a prevalent threat for the findings of the research.

The CFA (one-factor solution) was conducted in SAS version 9.4 (SAS Institute, 2013) by utilising the CALIS procedure to determine whether common method variance occurred. The following fit indices, as recommended by Pituch and Stevens (2016), were utilised to evaluate the model fit.

Comparative fit index (CFI; Bentler, 1990) is an incremental fit index that measures the proportionate improvement in noncentrality when moving from the null to a considered model, to the noncentrality of the null model. CFI value ranges from 0 – 1, with higher values indicating a better fit. CFI values of $\geq .90$ are associated with an acceptable model fit.

Normed fit index (NFI or NNI; Bentler & Bonnett, 1980) is an incremental fit index that is utilised to compare a restricted model with a full model using a baseline null model. NFI or NNI value ranges from 0 – 1 with higher values indicating a better fit. NFI /NNI values $\geq .90$ are associated with an acceptable model fit.

Standardised root mean squared residual (SRMR; Bentler, 2006) is an absolute fit index that is utilised to determine the average value of the standardised residuals between observed and predicted covariances. Hu and Bentler (1995) suggested that SRMR values $\leq .05$ indicate a good fit. Values between .05 and .10 indicate acceptable fit. Lower SRMR values represent a better fit, while higher values represent a poor fit.

Root mean square error of approximations (RMSEA; Steiger & Lind, 1980) is an absolute fit index that is utilised to evaluate the model in terms of how well the model reproduces the sample covariance matrix. Browne and Cudeck (1993) suggested that RMSEA values $\leq .05$ indicate a close fit (good fit). Values between .05 and .08 indicate adequate fit, between .08 and .10 indicate a mediocre fit, and $> .10$ is deemed unacceptable. Lower RMSEA values indicate a better fit, while higher values represent a poor fit.

6.7.1.3 Step 3: Construct validity and internal consistency reliability of the measurement model

Construct reliability must be established before construct validity and can be assessed. Cronbach's alpha is a measure of reliability and internal consistency of the measured variables representing a latent construct and provides a coefficient of inter-item correlations by calculating the average of all possible split-half reliability coefficients (Gravetter & Forzano, 2018; Salkind, 2018).

A rule of thumb for reliability estimate is that .70 or higher suggests good internal consistency reliability. Reliability between .60 and .70 may be acceptable, provided that other indicators of a model's construct validity are good (Hair et al., 2019). High reliability coefficients indicate that internal consistency exists, meaning that the measures all consistently represent the same latent construct.

Construct validity of the measurement model refers to whether the scores of the measuring instrument measure the distinct dimensions (constructs) intended to measure (Gravetter & Forzano, 2018; Salkind, 2018). To determine the construct validity of each measurement model, it is imperative to examine the relationship with other constructs that are related (convergent validity) and unrelated (discriminant validity) (Gravetter & Forzano, 2018; Pallant, 2013). The measurement validity of each scale was tested by means of CFA to ensure optimal model fit before proceeding with the statistical analyses for testing the research hypotheses. CFA was conducted in SAS version 9.4 (SAS Institute, 2013) by utilising the CALIS procedure. The incremental and absolute goodness of fit indices already discussed in Section 6.7.1.2; CFI ($\geq .90$), NFI or NNI ($\geq .90$), RMSEA ($\leq .08$) and SRMR ($\leq .10$) were utilised to determine the construct validity.

Information-based model selection criteria act as a cross-validation measure (Cudeck & Browne, 1983) and do not have cut-off values to which models may be measured in terms of overall model fit. Instead, these information criteria are used comparatively among at least two competing

models (Pituch & Stevens, 2016). Akaike's (1987) Information Criterion (AIC) is the most popular information-based criterion (Pituch & Stevens, 2016), utilised to estimate the relative quality of statistical models for a given set of data. Regardless of the AIC value, the model associated with the smallest AIC demonstrates better predictive accuracy (validity) than the comparison models.

Convergent validity refers to the extent to which indicators of a specific construct converge or share a high proportion of variance in common, while discriminant validity refers to the extent to whether a construct is truly distinct from other constructs both in terms of how much it correlates with other constructs and how distinctly measured variables represent only this single construct (Gravetter & Forzano, 2018; Hair et al., 2019).

The average variance extracted (AVE) with CFA is calculated as the mean-variance extracted for the items loading on a construct and is a summary indicator of convergence.

Hair et al. (2019) suggest the following estimates for construct validity:

- Standardised loading estimates $\geq .50$, and ideally $\geq .70$,
- AVE $\geq .5$ to provide adequate convergent validity,
- AVE estimates for two factors also should be higher than the square of the correlation between the two factors to provide evidence of discriminant validity,
- Composite reliability $\geq .70$ indicate adequate convergence or internal consistency.

6.7.2 Stage 2: Descriptive statistical analysis

Descriptive statistics provided a means to organise and summarise data meaningfully in order to promote an understanding of the data characteristics with regards to the research constructs (Maree, 2016), namely, career satisfaction, self-perceived employability, psychosocial career preoccupations, career adaptability, employability attributes, career anchors, and career values. Descriptive statistics were utilised to test assumptions on the variables (constructs) and included the means, standard deviations, score ranges, skewness and kurtosis (Pallant, 2013). The MEANS procedure in SAS version 9.4 (SAS Institute, 2013) was utilised to determine the following descriptive statistics.

The guidelines provided by Tramontano and Fida (2018) were utilised to interpret the following descriptive statistics:

Mean refers to the average score describing the sample and the average score describing the relevant constructs.

Standard deviation is a measure of the variability around the mean within the sample.

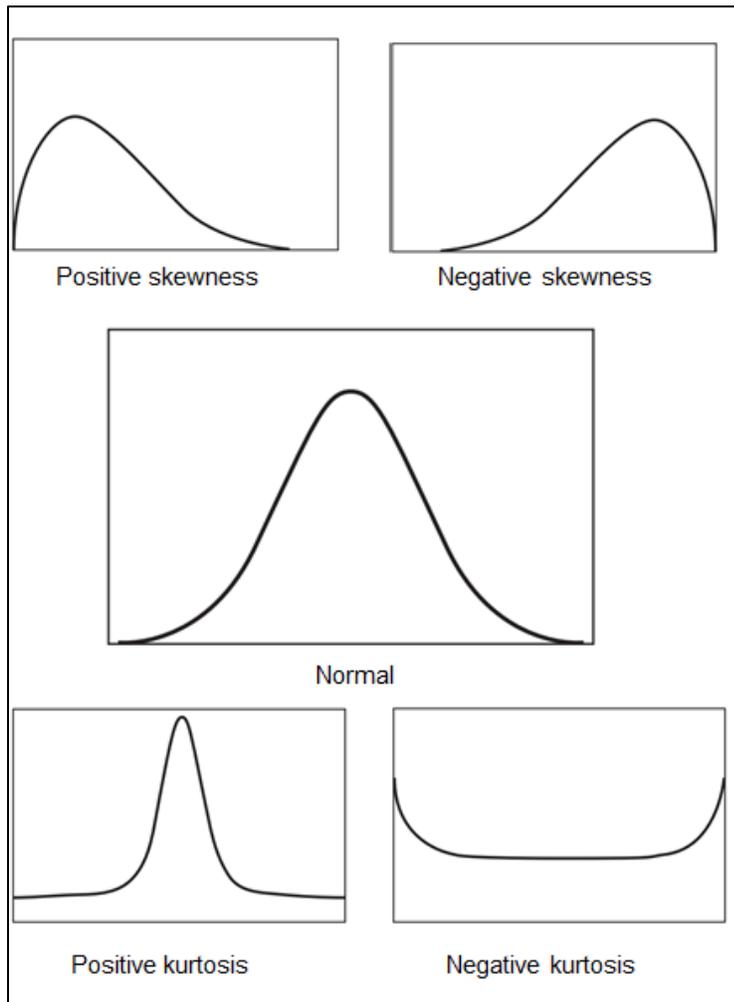
Score ranges refer to the lowest and the highest values within the sample under study.

Skewness and kurtosis refer to the distribution of scores on continuous variables to test the assumption of normality to determine whether parametric or non-parametric statistical techniques are to be utilised to test for significant mean differences (Pallant, 2013). Skewness provides evidence regarding the symmetry of the data distribution, while kurtosis provides evidence regarding the peakedness of the data distribution. To obtain a perfect normal distribution, the values of the skewness and kurtosis should be both zero (Tabachnick & Fidell, 2019).

As indicated by Figure 6.12, when positive skewness occurs, the scores are clustered to the left around the lower values. When negative skewness occurs, scores are clustered towards the right around the high-end values. Positive kurtosis occurs when the distribution is clustered towards the centre and peaked with long thin tails. Negative kurtosis occurs when values are below zero, indicating a relatively flat distribution, and implies that there were too many extreme responses (Tabachnick & Fidell, 2019). A distribution is called approximate normal if skewness or kurtosis (excess) of the data are between -1 and $+1$. (Mishra et al., 2019). To determine whether the distribution can be considered normal, the reference values of an absolute skewness value of ≤ 2 or an absolute kurtosis (excess) ≤ 4 can be utilised. (Mishra et al., 2019).

Another quick method to test the normality for a sample size of > 50 (Mishra et al., 2019) is to utilise the relative value of the SD with respect to mean. When the SD is less than the half mean (i.e., CV $< 50\%$), data are considered normal. Skewness and kurtosis will, however, not make a substantive difference in the analysis of a large sample (more than 200+ cases) (Tabachnick & Fidell, 2019). The risk of underestimating the variance of the data caused by kurtosis can be lowered with a large sample.

Figure 6.12
Normality



Source. Tabachnick and Fidell (2014, p.114)

6.7.3 Stage 3: Correlation analysis

Correlation analysis was utilised to test the relationships between various variables (Gravetter et al., 2020), including individuals' biographical characteristics (age, gender, race and employment status), psychosocial career preoccupations and career adaptability (antecedents/independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences/dependent variables).

The following research hypothesis was tested by performing the correlational statistical analysis:

H1: There are statistically significant relationships among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables).

The information about the sample was checked before proceeding with the analysis, and all missing data cases were excluded from the analysis.

Correlation is a measure of association that provides information about whether and how two measures co-vary (Gravetter et al., 2020; Tramontano & Fida, 2018). Correlation indicates whether the increase in one measure corresponds with an increase (positive correlation) or a decrease (negative correlation) in the other (Gravetter et al., 2020; Pallant, 2013; Tramontano & Fida, 2018).

The Pearson product-moment correlation coefficient (*Pearson's r*) is utilised for variables assessed on interval or ratio scale while the Spearman rank-order correlation (*rho*) is utilised for ordinal data (Tramontano & Fida, 2018). Pearson's *r* ranges from -1 to $+1$. The sign in front of *r* specifies whether there is a positive correlation or a negative correlation. A positive sign indicates a positive correlation suggesting that as one variable increases, the other variable also increases. A negative sign indicates a negative correlation, suggesting that as one variable increases, the other variable decreases. The size of the absolute value (ignoring the sign) provides evidence of the strength of the relationship. Pearson's *r* suggests that values $<.10$ indicate a weak association, values between $.10$ and $.30$ indicates a moderate association and values between $.30$ and $.50$ indicate a medium correlation and values $>.50$ indicates a strong association. A perfect correlation of 1 or -1 shows that the value of one variable can be determined precisely by the value of the other variable (Gravetter et al., 2020). The CORR procedure in SAS version 9.4 (SAS Institute, 2013) was utilised to determine the correlations between the variables.

The guidelines of Cohen (1988, 79–81) were followed to interpret the practical effect of the associations at $p \leq .05$:

Small $r = .10$ to $.29$

Medium $r = .30$ to $.49$

Large $r \geq .50$

6.7.4 Stage 4: Inferential statistical analysis

Inferential and multivariate statistics were utilised to draw further conclusions about the data employing canonical correlation analysis, stepwise regression analysis, structural equation modelling (SEM), hierarchical moderated regression, and test for significant mean differences.

6.7.4.1 Canonical correlation

Canonical correlation analysis was utilised to measure linear interrelationships between two sets of variables – the independent variables and the dependent variables (Hair et al., 2019; Pallant, 2013; Tabachnick & Fidell, 2019). Canonical correlation is, therefore, a technique that is utilised to measure the strength of the overall relationship between the linear composites (canonical variates) of the independent and the dependent variables and is expressed as a canonical correlation coefficient (R_c). Canonical correlation analysis was utilised to measure the overall statistical relationship between individuals' psychosocial career preoccupations and career adaptability and psychosocial career resources (employability attributes, career anchors and career values) as a composite set of independent variables, and career satisfaction and self-perceived employability as a composite set of dependent variables.

The following research hypothesis was tested:

H2: Individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables, significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables.

The CANCELL procedure in SAS version 9.4 (SAS Institute, 2013) was utilised to conduct the canonical correlation analysis.

The following guidelines were utilised to interpret the canonical correlations analysis (Hair et al., 2019; Sherry & Henson, 2005; Tabachnick & Fidell, 2019).

Step 1: Evaluate the full canonical model in terms of statistical and practical significance. The p -value of the model determines the statistical significance, where $p < .001$ indicates an extremely significant, where $p = .001 - .01$ indicates a very significant model, where $p = .01 - .05$ indicates a significant model and where $p \geq .10$ the model is less significant. The Wilks's λ inverse effect size or the amount of variance not shared between the variable sets determines the practical significance for the r^2 metric ($1 - \lambda$): $> .01 < .09 =$ small practical effect size, $> .09$ to $< .25 =$ moderate practical effect size and $> .25 =$ large practical effect size.

In step 2, each canonical function is evaluated against the criteria to determine the significance and effect size.

In step 3 the canonical loadings contain correlations were interpreted based on the cut-off of $R_c \geq .30$, whereas the R_c^2 contains the squared correlations and measure overlapping variance and indicates the practical effect size in terms of $R_c^2 \leq .12 =$ small practical effect size, $R_c^2 \geq .13 \leq .25 =$ medium practical effect size, $R_c^2 \geq .26 =$ large practical effect size.

6.7.4.2 Stepwise regression analysis

The canonical correlation analysis identified the composite set of independent variables that significantly and positively predicted career satisfaction and self-perceived employability as a composite set of dependent variables. To further explore and identify the best predictors to conduct hierarchical moderated regression with, stepwise regression analysis was conducted first (Hair et al., 2019; Keith, 2014).

Stepwise regression analysis was, therefore utilised as preliminary statistics to identify best biographical predictors (as control variables) for inclusion in hierarchical moderated regression and relates to the following research hypothesis:

H3: The relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences/outcomes) is moderated by individuals' psychosocial resources (employability attributes, career anchors and career values). The relationship is more positive when individuals' psychosocial career resources are well developed or strongly crystallised than when these resources are not well developed or strongly crystallised.

Stepwise regression is especially useful to determine a subset of the variables. The REG procedure in SAS version 9.4 (SAS Institute, 2013) was utilised as a general-purpose procedure for stepwise regression. The backward elimination technique was applied (Keith, 2014). This technique starts with all variables in the model and deletes variables one by one until all the variables that remain in the model produce F statistics significant at the 10% significance level. The variable with the largest p -value leaves first, and for each step that follows the variable producing the smallest contribution to the model will be deleted.

The *standardised regression coefficient* (β), represents the expected change in the standardised dependent variable for a change of one standard deviation in the independent variable (Hair et al., 2019). Similar to correlation coefficients, regression coefficients can vary from -1 (perfect negative association) and +1 (perfect positive association), with 0 indicating the absence of a relationship. The sign of the regression coefficients provides information about the direction of the relationship (positive vs negative), while the absolute value of it provides information about the strength of the relationship (Keith, 2014).

The R-square (R^2) referred to as the coefficient of determination varies between 0 and 1, and represent the proportion of variability in the dependent variable that is explained by the regression model (Hair et al., 2019). The adjusted R-square adjusts for the number of predictor (independent) variables in the model. When the F -statistic for the overall model is significant, it indicates that that the model explains a significant portion of the variation in the data (Keith, 2014).

6.7.4.3 Structural equation modelling (SEM)

Structural equation modelling (SEM), as an extension of several multivariate techniques, such as factor analysis and multiple regression analysis was conducted to assess the structural model fit of the stepwise regression results for the relevant constructs identified (Hair et al., 2019; Kline, 2016; Leedy & Ormrod, 2015; Yang, 2018). SEM was thus utilised to test the following research hypothesis:

H3: The relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences/outcomes) is moderated by individuals' psychosocial resources (employability attributes, career anchors and career values). The relationship is more positive when individuals' psychosocial career resources are well developed or strongly crystallised than when these resources are not well developed or strongly crystallised.

SEM gained popularity in the psychological research field, especially to test priori hypotheses amongst observed or latent variables (Yang, 2018); therefore, a combination of multiple regression and confirmatory factor analysis was utilised to distinguish between direct and indirect relationships between variables and to analyse relationships between latent variables (Kline, 2016; Leedy & Ormrod, 2015; Yang, 2018). By conducting SEM, it is possible to estimate the multiple and interrelated dependence relationships simultaneously; and to define a theoretical model that explains the entire set of relationships (Hair et al., 2019). The CALIS procedure in SAS version 9.4 (SAS Institute, 2013) covariance structure analysis with maximum likelihood estimation procedure was utilised to perform the SEM.

A series of multiple fit indices were utilised to assess and determine how well the theoretical model fit and explain the observed covariance structure among the measured variables (as input data). The correspondence between the observed covariance matrix and the estimated covariance matrix determines the model fit of the proposed model. Models that produce an estimated covariance matrix that is within sampling variation of the observed covariance matrix would be said to fit (Hair et al., 2019). The overall model fit was assessed by utilising multiple fit indices.

Goodness-of-fit (GOF) indices indicate how well, specified theoretical structures represent reality as represented by the data. It is important that the model be able to account for all of the information about the data, meaning not only the variances but the covariances among measured variables as well (Hair et al., 2019). The χ^2 chi-squared value (likelihood ratio) is the fundamental statistical measure in SEM to quantify the differences between the covariance matrices. The associated degrees of freedom (*df*) represents the amount of mathematical information available and is based on the size of the covariance matrix (Hair et al., 2019).

Absolute fit indices are direct measures of how well the specified model reproduces the observed data, and provide a basic assessment of how well the theory fits the sample data (Hair et al., 2019). Measures related to the root mean square error of approximation (RMSEA) represents how well a model fits a population and not just a sample used for estimation. The computation of RMSEA aims to correct and includes thus both model complexity and sample size. RMSEA is considered a badness- of- fit measure as high values indicate a poor fit, whereas lower values reflect better model fits (Hair et al., 2019). Measures related to the standardised root mean residual (SRMR) reflects the standardised value of root mean square residual (i.e., the average standardized residual) and is useful for comparing model fit. With the SRMR, the practical significance can be assessed in terms of the magnitude of the SRMR in light of the observed or

actual covariances or correlations. The SRMR is also considered a badness of fit measure, where values more than .10 indicates a problem with fit, and lower values represent a better fit (Hair et al., 2019).

Incremental fit indices indicate how well the estimated model fit relative to an alternative baseline model and are referred to as comparative fit indices (Hair et al., 2019). The comparative fit index (CFI) is the most widely utilised index to supplement the chi-square (χ^2) and degrees of freedom (df). The CFI is normed so that values range between 0 and 1. Higher CFI values indicate a better fit (Hair et al., 2019). The Bentler-Bonett non-normed index (NNI) measures inconsistencies between the chi-square (χ^2) value of the hypothesised model and the chi-squared value (χ^2) of the null model (Bentler & Bonett, 1980). Values higher than .90 indicate a marginal fit (Hair et al., 2019).

6.7.4.4 Hierarchical moderated regression analysis

Regression analysis was utilised to determine the relationship between the dependent variables and the independent variables, with the intent to make predictions (Chatterjee & Hadi, 2015; Leedy & Ormrod, 2015; Tabachnick & Fidell, 2019). After exploring the correlation between the variables, a multiple regression analysis was done to test the following research hypothesis:

H3: The relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences/outcomes) is moderated by individuals' psychosocial resources (employability attributes, career anchors and career values). The relationship is more positive when individuals' psychosocial career resources are well developed or strongly crystallised than when these resources are not well developed or strongly crystallised.

Hayes (2017) refers to moderation analysis as statistical analysis to address, when, or under what conditions an effect exists (or does not) and in what magnitude. A rigorous bootstrapping procedure (95% confidence interval) with the lower limit confidence interval (LLCI) and upper limit confidence interval (ULCI) not including zero, was utilised to assess for significant main and interaction effects. Therefore hierarchical moderated regression analysis was performed to explore whether the link between career cognitions (career adaptability and psychosocial career preoccupations) and career outcomes (career satisfaction and self-perceived employability) was conditional upon psychosocial career resources (employability attributes, career orientations and career values).

6.7.4.5 Tests for significant mean differences-

Parametric statistics were utilised to test for significant mean differences as the data were suitable with the normal distribution of score (Pallant, 2013).

Tests for significant mean differences was performed to test the following research hypothesis:

H4: Individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations), psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability.

Parametric ANOVA procedure in SAS version 9.4 (SAS Institute, 2013) was utilised to test for significant differences among the mean scores on the biographical variables related to age, race and employment status. Tukey's Honestly Significant different tests (HSD), as post-hoc comparisons were utilised to guard against Type 1 errors and to determine where the differences occurred in terms of age, race and employment status (Pallant, 2013).

The parametric TTEST procedure in SAS version 9.4 (SAS Institute, 2013) was utilised to test for differences between gender. Pooled and Satterthwaite post-hoc tests were utilised to establish the significant mean differences between males and females. When the significance level (p) is larger than .05, the Pooled posthoc test, which assumes equal variance (more weight given to the larger sample) will be utilised. When the significance level (p) is less than .05, the Satterthwaite posthoc test, which assumes unequal variance will be utilised.

To finally assess the importance of the differences between the relevant groups, the practical effect size statistics of Cohen's d was utilised.

6.7.5 Stage 5: Construction of an empirical model

Stage 5 aims to construct an empirical model depicting core construct elements based on moderating results and relates to research hypothesis H5—this entailed a qualitative analysis and interpretation of the manifested empirical results:

H5: The empirically manifested relationship dynamics among the variables constitute a psychosocial profile for enhancing the career satisfaction and employability of knowledge workers.

6.7.6 Statistical significance

The p -value of the statistical function expresses statistical significance. The p -value is the probability of obtaining the result if the null hypothesis is true. The statistical significance level of $p \leq .05$ was chosen and provided 95% confidence in the research results being accepted (Hair et al., 2019). The null hypothesis is rejected if the p -value is below .05, which means there is only a 5% chance that the observed results would be seen if there were no real effect (Pallant, 2013).

In statistical hypothesis testing, a Type I error is the incorrect rejection of a true null hypothesis also known as a 'false positive' finding or conclusion, in other words when findings are reported as significant when in fact they have occurred by chance (Pallant, 2013). A Type II error is the non-rejection of a false null hypothesis, also known as a 'false negative' finding or conclusion, in other words when findings are reported as not significant when in fact they are (Pallant, 2013). In statistical significance, the goal is to minimize one or both of these errors. The quality of the hypothesis testing can thus be increased by selecting a low cut-off (threshold) p -value.

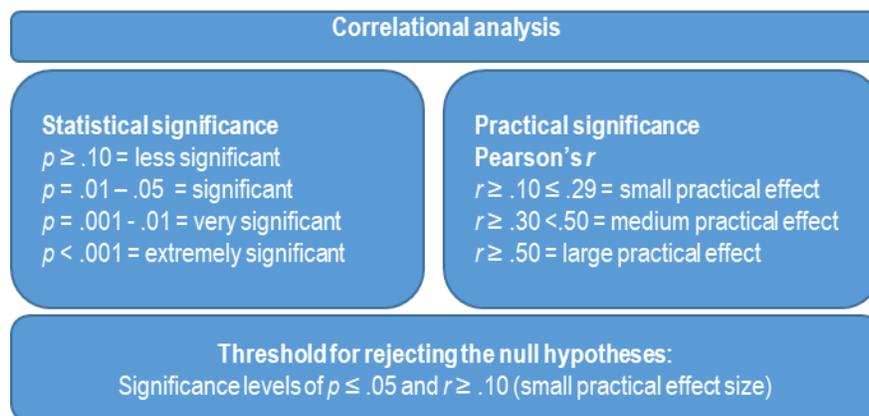
6.7.6.1 Correlation analysis

To measure the effect size and to determine the practical significance, the Pearson Product moment correlation coefficient (r) was utilised.

The criteria for determining the statistical and practical significance for correlation analysis are presented in Figure 6.13.

Figure 6.13

Criteria for Determining the Statistical and Practical Significance for Correlation Analysis



Source. Gravetter et al. (2020).

6.7.6.2 Canonical correlation analysis

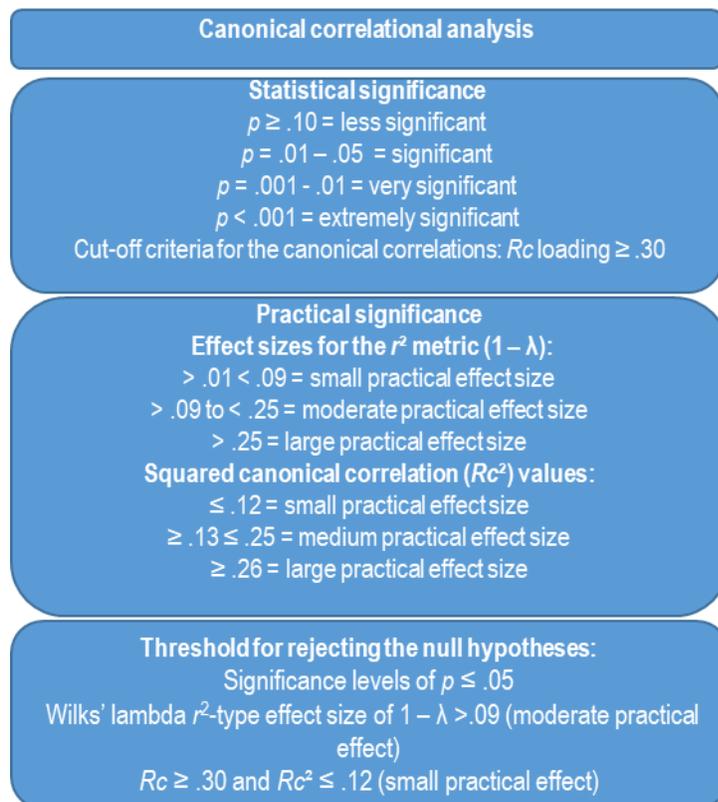
Wilks' multivariate criterion lambda (λ) was used because it allows researchers to assess the practical significance ($1 - \lambda = r^2$ -type metric of effect size) of the full canonical model.

Statistical and practical significance for the overall model was established by interpreting the overall canonical correlation coefficients (R_c), their squared values (R_c^2) and the redundancy index (d).

The standardised canonical correlation coefficients (i.e. canonical weights) and structure coefficients (canonical loadings and cross-loadings) were examined to determine the proportion of variance explained and the amount of shared variance. The criteria for determining the statistical and practical significance for the canonical correlation analysis are presented in Figure 6.14.

Figure 6.14

Criteria for Determining the Statistical and Practical Significance for the Canonical Correlation Analysis



Source. Hair et al. (2019); Pallant (2013); Sherry and Henson (2005); Tabachnick and Fidell (2019).

6.7.6.3 Stepwise regression analysis (Preliminary to moderation analysis)

Estimates were made of and inferences about both conditional direct effects between the independent, moderator and dependent variables.

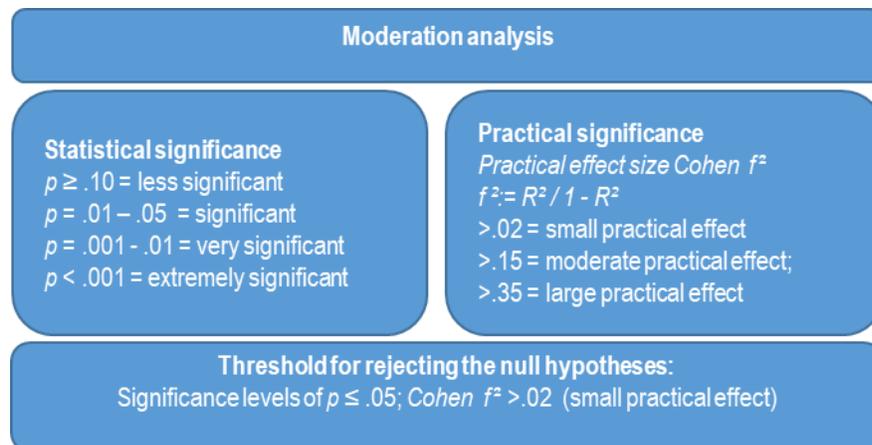
Significant moderation effects ($p \leq .05$) detected were probed by utilising visual representations – using the mean value for the moderator (horizontal collectivism) as well as values equal to one standard deviation above and below the mean and the Cohen square.

For significant moderation effects, one has to establish also the practical effect size- Cohen f-square: $f^2 = R^2 / 1 - R^2$; $>.02 =$ small; $>.15 =$ moderate; $>.35 =$ large.

The criteria for determining the statistical and practical significance for moderation analysis are presented in Figure 6.15.

Figure 6.15

Criteria for Determining the Statistical and Practical Significance for Moderation Analysis



Source. Chatterjee and Hadi (2015); Hayes (2017); Leedy and Ormrod (2015); Tabachnick and Fidell (2019).

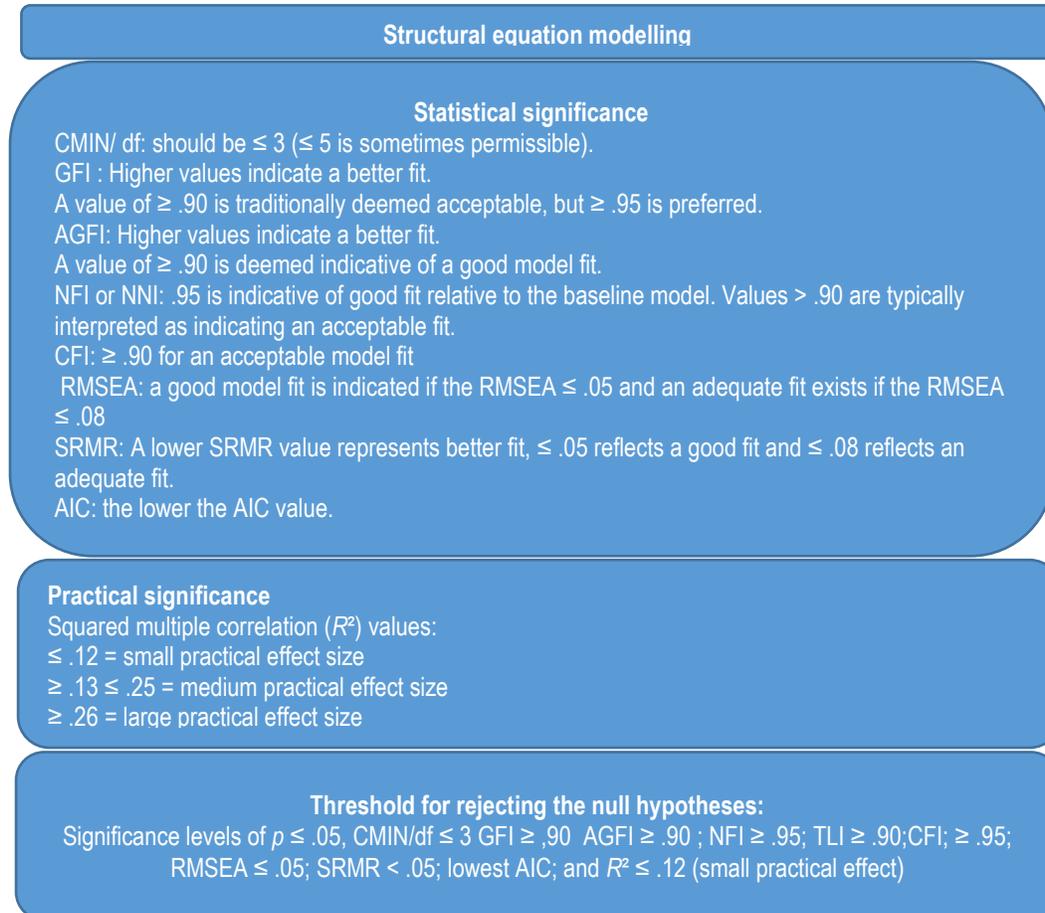
6.7.6.4 Structural equation modelling

The overall fit of the model was assessed by utilising a range of model fit indices.

The criteria for determining the statistical and practical significance for the structural equation modelling are presented in Figure 6.16

Figure 6.16

Criteria for Determining the Statistical and Practical Significance for Structural Equation Modelling



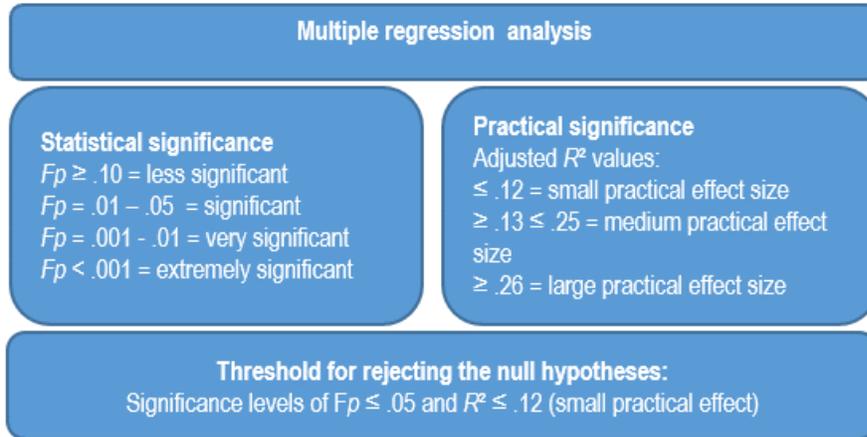
Source. Bentler and Bonett (1980); Browne and Cudeck (1993); Hair et al. (2019); Kiazad (2010); Kline (2016); Leedy and Ormrod (2015); O'Rourke and Hatcher (2013); Pituch and Stevens (2016); Schumacker and Lomax (2016); Tabachnick and Fidell (2019); Yang (2018).

6.7.6.5 Hierarchical moderated regression analysis

The criteria for determining the statistical and practical significance for multiple regression analysis are presented in Figure 6.17.

Figure 6.17

Criteria for Determining the Statistical and Practical Significance for Multiple Regression Analysis



Source. Chatterjee and Hadi (2015); Leedy and Ormrod (2015); Pituch and Stevens (2016); Tabachnick and Fidell (2019).

6.7.6.6 Tests of significant mean differences

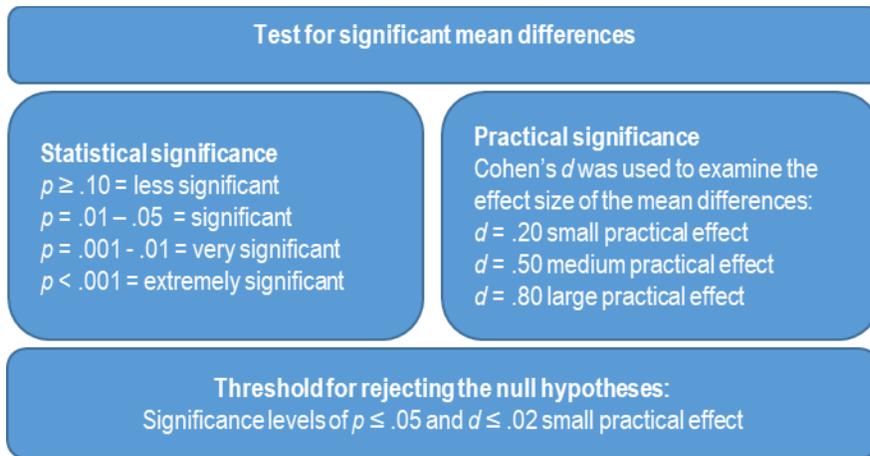
The Kolmogorov-Smirnov test was used to assess the normality of the data distribution.

Significant mean differences between the subgroups were determined by utilising parametric statistics.

Generally, values of Cohen's d are considered small when $< .20$, medium when between $.20$ and $.50$, or large when $> .50$ (Cohen, 1988). The criteria for determining the statistical and practical significance for tests of significant mean differences are presented in Figure 6.18.

Figure 6.18

Criteria for Determining Statistical and Practical Significance for Tests of Significant Mean Differences



Source. Cohen (1988, pp. 79–81)

6.8 CHAPTER SUMMARY

This chapter presented the empirical approach that was applied in the study. The first seven steps of the empirical research phase were explained. The relevant research approach that was followed was discussed. The sample of knowledge workers was determined and comprehensively described and presented. The chosen psychometric battery was deliberated and motivated. The ethical considerations and the administration of the psychometric battery were explained. The capturing of criterion data were discussed, and the research hypotheses were presented. Finally, the statistical processes of the data were explained. Chapter 7 focuses on Step 8, the reporting of the results.

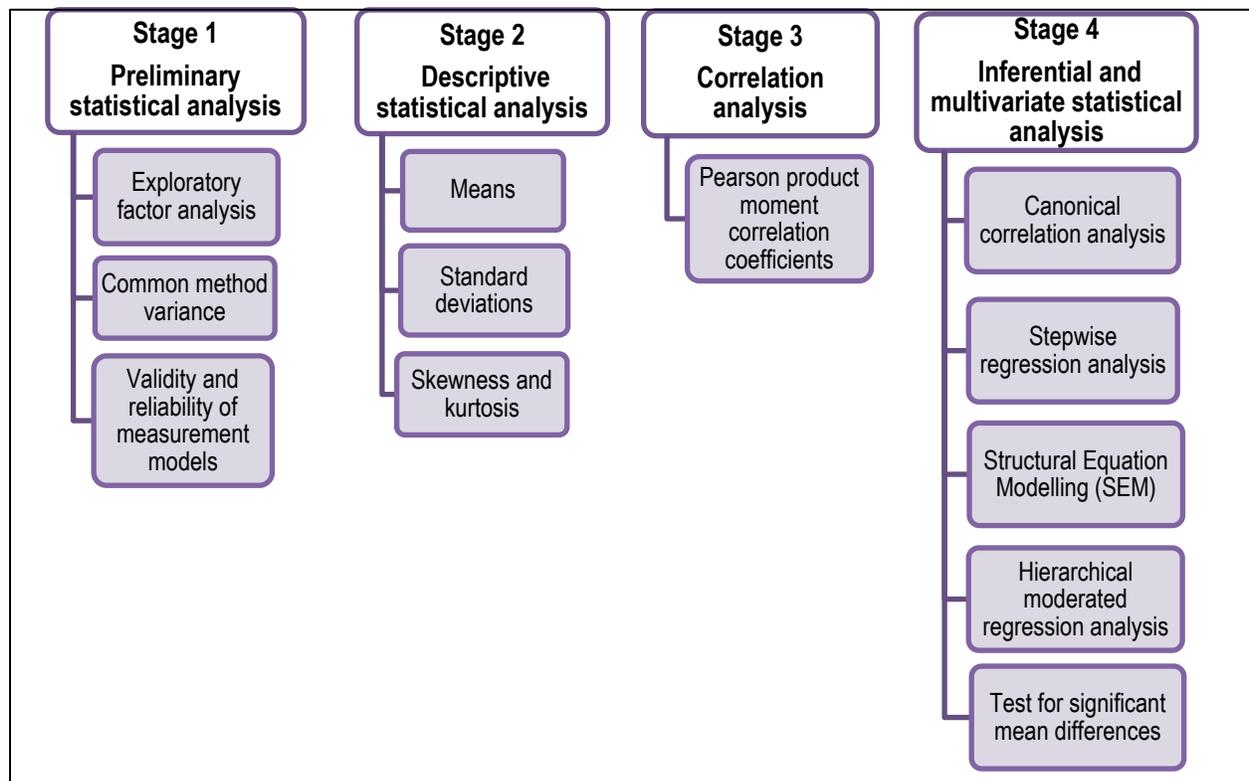
CHAPTER 7: RESULTS

This chapter focuses on the results of the statistical analyses and aims to address the empirical research aims 1, 2, 3, 4 and 5. This chapter reports on the statistical results of the empirical study through descriptive, correlational and inferential statistics. This chapter utilised tables and figures to present the statistical results.

Figure 7.1 illustrates the various statistical analyses that were conducted in this study.

Figure 7.1

Overview of Statistical Analysis



Source. Author's own work

7.1 PRELIMINARY STATISTICAL ANALYSIS

In this section, the exploratory factor analysis, the common method variance, construct validity and reliability conducted in terms of the measuring instruments are reported on.

7.1.1 Exploratory factor analysis (EFA): Career Values Scale

The career values scale (CVS) was subjected to an EFA because this instrument is under-researched in the South African work context. EFA was, therefore utilised to evaluate whether the underlying factor structure of the CVS was appropriate for the South African context.

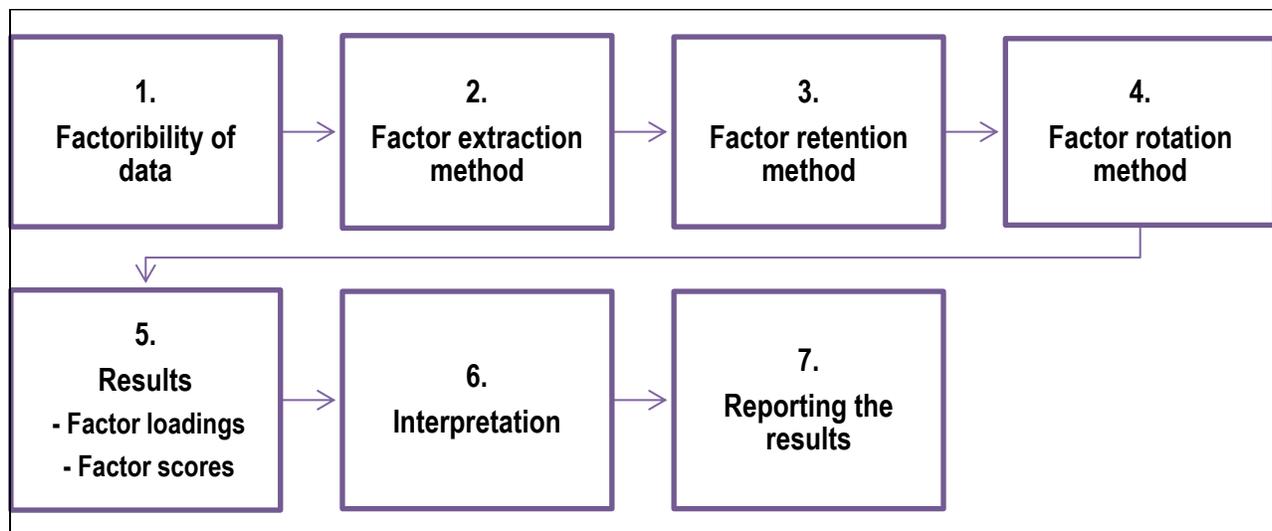
The PCPS and EAS were developed and tested in the South African (SA) context and therefore not subjected to EFA. The CAAS, COI, GEM and CSS are well-researched in the SA context and therefore not subjected to EFA.

By utilising EFA, it was possible to determine which, of a large set (88) of items, “hang together” as groups or dimensions of career values (Leech et al., 2015), and to identify the number and nature of latent factors.

The researcher extensively utilised the guidelines for conducting EFA of Loewen and Gonulal (2015) and Thompson (2004). The EFA consists of the following steps presented in Figure 7.2 (Loewen & Gonulal, 2015):

Figure 7.2

Steps of EFA



Source. Loewen and Gonulal (2015, p. 503).

7.1.1.1 Step 1: Factorability of data

It is firstly important to determine whether the data were appropriate for factor analysis. Likert scale items were suitable for EFA, and the variables need to be linearly related and moderately correlated. The sample size should also be appropriate for EFA. Sample sizes of 100 (Hair et

al., 2019), and 300 (Tabachnick & Fidell, 2019) are often considered adequate. However, some recommendations regarding sample size relate to the number of participants per item of the instrument. To obtain 10 to 20 participants per item (Thompson, 2004) would require a sample size ranging from 880 to 1760 participants ($10 \times 88 = 880$, $20 \times 88 = 1760$) which would be a daunting task taking into consideration the already low response rate.

An alternative approach, the Kaiser-Meyer-Olkin (KMO), a measure of sampling adequacy was utilised to investigate the appropriateness of the sample for EFA. Values of the KMO ranges between 0 and 1, where values between .50 and .70 were considered mediocre; between .70 and .80 were considered good; between .80 and .90 were considered significant, and values above .90 were considered perfect or excellent (Field, 2009).

Moreover, it is also essential to examine the correlations and commonalities among the variables and to test for low correlations, which will be undesirable, as no relationship will mean no related variables or factors. The researcher utilised Bartlett's Test of Sphericity as it indicates whether the correlations between the variables were significantly different from zero (Field, 2009). A significant result with $p < .05$ indicates that the variables were correlated and thus suitable for EFA.

Table 7.1 reports the results of the diagnostics statistics.

Table 7.1

KMO and Bartlett's Test: Career Values Scale

Kaiser-Meyer-Olkin measure of sampling adequacy: Career Values		.93
Bartlett's test of sphericity	Approximate chi-square	25436.77
	Df	3828
	Sig.	.000

Note. N = 404.

As indicated in Table 7.1, the KMO and Bartlett's tests were utilised to test assumptions and the sample adequacy. The Kaiser-Meyer-Olkin measure of sampling adequacy of .93 indicates that there were sufficient items for each factor as the value exceeded the minimum recommended value of .70 (Leech et al., 2015). Furthermore, Bartlett's test of sphericity obtained a statistical significance of $p = .000$ for the CVS. The results indicated that the sample used in this study was adequate and that significant correlations existed between the variables of the correlation matrices of the CVS.

Once the suitability of the data for EFA was confirmed, it was necessary to decide which method of factor extraction to utilise.

7.1.1.2 Step 2: Factor extraction method

To determine which factor extraction method to utilise, it was first important to determine the objectives of the factor analysis and secondly, the amount of prior knowledge about the variance in the variables. Principal component analysis (PCA) is more appropriate to summarise variance in a minimum number of factors for the purpose of prediction, whereas common factor analysis or principal axis factoring (PAF) is more appropriate to determine underlying factors or dimensions that reflect what the variables share in common (Hair et al., 2019; Loewen & Gonulal, 2015; Tabachnick & Fidell, 2019)

The primary objective of EFA was to identify the latent dimensions in the variables; therefore, PAF was utilised as the factor extraction method (Hair et al., 2019; Sarstedt & Mooi, 2019).

7.1.1.3 Step 3: Factor retention criteria

Once the factor extraction method was determined, it was necessary to determine the number of factors to retain. A combination of the Kaiser's criterion, 60 per cent of cumulative percentage of variance and the scree plot were utilised as criteria to determine the number of factors to retain.

Kaiser's criterion: The most commonly used criterion is the latent root or eigenvalues criterion. Eigenvalues refer to the amount of variance accounted for by each factor, and the higher the eigenvalue, the more variance accounted for by the factor. The underlying principle for this criterion is that any individual factor should account for the variance of at least a single variable if it is to be retained for interpretation. Kaisers' s criterion recommends that factors with eigenvalues >1.0 should be retained and can be considered significant.

Cumulative percentage of variance: This approach is based on achieving a specified cumulative percentage of total variance extracted by consecutive factors to account for as much variance as possible with as few variables as possible. As recommended by Field (2009), Hair et al. (2019), and Loewen and Gonulal (2015) factors that explained at least 60 per cent of the total variance were retained. By utilising this criterion, the practical significance for the derived factors was ensured by guaranteeing that they explain at least a specified amount of variance.

Scree test criterion: This approach examines the scree plot of eigenvalues represented in descending order of magnitude and identifies the optimum number of factors that can be extracted

before the amount of unique variance begins to dominate the common variance structure. The shape of the resulting curve is used to evaluate the cut-off point. The cut-off point for selecting factors is the sharp descent or elbow (point of inflexion) in the plot slopes.

Table 7.2
Factor Extraction using Principal Axis Factoring (Career Values)

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	24.41	27.74	27.74	24.05	27.33	27.33	14.93
2	6.21	7.05	34.79	5.84	6.64	33.97	14.89
3	5.16	5.86	40.65	4.79	5.45	39.41	14.51
4	4.00	4.54	45.19	3.65	4.15	43.57	9.18
5	2.88	3.27	48.46	2.50	2.84	46.40	7.42
6	2.54	2.88	51.34	2.14	2.43	48.84	4.98
7	2.29	2.60	53.94	1.90	2.16	51.00	9.63
8	2.03	2.31	56.25	1.64	1.86	52.85	11.18
9	1.76	2.00	58.25	1.41	1.60	54.45	2.77
10	1.65	1.88	60.13	1.24	1.41	55.86	11.67
11	1.37	1.56	61.68	.96	1.09	56.95	8.00
12	1.21	1.38	63.06	.82	.93	57.89	4.13
13	1.15	1.30	64.36	.76	.86	58.75	7.43
14	1.12	1.27	65.64	.73	.83	59.57	2.97
15	1.09	1.24	66.87	.70	.79	60.37	1.79
16	1.01	1.15	68.02	.63	.72	61.09	1.98
17	1.00	1.14	69.16	.58	.66	61.74	1.60

Note. N = 404.

Extraction Method: Principal Axis Factoring.

a When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

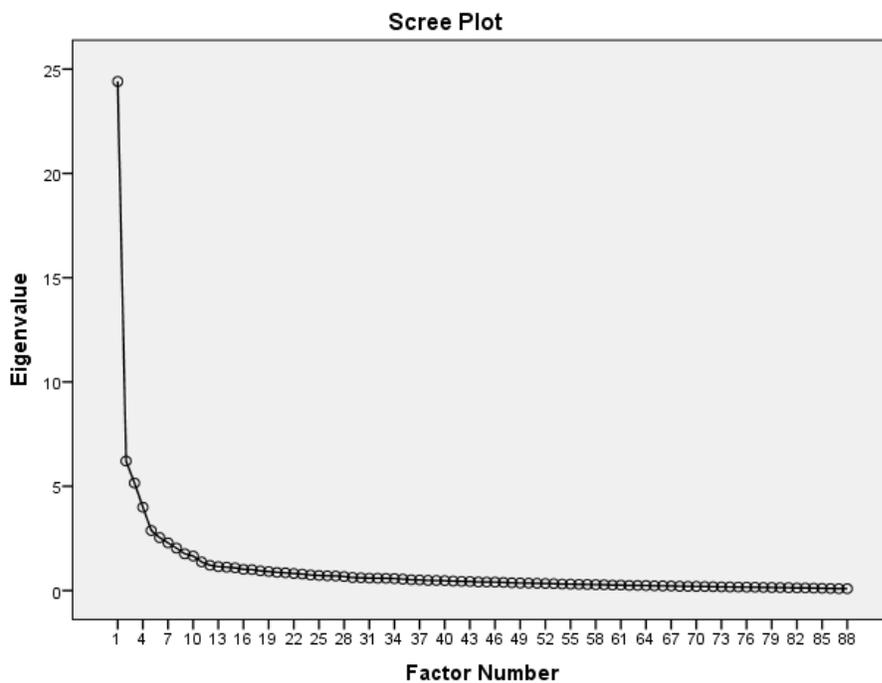
Table 7.2 indicates the total variance explained and demonstrates how the variance is divided among the 17 factors that have eigenvalues (a measure of explained variance) greater than 1.0, which is a common criterion for a factor to be useful. When the eigenvalue is less than 1.0, the factor explains less information than a single item would have explained. Most researchers would not consider the information gained from such a factor to be sufficient to justify keeping that factor (Leech et al., 2015). The first factor can be expected to account for a fairly large amount of the

common variance (24.408). Each succeeding factor will account for progressively smaller amounts of variance. Although a large number of factors (17) may be extracted in this way, in the present research only the first ten (10) factors with eigenvalues of 1.653 and higher were regarded as being sufficiently important to be retained for interpretation. When considering the ten factors in Table 7.2, 60% variance was explained and provided evidence of essential uni-dimensionality (a general underlying factor).

The scree plot in Figure 7.3 indicates that the first ten factors cumulatively explained 60% of the variance in the data, thus indicating a good factor structure according to the guidelines of Pallant (2013). Further inspection of the scree plot indicates an inflexion point at the tenth component (eigenvalue of 1.653).

Figure 7.3

Scree Plot for Factor Retention of the CVS



7.1.1.4 Step 4: Factor rotation method

Unrotated factor solutions only extract factors in the order in which their variances were extracted. To rotate the factor solution produces a more differentiated factor loading matrix, therefore redistributing the variance from earlier factors to later ones, which indicates the strength with each variable loading onto each factor. Factor rotation maximises high item loadings while minimising

low item loadings on other factors (Field, 2009; Hair et al., 2019; Loewen & Gonulal, 2015; Tabachnick & Fidell, 2019). Thus, factor rotation provides a more straightforward, meaningful and more interpretable factor pattern. The orthogonal rotation method assumed that factors were uncorrelated or independent, whereas the oblique rotation method aims to produce factors that were correlated. The oblique rotation method (Promax with Kaiser Normalisation) was utilised as it was best suited to determine and cluster several theoretically significant factors more accurately (Field, 2009; Hair et al., 2019; Loewen & Gonulal, 2015; Tabachnick & Fidell, 2019).

7.1.1.5 Step 5: Results of factor loadings

Factor loadings indicate the strength and association between each variable and each factor. Only variables with loadings of .32 and above were interpreted (Hair et al., 2019; Loewen & Gonulal, 2015; Tabachnick & Fidell, 2019). The greater the loading, the more the variable is a true measure of the factor. The squared loading indicates the amount of the variable's total variance accounted for by the specific factor. Comrey and Lee (1992) suggest that loadings in excess of .71 (50% overlapping variance) are considered excellent, .63 (40% overlapping variance) very good, .55 (30% overlapping variance) good, .45 (20% overlapping variance) fair, and .32 (10% overlapping variance) poor. Factor loadings equal to or greater than .40 can be treated as meaningful loadings (O'Rourke & Hatcher, 2013).

7.1.1.6 Step 6: Interpretation and reporting of results

The theoretical expectation and the contents of factors regarding both the number of factors and the interpretability of the factors obtained were considered.

The EFA was utilised to discover the underlying (simple) structure and not to determine it. The purpose of the EFA was seen as assisting in exploring whether the ten theoretically proposed factors could be identified in a reliable way.

The following interpretability criteria recommended by O'Rourke and Hatcher (2013) were utilised when interpreting the substantive meaning of the retained factors and verifying that this interpretation "makes sense actually" in terms of what is known about the constructs under investigation.

- Are there at least three variables (items) with significant loadings on each retained factor?
A solution is less satisfactory if less than three variables measure a given factor.

- Do the variables that load on a given factor share some conceptual meaning? For example, if three questions on a survey all load on Factor 1, do all three of these questions seem to be measuring the same underlying construct?
- Do the variables that load on different factors seem to be measuring different constructs? For example, if three questions load on factor 1, and three other questions load on Factor 2, do the first three questions seem to be measuring a construct that is conceptually different from the construct measured by the last three questions?
- Does the rotated factor pattern demonstrate “simple structure?” Simple structure means that the pattern possesses two characteristics: (a) most of the variables have relatively high factor loadings on only one factor, and near-zero loadings for the other factors; and (b) most factors have relatively high factor loadings for some variables and near-zero loadings for the remaining variables.

Table 7.3 provides the loadings of the items of the CVS for the first-factor loading (teamwork).

Table 7.3

Revised Item Loadings of the CVS: Factor Loading for Teamwork

Factor 1: Teamwork Item description ^a	Factor loading									
	1	2	3	4	5	6	7	8	9	10
63	.96									
52	.80									
19	.78									
85	.77									
41	.75									
8	.74									
30	.64									
53	.44									
18	.35		.33							
62	.33						.30			
42	.32									
Total number of items Factor 1	11									

Note. N = 404

^a Item description not included due to copyright

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization

As indicated in Table 7.3, the items of the teamwork dimension remained the same, confirming that the factor loadings were meaningful. Item 18 cross-loaded on factor 3; however, the loading

was still higher on factor 1. Item 62 cross-loaded on factor 7; however, the loading was loaded higher on factor 1. Therefore, item 18 and 62 remained at factor 1.

Table 7.4 provides the loadings of the items of the CVS for factor 2 (creativity).

Table 7.4

Revised Item Loadings of the CVS: Factor Loading for Creativity

Factor 2: Creativity Item description ^a	Factor loading									
	1	2	3	4	5	6	7	8	9	10
70		.84								
37		.83								
59		.80								
26		.77								
15		.73								
81		.72								
48		.70								
4		.63								
46		.42								
Total number of items Factor 2		9								

Note. N = 404.

^a Item description not included due to copyright

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization

As indicated in Table 7.4 the items of the creativity dimension remained the same, confirming that the factor loadings were meaningful.

Table 7.5 provides the loadings of the items of the CVS for factor 3 (career development).

Table 7.5

Revised Item Loadings of the CVS: Factor Loading for Career Development

Factor 3: Career development Item description ^a	Factor loading									
	1	2	3	4	5	6	7	8	9	10
83			.91							
50			.87							
28			.82							
61			.78							
72			.74							
39			.73							
17			.70							
6			.37							
77			.33							.31
Total number of items Factor 3			9							

Note. N = 404.

^a Item description not included due to copyright

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization

As indicated in Table 7.5, the items of the career development dimension remained the same, confirming that the factor loadings were meaningful.

Table 7.6 provides the loadings of the items of the CVS for factor 4 (financial rewards).

Table 7.6

Revised Item Loadings of the CVS: Factor Loading for Financial Rewards

Factor 4: Financial rewards Item description ^a	Factor loading									
	1	2	3	4	5	6	7	8	9	10
60				.80						
49				.79						
5				.68						
71				.62						
27				.60						
65				.56						
16				.53 ^b						
82				.50						
66				.42						
38				.32						
Total number of items Factor 4				10						

Note. N = 404.

^a Item description not included due to copyright

^b item loaded on factor 15

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization

As indicated in Table 7.6, item 16 cross-loaded on factor 15, which consists of only 2 items, therefore it was decided to instead load this item on factor 4. The rest of the items of the dimension of the financial reward remained the same, confirming that the factor loadings were meaningful.

Table 7.7 provides the loadings of the items of the CVS for factor 5 (independence).

Table 7.7

Revised Item Loadings of the CVS: Factor Loading for Independence

Factor 5: Independence Item description ^a	Factor loading									
	1	2	3	4	5	6	7	8	9	10
36					.84					
44					.71 ^a					
55					.66 ^b					
14					.65					
47					.61					
25					.60					
69					.57					
3					.49					
80					.47					
Total number of items Factor 5					9					

Note. N = 404.

^a Item description not included due to copyright

^b item loaded on factor 12

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization

As indicated in Table 7.7, item 44 and 55 were loaded on factor 12; however, after the interpretation of the items, it was decided to load both items on factor 5. Item 64, which should theoretically be loaded on factor 5, did not load on any factor after rotation and was therefore discarded. The rest of the items of the independence dimension remained the same, confirming that the remaining factor loadings were meaningful.

Table 7.8 provides the loadings of the items of the CVS for factor 6 (security).

Table 7.8

Revised Item Loadings of the CVS: Factor Loading for Security

Factor 6: Security Item description ^a	Factor loading									
	1	2	3	4	5	6	7	8	9	10
32						.65				
21						.61				
43						.53				
54				.34		.52				
76						.49				
87						.49				
10						.44 ^b				
Total number of items Factor 6						7				

Note. N = 404.

^a Item description not included due to copyright

^b Item loaded on factor 15

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization

Item 10 was cross-loaded on factor 15, which contain only two loaded items. After the interpretation of item 10, it was decided to load the items together on factor 6. As indicated in Table 7.8 the rest of the items of the security dimension remained the same, confirming that the factor loadings were meaningful.

Table 7.9 provides the loadings of the items of the CVS for factor 7 (prestige).

Table 7.9

Revised Item Loadings of the CVS: Factor Loading for Prestige

Factor 7:Prestige Item description ^a	Factor loading									
	1	2	3	4	5	6	7	8	9	10
7							.77			
40							.76			
51							.68			
29							.57			
73							.45			
84							.39 ^b			
88							.38 ^b			
Total number of items Factor 7							7			

Note. N = 404.

^a Item description not included due to copyright

^b items loaded on factor 16

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization

Items 84 and 88 were both loaded on the initial factor 16 and were the only two items loaded on this factor. After interpretation, it was decided to instead load these items on factor 7. As indicated in Table 7.9, the rest of the items of the prestige dimension remained the same, confirming that the factor loadings were meaningful.

Table 7.10 provides the loadings of the items of the CVS for factor eight (influence).

Table 7.10

Revised Item Loadings of the CVS: Factor Loading for Influence

Factor 8:Influence Item description ^a	Factor loading									
	1	2	3	4	5	6	7	8	9	10
2								.78		
35								.76		
13								.57		
57								.45		
79								.36		
24								.33 ^b		
Total number of items Factor 8								6		

Note. N = 404.

^a Item description not included due to copyright

^b item loaded on factor 17

^b item loaded on factor 10

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization

Item 24 was the only item loaded on factor 17. After the interpretation of item 24, it was decided to instead load this item with factor 8. The rest of the items of the influence dimension remained the same as indicated by Table 7.10, confirming that the factor loadings were meaningful.

Table 7.11 provides the item loadings of the CVS for factor 9 (excitement).

Table 7.11

Revised Item Loadings of the CVS: Factor Loading for Excitement

Factor 9:Excitement Item description ^a	Factor loading									
	1	2	3	4	5	6	7	8	9	10
86									.72 ^c	
33									.71	
75									.66 ^b	
31									.64 ^b	
11									.53	
9									.49 ^b	
22									.45	
74									.42 ^c	
20									.39	
Total number of items Factor 9									9	

Note. N = 404.

^a Item description not included due to copyright

^b items loaded on factor 13

^c items loaded on factor 14

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization

Items 9, 31 and 75 were initially loaded on factor 13 and were the only three items loaded on this factor. After the interpretation, it was decided to instead load these items with factor 9 (excitement).

Items 74 and 86 were both initially loaded on factor 14 and were the only two items loaded on this factor. After the interpretation of the items, it was decided to instead load these items with factor 9 (excitement). As indicated in Table 7.11, the rest of the items of the excitement dimension remained the same, confirming that the factor loadings were meaningful.

Table 7.12 provides the item loadings of the CVS for factor 10 (service orientation).

Table 7.12

Revised Item Loadings of the CVS: Factor Loading for Service Orientation

Factor 10: Service orientation Item description ^a	Factor loading									
	1	2	3	4	5	6	7	8	9	10
45										.65
67	.36									.65
58										.59
68								.31		.45
34										.66
78										.59
56	.33									.57
12	.30									.50
1										.49
Total number of items Factor 10										9

Note. N = 404.

^a Item description not included due to copyright
 Extraction Method: Principal Axis Factoring.
 Rotation Method: Promax with Kaiser Normalization

As indicated by Table 7.12, items 1, 12, 34, 56 and 78 were all initially loaded on factor 11 and were the only items loaded on factor 11. After the interpretation of the items, it was decided to instead load these items on factor 10 (service orientation), together with the original items of factor 10. Item 23, which should load theoretically on factor 10 (service orientation) did not load on any factor, and the item was therefore discarded.

Table 7.13 indicates a summary of the factors that were subjected to further statistical analysis.

Table 7.13

Summary: Factor Solution for the Career Values Scale

Original CVS factors	Items per factor	CVS factor solution after EFA	Items per factor
Teamwork	11	Teamwork	11
Creativity	9	Creativity	9
Career development	9	Career development	9
Financial rewards	9	Financial rewards	10
Independence	9	Independence	9
Security	8	Security	7
Prestige	7	Prestige	7
Influence	11	Influence	6
Excitement	9	Excitement	9
Service orientation	6	Service orientation	9
Total:10	Total:88	Total:10	Total:86

Note. N = 404.

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization

As indicated in Table 7.13, only two items were removed, item 23 and 64, therefore the EFA supported the underlying factor structure of the CVS as proposed by the theory (Macnab et al., 2005).

7.1.2 Testing for common method variance

Due to the cross-sectional and self-report nature of the research approach, tests for common method variance or bias were necessary. The Harman's single-factor test and confirmatory factor analysis (CFA: one-factor solution) were applied to test for common method variance (Tehseen et al., 2017).

In terms of Harman's single-factor test, all items of each scales' constructs were loaded into a factor analysis to check whether one single general factor emerged and accounted for the majority of the covariance (i.e. >50%: Tehseen et al., 2017) as an indication of common method variance. In addition, a one-factor confirmatory factor analysis (CFA) was also conducted to further assess for common method bias.

CFA goodness-of-fit is indicated where RMSEA and SRMR are $\leq .08$ and CFI and NFI or NNI $\geq .90$ or higher (Bentler & Bonett, 1980; Browne & Cudeck, 1993; Kiazad, 2010). Poor data fit of the CFA one-factor solution serves as an indication of the lack of common method variance.

The results of Harman's one-factor and CFA one-factor solutions are summarised in Table 7.14.

Table 7.14

Results of Harman's and Confirmatory Factor Analysis One Factor Solutions

Scale	Harman's one-factor solution %	One factor Confirmatory Factor Analysis (CFA)
Career adapt-ability scale (CAAS)	8.62%	Chi-square = 1862.1475 /df =252=7.39*** SRMR = .098 RMSEA = .13 CFI = .64 NNI = .61 AIC = 1958.1475
Psychosocial career preoccupations scale (PCPS)	11.36%	Chi-square = 2055.5229 /df =252=8.15*** SRMR = .08 RMSEA = .14 CFI = .73 NNI = .71 AIC = 2151.5229
Employability attributes scale (EAS)	18.95%	Chi-square = 8771.5471 /df =1484=5.91*** SRMR =.10 RMSEA = .11 CFI = .52 NNI = .50 AIC = 8995.5471
Career orientations inventory (COI)	10.22%	Chi-square = 4383.1183 /df =665=6.59*** SRMR = .11 RMSEA = .12 CFI = .48 NNI = .45 AIC = 4535.1183
Career values scale (CVS)	24.41%	Chi-square = 4535.1183 /df = 3740=1.21 SRMR = .11 RMSEA = .10 CFI = .42 NNI = .41 AIC = 17659.2123
Career satisfaction scale (CSS)	NA	Chi-square = 73.5574 /df =5=14.71*** SRMR = .05 RMSEA = .22 CFI = .95 NNI = .90 AIC = 93.5574
Graduate Employability Measure (GEM)	NA	Chi-square = 297.7633 /df = 44=6.77*** SRMR = .09 RMSEA = .13 CFI = .81 NNI = .76 AIC =341.7633

Note. N = 404. *** $p \leq .0001$

The Harman's one-factor solution for the CAAS indicated that loading all the items of the CAAS onto one single factor accounted for only 8.62% of the covariance among the scale variables.

When the CAAS variables were loaded onto a single construct in the CFA model, the fit indices indicated that the single factor did not fit the model well, with a CFI value below .90 and SRMR and RMSEA values above .08 (Chi-square/df ratio = 7.39***; $p < .000$; SRMR = .098; RMSEA = .13; CFI = .64; NNI = .61).

The Harman's one-factor solution for the PCPS indicated that loading all the items of the PCPS onto one single factor accounted for only 11.36% of the covariance among the scale variables. When the PCPS variables were loaded onto a single construct in the CFA model, the fit indices indicated that the single factor did not fit the model well, with a CFI value below .90 and RMSEA value above .08 (Chi-square/df ratio = 8.15***; $p < .000$; SRMR = .08; RMSEA = .14; CFI = .73; NNI = .71).

The Harman's one-factor solution for the EAS indicated that loading all the items of the EAS onto one single factor accounted for only 18.95% of the covariance among the scale variables. When the EAS variables were loaded onto a single construct in the CFA model, the fit indices indicated that the single factor did not fit the model well, with a CFI value below .90 and SRMR and RMSEA values above .08 (Chi-square/df ratio = 5.91***; $p < .000$; SRMR = .10; RMSEA = .11; CFI = .52; NNI = .50).

The Harman's one-factor solution for the COI indicated that loading all the items of the COI onto one single factor accounted for only 10.22% of the covariance among the scale variables. When the COI variables were loaded onto a single construct in the CFA model, the fit indices indicated that the single factor did not fit the model well, with a CFI value below .90 and SRMR and RMSEA values above .08 (Chi-square/df ratio = 6.59***; $p < .000$; SRMR = .11; RMSEA = .12; CFI = .48; NNI = .45).

The Harman's one-factor solution for the CVS indicated that loading all the items of the CVS onto one single factor accounted for only 24.41% of the covariance among the scale variables. When the CVS variables were loaded onto a single construct in the CFA model, the fit indices indicated that the single factor did not fit the model well, with a CFI value below .90 and SRMR and RMSEA values above .08 (Chi-square/df ratio = 1.21 ***; $p < .000$; SRMR = .11; RMSEA = .10; CFI = .42; NNI = .41).

The CSS and GEM were developed as single factor scales and were also subjected to a CFA one-factor solution.

When the CSS variables were loaded onto a single construct in the CFA model, the fit indices indicated that the single factor did not fit the model well, with a CFI value above .90 and SRMR and RMSEA values above .08 (Chi-square/df ratio = 14.71 ***; $p < .000$; SRMR = .05; RMSEA = .22; CFI = .95; NNI = .90). Although the CFA results suggested lack of common method variance, the results also indicated that the measurement model for the CSS had to be further tested for construct validity in future studies.

When the GEM variables were loaded onto a single construct in the CFA model, the fit indices indicated that the single factor did almost fit the model well, with a CFI value just below .90 and SRMR and RMSEA values above .08 (Chi-square/df ratio = 6.77 ***; $p < .000$; SRMR = .09; RMSEA = .13; CFI = .81; NNI = .76). Although the CFA results suggested lack of common method variance, the results also indicated that the measurement model for the GEM had to be further tested for construct validity in future studies.

These results showed that the relationship between the variables of the various scales was not mainly due to common method bias and that common method variance was therefore not a potential threat for the research findings. The results of the statistical analysis could, therefore, be interpreted with considerable more confidence.

7.1.3 Testing construct validity and reliability of the measurement scales

Before proceeding with the statistical analysis, the overall construct validity, in terms of the discriminant and convergent validity, and the reliability of the measurement scales were determined.

7.1.3.1 Measurement model construct validity of each scale

To test the construct validity of the measurement scales, a confirmatory factor analysis (CFA) was utilised (Hair et al., 2019; Tabachnick & Fidell, 2019). The aim was to determine the fit of the measurement models of each scale. The data were analysed utilising the SAS version 9.4 (SAS Institute, 2013) CALIS procedure. The maximum likelihood estimation, with the Levenberg-Marquardt Optimization method, was applied to test covariance structure models with multiple indicators for all latent constructs. The results of the CFA are summarised in Table 7.15. Goodness-of-fit is indicated if RMSEA and SRMR values were $\leq .08$ and NNI and CFI values $\geq .90$ or higher (Bentler & Bonett, 1980; Browne & Cudeck, 1993; Kiazad, 2010; O'Rourke & Hatcher, 2013). The AIC (Akaike Information Criterion) is a measure that compares models with different numbers of latent variables and depicts model fit as well as model parsimony

(Schumacker & Lomax, 2016). A smaller value is an indication of a reasonable better fit (Pituch & Stevens, 2016).

Table 7.15

Confirmatory Factor Analysis: Validity of Measurement Scales

Scale	Confirmatory factor analysis	
	Original factor model	Optimised model
Career adapt-ability scale (CAAS)	Chi-square = 1076.6640/df=245=4.39***	Chi-square = 532.7946 /df =185=2.88***
<i>Sub-factors:</i>		
<i>Concern</i>	SRMR = .07	SRMR = .06
<i>Control</i>	RMSEA = .10	RMSEA = .08
<i>Curiosity</i>	CFI = .82	CFI = .92
<i>Confidence</i>	NNI = .79	NNI = .89
	AIC = 1186.6640	AIC = 714.7946
Psychosocial career preoccupations scale (PCPS)	Chi-square = 1500.0952/df=249=6.02***	Chi-square = 479.5660 /df =160=2.99***
<i>Sub-factors:</i>		
<i>Career establishment preoccupations</i>	SRMR = .07	SRMR = .05
<i>Career adaptation preoccupations</i>	RMSEA = .12	RMSEA = .08
<i>Work/life adjustment preoccupations</i>	CFI = .81	CFI = .95
	NNI = .80	NNI = .93
	AIC = 1602.0952	AIC = 621.5660
Employability attributes scale (EAS)	Chi-square = 6708.6297/df=1402=4.79***	Chi-square=1502.0187/df=590=2.55***
<i>Sub-factors:</i>		
<i>Career self-management</i>	SRMR = .09	SRMR = .06
<i>Cultural competence</i>	RMSEA = .10	RMSEA = .07
<i>Career resilience</i>	CFI = .64	CFI = .91
<i>Proactivity</i>	NNI = .62	NNI = .89
<i>Entrepreneurial orientation</i>	AIC = 6984.6297	AIC = 1804.0187
<i>Sociability</i>		
<i>Self-efficacy</i>		
<i>Emotional literacy</i>		
Career orientations inventory (COI)	Chi-square =2278.6601 /df =674=3.38***	Chi-square = 899.9028/df =382=2.36***
<i>Sub-factors</i>		
<i>Technical/functional</i>	SRMR = .08	SRMR = .06
<i>General managerial competence</i>	RMSEA = .08	RMSEA = .06
<i>Autonomy</i>	CFI = .78	CFI = .92
<i>Security/stability</i>	NNI = .76	NNI = .89
<i>Entrepreneurial creativity</i>	AIC = 2490.6601	AIC = 1191.9028
<i>Service/dedication to a cause</i>		
<i>Pure challenge</i>		
<i>Lifestyle</i>		
Career values scale(CVS)	Chi-square=10331.3996/df =3695=2.80***	Chi-square=3440.8831/df=1821=1.89***
<i>Sub-factors</i>		
<i>Service orientation</i>	SRMR = .09	SRMR = .07
<i>Teamwork</i>	RMSEA = .07	RMSEA = .05
<i>Influence</i>	CFI = .72	CFI = .91
<i>Creativity</i>	NNI = .71	NNI = .90
<i>Independence</i>	AIC = 10773.399	AIC = 4088.8831
<i>Excitement</i>		
<i>Career development</i>		
<i>Financial rewards</i>		
<i>Prestige</i>		
<i>Security</i>		

Scale	Confirmatory factor analysis	
	Original factor model	Optimised model
Career satisfaction scale (CSS) Career satisfaction	Chi-square = 73.5574 /df =5=14.71*** SRMR = .05 RMSEA = .22 CFI = .95 NNI = .89 AIC = 93.5574	Chi-square = 3.5670/df =3=1.19*** SRMR = .009 RMSEA = .09 CFI = .99 NNI = .99 AIC = 27.57
Graduate Employability Measure (GEM) Self-perceived employability	Chi-square = 297.7633 /df =44=6.77*** SRMR =.09 RMSEA = .13 CFI =.81 NNI = .76 AIC = 341.7633	Chi-square = 20.6014/df =9=2.29*** SRMR = .02 RMSEA =.09 CFI = .99 NNI = .97 AIC = 58.6014

Note: N =404 *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

The CFA for the CAAS displayed construct validity of the original four-factor measurement model, with the optimised model fit indices indicating good data fit with SRMR and RMSEA of below and equal to .08 and a CFI and NNI (close to) > .90 including the lower AIC value. (Chi-square/df ratio = 2.88***; $p < .000$; SRMR = .06; RMSEA = .08; CFI = .92; NNI = .89; AIC = 714.7946).

The CFA for the PCPS displayed construct validity of the original three-factor measurement model, with the optimised model fit indices indicating good data fit with SRMR and RMSEA of below and equal to .08 and a CFI and NNI > .90 including the lower AIC value. (Chi-square/df ratio = 2.99***; $p < .000$; SRMR = .05; RMSEA = .08; CFI = .95; NNI = .93; AIC = 621.5660).

The CFA for the EAS displayed construct validity of the original eight factor measurement model, with the optimised model fit (excluding the subscale self-efficacy) indices indicating SRMR and RMSEA of below .08 and a CFI and NNI (close to) > .90 including the lower AIC value. (Chi-square/df ratio = 2.55***; $p < .000$; SRMR = .06; RMSEA = .07; CFI = .91; NNI = .89; AIC = 1804.0187). The self-efficacy subscale was therefore excluded in further statistical analysis as the exclusion of it, improved the model fit significantly.

The CFA for the COI displayed construct validity of the original eight factor measurement model, with the optimised model fit (excluding technical/functional subscale) indices indicating SRMR and RMSEA of below .08 and a CFI and NNI (almost) > .90 including the lower AIC value. (Chi-square/df ratio = 2.36***; $p < .000$; SRMR = .06; RMSEA = .06; CFI = .92; NNI = .89; AIC = 1191.9028). The technical/functional subscale was therefore excluded in further statistical analysis as the exclusion of it, improved the model fit significantly.

The CFA for the CVS displayed construct validity of the original ten-factor measurement model, with the optimised model fit (excluding independence and security subscales) indices indicating

SRMR and RMSEA of below .08 and a CFI and NNI (almost) > .90 including the lower AIC value. (Chi-square/df ratio = 1.89***; $p < .000$; SRMR = .07; RMSEA = .05; CFI = .91; NNI = .90; AIC = 4088.8831). The independence and security subscales were therefore excluded in further statistical analysis as the exclusion of it, improved the model fit significantly.

The CFA for the CSS displayed construct validity, with the optimised model fit indices indicating SRMR and RMSEA of below .08 and a CFI and NNI (almost) > .90 including the lower AIC value. (Chi-square/df ratio = 1.19***; $p < .000$; SRMR = .009; RMSEA = .09; CFI = .99; NNI = .99; AIC = 27.57).

The CFA for the GEM displayed construct validity, with the optimised model fit indices indicating SRMR well below .08 and RMSEA just above .08 and a CFI and NFI or NNI > .90 including the lower AIC value. (Chi-square/df ratio = 2.29***; $p < .000$; SRMR = .02; RMSEA = .09; CFI = .99; NFI or NNI = .97; AIC = 58.6014).

Although not all measurements met all goodness of fit indices perfectly, the CFA results still provided evidence of construct validity of the seven measurement scales for this research's exploratory purposes.

7.1.3.2 Convergent and discriminant validity and reliability

The internal consistency reliability and validity of each of the measuring instruments were assessed to minimise the risk of making Type I and Type II errors (Salkind, 2018). The measuring instruments' internal consistency was determined by utilising the Cronbach alpha coefficient and composite reliability (a less biased form of Cronbach's alpha coefficient), which assesses the internal consistency reliability of the overall scale and subscales (Maree, 2016).

The Cronbach's alpha and composite reliability coefficient is a score between 0 and 1; where a higher score indicates a more reliable item or scale (Gravetter et al., 2020; Hair et al., 2019; Tabachnick & Fidell, 2019). A Cronbach alpha and composite reliability coefficient of .70 is an acceptable threshold to show evidence of a reliable scale (Gravetter et al., 2020; Hair et al., 2019; Tabachnick & Fidell, 2019).

Hair et al. (2019) believe that composite reliabilities should also be calculated as Cronbach's alpha has a propensity to understate reliability. Composite reliabilities were therefore also calculated. Composite reliabilities $\geq .70$ were deemed adequate (Hair et al., 2019).

The average variances extracted (AVE) were calculated to determine the convergent validity of the scales. AVE determines the total amount of variance that can be ascribed to the construct

relative to the amount of variance ascribed to measurement error (Fornell & Larcker, 1981; Teo, 2011). AVE \geq .50 is regarded as adequate for convergent validity (Hair et al., 2019).

(a) *Career adapt-ability scale (CAAS)*

Table 7.16 reports the Cronbach alpha coefficients, composite reliability and AVE (average variance extracted), MSV (maximum shared value) and ASV (average variance shared) for each of the four subscales of the CAAS.

Table 7.16

Convergent and Discriminant Validity of the Measurement Scales: Career Adapt-Ability Scale (CAAS)

Scales	Cronbach's alpha	Composite reliability (CR)	AVE	MSV	ASV	Results of convergent validity CR > AVE AVE > .50	Results of discriminant validity MSV < AVE ASV < AVE
Concern	.75	.69	.27	.74	.63	No	No
Control	.79	.90	.66	.44	.33	Yes	Yes
Curiosity	.84	.87	.52	.74	.47	Yes	No
Confidence	.86	.83	.46	.71	.53	No	No

Note: N = 404. AVE: average variance extracted. MSV: maximum shared value. ASV: average variance shared

All the subscales of the CAAS obtained high reliabilities ($>.70$) indicating acceptable Cronbach alpha coefficients for the CAAS subscales, ranging from $\alpha = .75$ to $\alpha = .86$. The AVEs were above the 0.5 thresholds for control (.66) and curiosity (.52), whereas concern (.27) and confidence (.47) were below the 0.5 thresholds. The composite reliability coefficients were larger than the AVEs. Convergent validity was, therefore, supported for only control and curiosity. The MSVs ranged between .44 and .74, and the ASVs ranged between .33 and .63. MSVs and ASVs for concern, curiosity and confidence were larger than the AVEs; therefore, discriminant validity was not supported. Convergent and discriminant validity was therefore supported for control only. The potential lack of convergent and discriminant validity pertaining to some subscales was taken into consideration in the interpretation of the findings relevant to the testing of the research hypotheses.

(b) *Psychosocial career preoccupations (PCPS)*

Table 7.17 reports the Cronbach alpha coefficients, composite reliability and AVE (average variance extracted), MSV (maximum shared value) and ASV (average variance shared) for each of the three subscales of the PCPS.

Table 7.17

Convergent and Discriminant Validity of the Measurement Scales: Psychosocial Career Preoccupations (PCPS)

Scales	Cronbach's alpha	Composite reliability (CR)	AVE	MSV	ASV	Results of convergent validity CR > AVE AVE > .50	Results of discriminant validity MSV < AVE ASV < AVE
Career establishment preoccupations	.93	.93	.55	.79	.71	Yes	No
Career adaptation preoccupations	.89	.86	.56	.64	.63	Yes	No
Work/life adjustment preoccupations	.78	.81	.51	.79	.71	Yes	No

Note: N = 404. AVE: average variance extracted. MSV: maximum shared value. ASV: average variance shared

All the subscales of the PCPS obtained high reliabilities (>.70) indicating acceptable Cronbach alpha coefficients for the PCPS subscales, ranging from $\alpha = .78$ to $\alpha = .93$. The AVEs were above the 0.5 thresholds ranging between .51 and .56, and the composite reliability coefficients were larger than the AVEs, indicating acceptable convergent validity. The MSVs ranged between .64 and .79, and the ASVs ranged between .63 and .71. All the values of the MSVs and ASVs were larger than the AVEs; therefore, discriminant validity was not supported. The potential lack of discriminant validity was taken into consideration in the interpretation of the findings relevant to the testing of the research hypotheses.

(c) *Employability attributes scale (EAS)*

Table 7.18 reports the Cronbach alpha coefficients, composite reliability and AVE (average variance extracted), MSV (maximum shared value) and ASV (average variance shared) for each of the seven subscales (excluding self-efficacy) of the EAS.

Table 7.18***Convergent and Discriminant Validity of the Measurement Scales: Employability Attributes Scale (EAS)***

Scales	Cronbach's alpha	Composite reliability (CR)	AVE	MSV	ASV	Results of convergent validity CR > AVE AVE > .50	Results of discriminant validity MSV < AVE ASV < AVE
Career self-management	.86	.85	.46	.98	.61	No	No
Cultural competence	.90	.91	.67	.55	.38	Yes	Yes
Career resilience	.75	.76	.45	.98	.68	No	No
Proactivity	.84	.83	.46	.98	.75	No	No
Entrepreneurial orientation	.81	.82	.44	.89	.64	No	No
Sociability	.79	.56	.30	.81	.64	No	No
Emotional literacy	.88	.90	.55	.48	.42	Yes	Yes

Note: N = 404. AVE: average variance extracted. MSV: maximum shared value. ASV: average variance shared

All the subscales (excluding self-efficacy) of the EAS obtained high reliabilities (>.70) indicating acceptable Cronbach alpha coefficients ranging from $\alpha = .75$ to $\alpha = .90$. The AVEs for all the subscales, except cultural competence (.67) and emotional literacy (.56), was below the 0.5 thresholds ranging between .30 and .46. The composite reliability coefficients for all subscales were larger than the AVEs; however only cultural competence and emotional literacy resulted in acceptable convergent validity. The MSVs ranged between .48 and .98, and the ASVs ranged between .38 and .75. Discriminant validity was only supported for cultural competence and emotional literacy. Although the overall EAS instrument's internal consistency is acceptable, convergent and discriminant validity for the subscales, career self-management, career resilience, proactivity, entrepreneurial orientation, and sociability were not supported. The potential lack of convergent and discriminant validity pertaining to some subscales was considered in the interpretation of the findings relevant to the testing of the research hypotheses.

(d) *Career orientations inventory (COI)*

Table 7.19 reports the Cronbach alpha coefficients, composite reliability and AVE (average variance extracted), MSV (maximum shared value) and ASV (average variance shared) for each of the seven subscales (excluding technical/functional subscale) of the COI.

Table 7.19*Convergent and Discriminant Validity of the Measurement Scales: Career Orientations Inventory (COI)*

Scales	Cronbach's alpha	Composite reliability (CR)	AVE	MSV	ASV	Results of convergent validity CR > AVE AVE > .50	Results of discriminant validity MSV < AVE ASV < AVE
General managerial competence	.78	.78	.47	.26	.15	No	Yes
Autonomy and independence	.80	.79	.44	.48	.20	No	No
Security and stability	.82	.82	.53	.18	.08	Yes	Yes
Entrepreneurial Creativity	.77	.83	.56	.48	.26	Yes	Yes
Service or dedication to a cause	.85	.86	.55	.34	.18	Yes	Yes
Pure challenge	.85	.85	.53	.44	.25	Yes	Yes
Lifestyle	.80	.84	.51	.24	.14	Yes	Yes

Note: N = 404. AVE: average variance extracted. MSV: maximum shared value. ASV: average variance shared

All the subscales (excluding technical/functional) of the COI obtained high reliabilities (>.70), indicating acceptable Cronbach alpha coefficients for the COI subscales, ranging from $\alpha = .77$ to $\alpha = .85$. The AVEs for security and stability (.53), entrepreneurial creativity (.56), service or dedication to a cause (.55), pure challenge (.53), and lifestyle (.51) were all above the 0.5 thresholds. The composite reliability coefficients for these subscales were larger than the AVEs, indicating acceptable convergent validity. The AVEs of the subscales general managerial competence (.47) and autonomy (.44) were below the 0.5 thresholds, and although the composite reliability coefficients were larger than the AVEs, convergent validity was not supported. The MSVs ranged between .18 and .48, and the ASVs ranged between .08 and .26. All the values of the MSVs and ASVs were smaller than the AVEs, except for the subscale autonomy and independence; therefore, discriminant validity was supported for all the subscales, except for the autonomy and independence subscale. The potential lack of convergent and discriminant validity pertaining to some subscales was taken into consideration in the interpretation of the findings relevant to the testing of the research hypotheses.

(e) *Career values scale (CVS)*

Table 7.20 reports the Cronbach alpha coefficients, composite reliability and AVE (average variance extracted), MSV (maximum shared value) and ASV (average variance shared) for each of the eight subscales (excluding independence and security subscales) of the CVS.

Table 7.20

Convergent and Discriminant Validity of the Measurement Scales: Career Values Scale (CVS)

Scales	Cronbach's alpha	Composite reliability (CR)	AVE	MSV	ASV	Results of convergent validity CR > AVE AVE > .50	Results of discriminant validity MSV < AVE ASV < AVE
Service orientation	.89	.80	.51	.62	.54	Yes	No
Teamwork	.93	.93	.56	.64	.60	Yes	No
Influence	.87	.84	.34	.64	.64	No	No
Creativity	.92	.92	.56	.55	.52	Yes	Yes
Excitement	.83	.79	.38	.55	.61	No	No
Career development	.93	.93	.63	.44	.55	Yes	Yes
Financial rewards	.87	.88	.45	.34	.41	No	No
Prestige	.85	.88	.56	.35	.49	Yes	Yes

Note: N = 404. AVE: average variance extracted. MSV: maximum shared value. ASV: average variance shared

All the subscales (excluding independence and security) of the CVS obtained high reliabilities (>.70), indicating acceptable Cronbach alpha coefficients for the CVS subscales, ranging from $\alpha = .83$ to $\alpha = .93$. The AVEs for the subscales service orientation (.51), teamwork (.56), creativity (.56), career development (.63) and prestige (.56) were above the 0.5 thresholds, and the composite reliability coefficients for these subscales were larger than the AVEs, indicating acceptable convergent validity. The AVEs for influence (.34), excitement (.38) and financial rewards (.45) were below the 0.5 thresholds, and the composite reliability coefficients for these subscales were smaller than the AVEs; therefore, convergent validity was not supported for these subscales. The MSVs ranged between .34 and .64, and the ASVs ranged between .41 and .64. The values of the MSVs and ASVs for the subscales creativity, career development and prestige were smaller than the AVEs; therefore, discriminant validity was supported for these subscales and not supported for service orientation, teamwork, influence, excitement and financial rewards. The potential lack of convergent and discriminant validity pertaining to some subscales was taken

into consideration in the interpretation of the findings relevant to the testing of the research hypotheses.

(f) *Career Satisfaction Scale (CSS) and Graduate Employability Measure (GEM)*

Table 7.21 reports the Cronbach alpha coefficients for the CSS and GEM.

Table 7.21

Convergent and Discriminant Validity of One-construct Measurement Scales: Career Satisfaction Scale and Graduate Employability Measure (GEM)

Scales	Cronbach's alpha	Composite reliability (CR)	AVE	MSV	ASV	Results of convergent validity CR > AVE AVE >.50	Results of discriminant validity MSV < AVE ASV <AVE
Career satisfaction scale (CSS)	.89	N/A	N/A	N/A	N/A	N/A	N/A
Graduate Employability Measure (GEM)	.84	N/A	N/A	N/A	N/A	N/A	N/A

Note: N = 404. AVE: average variance extracted. MSV: maximum shared value. ASV: average variance shared

The CSS and the GEM are measurement scales measuring one construct. Both the scales obtained high reliabilities (>.70), indicating acceptable Cronbach alpha coefficients.

The CFAs for each scale provided evidence of construct validity of each scale's measurement model. Although some concerns arose pertaining to the convergent and discriminant validity of some of the subscales of the scales, it was overall concluded that the various scales had acceptable overall construct validity in order to further proceed with the testing of the research hypotheses. In addition, the scales had, in general, acceptable internal consistency reliability, indicating that further statistical analyses may provide useful information.

7.1.3.3 Overall measurement model validity

A CFA was performed to assess the measurement model discriminant validity of the overall psychometric battery. The CFA included all the scale constructs with the subscale factors loading onto the respective overall construct in the multifactor measurement model. Table 7.22 indicates that the measurement model obtained good data fit.

Table 7.22*Overall Measurement Model Validity*

Model	Chi-square	df	p	SRMR	RMSEA	CFI	NNI	AIC
Fit statistics	774.90	304	.000***	.06	.07	.92	.91	922.89

The measurement model obtained a chi-square statistic of 774.90 (340 *df*); CMIN/*df* = 2.28; p = .000; SRMR = .06; RMSEA = .07; CFI = .92; NNI = .91; AIC = .91. Although SRMR and RMSEA values less than .055 are ideal, the values were still below the threshold of .08. The CFI and NNI values were above the .90 threshold, and indicated good data fit.

In summary, the overall measurement model had discriminant validity which warranted further statistical analyses. The discriminant validity of the overall measurement model also suggested a lack of potential multicollinearity between the scales.

7.2 DESCRIPTIVE STATISTICS

Descriptive statistics describe and summarise the features of the gathered data. The descriptive statistics provide information on the mean scores, standard deviations, skewness and kurtosis for each measuring instrument (CAAS, PCPS, EAS, COI, CVS, CSS and GEM).

7.2.1 Means, standard deviations, skewness and kurtosis for the independent variables

Table 7.23 provides a summary of the CAAS and PCPS and subscales in terms of the mean, standard deviations, skewness, and kurtosis.

Table 7.23*Descriptive Statistics: Mean, Standard Deviation, Skewness and Kurtosis (Independent Variables)*

Scale	Mean	SD	Skewness	Kurtosis
Career adapt-ability scale (CAAS) (Max 5)	3.86	.53	-.21	-.17
Concern	3.69	.71	-.49	.16
Control	3.76	.69	-.33	-.19
Curiosity	4.00	.63	-.34	-.17
Confidence	3.95	.63	-.52	.36
Psychosocial career preoccupations (PCPS) (Max 5)	3.16	.95	-.36	-.64
Career establishment preoccupations	3.41	1.03	-.49	-.64
Career adaptation preoccupations	2.60	1.11	.37	-.79
Work/life adjustment preoccupations	3.09	1.04	-.28	-.78

Note. N = 404.

In terms of the CAAS, the general mean scores were relatively high and ranged between 3.69 and 4.00. The participants scored the highest on the curiosity subscale ($M = 4.00$; $SD = .63$), and the lowest on the concern subscale ($M = 3.69$; $SD = .71$). The standard deviations for each of the four subscales were in a similar range of .63 to .71 indicating that all SD values were less than half mean (i.e., $CV < 50\%$) and can be considered normal (Mishra et al., 2019). The skewness values for the CAAS varied between -.21 and -.52, which indicated a slight positive skewness as the scores were clustered to the left around lower values. The kurtosis values ranged between -.19 and .36, which indicated a slightly flat distribution. Although the values of skewness and kurtosis were not exactly zero as recommended by Tabachnick and Fidell (2019), the distribution is approximately normal, as the skewness and kurtosis values were between -1 and +1 (Mishra et al., 2019; Tramontano & Fida, 2018) and are therefore considered adequate to assume that the data were normally distributed.

In terms of the PCPS, the general mean scores were relatively in the mid-range and ranged between 2.60 to 3.41, indicating that the participants scored the highest on the career establishment subscale ($M = 3.41$; $SD = 1.03$), and the lowest on the career adaptation preoccupations subscale ($M = 2.60$; $SD = 1.11$). The standard deviations for each of the three subscales were less than half the mean (i.e., $CV < 50\%$) and were in a similar range between 1.03 and 1.11 and can be considered normal (Mishra et al., 2019). The skewness values for the PCPS varied between -.28 and .37. The kurtosis values ranged between -.64 and -.79, which indicated a slightly flat distribution. Although the values of skewness and kurtosis were not exactly zero as recommended by Tabachnick and Fidell (2019), the values range between -1 and +1 and are considered adequate to assume that the data were normally distributed (Mishra et al., 2019; Tramontano & Fida, 2018).

7.2.2 Means, standard deviations, skewness and kurtosis for the moderator variables

Table 7.24 provides a summary of the EAS, COI and CVS and subscales in terms of the mean, standard deviations, skewness, and kurtosis.

Table 7.24*Descriptive Statistics: Mean, Standard Deviation, Skewness and Kurtosis (Moderator Variables)*

Scale	Mean	SD	Skewness	Kurtosis
Employability Attributes Scale (EAS) (Max 6)	4.41	.73	-.27	-.48
Career self-management	4.68	.80	-.48	-.19
Cultural competence	4.14	1.07	-.26	-.56
Career resilience	4.57	.79	-.38	.00
Proactivity	4.45	.86	-.35	-.31
Entrepreneurial orientation	4.42	.85	-.48	.03
Sociability	3.97	1.20	-.26	-.62
Emotional literacy	4.37	.93	-.39	-.40
Career Orientations Inventory (COI) (Max 6)	3.92	.73	.08	.20
General managerial competence	2.70	1.17	.43	-.50
Autonomy and independence	4.12	1.03	-.19	-.51
Security and stability	3.89	1.10	-.17	-.47
Entrepreneurial Creativity	3.79	1.22	-.17	-.69
Service or dedication to a cause	4.17	1.09	-.49	-.20
Pure challenge	4.10	1.06	-.42	-.39
Lifestyle	4.36	1.00	-.42	-.02
Career Values Scale (CVS) (Max 5)	3.80	.49	.11	.62
Service orientation	3.93	.65	-.69	.47
Teamwork	3.70	.72	-.31	.00
Influence	3.84	.58	-.29	1.11
Creativity	3.85	.70	-.41	-.08
Excitement	3.40	.69	-.13	.37
Career development	4.14	.60	-.67	1.06
Financial rewards	3.91	.61	-.38	.60
Prestige	3.49	.80	-.23	-.18

Note. N = 404.

In terms of the EAS, the general mean scores were relatively medium-high and ranged between 3.97 and 4.68. The participants scored the highest on the career self-management subscale ($M = 4.68$; $SD = .80$), and the lowest on the sociability subscale ($M = 3.97$; $SD = 1.20$). The standard deviations for each of the seven subscales were in a similar range of .79 to 1.20 indicating that all SD values were less than half the mean (i.e., $CV < 50\%$) and can be considered normal (Mishra

et al., 2019). The skewness values for the EAS varied between -.26 and -.48, which indicated a slight positive skewness as the scores, were clustered to the left around lower values. The kurtosis values ranged between -.62 and .03. Although the values of skewness and kurtosis were not exactly zero as recommended by Tabachnick and Fidell (2019), the distribution is approximately normal, as the skewness and kurtosis values were between - 1 and + 1 (Mishra et al., 2019; Tramontano & Fida, 2018) and are therefore considered adequate to assume that the data were normally distributed.

In terms of the COI, the general mean scores were relatively in the mid-range and ranged between 2.70 and 4.36. The most prominent career anchor was the lifestyle ($M = 4.36$; $SD = 1.00$), career anchor. The participants scored the lowest on the general managerial competence ($M = 2.70$; $SD = 1.17$). The standard deviations for each of the seven subscales were in a similar range of 1.00 to 1.22 indicating that all SD values were less than half the mean (i.e., $CV < 50\%$) and can be considered normal (Mishra et al., 2019). The skewness values for the COI varied between -.49 and .43, while the kurtosis values ranged between -.69 and -.02. The values of skewness and kurtosis were between - 1 and + 1 (Mishra et al., 2019; Tramontano & Fida, 2018) and are therefore considered adequate to assume that the data were normally distributed, even though the values were not exactly zero as recommended by Tabachnick and Fidell (2019).

In terms of the CVS, the general mean scores were relatively medium-high and ranged between 3.40 and 4.14. The most prominent career value present was the career development ($M = 4.14$; $SD = .60$) subscale. The participants scored the lowest on the excitement value ($M = 3.40$; $SD = .69$) subscale. The standard deviations for each of the eight subscales were in a similar range of .58 to .80 indicating that all SD values were less than half the mean (i.e., $CV < 50\%$) and can be considered normal (Mishra et al., 2019). The skewness values for the CVS varied between -.69 and -.13, which indicated a slight positive skewness as the scores, were clustered to the left around lower values. The kurtosis values ranged between -.18 and 1.11 and were thus just outside the - 1 and +1 range recommended for a normal distribution (Mishra et al., 2019; Tramontano & Fida, 2018), indicating a slightly positive kurtosis with values clustered towards the centre with long thin tails. The skewness values were, however, within the recommended range of - 1 and +1 (Mishra et al., 2019; Tramontano & Fida, 2018).

7.2.3 Means, standard deviations, skewness and kurtosis for the dependent variables

Table 7.25 provides a summary of the CSS and the GEM in terms of the mean, standard deviations, skewness, and kurtosis.

Table 7.25

Descriptive Statistics: Mean, Standard Deviation, Skewness and Kurtosis (Dependent Variables)

Scale	Mean	SD	Skewness	Kurtosis
Career satisfaction scale (CSS) (Max 5)	3.90	.81	-.98	1.12
Graduate Employability Measure (GEM) (Max 5)	3.68	.73	-.51	.23

Note. N = 404.

The mean score value for the CSS was 3.90 (relatively high), and the standard deviation was .81. The skewness value was -.98 and within the recommended range of – 1 and +1 (Mishra et al., 2019; Tramontano & Fida, 2018). The kurtosis value was 1.12, falling just outside the recommended range of – 1 and +1 (Mishra et al., 2019; Tramontano & Fida, 2018). The SD values were less than half the mean (i.e., CV <50%), indicating that the sample distribution can be considered normal (Mishra et al., 2019).

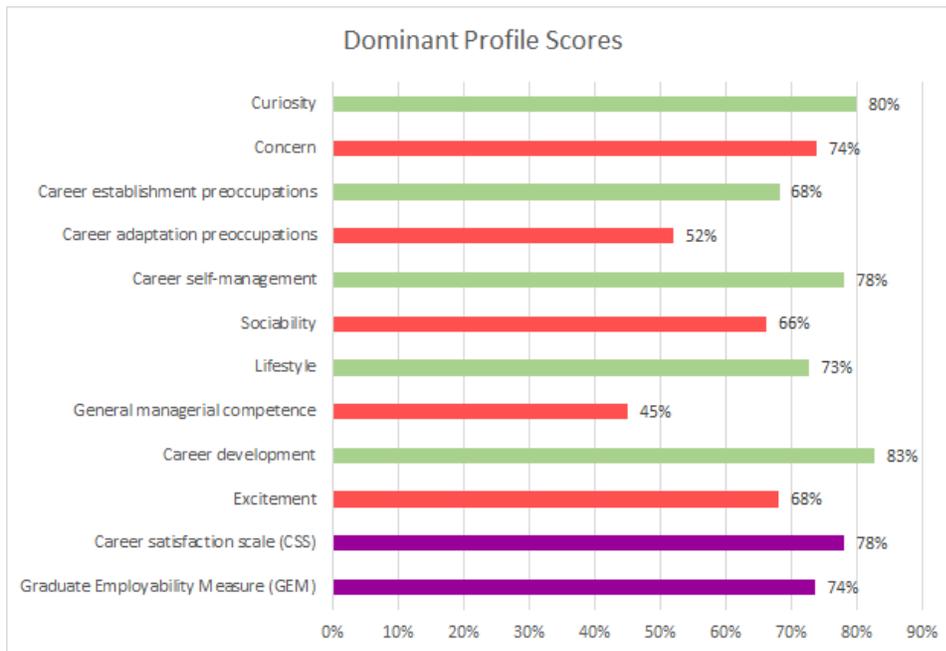
The general mean scores for the GEM was relatively medium-high (3.68), and the standard deviation was .73. The skewness value was -.51, and the kurtosis value was .23, with both values within the recommended range of – 1 and +1 (Mishra et al., 2019; Tramontano & Fida, 2018). The SD values were less than half the mean (i.e., CV <50%), indicating that the sample distribution can be considered normal (Mishra et al., 2019).

7.2.4 Preliminary analysis 1: Towards constructing a career satisfaction and employability profile for knowledge workers

In summary, the following core conclusions regarding the dominant profile in Figure 7.4 emerged:

Figure 7.4

Dominant Profile Scores



In terms of career cognitions, especially for career adaptability, participants reported high levels of career curiosity suggesting that individuals were curious to explore the world of work and make an effort to gain as much information as possible about the requirements, practices and rewards related to specific careers and occupations. Individuals reported lower levels of career concern which suggested that individuals were less likely to be involved in their own career planning tasks and were inclined to think less about their future careers. The predominant career stages represented in the sample were related to the established (31 – 45 years) career stage, and it can thus be expected that individuals want to explore the world of work to establish the best person-environment fit.

In terms of career cognitions, especially for psychosocial career preoccupations, individuals seemed more concerned about career establishment preoccupations, and less concerned about career adaptation preoccupations. These profile scores suggest that individuals were more concerned about fitting in with a group, career and strive towards economic stability and security, and were looking for opportunities for self-expression and personal growth and development, and

advancing in their careers in the present organisation. Individuals were seemingly less concerned about adapting to career changes in terms of adjusting one's interests, talents and improve one's capabilities, and to fit into the employment market. These predominant and less dominant preoccupations can be expected, as individuals in the sample were related to the established (31 – 45 years) career stage, and it can be expected that individuals as knowledge workers are already highly skilled and qualified to fit into the employment market. It is furthermore expected that the knowledge workers presented in the sample (mostly white males) could also be more concerned about their economic stability and security, and would probably stay in their current organisation.

In terms of employability attributes, individuals reported high levels of career self-management and rather low levels of sociability. These profile scores suggested that individuals represented in the sample might have a tendency to instead invest in resources (setting goals, manage oneself, enhance self-knowledge) that they have control over to advance in their careers rather than to rely on social contacts and networks as a resource to advance in their careers.

In terms of career anchors, the most dominant career anchor reported were the lifestyle career anchor. This suggests that individuals in the established career and life stage seemed to be predominantly concerned with different facets of their lives and seemingly strived towards a balance between their careers, family and other personal interests. The general managerial competence career anchor represented the lowest mean score and can be considered as the least dominant career anchor. This suggests that the individuals represented in the sample were seemingly already established as specialists in their fields and were probably not be interested in becoming general managers. Since lifestyle is the most dominant career anchor, it suggested that individuals were seemingly striving towards having a work-life balance, rather than to advance up the corporate ladder to higher levels of responsibility and thus sacrificed time for family and other personal interests.

In terms of career values, the highest mean score reported was related to career development, and the lowest mean score was related to excitement. These profile scores suggested that personal and professional development and growth were much more critical for the individuals represented in the sample than to have variety, try new things out, and taking risks or having fast past work.

In terms of the career outcomes, the career satisfaction score was relatively high, followed by self-perceived employability. It is evident that though self-perceived employability was reported as important, career satisfaction acted as the fundamental and ultimate career goal.

7.3 CORRELATIONAL STATISTICS

In this research, correlational statistics were performed in order to determine the magnitude and direction between the respective variables. The correlation statistics were furthermore performed to test research hypothesis H1.

There are statistically significant relationships among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables).

The SAS version 9.4 (SAS Institute, 2013) software program was utilised. The guidelines of Cohen (1988, pp. 79–81) were followed to interpret the practical effect of the associations at $p \leq .05$:

Small $r = .10$ to $.29$

Medium $r = .30$ to $.49$

Large $r \geq .50$

7.3.1 Correlations between biographical variables and the scale constructs

Spearman correlations were utilised to determine the magnitude and direction between the biographical variables and the construct variables.

7.3.1.1 Correlations between biographical variables and independent variables

Table 7.26 provides a summary of the correlations between the biographical variables and the independent variables (career adaptability and psychosocial career preoccupations).

Table 7.26*Correlations between Biographical Variables and Independent Variables*

Variables	Age	Gender	Race	Job level	Employment status	Qualification
Career Adapt-Abilities (CAAS)	-.04	.03	-.25***	.01	-.05	-.02
Concern	-.23***	.09	-.29***	.05	-.07	-.11*
Control	.08	.04	-.17***	-.05	.00	-.04
Curiosity	-.06	-.01	-.21***	.06	-.06	.00
Confidence	.02	-.01	-.15**	-.03	.01	-.01
Psychosocial Career Preoccupations (PCPS)	-.43***	.19***	-.26***	.23***	-.13**	-.09***
Career establishment preoccupations	-.44***	.19***	-.23***	.23***	-.13**	-.13**
Career adaptation preoccupations	-.29***	.16	-.26***	.19***	-.13**	-.06
Work/life adjustment preoccupations	-.38***	.17***	-.20***	.15**	-.09	-.03

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

$r = .10$ to $.29$ (small practical effect), $r = .30$ to $.49$ (medium practical effect), $r \geq .50$ (large practical effect)

As shown in Table 7.26 the correlations between biographical variables and the independent variables indicated a significant negative correlation between age and concern ($r = -.23$; small practical effect; $p < .001$). Furthermore, significant negative correlations were observed between age and overall psychosocial career preoccupations ($r = -.43$; medium practical effect; $p < .001$), and all three subscales; career establishment preoccupations ($r = -.44$; medium practical effect; $p < .001$), career adaptation preoccupations ($r = -.29$; small practical effect; $p < .001$) and work/life adjustment preoccupations ($r = -.38$; medium practical effect; $p < .001$).

The results in Table 7.26 indicated a significant negative correlation between race and overall career adapt-abilities ($r = -.25$; small practical effect; $p < .001$), and the subscales concern ($r = -.29$; small practical effect; $p < .001$), control ($r = -.17$; small practical effect; $p < .001$) and curiosity ($r = -.21$; small practical effect; $p < .001$).

The results in Table 7.26 showed significant negative correlations between race and overall psychosocial career preoccupations ($r = -.26$; small practical effect; $p < .001$) and all three subscales; career establishment preoccupations ($r = -.23$; small practical effect; $p < .001$), career adaptation preoccupations ($r = -.26$; small practical effect; $p < .001$) and work/life adjustment preoccupations ($r = -.20$; small practical effect; $p < .001$).

As shown in Table 7.26, no significant correlations were observed between the biographical variables (gender, job level, employment status, and qualification) and career adaptability.

The results in Table 7.26 further indicated a significant positive correlation between gender and overall psychosocial career preoccupations ($r = .19$; small practical effect; $p < .001$), and the subscales career establishment preoccupations ($r = .19$; small practical effect; $p < .001$), and work/life adjustment preoccupations ($r = .17$; small practical effect; $p < .001$).

The results in Table 7.26 further indicated a significant positive correlation between job level and psychosocial career preoccupations ($r = .23$; small practical effect; $p < .001$), and the subscales career establishment preoccupations ($r = .23$; small practical effect; $p < .001$), career adaptation preoccupations ($r = .19$; small practical effect; $p < .001$). No significant correlations were found between employment status and psychosocial career preoccupations. Finally, the results indicated a significant negative correlation between qualification and overall psychosocial career preoccupations ($r = -.09$; small practical effect; $p < .001$).

7.3.1.2 Correlations between biographical variables and moderator variables

Table 7.27 provides a summary of the correlations between the biographical variables and the moderator variables (employability attributes, career anchors and career values)

Table 7.27

Correlations between Biographical Variables and Moderator Variables

Variables	Age	Gender	Race	Job level	Employment status	Qualification
Employability Attributes Scale (EAS)	.00	.02	-.20***	.00	-.11*	.00
Career self-management	.05	-.04	-.15**	.00	-.09	.02
Cultural competence	-.07	.05	-.25***	.08	-.11*	-.03
Career resilience	.04	-.01	-.14**	-.02	-.04	.00
Proactivity	.08	-.04	-.18***	-.02	-.08	.05
Entrepreneurial orientation	.02	-.09	-.13*	.03	.01	.00
Sociability	-.05	.02	-.12*	-.09	-.10*	.03
Emotional literacy	-.06	.12*	-.17***	.00	-.16**	-.01
Career Orientations Inventory (COI)	-.14**	-.05	-.33***	.11*	.01	-.04
General managerial competence	-.21***	-.10*	-.32***	-.09	-.08	-.07
Autonomy	-.08	.00	-.13**	.13**	.14**	.05
Security/stability	-.14**	.08	-.14**	.07	-.19***	-.10*
Entrepreneurial creativity	-.05	-.12*	-.25***	.12*	.22***	.04
Service/dedication to a cause	-.03	.02	-.29***	.16**	-.04	-.03
Pure challenge	-.04	-.10	-.25***	.03	-.01	-.03
Lifestyle	-.13**	.03	-.18***	.10	-.08	-.03
Career Values Scale (CVS)	-.13**	.00	-.34***	-.02	-.17***	-.07

Variables	Age	Gender	Race	Job level	Employment status	Qualification
Service orientation	-.12*	.07	-.35***	.09	-.18***	-.10*
Teamwork	-.15**	.00	-.34***	-.01	-.25***	-.11*
Influence	-.04	-.08	-.25***	-.19***	-.08	-.13**
Creativity	-.02	-.12*	-.25***	.04	-.06	-.02
Excitement	-.01	-.15**	-.28***	-.03	-.05	-.03
Career development	-.14**	.09	-.28***	.12*	-.13**	.04
Financial rewards	-.11*	.09	-.19***	-.08	-.10*	-.01
Prestige	-.15**	.09	-.16**	.01	-.11*	-.03

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$
 $r = .10$ to $.29$ (small practical effect), $r = .30$ to $.49$ (medium practical effect), $r \geq .50$ (large practical effect)

As indicated in Table 7.27, the correlations between biographical variables and the moderator variables showed significant negative correlations between age and general managerial competence ($r = -.21$; small practical effect; $p < .001$). Furthermore the results showed no significant correlations between gender and the moderator variables (employability attributes, career orientations and career values).

The results in Table 7.27 further indicated significant negative correlations between race and overall employability attributes ($r = -.20$; small practical effect; $p < .001$) and the subscales cultural competence ($r = -.25$; small practical effect; $p < .001$), proactivity ($r = -.18$; small practical effect; $p < .001$) and emotional literacy ($r = -.17$; small practical effect; $p < .001$).

The results in Table 7.27 further indicated a significant negative correlation between race and overall career orientations inventory ($r = -.33$; medium practical effect; $p < .001$), and the subscales general managerial competence ($r = -.32$; medium practical effect; $p < .001$), entrepreneurial creativity ($r = -.25$; small practical effect; $p < .001$), service/dedication to a cause ($r = -.29$; small practical effect; $p < .001$), pure challenge ($r = -.25$; small practical effect; $p < .001$) and lifestyle ($r = -.18$; small practical effect; $p < .001$).

The results in Table 7.27 further indicated a significant negative correlation between race and overall career values scale ($r = -.34$; medium practical effect; $p < .001$), and the subscales service orientation ($r = -.35$; medium practical effect; $p < .001$), teamwork ($r = -.34$; medium practical effect; $p < .001$), influence ($r = -.25$; small practical effect; $p < .001$), creativity ($r = -.25$; small practical effect; $p < .001$), excitement ($r = -.28$; small practical effect; $p < .001$), career development ($r = -.28$; small practical effect; $p < .001$) and financial rewards ($r = -.19$; small practical effect; $p < .001$).

As indicated in Table 7.27, a significant negative correlation was observed between job level and influence ($r = -.19$; small practical effect; $p < .001$).

The results in Table 7.27 showed significant negative correlations between employment status and security/stability ($r = -.19$; small practical effect; $p < .001$), and overall career values scale ($r = -.17$; small practical effect; $p < .001$) and the subscales service orientation ($r = -.18$; small practical effect; $p < .001$) and teamwork ($r = -.25$; small practical effect; $p < .001$). The results further indicated a significant positive correlation between employment status and entrepreneurial creativity ($r = .22$; small practical effect; $p < .001$). Finally, the results showed no significant correlation between qualification and the moderator variables (employability attributes, career orientations and career values).

7.3.1.3 Correlations between biographical variables and independent variables

Table 7.28 provides a summary of the correlations between the biographical variables and the dependent variables (career satisfaction and self-perceived employability).

Table 7.28

Correlations between Biographical Variables and Dependent Variables

Variables	Age	Gender	Race	Job level	Employment status	Qualification
Career satisfaction	.21***	-.05	.16***	-.25***	-.06	.09
Self-perceived employability	-.01	.03	-.32***	-.10*	-.09	-.08

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$
 $r = .10$ to $.29$ (small practical effect), $r = .30$ to $.49$ (medium practical effect), $r \geq .50$ (large practical effect)

As shown in Table 7.28, the correlations between the biographical variables and the dependent variables indicate a significant positive correlation between age and career satisfaction ($r = .21$; small practical effect; $p < .001$). No significant correlations were observed between gender and career satisfaction and self-perceived employability.

The results in Table 7.28 further indicated a significant positive correlation between race and career satisfaction ($r = .16$; small practical effect; $p < .001$) and a significant negative correlation between race and self-perceived employability ($r = -.32$; medium practical effect; $p < .001$). The results also showed a significant negative correlation between job level and career satisfaction ($r = -.25$; small practical effect; $p < .001$). Finally, the results indicated no significant correlations between the biographical variables related to employment status and qualification and the dependent variables.

In summary, the observed associations suggested that some of the biographical variables may function as important control variables in interpreting the findings.

7.3.2 Correlations between the scale variables

To further investigate the relationship between the independent, moderator and dependent variables, it was essential to determine the correlations between the scale variables. Pearson's product-moment correlations were utilised to determine the direction and strength of the relationship between each construct.

7.3.2.1 Correlations between independent variables and dependent variables

The relationship between psychosocial career preoccupations and career adaptability as independent variables, and career satisfaction and self-perceived employability as dependent variables are reported in Table 7.29.

Table 7.29

Correlations between Independent Variables and Dependent Variables

	Career satisfaction	Self-perceived employability
Career Adapt-Abilities Scale (CAAS)	.14**	.36***
Concern	-.04	.23***
Control	.24***	.30***
Curiosity	.06	.30***
Confidence	.17***	.30***
Psychosocial Career Preoccupations Scale (PCPS)	-.31***	-.02
Career establishment preoccupations	-.27***	.00
Career adaptation preoccupations	-.37***	-.06
Work/life adjustment preoccupations	-.17***	-.02
Employability Attributes Scale (EAS)	.22***	.38***
Career self-management	.26***	.37***
Cultural competence	.02	.27***
Career resilience	.24***	.36***
Proactivity	.24***	.34***
Entrepreneurial orientation	.12*	.29***
Sociability	.22***	.31***
Emotional literacy	.15**	.23***
Career Orientations Inventory (COI)	.01	.27***
General managerial competence	-.05	.20***
Autonomy	-.02	.15**
Security/stability	.02	.00
Entrepreneurial creativity	-.06	.20***
Service/dedication to a cause	.07	.21***

	Career satisfaction	Self-perceived employability
Pure challenge	.12*	.25***
Lifestyle	-.03	.19***
Career Values Scale (CVS)	.13**	.31***
Service orientation	.14**	.24***
Teamwork	.11*	.28***
Influence	.16**	.30***
Creativity	.04	.22***
Excitement	.11*	.30***
Career development	.11*	.27***
Financial rewards	.00	.09
Prestige	.14**	.15**
Career satisfaction	1.00***	.20***
Self-perceived employability	.20***	1.00***

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

$r = .10$ to $.29$ (small practical effect), $r = .30$ to $.49$ (medium practical effect), $r \geq .50$ (large practical effect)

As indicated in Table 7.29, the correlations between the independent variables (psychosocial career preoccupations scale, career establishment preoccupations, career adaptation preoccupations, work/life adjustment preoccupations), and the dependent variable (career satisfaction) were negative and ranged between $r \geq -.17$ and $r \leq -.37$ (small to moderate practical effect, $p \leq .001$).

As indicated in Table 7.29, the correlations between the independent variables (control, confidence, employability attributes scale, career self-management, career resilience, proactivity, and sociability) and the dependent variable (career satisfaction) were positive and ranged between $r \geq .17$ and $r \leq .26$ (small to moderate practical effect, $p \leq .001$).

As indicated in Table 7.29, no significant correlations were observed between the independent variables (career adapt-abilities scale [CAAS], concern, curiosity, cultural competence, entrepreneurial orientation, emotional literacy, career orientations inventory [COI] general managerial competence, autonomy, security/stability, entrepreneurial creativity, service/dedication to a cause, pure challenge, lifestyle, career values scale [CVS], service orientation, teamwork, influence, creativity, excitement, career development, financial rewards, prestige) and the dependent variable (career satisfaction).

As indicated in Table 7.29, the correlations between the independent variables (career adapt-abilities scale, concern, control, curiosity, confidence, employability attributes scale, career self-management, cultural competence, career resilience, proactivity, entrepreneurial orientation, sociability, emotional literacy, career orientations inventory, general managerial competence,

entrepreneurial creativity, service/dedication to a cause, pure challenge, lifestyle, career values scale, service orientation, teamwork, influence, creativity, excitement, career development) and the dependent variable (career satisfaction) were positive and ranged between $r \geq .19$ and $r \leq .38$ (small to moderate practical effect, $p \leq .001$).

As indicated in Table 7.29, no significant correlations were observed between the independent variables (psychosocial career preoccupations scale, career establishment preoccupations, career adaptation preoccupations, work/life adjustment preoccupations, autonomy, security/stability, financial rewards, prestige and the dependent variable (self-perceived employability).

7.3.2.2 Correlations between independent variables and moderator variables

The relationship between psychosocial career preoccupations and career adaptability as independent variables, and employability attributes, career orientations and career values as moderator variables are reported in Table 7.30.

Table 7.30
Correlations between Moderator Variables and Independent Variables

	Career Adapt-Abilities Scale (CAAS)	Concern	Control	Curiosity	Confidence	Psychosocial Career Preoccupations Scale (PCPS)	Career establishment preoccupations	Career adaptation preoccupations	Work/life adjustment preoccupations
Employability Attributes Scale (EAS)	.61***	.35***	.50***	.57***	.50***	.19***	.16***	.16**	.20***
Career self-management	.61***	.35***	.50***	.53***	.55***	.16***	.15**	.09	.21***
Cultural competence	.38***	.21***	.33***	.39***	.28***	.20***	.18***	.21***	.17***
Career resilience	.53***	.26***	.47***	.45***	.47***	.20***	.18***	.21***	.17***
Proactivity	.60***	.35***	.48***	.54***	.51***	.14**	.13*	.11*	.17***
Entrepreneurial orientation	.56***	.35***	.39***	.57***	.44***	.12*	.09	.13*	.13**
Sociability	.41***	.24***	.36***	.37***	.33***	.11*	.07	.10*	.16***
Emotional literacy	.39***	.20***	.33***	.38***	.30***	.19***	.17***	.16***	.17***
Career Orientations Inventory (COI)	.41***	.37***	.26***	.38***	.31***	.31***	.27***	.30***	.27***
General managerial competence	.25***	.26***	.16**	.22***	.18***	.22***	.19***	.24***	.20***

	Career Adapt-Abilities Scale (CAAS)	Concern	Control	Curiosity	Confidence	Psychosocial Career Preoccupations Scale (PCPS)	Career establishment preoccupations	Career adaptation preoccupations	Work/life adjustment preoccupations
Autonomy	.24***	.17***	.19***	.24***	.16**	.14**	.11*	.20***	.08
Security/stability	.13**	.16***	.10*	.06	.12*	.31***	.32***	.22***	.28***
Entrepreneurial creativity	.33***	.31***	.20***	.31***	.25***	.15**	.13**	.15**	.14**
Service/dedication to a cause	.31***	.30***	.20***	.31***	.21***	.18***	.15**	.17***	.19***
Pure challenge	.39***	.29***	.23***	.37***	.36***	.19***	.17***	.19***	.17***
Lifestyle	.23***	.22***	.13*	.22***	.16**	.24***	.20***	.21***	.26***
Career Values Scale (CVS)	.47***	.33***	.34***	.42***	.39***	.24***	.22***	.18***	.24***
Service orientation	.33***	.28***	.22***	.32***	.24***	.18***	.16**	.14**	.21***
Teamwork	.33***	.24***	.23***	.31***	.26***	.19***	.17***	.15**	.20***
Influence	.38***	.20***	.32***	.30***	.37***	.08	.07	.03	.12*
Creativity	.40***	.27***	.23***	.42***	.36***	.16**	.15**	.15**	.14**
Excitement	.38***	.22***	.26***	.42***	.28***	.15**	.11*	.18***	.14**
Career development	.46***	.38***	.29***	.44***	.38***	.22***	.23***	.15**	.20***
Financial rewards	.25***	.18***	.26***	.18***	.17***	.25***	.24***	.19***	.24***
Prestige	.25***	.22***	.20***	.17***	.23***	.19***	.20***	.11*	.19***

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$
 $r = .10$ to $.29$ (small practical effect), $r = .30$ to $.49$ (medium practical effect), $r \geq .50$ (large practical effect)

(a) *Correlations between CAAS and EAS*

As indicated in Table 7.30, the correlations between the independent variable (overall CAAS and subscales: concern, control, curiosity and confidence) and the moderator variable (overall EAS and subscales: career self-management, cultural competence, career resilience, proactivity, entrepreneurial orientation, sociability, emotional literacy) were significantly positive and ranged between $r \geq .20$ and $r \leq .61$ (small to large practical effect, $p \leq .001$).

(b) *Correlations between CAAS and COI*

The correlations between CAAS and COI were presented in Table 7.30.

The correlations between the independent variable (overall CAAS and subscales: concern, control, curiosity and confidence) and the moderator variable (overall COI and subscales:

entrepreneurial creativity, service/dedication to a cause and pure challenge) were significantly positive and ranged between $r \geq .20$ and $r \leq .41$ (small to moderate practical effect, $p \leq .001$).

The correlations between the overall CAAS and the COI subscales (general managerial competence, autonomy, and lifestyle) were significantly positive and ranged between $r \geq .23$ and $r \leq .25$ (small practical effect, $p \leq .001$). No significant correlations were observed between the overall CAAS and the security subscale of the COI.

A significant positive correlation was observed between the CAAS subscale (concern) and the overall COI and all subscales (general managerial competence, autonomy, security/stability, entrepreneurial creativity, service/dedication to a cause, pure challenge and lifestyle) ranging between $r \geq .16$ and $r \leq .37$ (small to moderate practical effect, $p \leq .001$).

A significant positive correlation was observed between the CAAS subscale (control) and the overall COI and the subscales (autonomy, entrepreneurial creativity, service/dedication to a cause, and pure challenge) ranging between $r \geq .19$ and $r \leq .26$ (small practical effect, $p \leq .001$). No significant correlations were observed between the CAAS subscale (control) and the COI subscales (general managerial competence, security and lifestyle).

A significant positive correlation was observed between the CAAS subscale (curiosity) and the overall COI and subscales (general managerial competence, autonomy, entrepreneurial creativity, service/dedication to a cause, pure challenge and lifestyle) ranging between $r \geq .22$ and $r \leq .38$ (small to moderate practical effect, $p \leq .001$). No significant correlations were observed between subscale curiosity and subscale security/stability.

A significant positive correlation was observed between the CAAS subscale (confidence) and the overall COI and subscales (general managerial competence, entrepreneurial creativity, service/dedication to a cause and pure challenge) ranging between $r \geq .18$ and $r \leq .36$ (small to moderate practical effect, $p \leq .001$). No significant correlations were observed between the subscale confidence and the subscales autonomy, security/stability and lifestyle.

(c) *Correlations between CAAS and CVS*

The correlations between CAAS and CVS were presented in Table 7.30.

The correlations between the independent variable (overall CAAS and all subscales: concern, control, curiosity and confidence) and the moderator variable (overall CVS and all subscales: service orientation, teamwork, influence, creativity, excitement, career development, financial

rewards and prestige) were significantly positive and ranged between $r \geq .17$ and $r \leq .47$ (small to moderate practical effect, $p \leq .001$).

(d) *Correlations between PCPS and EAS*

The correlations between PCPS and EAS are presented in Table 7.30.

The correlations between the independent variable (overall PCPS) and the moderator variable (overall EAS and subscales: career self-management, cultural competence, career resilience and emotional literacy) were significantly positive and ranged between $r \geq .16$ and $r \leq .20$ (small practical effect, $p \leq .001$). No significant correlations were observed between the overall PCPS and the subscales proactivity, entrepreneurial orientation and sociability.

A significant positive correlation was observed between the PCPS subscale (career establishment preoccupations) and the overall EAS and subscales (cultural competence, career resilience and emotional literacy) ranging between $r \geq .16$ and $r \leq .18$ (small practical effect, $p \leq .001$). No significant correlations were observed between the subscale career establishment preoccupations and the subscales career self-management, proactivity, entrepreneurial orientation and sociability.

A significant positive correlation was observed between the PCPS subscale (career adaptation preoccupations) and the EAS subscales (cultural competence, career resilience and emotional literacy) ranging between $r \geq .16$ and $r \leq .21$ (small practical effect, $p \leq .001$). No significant correlations were observed between the overall EAS and the subscales career self-management, proactivity, entrepreneurial orientation and sociability.

A significant positive correlation was observed between the PCPS subscale (work/life adjustment preoccupations) and the overall EAS and subscales (career self-management, cultural competence, career resilience, proactivity, sociability and emotional literacy) ranging between $r \geq .16$ and $r \leq .21$ (small practical effect, $p \leq .001$). No significant correlations were observed between the PCPS subscale (work/life adjustment preoccupations) and the EAS subscale entrepreneurial orientation.

(e) *Correlations between PCPS and COI*

The correlations between PCPS and COI were presented in Table 7.30.

The correlations between the independent variable (overall PCPS and all subscales career establishment, career adaptation and work/life adjustment preoccupations) and the moderator variable (overall COI and the subscales: general managerial competence, security/stability, pure challenge and lifestyle) were significantly positive and ranged between $r \geq .17$ and $r \leq .32$ (small to moderate practical effect, $p \leq .001$). No significant correlations were observed between the overall PCPS and all subscales (career establishment, career adaptation and work/life adjustment preoccupations) and the COI subscale entrepreneurial creativity.

A significant positive correlation was observed between the overall PCPS and the subscales career adaptation and work/life adjustment preoccupations and the EAS subscale (service/dedication to a cause) ranging between $r \geq .17$ and $r \leq .19$ (small practical effect, $p \leq .001$). No significant correlations were observed between the PCPS subscale career establishment preoccupations and the EAS subscales service/dedication to a cause.

A significant positive correlation ($r = .20$, small practical effect, $p \leq .001$) was observed between the PCPS subscale career adaptation preoccupations and the EAS subscale autonomy. No significant correlations were observed between the overall PCPS, the subscales career establishment, work/life balance preoccupations, and the EAS subscale autonomy.

(f) *Correlations between PCPS and CVS*

The correlations between PCPS and CVS were presented in Table 7.30.

The correlations between the independent variable (overall PCPS and the subscale work/life adjustment) and the moderator variable (overall CVS and the subscales service orientation, teamwork, career development, financial rewards and prestige) were positive and ranged between $r \geq .18$ and $r \leq .25$ (small practical effect, $p \leq .001$). No significant correlations were observed between the overall PCPS, the subscales career establishment, work/life adjustment and the CVS subscales influence, creativity and excitement.

A significant positive correlation was observed between the PCPS subscale career establishment and career adaptation preoccupations and the overall CVS and the subscale financial rewards ranging between $r \geq .18$ and $r \leq .24$ (small practical effect, $p \leq .001$). A significant positive correlation was observed between the PCPS subscale career establishment preoccupations and

the CVS subscale teamwork, career development, financial rewards and prestige, ranging between $r \geq .17$ and $r \leq .24$ (small practical effect, $p \leq .001$).

A significant positive correlation ($r = .18$, small practical effect, $p \leq .001$) was observed between the PCPS subscale career adaptation preoccupations and the CVS subscale excitement. No significant correlations were observed between the PCPS subscales career establishment, career adaptation preoccupations and the CVS subscale service orientation. No significant correlations were observed between the PCPS subscale career adaptation preoccupations and the CVS subscales teamwork, influence, creativity, career development, and prestige.

7.3.2.3 Correlations between moderator variables and dependent variables

As indicated in Table 7.31, the correlations between the moderator variables (overall EAS and the subscales career self-management, career resilience, proactivity, sociability) and the dependent variable career satisfaction were positive and ranged between $r \geq .22$ and $r \leq .26$ (small practical effect, $p \leq .001$). No significant correlations were observed between cultural competence, entrepreneurial orientation, emotional literacy, career orientations inventory (COI), general managerial competence, autonomy, security/stability, entrepreneurial creativity, service/dedication to a cause, pure challenge, lifestyle, career values scale (CVS), service orientation, teamwork, influence, creativity, excitement, career development, financial rewards, prestige, and career satisfaction.

As indicated in Table 7.31, the correlations between the moderator variables employability attributes, career orientations and career values (overall EAS and all the subscales career self-management, cultural competence, career resilience, proactivity, entrepreneurial orientation, sociability and emotional literacy, overall COI, general managerial competence, entrepreneurial creativity, service/dedication to a cause, pure challenge, lifestyle, overall CVS, service orientation, teamwork, influence, creativity, excitement, career development, and the dependent variable self-perceived employability were positive and ranged between $r \geq .20$ and $r \leq .38$ (small to moderate practical effect, $p \leq .001$). No significant correlations were observed between autonomy, security/stability, financial rewards, prestige and self-perceived employability.

Table 7.31*Correlations between Moderator Variables and Dependent Variables*

	Career satisfaction	Self-perceived employability
Employability Attributes Scale (EAS)	.22***	.38***
Career self-management	.26***	.37***
Cultural competence	.02	.27***
Career resilience	.24***	.36***
Proactivity	.24***	.34***
Entrepreneurial orientation	.12*	.29***
Sociability	.22***	.31***
Emotional literacy	.15**	.23***
Career Orientations Inventory (COI)	.01	.27***
General managerial competence	-.05	.20***
Autonomy	-.02	.15**
Security/stability	.02	.00
Entrepreneurial creativity	-.06	.20***
Service/dedication to a cause	.07	.21***
Pure challenge	.12*	.25***
Lifestyle	-.03	.19***
Career Values Scale (CVS)	.13**	.31***
Service orientation	.14**	.24***
Teamwork	.11*	.28***
Influence	.16**	.30***
Creativity	.04	.22***
Excitement	.11*	.30***
Career development	.11*	.27***
Financial rewards	.00	.09
Prestige	.14**	.15**
Career satisfaction	1.00***	.20***
Self-perceived employability	.20***	1.00***

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

$r = .10$ to $.29$ (small practical effect), $r = .30$ to $.49$ (medium practical effect), $r \geq .50$ (large practical effect)

In summary, the results provided evidence in support of research hypothesis H1.

There are statistically significant relationships among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables).

7.3.3 Preliminary analysis 2: Towards constructing a career satisfaction and employability profile for knowledge workers

In conclusion, the results indicated that race had significant negative associations, ranging from small to medium practical effect, with all the construct variables, (except for security/stability), and significant positive associations with career satisfaction. The negative associations between the biographical (race, age and employment status), and construct variables (psychosocial career preoccupations, career adaptability, employability attributes, career orientations, career values and career satisfaction), suggested differences between biographical groups (race, age and employment status) that require further investigation.

The results indicated that self-perceived employability had significant positive correlations, ranging from small to medium practical effects, to all construct variables, except for the psychosocial career preoccupations. Psychosocial career preoccupations had significant negative correlations with career satisfaction.

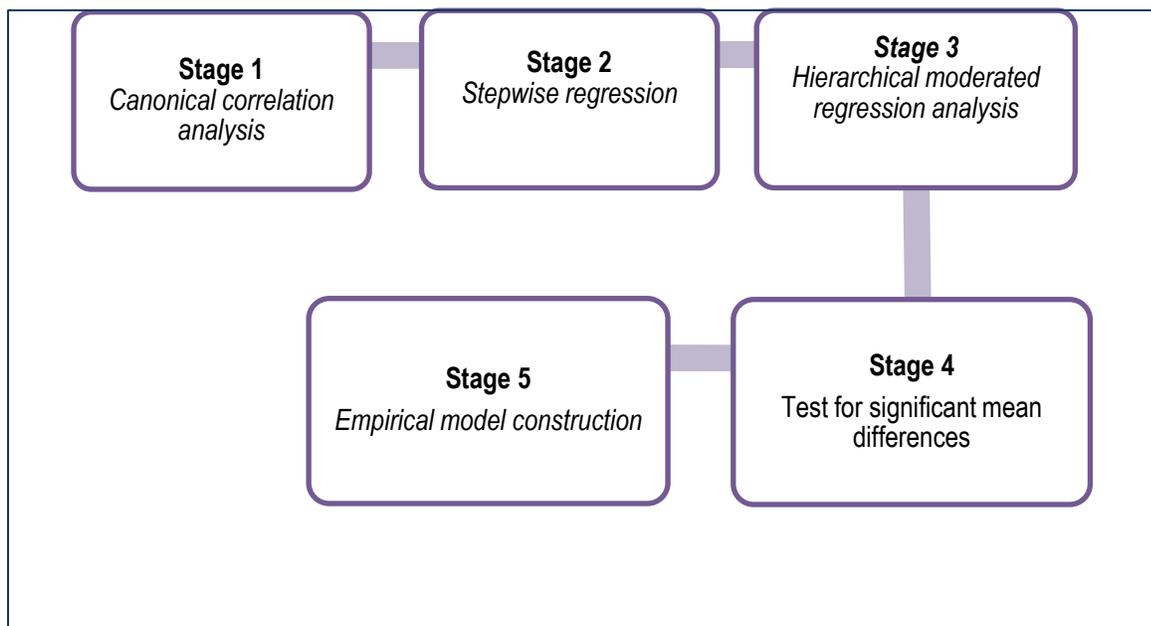
Predominantly positive associations, ranging from small to large, were observed between all the independent and moderator variables. Employability attributes (and all subscales) indicated significant large positive associations with career adaptability (and all subscales).

The general significant associations observed in the constructs suggested relationship dynamics that could be further investigated by means of inferential statistics. In contrast, the negative associations between the biographical and construct variables suggested differences between biographical groups that need further investigation.

7.4 INFERENCEAL (MULTIVARIATE) STATISTICAL ANALYSIS

Inferential statistics were utilised to draw conclusions from the data and were reported and interpreted in the following five stages:

Figure 7.5
Steps in Multivariate Statistical Analysis



Source. Author's own work

7.4.1 Canonical correlation

The purpose of canonical correlation analysis is to simultaneously correlate several metric dependent variables and several metric independent variables. Therefore, the underlying principle of canonical correlation is to develop a linear combination of each set of variables (both independent and dependent) in such a way that maximises the correlation between the two sets (Hair et al., 2019).

The research study comprises a large number of construct variables. Thus, it was assumed that numerous dynamics would inform the construction of an empirically tested psychosocial profile for enhancing the career satisfaction and self-perceived employability of knowledge workers. The purpose of the research study was to explore these dynamics among the construct variables from various multivariate statistics to assess the core common patterns and unique dynamics that

would arise from the various types of multivariate statistical procedures. By applying a canonical correlation analysis before the regression analysis, the researcher assessed whether a bi-directional link exists between two composite sets of multiple variables. In other words, the researcher could assess the explanatory power of the combination of the independent variables and moderator variables in relation to the dependent variables. The canonical correlation analysis also highlighted which dependent variables had the most significant explanatory power in terms of the independent variables and moderator variables.

The advantage of canonical correlation analysis is that it limits the probability of committing Type I errors which often leads to concluding that a significant effect exists when this is not the case – hence the possibility of rejecting a true null hypothesis (Hair et al., 2019; Sherry & Henson, 2005; Tabachnick & Fidell, 2019). To conduct a canonical correlation analysis was therefore considered appropriate and suitable for the purposes of this research study. The CANCELL procedure in SAS version 9.4 (SAS Institute, 2013) was utilised to conduct the analysis.

The Wilk's multivariate criterion lambda (λ) was utilised as it allows researchers to assess the practical significance ($1-\lambda = r^2$ -type metric of effect size) of the full canonical model (Sherry & Henson, 2005).

Practical effect sizes for the r^2 metric are:

- $> .01 < .09$ = small practical effect size
- $> .09$ to $< .25$ = moderate practical effect size
- $> .25$ = large practical effect size

The canonical correlation was utilised to test research hypothesis H2:

Individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables, significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables.

Table 7.32 reports the canonical correlation analysis of the overall model fit statistics.

Table 7.32

Canonical Correlation Analysis: Overall Model Fit Statistics Relating to the Psychological Attributes and Career Satisfaction and Self-perceived Employability

Canonical function	Canonical Correlation r_c	Adjusted Canonical Correlation	Squared Canonical Correlation (Rc^2)	Eigenvalue	F statistics	Probability (p)
1	.63	.60	.40	.67	5.84	<.0001***
2	.46	.40	.21	.26	3.52	<.0001***
Multivariate Statistics and F Approximations						
Statistics		Value	Approximate F statistics F Value			Probability (p)
Wilks' Lambda		.47	5.84			<.0001***
Pillai's Trace		.61	5.67			<.0001***
Hotelling-Lawley Trace		.94	6.01			<.0001***
Roy's Greatest Root		.67	8.69			<.0001***
NOTE: F Statistic for Roy's Greatest Root is an upper bound.						
NOTE: F Statistic for Wilks' Lambda is exact.						

Note. N = 404.

Table 7.32 reports the results of the full canonical model, which was statistically significant (Wilks's lambda (λ) of .472, $F = 5.84$, $p = < .0001$). To further determine the practical effect the r^2 was calculated by the Wilks's λ inverse effect size ($1 - \lambda$: $1 - .472 = .53$) and indicated a large practical effect, confirming that the full model explained a significant proportion (about 53%; large practical effect) of the variance shared between the two sets of variables. The cut-off criteria for the canonical correlations are generally accepted and set at Rc loading $\geq .30$.

Table 7.32 further reports the canonical correlation results of each canonical function. The first function obtained a canonical correlation of .63 and contributes 40% ($Rc^2 = .40$) of the explained variance relative to the two functions. Therefore, the first function was regarded as being practically sufficient for interpreting the links between the two sets of variables. The second canonical function obtained a canonical correlation of .46 and explained 21% ($Rc^2 = .21$) of the overlapped variance.

Table 7.33 shows the results of the standardised canonical correlation analysis for the first canonical function.

Table 7.33

Results of the Standardised Canonical Correlation Analysis for the First Canonical Function

Variate/variable	Canonical coefficient (Weight)	Structure coefficient (Canonical loading) (Rc)	Canonical cross loadings (Rc)	Squared multiple correlation (Rc ²) %
Psychological attributes canonical variate (independent variables)				
Concern	.04	.13	.08	.01
Control	.25	.52	.33	.11
Curiosity	-.04	.31	.19	.04
Confidence	-.04	.44	.28	.08
Career establishment preoccupations	-.08	-.33	-.21	.04
Career adaptation preoccupations	-.50	-.50	-.32	.10
Work/life adjustment preoccupations	-.02	-.22	-.14	.02
Career self-management	.47	.61	.39	.15
Cultural competence	-.16	.24	.15	.02
Career resilience	.23	.57	.36	.13
Sociability	.26	.50	.32	.10
Entrepreneurial orientation	-.34	.38	.24	.06
Proactivity	-.02	.57	.36	.13
Emotional literacy	.06	.36	.23	.05
Security/stability	-.07	.03	.02	.00
Service/dedication to a cause	.01	.25	.16	.02
Pure challenge	.22	.34	.22	.05
Lifestyle	.10	.12	.07	.01
Autonomy	-.05	.09	.06	.00
General managerial competence	.01	.10	.06	.00
Entrepreneurial creativity	-.20	.09	.06	.00
Influence	.06	.43	.27	.07
Financial rewards	-.14	.07	.05	.00
Prestige	.14	.29	.18	.03
Service orientation	.12	.36	.23	.05
Teamwork	-.03	.36	.23	.05
Creativity	-.19	.23	.15	.02
Career development	-.01	.34	.22	.05
Excitement	.31	.37	.23	.05
Percentage of the overall variance of variables explained by their own canonical variables: .13				
Career satisfaction and self-perceived employability canonical variates (composite set of latent dependent variables)				
Career satisfaction	.77	.87	.55	.31
Self-perceived employability	.50	.65	.41	.17
Percentage of the overall variance of variables explained by their own canonical variables: .59				
Overall model fit measure (function1)				
F(p) = 5.84 (p < .0001); df = 58; 746				
Wilks's Lambda (λ) = .472				
R ² type effect size: 1-λ = .528 (large effect)				
Redundancy index: Rc ² = .40 (percentage of overall variance in career satisfaction and self-perceived employability (dependent) canonical construct variables accounted for by the psychological attributes (independent) canonical construct variables): large practical effect				
<i>Note.</i> N = 404.				

The structure coefficient (R_c) indicates the bivariate correlation between the observed variables (predictor variable) and the synthetic variable (variable created from all the predictor variables via the linear equation). The cut-off criteria for factorial loadings ($R_c \geq .30$) were utilised to determine which variables contributed most to the relationship between the variables (Hair et al., 2019; Tabachnick & Fidell, 2019).

Table 7.33 reported that the set of independent variables, which individually contributed the most in explaining the overall psychological attributes canonical construct variate variables were related to :

(1) career cognitions

- The career adaptability variables: control ($R_c = .52$), confidence ($R_c = .44$), curiosity ($R_c = .31$),
- The psychosocial career preoccupation variables: career adaptation preoccupations ($R_c = -.50$), career establishment preoccupations ($R_c = -.33$),

(2) psychosocial career resources

- Employability attributes: career self-management ($R_c = .61$), career resilience ($R_c = .57$), proactivity ($R_c = .57$), sociability ($R_c = .50$), entrepreneurial orientation ($R_c = .38$), emotional literacy ($R_c = .36$),
- Career anchors: pure challenge ($R_c = .34$)
- Career values: influence ($R_c = .43$), excitement ($R_c = .37$), service orientation ($R_c = .36$), teamwork ($R_c = .36$), career development ($R_c = .34$).

Employability attributes, followed by career adaptability and psychosocial career preoccupations, contributed the most in explaining psychological attributes. Career values and career anchors contributed less in explaining psychological attributes. Although canonical correlation does not imply causality, the negative direction of the values suggests that the higher the participants' career adaptation preoccupations, the higher the likelihood that their overall psychological career attributes will be lower.

Table 7.33 further indicated that the set of dependent variables, which individually contributed most to explaining the overall career satisfaction and self-perceived employability canonical variate variables, were:

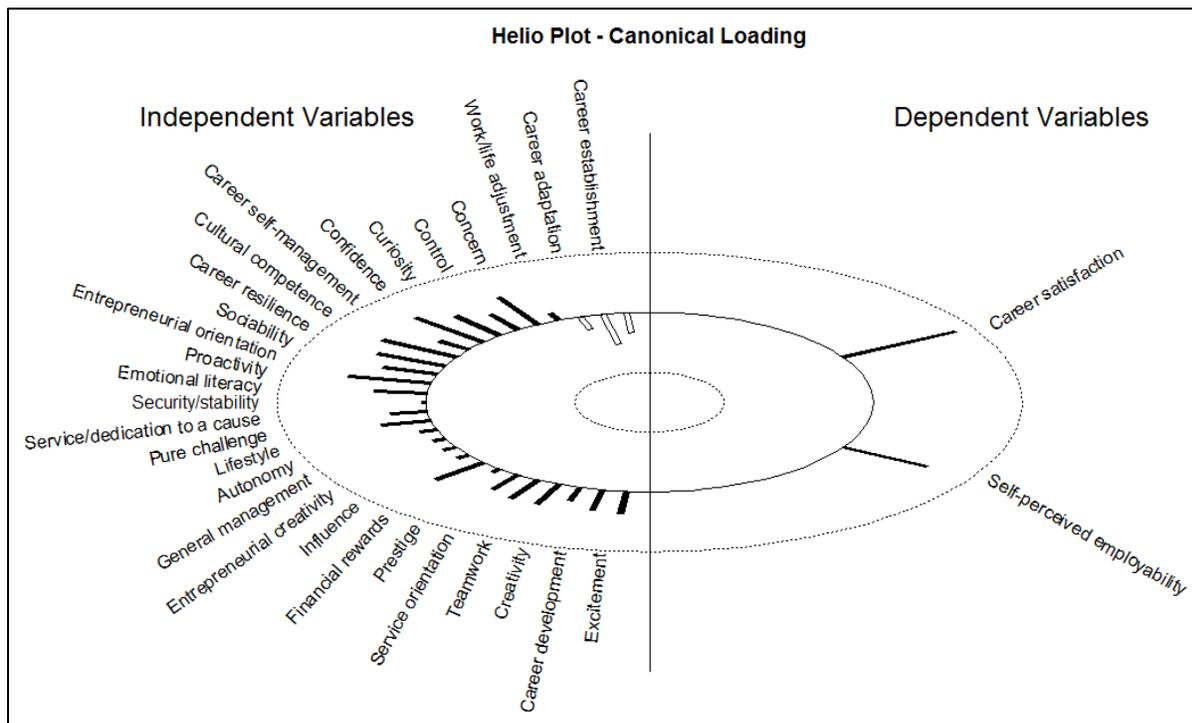
- Career satisfaction ($R_c = .87$)
- Self-perceived employability ($R_c = .65$)

Thus, career satisfaction accounted the most in explaining career satisfaction followed by self-perceived employability canonical variate variables (career outcomes).

Figure 7.6 illustrates an helio plot of the canonical loading.

Figure 7.6

Scree Plot for Career Satisfaction/Self-perceived Employability



As illustrated in Figure 7.6, the positive direction of the values suggests that the higher the participants' levels of career adaptability (control, curiosity, confidence), employability attributes (career self-management, career resilience, sociability, entrepreneurial orientation, proactivity, emotional literacy), career anchors (pure challenge), career values (influence, service orientation, teamwork, career development and excitement), the higher the likelihood that their overall level of psychological attributes will be higher.

The negative direction of the values suggests that the higher the participants' levels of psychosocial career preoccupations (career establishment preoccupations and career adaptation preoccupations), the higher the likelihood that their overall levels of psychological career attributes will be lower.

Table 7.33 further indicated that the independent canonical construct variate variables (psychological career attributes) contributed significantly ($Rc^2 = .40$, 40%; large practical effect) in explaining the variance in the dependent variables career satisfaction and self-perceived employability variables. Table 7.33 further indicated that the following variables had contributed most in explaining the variance in the career satisfaction and self-perceived employability variables:

- Career adaptability: control ($Rc = .33$; $Rc^2 = .11$; small practical effect size; 11% of variance)
- Psychosocial career preoccupations: career adaptation preoccupations ($Rc = -.32$; $Rc^2 = .10$; small practical effect size; 10% of variance)
- Employability attributes: career self-management ($Rc = .39$; $Rc^2 = .15$; moderate practical effect size; 15% of variance), career resilience ($Rc = .36$; $Rc^2 = .13$; moderate practical effect size; 13% of variance), sociability ($Rc = .32$; $Rc^2 = .10$, small practical effect size; 10% of variance; proactivity ($Rc = .36$; $Rc^2 = .13$; small practical effect size; 13% of variance).

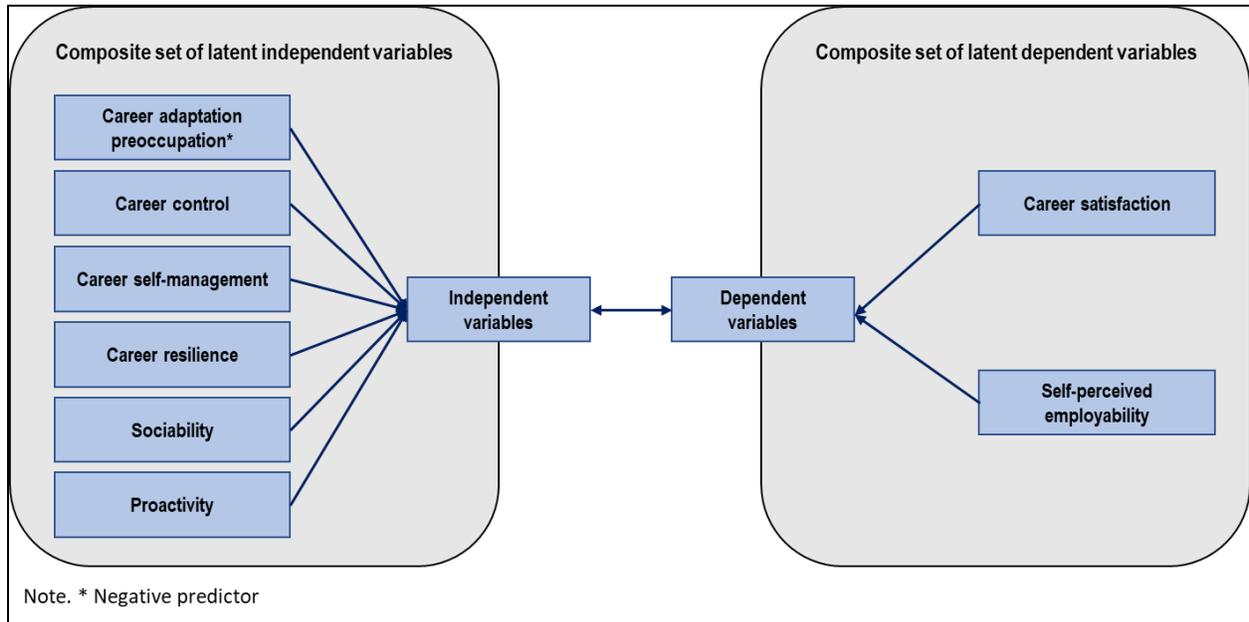
Table 7.33 further indicated that the following variables had contributed most in explaining the variance in the psychological career attribute variables:

- Career satisfaction ($Rc = .55$; $Rc^2 = .31$; large practical effect size, 31% of variance);
- Self-perceived employability ($Rc = .41$; $Rc^2 = .17$; moderate practical effect size; 17% of variance).

Figure 7.7 illustrates the factor structure of the canonical cross-loadings.

Figure 7.7

Factor Structure of the Canonical Cross-loadings



As illustrated by Figure 7.7, the factor structure of the canonical cross-loadings indicates that high levels of positive career outcomes (career satisfaction and self-perceived employability) are associated with high levels of psychological attributes (career adaptability: career control and employability attributes) and low levels of psychosocial career preoccupations, with career satisfaction having the most substantial explanatory power. Although career anchors (pure challenge) and career values (influence, service orientation, teamwork, career development and excitement), contributed significantly to the variance in psychological attributes, career anchors and career values did not significantly contribute to the variance explained in career satisfaction and self-perceived employability.

In conclusion, the canonical correlation analysis indicated that career self-management, career resilience and proactivity, sociability and career control were the strongest psychological attributes in predicting higher levels of career satisfaction and self-perceived employability. Career adaptation preoccupations acted as a negative predictor for career satisfaction and self-perceived employability.

7.4.2 Preliminary analysis 3: Towards constructing a career satisfaction and employability profile for knowledge workers

The career cognitions related to career adaptability (career control) followed by psychosocial career preoccupations (career adaptation preoccupations) contributed to explaining the variance in career satisfaction and self-perceived employability as a composite set of dependent variables. The negative direction of psychosocial career preoccupations (career adaptation preoccupations) indicated that the lower participants psychosocial career preoccupations (career adaptation preoccupations), the higher the likelihood that their levels of career satisfaction and self-perceived employability will be higher.

Thus, the results imply that low career adaptation preoccupations are associated with higher levels of career satisfaction and self-perceived employability. This suggests that when individuals have low levels of employability concerns related to adapting to the changing career context and are less concerned about adjusting their interests, talents and capabilities to fit with opportunities in the employment market, they are more likely to experience high levels of career satisfaction and self-perceived employability. This may imply that participants perceived adequate person-environment fit at a particular point of time in their careers.

High levels of career control (taking responsibility) also contributed to explaining higher levels of career satisfaction and self-perceived employability. This suggests that when individuals' feel responsible for managing and building their own careers, they may experience high levels of career satisfaction and self-perceived employability.

The psychosocial career resources employability attributes (career self-management, career resilience, proactivity and sociability) also contributed to explaining the variance in career satisfaction and self-perceived employability.

This suggests that when individuals have high levels of career self-management (the tendency to proactively manages one's career), career resilience (high degree of adaptability, flexibility, and competence, regardless of career circumstances), sociability (open to establish and maintain social contacts and to utilise formal and informal contacts to the advantage of one career), and proactivity (engage in active role orientations to change and improve oneself and one's situation) also contributed to explaining higher levels of career satisfaction and self-perceived employability.

The psychosocial career resources career anchors and career values did not contribute to explaining the variance in career satisfaction and self-perceived employability.

Overall, it is concluded that career adaptability (i.e. career concern), psychosocial career preoccupations (i.e. career adaptation preoccupations), and employability attributes (i.e. career self-management, career resilience, sociability, and proactivity) are important to consider in understanding levels of career satisfaction and self-perceived employability. On the other hand, higher levels of career satisfaction and self-perceived employability help to explain lower levels of career adaptation preoccupations, and higher levels of career concern, career self-management, career resilience, sociability, and proactivity.

Career anchors and career values do not seem to strongly influence career satisfaction and self-perceived employability when jointly studied in terms of career adaptability, career preoccupations, and employability attributes. Traditionally industrial psychologists assume that career anchors and value congruence will lead to career satisfaction and will determine how long individuals will stay in a specific career (Coetzee & Schreuder, 2021; Maree, 2020). However, taking the changing nature of careers into account, the relevance of traditional constructs is questioned. Therefore, it is important to determine whether career anchors and values are still relevant in the VUCA world of work. It seems that the presence of contemporary career constructs such as career adaptability, psychosocial career preoccupations and employability attributes play a more prominent role in career satisfaction and self-perceived employability (when combined) than career anchors and career values.

7.4.3 Stepwise regression analysis and structural equation modelling

Two stages of statistical analysis (stepwise regression and moderated regression) were performed to test research hypothesis H3:

The relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is moderated by their psychosocial resources (employability attributes, career anchors and career values). The relationship is more positive when their psychosocial career resources are well developed or strongly crystallised than when these career resources are not well developed or strongly crystallised.

The following two stages of statistical analysis were performed:

Stage 1 consisted of stepwise regression. All independent (career adaptability and psychosocial preoccupations scales and subscales) and moderator (employability attributes, career anchors and career values scales and subscales) and socio-demographic variables (age, gender, race

and employment status) were included in the model as independent variables in predicting (1) career satisfaction and (2) self-perceived employability. Stepwise regression was utilised to identify the best predictors that could be utilised for moderated regression analysis. SAS version 9.4 (SAS Institute, 2013) was utilised to perform stepwise regression analysis.

Stage 2: The best significant predictors were then utilised in the moderated regression analysis.

The REG procedure in SAS version 9.4 (SAS Institute, 2013) was utilised to perform linear regression by implementing the backward elimination technique. The backward elimination technique begins by calculating *F* statistics for a model, including all of the independent variables. The variables are then deleted from the model one by one (the one with the largest *p*-value leaves first) until all the variables remaining in the model produce *F* statistics significant at the 10% significance level. At each step, the variable showing the smallest contribution to the model is deleted. Due to the exploratory nature and a large number of variables, the significant level was established at $p < .10$.

Table 7.34 illustrates the results of the final step of the (backward) stepwise regression analysis for all subscales as predictors for career satisfaction.

Table 7.34

Results of Final Step-Career Satisfaction: Stepwise Regression Subscales

Variable	Career satisfaction (Step 25)			
	β	Type II SS	<i>F</i>	<i>p</i>
Age	.17	1.5	4.21	.04
Race	.16	1.69	4.75	.02
Employment status	-.17	2.0	5.64	.02
Career adaptation preoccupations	-.13	5.47	15.38	.0001
Proactivity	.13	2.78	7.81	.01
Pure challenge	.10	2.36	6.64	.01
Entrepreneurial creativity	-.09	2.71	7.62	.01
Prestige	.08	1.39	3.92	.05
Model info				
<i>F</i> (<i>p</i>)	31.32***			
<i>R</i> ²	.48			

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

The stepwise regression consisted of twenty-five steps, as step twenty-five produced the most significant predictors of career satisfaction. The ANOVA (F_p) and R^2 values were utilised as indicators of the variance explained by the model. The $F(11, 123) = 31.32; p \leq .0001$ statistic for the overall model is significant and indicated that the model explains 48 per cent ($R^2 = .48$ large practical effect size) of the variation in the data.

As indicated in Table 7.34, the best predictors of career satisfaction were career adaptation preoccupations ($\beta = -.13; p = <.0001$; negative predictor), proactivity ($\beta = .13; p = .01$ positive predictor), pure challenge ($\beta = .10; p = .01$ positive predictor), entrepreneurial creativity ($\beta = -.09; p = .01$ negative predictor), prestige ($\beta = .08; p = .05$ positive predictor). The best biographical predictors of career satisfaction were age ($\beta = .17; p = .04$; positive predictor), race ($\beta = .16; p = .02$; positive predictor) and employment status ($\beta = -.17; p = .02$; negative predictor).

Table 7.35 illustrates the results of the final step of the (backward) stepwise regression analysis for all subscales as predictors for self-perceived employability.

Table 7.35

Results of Final Step- Self-perceived Employability: Stepwise Regression Subscales

Variable	Self-Perceived employability (Step 25)			
	β	Type II SS	F	p
Race	-.46	14.25	37.66	<.0001
Career establishment preoccupations	.12	1.91	5.05	.03
Work-life adjustment preoccupations	-.14	2.90	7.67	.01
Career self-management	.20	6.18	16.32	<.0001
Sociability	.08	2.98	7.88	.01
Security	-.07	1.83	4.82	.03
Lifestyle	.10	3.19	8.42	.004
Creativity	-.13	1.49	3.94	.05
Excitement	.19	3.23	8.53	.004
Model info				
F	15.86	<.0001		
F_p				
R^2	.32			

Note. $N = 404$. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

As indicated in Table 7.35, the stepwise regression consisted of twenty-five steps, as step twenty-five produced the most significant predictors of self-perceived employability. The ANOVA (F_p) and R^2 values were utilised as indicators of the variance explained by the model. The $F(11, 66) = 15.86$ ($p \leq .0001$) statistic for the overall model is significant and indicated that the model explains 32 per cent ($R^2 = .32$; large practical effect size) of the variation in the data.

As indicated in Table 7.35, the best predictors of self-perceived employability were career establishment preoccupations ($\beta = .12$; $p = .03$ positive predictor), work life adjustment preoccupations ($\beta = -.14$; $p = .01$ negative predictor), career self-management ($\beta = .20$; $p = <.0001$; positive predictor), sociability ($\beta = .08$; $p = .01$ positive predictor), security ($\beta = -.07$; $p = .03$ negative predictor), lifestyle ($\beta = .10$; $p = .004$; positive predictor), creativity ($\beta = -.13$; $p = .05$ negative predictor) and excitement ($\beta = .19$; $p = .004$; positive predictor). The best biographical predictor of self-perceived employability was race ($\beta = -.46$; $p = <.0001$; negative predictor).

Table 7.36 illustrates the results of the final step of the (backward) stepwise regression analysis for all overall scales as predictors for career satisfaction and self-perceived employability.

Table 7.36

Results of Final Step: Stepwise Regression Overall Scales

Variable	Career satisfaction (Step 4)				Self-perceived employability (Step 7)			
	β	Type II SS	F	P	β	Type II SS	F	p
Intercept	1.52	8.08	21.53	<.0001	2.06	20.69	51.92	<.0001
CAAS	None	None	None	None	.19	2.24	5.61	.02
PCPS	-.12	4.04	10.78	.001	-.08	1.67	4.19	.04s
EAS	.13	2.35	6.27	.01	.23	6.67	16.73	<.0001
CVS	.17	1.49	3.98	.05	None	None	None	None
Model info								
F	$F(8, 114)$				$F(5,56)$			
F_p	37.98***				28.13***			
R^2	.44				.27			

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

As indicated in Table 7.36, the stepwise regression for career satisfaction consisted of four steps, as step four produced the most significant predictors of career satisfaction. The ANOVA (F_p) and R^2 values were utilised as indicators of the variance explained by the model. The $F(8, 114) = 37.98$ ($p \leq .0001$) statistic for the overall model is significant and indicated that the model explains 44 per cent ($R^2 = .44$, large practical effect size) of the variation in the data.

As indicated in Table 7.36, the stepwise regression for self-perceived employability consisted of seven steps, as step seven produced the most significant predictors of self-perceived employability. The ANOVA (F_p) and R^2 values were utilised as indicators of the variance explained by the model. The F_p ($F = (5, 56) = 28.13$ $p \leq .0001$) statistic for the overall model is significant, and indicated that the model explains 27 per cent ($R^2 = .27$, large practical effect size) of the variation in the data.

As indicated in Table 7.36, the best predictors of career satisfaction were career values ($\beta = .17$; $p = .05$; positive predictor), employability attributes ($\beta = .13$; $p = .01$; positive predictor) and psychosocial career preoccupations ($\beta = -.12$; $p = .001$; negative predictor).

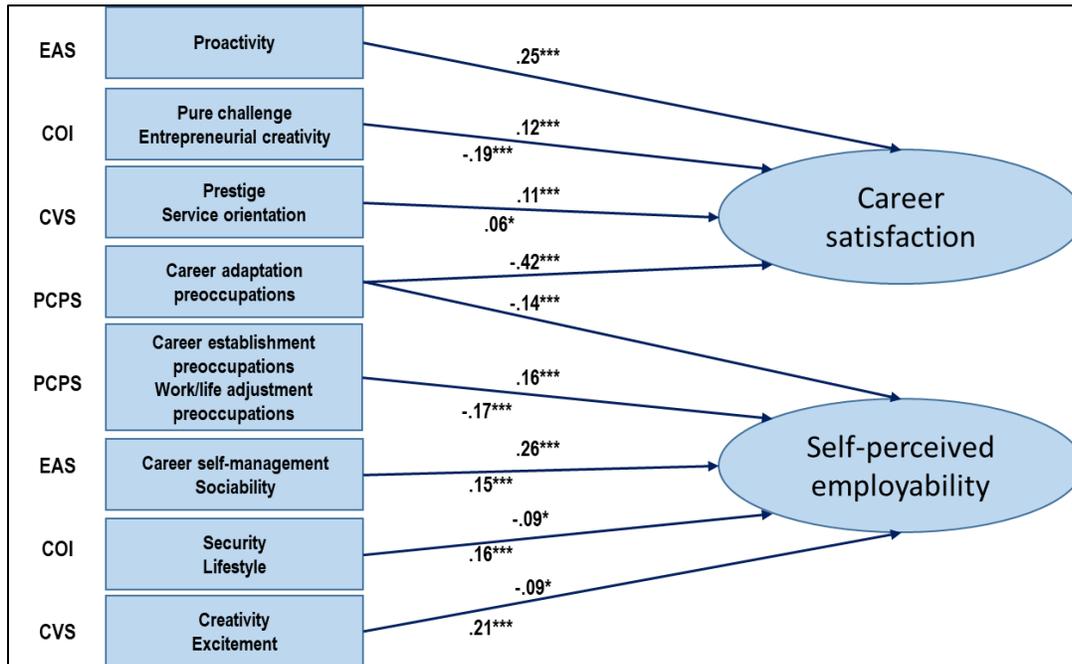
As indicated in Table 7.36, the best predictors of self-perceived employability were career adaptability ($\beta = .19$; $p = .02$ positive predictor), psychosocial career preoccupations ($\beta = -.08$; $p = .04$ negative predictor) and employability attributes ($\beta = .23$; $p = <.0001$; positive predictor).

The significant results obtained in the stepwise regression analysis for the overall scales were further utilised in the hierarchical moderated regression.

SEM was conducted to assess the structural model fit of the stepwise regression results for the constructs identified in Table 7.34 and Table 7.35. The model fit statistics showed good fit: chi-square = 30.07; $df = 14$; chi-square/ $df = 2.15$ ($p = .01$); SRMR = .01; RMSEA = .08 (90% CL); CFI = .99; NNI = .95. Figure 7.8 illustrates the significant standardised path loadings of the stepwise regression data. The CALIS SAS version 9.4 (SAS Institute, 2013) covariance structure analysis with maximum likelihood estimation procedure was utilised to perform the SEM.

Figure 7.8

Structural Equation Model Paths



Note. $t > 1.96$ ($*p \leq .05$); $t > 2.56$ ($**p \leq .01$); $t > 4.0 = ***p \leq .0001$

7.4.4 Hierarchical moderated regression analysis

Toward constructing the career satisfaction and self-perceived employability profile, it is imperative to explore further and determine the influencing dynamics of the best predicting construct and biographical variables identified in the stepwise regression. Therefore, hierarchical moderated regression was utilised (as the second step) by applying the Hayes PROCESS procedure in SPSS version 2.15 (Hayes, 2013).

Based on the stepwise regression analysis results, six hierarchical moderated regression models were tested for career satisfaction and self-perceived employability.

Model 1

- Psychosocial career preoccupations (independent variable) and employability attributes (moderator variable) as significant predictors of career satisfaction while controlling for age, race and employment status.
- Psychosocial career preoccupations (independent variable) and employability attributes (moderator variable) as significant predictors of self-perceived employability while controlling for race.

Model 2

- Career adaptability (independent variable) and employability attributes (moderator variable) as significant predictors of career satisfaction, while controlling for age, race and employment status.
- Career adaptability (independent variable) and employability attributes (moderator variable) as significant predictors of self-perceived employability, while controlling for race.

Model 3

- Psychosocial career preoccupations (independent variable) and career orientations (moderator variable) as significant predictors of career satisfaction, while controlling for age, race and employment status.
- Psychosocial career preoccupations (independent variable) and career orientations (moderator variable) as significant predictors of self-perceived employability, while controlling for race.

Model 4

- Career adaptability (independent variable) and career orientations (moderator variable) as significant predictors of career satisfaction, while controlling for age, race and employment status.
- Career adaptability (independent variable) and career orientations (moderator variable) as significant predictors of self-perceived employability, while controlling for race.

Model 5

- Psychosocial career preoccupations (independent variable) and career values (moderator variable) as significant predictors of career satisfaction, while controlling for age, race and employment status.
- Psychosocial career preoccupations (independent variable) and career values (moderator variable) as significant predictors of self-perceived employability, while controlling for race.

Model 6

- Career adaptability (independent variable) and career values (moderator variable) as significant predictors of career satisfaction, while controlling for age, race and employment status.
- Career adaptability (independent variable) and career values (moderator variable) as significant predictors of self-perceived employability, while controlling for race.

Hierarchical moderated regression was utilised to test research hypothesis H3:

The relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is moderated by their psychosocial resources (employability attributes, career anchors and career values). The relationship is more positive when their psychosocial career resources are well developed or strongly crystallised than when these career resources are not well developed or strongly crystallised.

The following dummy codes were utilised:

Age

- 18-30 = 0
- 31-60+ = 1

Ethnicity/race

- Black (African, Coloured, Indian) = 0
- White = 1

Employment status

- Employed (permanent/fixed term/self-employed) = 0
- Unemployed = 1

ANOVA $F_p < .05$ was used as the cut-off point in order to indicate significant models. The more rigorous bootstrapping procedure (95% confidence interval) with, the lower limit confidence interval (LLCI) and upper limit confidence interval (ULCI) not including zero, was utilised to assess for significant main and interaction effects. The Hayes (2013) PROCESS procedure (SPSS 2.15) was applied. The ANOVA (F_p) and R^2 values were used to indicate the variance that was explained by each model. The following range indicated the practical effect size of the adjusted R^2 :

- $R^2 \leq .12$ (small practical effect size)
- $R^2 \geq .13 \leq .25$ (moderate practical effect size)
- $R^2 \geq .26$ (large practical effect size)

The results of the hierarchical moderated regression models are reported in Tables 7.37 to 7.42.

7.4.4.1 Model 1

Table 7.37 reports the results of the hierarchical moderated regression analysis that was conducted to establish the main effect and the interaction effects of psychosocial career preoccupations (independent variable) and employability attributes (moderator variable) on career satisfaction (while controlling for age, race and employment status), and self-perceived employability (while controlling for race) as dependent variables.

Table 7.37*Moderating Interaction Effects (Career Preoccupations and Employability Attributes) on Career Satisfaction and Self-perceived Employability*

	Coefficient β	SE	t	P	Bootstrapping: 95% confidence interval		Coefficient β	SE	t	ρ	Bootstrapping: confidence interval		
Dependent variables: Career satisfaction					LLCI	ULCI	Self-perceived employability					LLCI	ULCI
Career preoccupations (A)	-.27	.04	-6.33	.000	-.36	-.19	-.11	.04	-2.93	.004	-.18	-.04	
Employability attributes (B)	.34	.05	6.56	.000	.24	.44	.34	.05	7.46	.000	.25	.44	
Interaction term: A x B	.03	.05	.65	.519	-.07	.13	-.03	.05	-.72	.474	-.12	.06	
Age	.22	.10	2.23	.027	.03	.42	n/a	n/a	n/a	n/a	n/a	n/a	
Race	.31	.08	3.70	.000	.15	.48	-.42	.07	-5.61	.000	-.56	-.27	
Employment status	-.20	.08	-2.40	.017	-.36	-.04	n/a	n/a	n/a	n/a	n/a	n/a	
Model info													
$F_p = 18.32^{***}$						$F_p = 27.03^{***}$							
$\Delta F_p = .417$						$\Delta F_p = .513$							
$R^2 = .22$						$R^2 = .22$							
$\Delta R^2 = .001$						$\Delta R^2 = .001$							
$f^2 = R^2/1 - R^2$ No significant interaction effects						$f^2 = R^2/1 - R^2$ No significant interaction effects							

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

$R^2 \leq .12$ (small practical effect size); $R^2 \geq .13 \leq .25$ (medium practical effect size); $R^2 \geq .26$ (large practical effect size)

Table 7.37 indicates that both regression models were significant (Career satisfaction: $F_p = 18.32$; $p \leq .001$ and Self-perceived employability: $F_p = 27.03$; $p \leq .001$). The results further indicate that psychosocial career preoccupations and employability attributes explained a moderate ($R^2 \geq .22$ [22%]) practical percentage of the variance in career satisfaction and self-perceived employability. In terms of the main effects for career satisfaction, psychosocial career preoccupations ($\beta = -.27$; $t = -6.33$; $p \leq .001$) and employment status ($\beta = -.20$; $t = -2.40$; $p \leq .05$) acted as significant negative predictors, whilst employability attributes ($\beta = .34$; $t = 6.56$; $p \leq .001$), race ($\beta = .31$; $t = 3.70$; $p \leq .001$) and age ($\beta = .22$; $t = 2.23$; $p \leq .05$) acted as significant positive predictors. No significant interaction effects were detected.

In terms of the main effects for self-perceived employability, psychosocial career preoccupations ($\beta = -.11$; $t = -2.93$; $p \leq .01$) and race ($\beta = -.42$; $t = -5.61$; $p \leq .001$) acted as significant negative predictors, while employability attributes ($\beta = .34$; $t = 7.46$; $p \leq .001$) acted as a significant positive predictor. In terms of the interaction effects, employability attributes did not have a significant moderating effect on the relationship between psychosocial career preoccupations and career

satisfaction ($\beta = .03$; $t = .65$; $p = .519$) and self-perceived employability ($\beta = -.03$; $t = -.72$; $p = .474$).

7.4.4.2 Model 2

Table 7.38 reports the results of the hierarchical moderated regression analysis that was conducted to establish the main effect and the interaction effects of career adaptability (independent variable) and employability attributes (moderator variable) on career satisfaction (while controlling for age, race and employment status), and self-perceived employability (while controlling for race) as dependent variables.

Table 7.38

Moderating Interaction Effects (Career Adaptability and Employability Attributes) on Career Satisfaction and Self-perceived Employability

Variables	Coefficient β	SE	t	P	Bootstrapping: 95% confidence interval		Coefficient β	SE	t	p	Bootstrapping: 95% confidence interval	
Career satisfaction (dependent variable)					LLCI	ULCI	Self-perceived employability			LLCI	ULCI	
Career adaptability (A)	.09	.09	1.01	.316	-.09	.28	.21	.08	2.63	.009	.05	.37
Employability attributes (B)	.25	.07	3.78	.000	.12	.38	.24	.06	4.27	.000	.13	.35
Interaction term: A x B	.03	.09	.28	.777	-.16	.21	.05	.08	.57	.572	-.11	.20
Age	.42	.10	4.15	.000	.22	.61	n/a	n/a	n/a	n/a	n/a	n/a
Race	.42	.09	4.75	.000	.25	.60	-.33	.08	-4.46	.000	-.48	-.19
Employment status	-.17	.09	-2.02	.044	-.34	-.01	n/a	n/a	n/a	n/a	n/a	n/a
Model info												
$F_p = 10.63^{***}$						$F_p = 25.98^{***}$						
$\Delta F_p = .081$						$\Delta F_p = .32$						
$R^2 = .14$						$R^2 = .21$						
$\Delta R^2 = .000$						$\Delta R^2 = .001$						
$f^2 = R^2/1 - R^2$ No interaction effects						$f^2 = R^2/1 - R^2$ No interaction effects						

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

$R^2 \leq .12$ (small practical effect size); $R^2 \geq .13 \leq .25$ (medium practical effect size); $R^2 \geq .26$ (large practical effect size)

Table 7.38 indicates that both regression models were significant (Career satisfaction: $F_p = 10.63$; $p \leq .001$ and Self-perceived employability: $F_p = 25.98$; $p \leq .001$). The results further indicate that career adaptability and employability attributes explained a moderate ($R^2 \geq .14$ [14%] and $R^2 \geq .21$ [21%]) practical percentage of the variance in career satisfaction and self-perceived

employability. In terms of the main effects for career satisfaction, career adaptability ($\beta = .09$; $t = 1.01$; $p = .316$) was not a significant predictor. Employability attributes ($\beta = .25$; $t = 3.78$; $p \leq .001$), age ($\beta = .42$; $t = 4.15$; $p \leq .001$) and race ($\beta = .42$; $t = 4.75$; $p \leq .001$) acted as significant positive predictors, while employment status ($\beta = -.17$; $t = -2.02$; $p \leq .05$) acted as a significant negative predictor for career satisfaction. In terms of the main effects for self-perceived employability, career adaptability ($\beta = .21$; $t = 2.63$; $p \leq .01$) and employability attributes ($\beta = .24$; $t = 4.27$; $p \leq .001$) acted as significant positive predictors, while race ($\beta = -.33$; $t = -4.46$; $p \leq .001$) acted as a significant negative predictor.

In terms of the interaction effects, employability attributes did not have a significant moderating effect on the relationship between career adaptability and career satisfaction ($\beta = .03$; $t = .28$; $p = .777$) and self-perceived employability ($\beta = .05$; $t = .57$; $p = .572$).

7.4.4.3 Model 3

Table 7.39 reports the results of the hierarchical moderated regression analysis that was conducted to establish the main effect and the interaction effects of psychosocial career preoccupations (independent variable) and career orientations (moderator variable) on career satisfaction (while controlling for age, race and employment status), and self-perceived employability (while controlling for race) as dependent variables.

Table 7.39*Moderating Interaction Effects (Career Preoccupations and Career Orientations) on Career Satisfaction and Self-perceived Employability*

Variables	Coefficient β	SE	t	P	Bootstrapping: 95% confidence interval		Coefficient β	SE	t	p	Bootstrapping: 95% confidence interval		
					LLCI	ULCI	Self-perceived employability				LLCI	ULCI	
Career satisfaction (dependent variable)							Self-perceived employability						
Career preoccupations (A)	-.26	.05	-5.84	.000	-.35	-.17	-.11	.04	-2.93	.004	-.19	-.04	
Career orientations (B)	.20	.06	3.42	.001	.09	.32	.22	.05	4.15	.000	.12	.33	
Interaction term: A x B	.00	.05	.04	.969	-.09	.10	.01	.04	.24	.814	-.08	.10	
Age	.26	.10	2.51	.012	.06	.47	n/a	n/a	n/a	n/a	n/a	n/a	
Race	.31	.09	3.45	.001	.14	.49	-.41	.08	-5.14	.000	-.57	-.26	
Employment status	-.26	.09	-3.02	.001	-.42	-.09	n/a	n/a	n/a	n/a	n/a	n/a	
Model info													
$F_p = 12.37^{***}$						$F_p = 15.80^{***}$							
$\Delta F_p = .002$						$\Delta F_p = .055$							
$R^2 = .16$						$R^2 = .14$							
$\Delta R^2 = .000$						$\Delta R^2 = .000$							
$f^2 = R^2/1 - R^2$ No interaction effects						$f^2 = R^2/1 - R^2$ No interaction effects							

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$
 $R^2 \leq .12$ (small practical effect size); $R^2 \geq .13 \leq .25$ (medium practical effect size); $R^2 \geq .26$ (large practical effect size)

Table 7.39 indicates that both regression models were significant (Career satisfaction: $F_p = 12.37$; $p \leq .001$ and Self-perceived employability: $F_p = 15.80$; $p \leq .001$). The results further indicate that psychosocial career preoccupations and career orientations explained a moderate ($R^2 \geq .16$ [16%] and $R^2 \leq .14$ [14%]) practical percentage of the variance in career satisfaction and self-perceived employability.

In terms of the main effects for career satisfaction, psychosocial career preoccupations ($\beta = -.26$; $t = -5.84$; $p \leq .001$) and employment status ($\beta = -.26$; $t = -3.02$; $p \leq .001$) acted as significant negative predictors, while career orientations ($\beta = .20$; $t = 3.42$; $p \leq .001$), age ($\beta = .26$; $t = 2.51$; $p \leq .05$) and race ($\beta = .31$; $t = 3.45$; $p \leq .001$) acted as significant positive predictors. In terms of the main effects for self-perceived employability, psychosocial career preoccupations ($\beta = -.11$; $t = -2.93$; $p \leq .01$) and race ($\beta = -.08$; $t = -5.14$; $p \leq .001$) acted as significant negative predictors, while career orientations ($\beta = .22$; $t = 4.15$; $p \leq .001$) acted as a significant positive predictor.

In terms of the interaction effects, career orientations did not have a significant moderating effect on the relationship between psychosocial career preoccupations and career satisfaction ($\beta = .00$; $t = .04$; $p = .969$) and self-perceived employability ($\beta = .01$; $t = .24$; $p = .814$).

7.4.4.4 Model 4

Table 7.40 reports the results of the hierarchical moderated regression analysis that was conducted to establish the main effect and the interaction effects of career adaptability (independent variable) and career orientations (moderator variable) on career satisfaction (while controlling for age, race and employment status), and self-perceived employability (while controlling for race) as dependent variables.

Table 7.40

Moderating Interaction Effects (Career Adaptability and Career Orientations) on Career Satisfaction and Self-perceived Employability

Variables	Coefficient β	SE	t	P	Bootstrapping: 95% confidence interval		Coefficient β	SE	t	p	Bootstrapping: 95% confidence interval	
Career satisfaction (dependent variable)					LLCI	ULCI	Self-perceived employability				LLCI	ULCI
Career adaptability (A)	.28	.08	3.39	.001	.12	.44	.37	.07	5.24	.000	.23	.51
Career orientations (B)	.05	.06	.82	.414	-.07	.18	.09	.05	1.59	.113	-.02	.19
Interaction term: A x B	.00	.09	.04	.968	-.18	.19	-.02	.08	-.26	.797	-.18	.14
Age	.42	.10	4.05	.000	.22	.62	n/a	n/a	n/a	n/a	n/a	n/a
Race	.42	.09	4.51	.000	.24	.60	-.33	.08	-4.23	.000	-.49	-.18
Employment status	-.21	.09	-2.42	.016	-.38	-.04	n/a	n/a	n/a	n/a	n/a	n/a
Model info												
$F_p = 8.09^{***}$					$F_p = 21.2^{***}$							
$\Delta F_p = .002$					$\Delta F_p = .066$							
$R^2 = .11$					$R^2 = .18$							
$\Delta R^2 = .000$					$\Delta R^2 = .000$							
$f^2 = R^2/1 - R^2$ No interaction effects					$f^2 = R^2/1 - R^2$ No interaction effects							

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

$R^2 \leq .12$ (small practical effect size); $R^2 \geq .13 \leq .25$ (medium practical effect size); $R^2 \geq .26$ (large practical effect size)

Table 7.40 indicates that both regression models were significant (Career satisfaction: $F_p = 8.09$; $p \leq .001$ and Self-perceived employability: $F_p = 21.2$; $p \leq .001$). The results further indicate that career adaptability and career orientations explained a small ($R^2 \geq .11$ [11%]) practical percentage of the variance in career satisfaction and a moderate ($R^2 \geq .18$ [18%]) practical percentage of the

variance in self-perceived employability. In terms of the main effects for career satisfaction, career adaptability ($\beta = .28$; $t = 3.39$; $p \leq .001$), age ($\beta = .42$; $t = 4.05$; $p \leq .001$) and race ($\beta = .42$; $t = 4.51$; $p \leq .001$) acted as significant positive predictors, while employment status ($\beta = -.21$; $t = -2.42$; $p \leq .05$) acted as a significant negative predictor. Career orientations ($\beta = .05$; $t = .82$; $p = .41$) was not a significant predictor for career satisfaction in the model. In terms of the main effects for self-perceived employability, career adaptability ($\beta = .37$; $t = 5.24$; $p \leq .001$) acted as a significant positive predictor, while race ($\beta = -.33$; $t = -4.23$; $p \leq .001$) acted as a significant negative predictor. Career orientations ($\beta = .09$; $t = 1.59$; $p = .113$) was not a significant predictor for self-perceived employability in the model.

In terms of the interaction effects, career orientations did not have a significant moderating effect on the relationship between career adaptability and career satisfaction ($\beta = .00$; $t = .04$; $p = .968$) and self-perceived employability ($\beta = -.02$; $t = -.26$; $p = .797$).

7.4.4.5 Model 5

Table 7.41 reports the results of the hierarchical moderated regression analysis that was conducted to establish the main effect and the interaction effects of psychosocial career preoccupations (independent variable) and career values (moderator variable) on career satisfaction (while controlling for age, race and employment status), and self-perceived employability (while controlling for race) as dependent variables.

Table 7.41*Moderating Interaction Effects (Career Preoccupations and Career Values) on Career Satisfaction and Self-perceived Employability*

Variables	Coefficient β	SE	<i>t</i>	<i>P</i>	Bootstrapping: 95% confidence interval		Coefficient β	SE	<i>t</i>	<i>p</i>	Bootstrapping: 95% confidence interval		
Career satisfaction (dependent variable)					LLCI	ULCI	Self-perceived employability					LLCI	ULCI
Career preoccupations (A)	-.26	.04	-5.89	.000	-.34	-.17	-.10	.04	-2.53	.012	-.17	-.02	
Career values (B)	.45	.08	5.52	.000	.29	.62	.37	.07	5.00	.000	.23	.52	
Interaction term: A x B	-.03	.08	-.33	.739	-.17	.12	-.06	.07	-.85	.398	-.19	.08	
Age	.27	.10	2.68	.008	.07	.47	n/a	n/a	n/a	n/a	n/a	n/a	
Race	.37	.09	4.19	.000	.20	.55	-.38	.08	-4.75	.000	-.54	-.22	
Employment status	-.18	.08	-2.18	.030	-.35	-.02	n/a	n/a	n/a	n/a	n/a	n/a	
Model info													
<i>Fp</i> = 15.90***						<i>Fp</i> = 18.0***							
ΔFp = .112						ΔFp = .715							
R^2 = .20						R^2 = .16							
ΔR^2 = .000						ΔR^2 = .002							
$f^2 = R^2/1 - R^2$ No interaction effects						$f^2 = R^2/1 - R^2$ No interaction effects							

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

$R^2 \leq .12$ (small practical effect size); $R^2 \geq .13 \leq .25$ (medium practical effect size); $R^2 \geq .26$ (large practical effect size)

Table 7.41 indicates that both regression models were significant (Career satisfaction: $Fp = 15.90$; $p \leq .001$ and Self-perceived employability: $Fp = 18.0$; $p \leq .001$). The results further indicate that psychosocial career preoccupations and career values explained a moderate ($R^2 \geq .20$ [20%] and $R^2 \geq .16$ [16%]) practical percentage of the variance in career satisfaction and self-perceived employability. In terms of the main effects for career satisfaction, career values ($\beta = .45$; $t = 5.52$; $p \leq .001$), age ($\beta = .27$; $t = 2.68$; $p \leq .01$) and race ($\beta = .37$; $t = 4.19$; $p \leq .001$) acted as significant positive predictors, while psychosocial career preoccupations ($\beta = -.26$; $t = -5.89$; $p \leq .001$) and employment status ($\beta = -.18$; $t = -2.18$; $p \leq .05$) acted as significant negative predictors. In terms of the main effects for self-perceived employability, career values ($\beta = .37$; $t = 5.00$; $p \leq .001$) acted as a significant positive predictor, while psychosocial career preoccupations ($\beta = -.10$; $t = -2.53$; $p \leq .05$) and race ($\beta = -.38$; $t = -4.75$; $p \leq .001$) acted as significant negative predictors.

In terms of the interaction effects, career values did not have a significant moderating effect on the relationship between psychosocial career preoccupations and career satisfaction ($\beta = -.03$; $t = -.33$; $p = .739$) and self-perceived employability ($\beta = -.06$; $t = -.85$; $p = .398$).

7.4.4.6 Model 6

Table 7.42 reports the results of the hierarchical moderated regression analysis that was conducted to establish the main effect and the interaction effects of career adaptability (independent variable) and career values (moderator variable) on career satisfaction (while controlling for age, race and employment status), and self-perceived employability (while controlling for race) as dependent variables.

Table 7.42

Moderating Interaction Effects (Career Adaptability and Career Values) on Career Satisfaction and Self-perceived Employability

Variables	Coefficient β	SE	t	P	Bootstrapping: 95% confidence interval		Coefficient β	SE	t	p	Bootstrapping: 95% confidence interval	
Career satisfaction (dependent variable)					LLCI	ULCI	Self-perceived employability				LLCI	ULCI
Career adaptability (A)	.19	.08	2.29	.023	.03	.36	.34	.07	4.73	.000	.20	.48
Career values (B)	.29	.09	3.15	.002	.11	.48	.18	.08	2.27	.024	.02	.34
Interaction term: AxB	.07	.14	.47	.636	-.21	.34	-.04	.12	-.31	.758	-.27	.20
Age	.44	.10	4.37	.000	.24	.64	n/a	n/a	n/a	n/a	n/a	n/a
Race	.48	.09	5.22	.000	.30	.66	-.31	.08	-3.98	.000	-.47	-.16
Employment status	-.17	.09	-1.94	.053	-.34	.00	n/a	n/a	n/a	n/a	n/a	n/a
Model info												
$F_p = 9.87^{***}$						$F_p = 22.0^{***}$						
$\Delta F_p = .225$						$\Delta F_p = .095$						
$R^2 = .13$						$R^2 = .18$						
$\Delta R^2 = .000$						$\Delta R^2 = .000$						
$f^2 = R^2/1 - R^2$ No interaction effects						$f^2 = R^2/1 - R^2$ No interaction effects						

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

$R^2 \leq .12$ (small practical effect size); $R^2 \geq .13 \leq .25$ (medium practical effect size); $R^2 \geq .26$ (large practical effect size)

Table 7.42 indicates that both regression models were significant (Career satisfaction: $F_p = 9.87$; $p \leq .001$ and Self-perceived employability: $F_p = 22.0$; $p \leq .001$). The results further indicate that career adaptability and career values explained a moderate ($R^2 \geq .13$ [13%] and $R^2 \geq .18$ [18%])

practical percentage of the variance in career satisfaction and self-perceived employability. In terms of the main effects for career satisfaction, career values ($\beta = .29$; $t = 3.15$; $p \leq .01$), career adaptability ($\beta = .19$; $t = 2.29$; $p \leq .05$), age ($\beta = .44$; $t = 4.37$; $p \leq .001$) and race ($\beta = .48$; $t = 5.22$; $p \leq .001$) acted as significant positive predictors. Employment status ($\beta = -.17$; $t = -1.94$; $p = .053$) was not a significant predictor for career satisfaction. In terms of the main effects for self-perceived employability, career values ($\beta = .18$; $t = 2.27$; $p \leq .05$) and career adaptability ($\beta = .34$; $t = 4.73$; $p \leq .001$) acted as significant positive predictors, while race ($\beta = -.31$; $t = -3.98$; $p \leq .001$) acted as a significant negative predictor.

In terms of the interaction effects, career values did not have a significant moderating effect on the relationship between career adaptability and career satisfaction ($\beta = .07$; $t = .47$; $p = .636$) and self-perceived employability ($\beta = -.04$; $t = -.31$; $p = .758$).

7.4.5 Preliminary analysis 4: Towards constructing a career satisfaction and employability profile for knowledge workers

This preliminary analysis considered both the stepwise regression results and hierarchical moderated regression (and compared these with the canonical correlation analysis). Overall, the stepwise regression results showed that the employability attribute of proactivity (self-initiated action to change and improve oneself), the career anchors of pure challenge (overcoming difficulty, strong focus on winning and competition), entrepreneurial creativity as a negative predictor (creating businesses with which individuals can identify and making money out of it), and the career values of prestige (obtaining recognition, status and admiration) and service orientation (helping or providing direct benefits to others) are important to consider in understanding the career satisfaction profile of knowledge workers. Thus, the results imply that traditional career constructs related to career anchors and career values are still relevant to explain career satisfaction in the contemporary career context. The results further suggest that knowledge workers are likely to be driven to overcome challenges and be the best in their niche professions and be motivated to help others. At the same time, they want to be recognised for the benefits they provide to others. Moreover, when knowledge workers are overly engaged in entrepreneurial creativity as dominant career anchor, which represent high levels of entrepreneurial creativity, they are likely to be motivated to create or build an empire or something that they can identify with as an extension of themselves. These knowledge workers might even be obsessed with the need to create or build a personal fortune, may be restless and become easily bored, and are likely to experience rather low levels of career satisfaction.

The results further emphasised the role of proactivity (as a contemporary career construct). The presence of proactivity suggests that knowledge workers who actively engage in role orientations, who are future-orientated and involved in self-initiated actions to change and improve oneself and the situation are more likely to experience career satisfaction.

In addition, participants' career adaptation preoccupations (having employability related concerns about adapting and adjusting interest and skills to fit in with career opportunities in the changing career context) are important to consider in understanding their career satisfaction and self-perceived employability. Higher levels of career adaptation preoccupations were associated with lower levels of career satisfaction and self-perceived employability. This suggests that when individuals have high levels of employability concerns related to adapting to the changing career context and are highly concerned and worried about adjusting their interests, talents and capabilities to fit with opportunities in the employment market, they might be too overwhelmed and might not be satisfied with the progress towards meeting their career goals, to develop new skills and to advance in their careers. By implication, individuals might be less confident in how they perceive current and future employment prospects.

The results further showed that high levels of work/life adjustment preoccupations were associated with lower levels of self-perceived employability, whereas high levels of career establishment preoccupations were associated with high levels of self-perceived employability. These results suggest that when individuals are highly concerned about fitting in with a group, career and strive towards economic stability and security, and are looking for opportunities for self-expression and personal growth and development, and advancing in their careers in the present organisation, they may have high levels of self-perceived employability confidence. When individuals are highly concerned about settling down and reducing or withdrawing from employment due to personal life responsibilities, they might, by implication, be less interested in gaining and maintaining their employment.

Moreover, high levels of career self-management and sociability further seemed to enhance self-perceived employability. These employability attributes explain the importance of individuals' career behaviour and interpersonal behaviour. It seemed that when individuals are proactively managing their careers by collecting career-related info to enhance self-knowledge and knowledge of the external environment; setting realistic goals and action plans; gain feedback to enhance decision making; updating skills and seek employment opportunities and are open to establish and maintain social contacts and are utilising their networks to the advantage of their

career, individuals seemed to be confident and might experience high levels of self-perceived employability.

The career anchors of security (organising one's career to feel safe and secure) and lifestyle (concerned about striking a balance with career, family and other personal interests) further explained higher levels of self-perceived employability. This suggests that even though knowledge workers work in a VUCA world of work, they are still valuing a sense of security and stability, while at the same time they are striving to achieve a balanced lifestyle. The career values of creativity (developing new ideas, being innovative, solving problems) and excitement (having variety, taking risks, trying out new things, value fast-paced work) also explained higher levels of self-perceived employability. This suggests that knowledge workers are likely to feel confident to find or to keep their employment when they perceive themselves as innovative thinkers and effective problems solvers, while at the same time having a sense of excitement, to prevent boredom, or losing interest in one's work.

For the career satisfaction and self-perceived employability profile, it seems that self-expression drives related to the dispositional aspects (individual factors) explain career satisfaction. To meet intrinsic needs, strengthen individual self-expressive perceptions and motivations and enhance feelings of career satisfaction. In contrast, the person-environment fit concerns and motives explain self-perceived employability. Career cognitions and career resources prepare and strengthen individual behaviour to remain employable or find appropriate employment by enhancing the person-environment congruence.

Although the hierarchical moderated regression results did not show any interaction effects between the career preoccupations and career adaptability variables (independent career cognition variables) and the moderator (psychosocial resources) variables of employability attributes, career anchors and career values in predicting the career satisfaction and self-perceived employability profile of the sample of knowledge workers, the significant main effects of the variables on the outcome variables were interesting. The career preoccupations career cognition construct when combined with the three moderator career resources constructs of employability attributes, career anchors and career values, all explained levels of career satisfaction and self-perceived employability. This finding emphasises the importance of career cognitions relating to career preoccupations for the career satisfaction and self-perceived employability of knowledge workers. It is thus important that knowledge workers be mindful of

psychosocial career preoccupations, as these concerns signal psychological readiness and indicate when it is necessary to revise or adjust one's career strategy.

On the other hand, the career cognition construct of career adaptability seemed to have a stronger main effect on self-perceived employability than on career satisfaction when combined with employability attributes. It seemed that employability attributes enhance and establish confidence in adaptive behaviour for knowledge workers' self-perceived employability. When career adaptability was combined with career values in the model, a positive main effect on both career satisfaction and self-perceived employability was evident. It seems that it is important to reflect on career values and determine the most valued career values in order to create a strong career identity. When knowledge workers have a strong career identity, and have high levels of psychological readiness (career adaptability) to engage in proactive adaptive behaviour, they are more likely to experience career satisfaction and self-perceived employability.

The canonical correlation results showed that when career satisfaction and self-perceived employability were jointly considered in a model in terms of the composite association with the composite set of career cognition and psychosocial career resources variables, only the career control variable of career adaptability played a significant explanatory role. Moreover, career adaptation preoccupations remained a strong explanatory variable, including the employability attributes of career self-management, career resilience, sociability and proactivity. Career anchors and career values did not play a significant explanatory role. It was evident, for the purpose of the construction of a psychosocial career satisfaction and employability profile for knowledge workers, that it may be more useful to consider the unique main effects that career cognitions and psychosocial career resources individually have on career satisfaction and self-perceived employability as unique constructs on their own. In other words, the career satisfaction profile has unique influencing factors while the self-perceived employability profile also has its unique influencing factors. This finding is important to consider in drawing conclusions and making recommendations for career development practice.

Moreover, overall, it was evident from the results that individuals' career cognitions (i.e. levels of psychosocial career preoccupations and career adaptability) were not conditional upon their psychosocial career resources (i.e. employability attributes, career anchors and career values) in explaining their levels of career satisfaction and self-perceived employability. The career cognitions and psychosocial career resources had individually specific main effects to consider in understanding knowledge workers' career satisfaction and self-perceived employability.

Finally, the stepwise regression and the hierarchical moderated regression analysis showed that age, race and employment status were important to consider in terms of the career satisfaction profile of knowledge workers. Race seemed especially important to consider in terms of their self-perceived employability and can be explained by increased career opportunities for previously disadvantaged groups. These results suggest that it may be useful to further explore the probability of significant differences regarding these biographical variables in terms of the various constructs.

To conclude, although main effects were evident between the variables, no significant interaction effect was present. The following research hypothesis H3 was, therefore, not supported.

The relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is moderated by their psychosocial resources (employability attributes, career anchors and career values). The relationship is more positive when their psychosocial career resources are well developed or strongly crystallised than when these career resources are not well developed or strongly crystallised.

7.4.6 Tests for significant mean differences

The t-test (for gender) and ANOVAs (for age, race and employment status), and post hoc tests were utilised to investigate the mean differences between the biographical variables of age, gender, race and employment status regarding the psychosocial career preoccupations (PCPS), career adaptability (CAAS), employability attributes (EAS), career orientations (COI), career values (CVS), career satisfaction (CSS) and self-perceived employability (GEM).

The test for significant mean differences was utilised to address research hypothesis H4:

Individuals from various age, gender, race and employment status groups differ significantly regarding their career adaptability and psychosocial career preoccupations, psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability.

The parametric TTEST procedure in SAS version 9.4 (SAS Institute, 2013) was utilised to test for differences between gender. Pooled and Satterthwaite post-hoc tests were utilised to establish the significant mean differences between males and females.

Parametric ANOVA procedure in SAS version 9.4 (SAS Institute, 2013) was utilised to test for significant differences among the mean scores on the biographical variables related to age, race and employment status. The Tukey's Studentized Range (HSD) Test for Confidence was utilised to controls the Type I experiment wise error rate. The TUKEY procedure in SAS version 9.4 (SAS Institute, 2013) performs Tukey's studentized range test (HSD) on all main effect means in the MEANS statement.

Cohen's *d* test was utilised to determine the practical effect size related to the differences between the respective groups of each variable.

7.4.6.1 Tests for significant mean differences for age group

Table 7.43 presents a summary of the ANOVAs and post hoc tests that represent a significant mean difference between the biographical variable of age and the significant variables.

Table 7.43*Tests for Significant Mean Differences: Age*

Variable	Source of difference	N	Mean	SD	ANOVA Sum of squares	Mean square	F	P	Source of significant differences between means	Cohen <i>d</i>
Concern	18-30 years (Emerging adulthood)	72	3.88	.55	13.74	4.58	9.63	<.0001	18-30 years - 46-60 years .29***	.47
				18-30 years - 60 years and older .65***					.93	
	31-45 years (Early adulthood)	172	3.78	.71					31-45 years- 60 years and older .55***	.71
	46-60 years (Middle adulthood)	120	3.59	.68					46-60 years - 18-30 years -.29***	.47
				46-60 years- 60 years and older .35***	.47					
	60 years and older (Late adulthood)	40	3.23	.82				60 years and older - 18-30 years -.65***	.93	
								60 years and older - 31-45 years -.55***	.71	
								60 years and older - 46-60 years -.35***	.47	
Psychosocial career preoccupations (PCPS)	18-30 years (Emerging adulthood)	72	3.76	.70	66.69	22.23	29.81	<.0001	18-30 years - 31-45 years .43***	.54
				18-30 years - 46-60 years 1.04***					1.28	
				18-30 years - 60 years and older 1.17***					1.40	
	31-45 years (Early adulthood)	172	3.33	.88					31-45 years - 18-30 years -.43***	.54
				31-45 - 46-60 years .60***	.68					
				31-45 years - 60 years and older .74***	.81					
	46-60 years (Middle adulthood)	120	2.73	.90				46-60 years - 18-30 years - 1.04***	1.28	
								46-60 years - 31-45 years -.60***	.68	
	60 years and older (Late adulthood)	40	2.59	.95				60 years and older - 18-30 years -1.17***	1.40	
								60 years and older - 31-45 years -.74***	.81	
Career establishment preoccupations	18-30 years (Emerging adulthood)	72	4.11	.75	81.13	27.04	31.22	<.0001	18-30 years - 31-45 years .52***	.62
				18-30 years - 60 years and older 1.19***					1.32	

Variable	Source of difference	N	Mean	SD	ANOVA Sum of squares	Mean square	F	P	Source of significant differences between means	Cohen d								
Career adaptation preoccupations	31-45 years (Early adulthood)	172	3.59	.94	41.39	13.80	12.16	<.0001	18-30 years - 46-60 years	1.38								
									18-30 years - 60 years and older	1.21***								
									31-45 years - 18-30 years	-.52***								
									31-45 years - 60 years and older	.67***								
	46-60 years (Middle adulthood)	120	2.90	.98					41.39	13.80	12.16	<.0001	31-45 years - 46-60 years	.68***				
													46-60 years - 18-30 years	1.21***				
													46-60 years - 31-45 years	-.68***				
													60 years and older - 18-30 years	-1.19***				
	60 years and older (Late adulthood)	40	2.92	1.03									41.39	13.80	12.16	<.0001	60 years and older - 31-45 years	.68***
																	60 years and older - 18-30 years	-1.19***
																	18-30 years - 46-60 years	.69***
																	18-30 years - 60 years and older	1.07***
18-30 years (Emerging adulthood)	72	3.03	1.04	41.39	13.80	12.16	<.0001	31-45 years - 46-60 years									.41***	
								31-45 years - 60 years and older									.79***	
								46-60 years - 18-30 years									-.69***	
								46-60 years - 31-45 years									-.41***	
31-45 years (Early adulthood)	172	2.75	1.14					41.39	13.80	12.16	<.0001	60 years and older - 18-30 years					1.08	
												60 years and older - 31-45 years					1.07***	
												60 years and older - 18-30 years					1.07***	
												60 years and older - 31-45 years					-.79***	
46-60 years (Middle adulthood)	120	2.34	1.00									41.39	13.80	12.16	<.0001	18-30 years - 46-60 years	.96***	
																18-30 years - 60 years and older	1.25***	
																31-45 years - 46-60 years	.61***	
																31-45 years - 60 years and older	.90***	
60 years and older (Late adulthood)	40	1.96	.95	41.39	13.80	12.16	<.0001									46-60 years - 18-30 years	-.96***	
																46-60 years - 31-45 years	-.61***	
																60 years and older - 18-30 years	-1.25***	
																60 years and older - 31-45 years	-.90***	
18-30 years (Emerging adulthood)	72	3.65	.84					68.66	22.89	25.04	<.0001					31-45 years - 46-60 years	.61***	
																31-45 years - 60 years and older	.90***	
																46-60 years - 18-30 years	-.96***	
																46-60 years - 31-45 years	-.61***	
31-45 years (Early adulthood)	172	3.30	.90									68.66	22.89	25.04	<.0001	60 years and older - 18-30 years	1.31	
																60 years and older - 31-45 years	-.90***	
																60 years and older - 18-30 years	-1.25***	
																60 years and older - 31-45 years	-.90***	
46-60 years (Middle adulthood)	120	2.69	1.06	68.66	22.89	25.04	<.0001									31-45 years - 46-60 years	.61***	
																31-45 years - 60 years and older	.90***	
																46-60 years - 18-30 years	-.96***	
																46-60 years - 31-45 years	-.61***	
60 years and older (Late adulthood)	40	2.40	1.06					68.66	22.89	25.04	<.0001					60 years and older - 18-30 years	1.31	
																60 years and older - 31-45 years	-.90***	
																60 years and older - 18-30 years	-1.25***	
																60 years and older - 31-45 years	-.90***	
31-45 years (Early adulthood)	172	3.96	.71									23.94	7.98	6.00	.0005	46-60 years - 18-30 years	-.30***	
																46-60 years - 18-30 years	-.30***	
																18-30 years - 46-60 years	.50***	
																18-30 years - 60 years and older	.89***	
46-60 years (Middle adulthood)	120	3.79	.76	23.94	7.98	6.00	.0005									18-30 years - 46-60 years	.50***	
																18-30 years - 60 years and older	.89***	
																18-30 years - 46-60 years	.50***	
																18-30 years - 60 years and older	.89***	
60 years and older (Late adulthood)	40	3.82	.69					23.94	7.98	6.00	.0005					18-30 years - 46-60 years	.50***	
																18-30 years - 60 years and older	.89***	
																18-30 years - 46-60 years	.50***	
																18-30 years - 60 years and older	.89***	
General managerial competence	72	3.06	1.11									23.94	7.98	6.00	.0005	18-30 years - 46-60 years	.50***	
																18-30 years - 60 years and older	.89***	
																18-30 years - 46-60 years	.50***	
																18-30 years - 60 years and older	.89***	

Variable	Source of difference	N	Mean	SD	ANOVA Sum of squares	Mean square	F	P	Source of significant differences between means	Cohen d
Lifestyle	31-45 years (Early adulthood)	172	2.77	1.21	12.56	4.19	4.30	.005	31-45 years - 60 years and older .60***	.55
	46-60 years (Middle adulthood)	120	2.56	1.15					46-60 years - 18-30 years -.50***	.45
	60 years and older (Late adulthood)	40	2.17	.98					60 years and older - 18-30 years -.89***	.85
									60 years and older - 31-45 years -.60***	.55
	18-30 years (Emerging adulthood)	72	4.45	.89					31-45 years - 46-60 years .38***	.37
	31-45 years (Early adulthood)	172	4.53	.96					46-60 years - 31-45 years -.38***	.37
Teamwork	46-60 years (Middle adulthood)	120	4.15	1.07	5.08	1.69	3.35	.019	18-30 years - 60 years and older .42***	.62
	60 years and older (Late adulthood)	40	4.14	.99						
	18-30 years (Emerging adulthood)	72	3.87	.75						
Prestige	31-45 years (Early adulthood)	172	3.72	.71	7.69	2.56	4.13	.007	60 years and older - 18-30 years -.42***	.62
	46-60 years (Middle adulthood)	120	3.65	.71					18-30 years - 31-45 years .31***	.39
	60 years and older (Late adulthood)	40	3.45	.61					18-30 years - 46-60 years .34***	.43
									18-30 years - 60 years and older .47***	.62
	18-30 years (Emerging adulthood)	72	3.77	.81					31-45 years - 18-30 years -.31***	.39
	31-45 years (Early adulthood)	172	3.46	.79					46-60 years - 18-30 years -.34***	.43
Career satisfaction scale	46-60 years (Middle adulthood)	120	3.43	.80	13.63	4.54	7.22	<.0001	60 years and older - 18-30 years -.47***	.62
	60 years and older (Late adulthood)	40	3.30	.70					18-30 years - 31-45 years -.31***	.35
									18-30 years - 46-60 years -.49***	.61
	18-30 years (Emerging adulthood)	72	3.56	.93					18-30 years - 60 years and older -.58***	.69
	31-45 years (Early adulthood)	172	3.87	.82					31-45 years - 18-30 years .31***	.35
	46-60 years (Middle adulthood)	120	4.05	.66					46-60 years - 18-30 years .49***	.61
				60 years and older - 18-30 years .58***	.69					

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

Cohen $d < .19$ no effect; $d > .20$ small practical effect; $d > .50$ medium practical effect; $d > .80$ large practical effect; $d > 1$ very large practical effect (Cohen, 1977, p.25)

(a) *Career Adapt-Ability Scale (CAAS)*

(i) Career concern

Table 7.43 reports significant mean differences for concern between the various age groups (18-30 years), (31-45 years), (46-60 years) and (60 years and older):

- Age groups: 18 – 30 and 46 – 60 (18 – 30 years: $M = 3.88$; $SD = .55$; 46 – 60 years: $M = 3.59$; $SD = .68$; $d = .47$; small practical effect);
- Age groups: 18 – 30 and 60 years and older (18 – 30 years: $M = 3.88$; $SD = .55$; 60 years and older: $M = 3.23$; $SD = .82$; $d = .93$; large practical effect);
- Age groups: 31 – 45 and 60 years and older (31 – 45 years: $M = 3.78$; $SD = .71$; 60 years and older: $M = 3.23$; $SD = .82$; $d = .71$; moderate practical effect);
- Age groups: 46 – 60 and 60 years and older (46 – 60 years: $M = 3.59$; $SD = .68$; 60 years and older: $M = 3.33$; $SD = .88$; $d = .47$; small practical effect).

(b) *Psychosocial Career Preoccupations (PCPS)*

Table 7.43 reports significant mean differences for psychosocial career preoccupations (PCPS) between the various age groups (18-30 years), (31-45 years), (46-60 years) and (60 years and older):

- Age groups: 18 – 30 and 31 – 45 (18 – 30 years: $M = 3.76$; $SD = .70$; 31 – 45 years: $M = 3.33$; $SD = .88$; $d = .54$; moderate practical effect);
- Age groups: 18 – 30 and 46 – 60 (18 – 30 years: $M = 3.76$; $SD = .70$; 46 – 60 years: $M = 2.73$; $SD = .90$; $d = 1.28$; very large practical effect);
- Age groups: 18 – 30 and 60 years and older (18 – 30 years: $M = 3.76$; $SD = .70$; 60 years and older: $M = 2.59$; $SD = .95$; $d = 1.40$; very large practical effect);
- Age groups: 31 – 45 and 46 – 60 (31 – 45 years: $M = 3.33$; $SD = .88$; 46 – 60 years: $M = 3.33$; $SD = .88$; $d = .68$; moderate practical effect);
- Age groups: 31 – 45 and 60 years and older (31 – 45 years: $M = 3.33$; $SD = .88$; 60 years and older: $M = 2.59$; $SD = .95$; $d = .81$; large practical effect).

(i) Career establishment preoccupations

Table 7.43 reports significant mean differences for career establishment preoccupations between the various age groups (18-30 years), (31-45 years), (46-60 years) and (60 years and older):

- Age groups: 18 – 30 and 31 – 45 (18 – 30 years: $M = 4.11$; $SD = .75$; 31 – 45 years: $M = 3.59$; $SD = .94$; $d = .62$; moderate practical effect);
- Age groups: 18 – 30 and 46 – 60 (18 – 30 years: $M = 4.11$; $SD = .75$; 46 – 60 years: $M = 2.90$; $SD = .98$; $d = 1.38$; very large practical effect);
- Age groups: 18 – 30 and 60 years and older (18 – 30 years: $M = 4.11$; $SD = .75$; 60 years and older: $M = 2.92$; $SD = 1.03$; $d = 1.32$; very large practical effect);
- Age groups: 31 – 45 and 46 – 60 (31 – 45 years: $M = 3.59$; $SD = .94$; 46 – 60 years: $M = 2.90$; $SD = .98$; $d = .71$; moderate practical effect);
- Age groups: 31 – 45 and 60 years and older (31 – 45 years: $M = 3.59$; $SD = .94$; 60 years and older: $M = 2.59$; $SD = .95$; $d = .68$; moderate practical effect).

(ii) Career adaptation preoccupations

Table 7.43 reports significant mean differences for career adaptation preoccupations between the various age groups (18-30 years), (31-45 years), (46-60 years) and (60 years and older):

- Age groups: 18 – 30 and 46 – 60 (18 – 30 years: $M = 3.03$; $SD = 1.04$; 46 – 60 years: $M = 2.34$; $SD = 1.00$; $d = .67$; moderate practical effect);
- Age groups: 18 – 30 and 60 years and older (18 – 30 years: $M = 3.03$; $SD = 1.04$; 60 years and older: $M = 1.96$; $SD = .95$; $d = 1.08$; very large practical effect);
- Age groups: 31 – 45 and 46 – 60 (31 – 45 years: $M = 2.75$; $SD = 1.14$; 46 – 60 years: $M = 2.34$; $SD = 1.00$; $d = .38$; small practical effect);
- Age groups: 31 – 45 and 60 years and older (31 – 45 years: $M = 2.75$; $SD = 1.14$; 60 years and older: $M = 2.59$; $SD = .95$; $d = .75$; moderate practical effect).

(iii) Work/life adjustment preoccupations

Table 7.43 reports significant mean differences for work/life adjustment preoccupations between the various age groups (18-30 years), (31-45 years), (46-60 years) and (60 years and older):

- Age groups: 18 – 30 and 46 – 60 (18 – 30 years: $M = 3.65$; $SD = .84$; 46 – 60 years: $M = 2.69$; $SD = 1.06$; $d = 1.01$; very large practical effect);
- Age groups: 18 – 30 and 60 years and older (18 – 30 years: $M = 3.65$; $SD = .84$; 60 years and older: $M = 2.40$; $SD = 1.06$; $d = 1.31$; very large practical effect);
- Age groups: 31 – 45 and 46 – 60 (31 – 45 years: $M = 3.30$; $SD = .90$; 46 – 60 years: $M = 2.69$; $SD = 1.03$; $d = .62$; moderate practical effect);
- Age groups: 31 – 45 and 60 years and older (31 – 45 years: $M = 3.30$; $SD = .90$; 60 years and older: $M = 2.40$; $SD = 1.06$; $d = .92$; large practical effect).

(c) *Career Orientations Inventory (COI)*

As reported in Table 7.43, the only significant mean differences for the career orientations inventory were between the 18 – 30 and 46 – 60 years age group (18 – 30 years: $M = 4.08$; $SD = .71$; 46 – 60 years: $M = 3.79$; $SD = .76$; $d = .40$; small practical effect).

(i) General managerial competence

Table 7.43 reports significant mean differences for general managerial competence between the various age groups ((18-30 years), (31-45 years), (46-60 years) and (60 years and older)):

- Age groups 18 – 30 and 46 – 60 (18 – 30 years: $M = 3.06$; $SD = 1.11$; 46 – 60 years: $M = 2.56$; $SD = 1.15$; $d = .45$; small practical effect);
- Age groups 18 – 30 and 60 years and older (18 – 30 years: $M = 3.06$; $SD = 1.11$; 60 years and older: $M = 2.17$; $SD = .98$; $d = .85$; large practical effect);
- Age groups 31 – 45 and 60 years and older (31 – 45 years: $M = 2.77$; $SD = 1.21$; 60 years and older: $M = 2.17$; $SD = .98$; $d = .55$; moderate practical effect).

(ii) Lifestyle

As reported in Table 7.43, the only significant mean differences for lifestyle were between the 31 – 45 and 46 – 60 years age group (31 – 45 years: $M = 4.53$; $SD = .96$; 46 – 60 years: $M = 4.15$; $SD = 1.07$; $d = .37$; small practical effect).

(d) *Career Values Scale (CVS)*

(i) Teamwork

As reported in Table 7.43, the only significant mean differences for teamwork were between the 18 – 30 and 60 years and older age group (18 – 30 years: $M = 3.87$; $SD = .75$; 60 years and older: $M = 3.45$; $SD = .61$; $d = .62$; moderate practical effect).

(ii) Prestige

Table 7.43 reports significant mean differences between the various age groups (18-30 years), (31-45 years), (46-60 years) and (60 years and older):

- Age groups 18 – 30 and 31 – 45 (18 – 30 years: $M = 3.77$; $SD = .81$; 31 – 45 years: $M = 3.46$; $SD = .79$; $d = .39$; small practical effect);
- Age groups 18 – 30 and 46 – 60 (18 – 30 years: $M = 3.77$; $SD = .81$; 46 – 60 years: $M = 3.43$; $SD = .80$; $d = .43$; small practical effect);
- Age groups 18 – 30 and 60 years and older (18 – 30 years: $M = 3.77$; $SD = .81$; 60 years and older: $M = 3.33$; $SD = .70$; $d = .62$; moderate practical effect).

(e) *Career Satisfaction Scale (CSS)*

Table 7.43 reports significant mean differences for career satisfaction between the various age groups (18-30 years), (31-45 years), (46-60 years) and (60 years and older):

- Age groups 18 – 30 and 31 – 45 (18 – 30 years: $M = 3.56$; $SD = .93$; 31 – 45 years: $M = 3.87$; $SD = .82$; $d = .35$; small practical effect);
- Age groups 18 – 30 and 46 – 60 (18 – 30 years: $M = 3.56$; $SD = .93$; 46 – 60 years: $M = 4.05$; $SD = .66$; $d = .61$; moderate practical effect);
- Age groups 18 – 30 and 60 years and older (18 – 30 years: $M = 3.56$; $SD = .93$; 60 years and older: $M = 4.15$; $SD = .77$; $d = .69$; moderate practical effect).

In summary, the younger age group (18-30 years) scored significantly higher than their older counterparts on all the psychosocial career preoccupations and for concern (career adaptability).

The younger age group (18 – 30 years) scored significantly higher on the general managerial competence career anchor, whereas the established age group (31 – 45 years) scored significantly higher on the lifestyle career anchor than other age groups (younger and older). Furthermore, the younger age group (18-30 years) scored significantly higher on the teamwork career value, than the older age group (60 years and older). The younger age group (18 – 30 years) scored significantly higher than other groups on the prestige career value. Finally, the younger age group (18 – 30 years) scored significantly lower on career satisfaction, than the older age groups (31 – 45; 46 – 60; and 60 years and older).

7.4.6.2 Tests for significant mean differences for gender group

Table 7.44 presents the results of the t-test procedure and mean scores investigating the mean differences between the biographical variable of gender and the significant variable.

Table 7.44

Tests for Significant Mean Differences: Gender

Variable	Source of difference	N	Mean	SD	t-value	95% confidence CL		Fp	P	Source of significant differences between means	Cohen d
						Minimum	Maximum				
Work/life adjustment preoccupations	Male	218	2.93	1.11	-3.57	2.78	3.07	1.47	.007	Male - Female: .36***	.36
	Female	186	3.29	.91		3.16	3.42				

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

Cohen $d < .19$ no effect; $d > .20$ small practical effect; $d > .50$ medium practical effect; $d > .80$ large practical effect; $d > 1$ very large practical effect (Cohen, 1977 p.25)

Table 7.44 reports significant mean differences between males and females for work/life adjustment preoccupations (males: $M = 2.93$; $SD = 1.11$; females: $M = 3.29$; $SD = .91$; $t = -3.57$; $Fp = 1.47$ at $p = .01$; $d = .36$; small practical effect). Females scored higher on the work/life adjustment preoccupation than males.

7.4.6.3 Tests for significant mean differences for race group

Table 7.45 presents a summary of the ANOVAs and post hoc tests that represent a mean difference between the biographical variable of race and the significant variables.

Table 7.45

Tests for Significant Mean Differences: Race

Variable	Source of difference	N	Mean	SD	ANOVA Sum of squares	Mean square	F	P	Source of significant differences between means	Cohen d
Career adaptability scale (CAAS)	African	83	4.12	.51	7.89	1.97	7.43	<.0001	African - White .34***	.69
	Coloured	10	3.88	.65						
	Indian	25	3.96	.64						
	Other	6	3.96	.94						
	White	280	3.78	.49						
Concern	African	83	4.10	.64	19.14	4.78	10.33	<.0001	White - African -.34*** African - White .54***	.83
	Coloured	10	3.83	.57						
	Indian	25	3.73	.82						
	Other	6	3.58	1.10						
	White	280	3.56	.67						
Control	African	83	4.14	.62	4.37	1.09	2.79	.026	White - African -.54*** African - White .25***	.41
	Coloured	10	3.97	.74						
	Indian	25	4.04	.67						
	Other	6	4.00	.90						
	White	280	3.88	.61						
Curiosity	African	83	4.07	.60	11.03	2.76	6.01	.0001	White - African -.25*** African - White .41***	.64
	Coloured	10	3.83	.81						
	Indian	25	3.79	.78						
	Other	6	4.00	1.16						
	White	280	3.66	.67						
Confidence	African	83	4.17	.62	5.09	1.27	3.33	.011	White - African -.41*** African - White .24***	.39
	Coloured	10	3.87	.80						
	Indian	25	4.21	.69						
	Other	6	4.14	1.00						
	White	280	3.94	.59						
Psychosocial career preoccupations (PCPS)	African	83	3.64	.96	25.19	6.30	7.39	<.0001	African - White .61***	.65
	Coloured	10	3.06	1.10						
	Indian	25	3.14	1.01						
	Other	6	2.66	.99						
	White	280	3.03	.90						
Career establishment preoccupations	African	83	3.88	1.01	22.85	5.71	5.63	.0002	White - African -.61*** African - White .58***	.58
	Coloured	10	3.24	1.21						
	Indian	25	3.35	1.06						
	Other	6	3.07	1.21						
	White	280	3.29	.99						
Career adaptation preoccupations	African	83	3.16	1.18	39.18	9.80	8.57	<.0001	White - African -.58*** African - White .73*** African - Other 1.46***	.65
	Coloured	10	2.84	1.05						
	Indian	25	2.61	1.15						
	Other	6	1.70	.75						
	White	280	2.44	1.03						
Work/life adjustment preoccupations	African	83	3.51	.98	20.48	5.12	4.94	.0007	Other - African -1.46*** White - African -.73*** African - White .53***	.54
	Coloured	10	2.80	1.04						
	Indian	25	3.19	1.26						
	Other	6	2.63	1.15						
	White	280	2.98	1.00						
Employability Attributes Scale	African	83	4.74	.66	12.26	3.07	6.00	.0001	African - White .43***	.64
	Coloured	10	4.33	.82						

Variable	Source of difference	N	Mean	SD	ANOVA Sum of squares	Mean square	F	P	Source of significant differences between means	Cohen d
Career self-management	Indian	25	4.47	.92	9.53	2.38	3.87	.004	White - African -.43*** African - White .37***	.64 .51
	Other	6	4.46	.67						
	White	280	4.31	.71						
	African	83	4.98	.67						
	Coloured	10	4.46	.96						
Cultural competence	Indian	25	4.68	.89	37.11	9.28	8.77	<.0001	White - African -.37*** African - White .69***	.51 .69
	Other	6	4.76	.93						
	White	280	4.60	.80						
	African	83	4.63	.96						
	Coloured	10	4.42	1.02						
Career resilience	Indian	25	4.56	1.19	7.45	1.86	3.05	.017	Indian - White .62*** White - African -.69*** White - Indian -.62*** African - White .34***	.56 .69 .56 .45
	Other	6	4.57	.46						
	White	280	3.94	1.04						
	African	83	4.83	.70						
	Coloured	10	4.58	.84						
Proactivity	Indian	25	4.63	.84	15.30	3.82	5.42	.0003	White - African -.34*** African - White .47***	.45 .59
	Other	6	4.50	.88						
	White	280	4.49	.80						
	African	83	4.82	.73						
	Coloured	10	4.08	1.16						
Entrepreneurial orientation	Indian	25	4.48	1.04	7.89	1.97	2.81	.025	White - African -.47*** African - White .34***	.59 .43
	Other	6	4.53	.77						
	White	280	4.35	.84						
	African	83	4.70	.76						
	Coloured	10	4.33	.85						
Sociability	Indian	25	4.33	.91	16.38	4.09	2.90	.022	White - African -.34*** African - White .43***	.43 .37
	Other	6	4.47	.78						
	White	280	4.35	.85						
	African	83	4.33	1.11						
	Coloured	10	3.50	1.30						
Emotional literacy	Indian	25	3.91	1.33	12.12	3.03	3.59	.007	White - African -.43*** African - White .42***	.37 .49
	Other	6	3.39	1.18						
	White	280	3.90	1.19						
	African	83	4.69	.80						
	Coloured	10	4.56	.84						
Career Orientations Inventory	Indian	25	4.47	1.09	31.70	7.93	17.43	<.0001	White - African -.42*** African - White .65*** African - Other .83*** African - Coloured .90*** Coloured - African -.90*** Coloured - Indian -.71*** Indian - White .46*** Indian - Coloured .71*** Other - African -.83*** White - African -.65*** White - Indian -.46***	.49 .95 .77 1.07 1.07 .89 .74 .89 .77 .95 .74
	Other	6	4.45	1.06						
	White	280	4.26	.94						
	African	83	4.41	.73						
	Coloured	10	3.51	.95						
General managerial competence	Indian	25	4.22	.61	80.38	20.09	16.87	<.0001	African - White 1.06*** African - Coloured 1.45*** Coloured - African -1.45*** Indian - White .68*** White - African -1.06*** White - Indian -.68*** African - White .36***	.93 1.37 1.37 .61 .93 .61 .35
	Other	6	3.58	1.35						
	White	280	3.76	.63						
	African	83	3.50	1.21						
	Coloured	10	2.05	.90						
Autonomy and independence	Indian	25	3.13	1.18	15.56	3.89	3.77	.005		
	Other	6	2.67	1.38						
	White	280	2.45	1.05						
	African	83	4.42	1.01						
	Coloured	10	3.52	1.11						
	Indian	25	4.19	.99						

Variable	Source of difference	N	Mean	SD	ANOVA Sum of squares	Mean square	F	P	Source of significant differences between means	Cohen d
Entrepreneurial Creativity	Other	6	3.37	1.29	48.88	12.22	8.80	<.0001	White - African -.36*** African - White .83***	.35 .75
	White	280	4.06	1.01						
	African	83	4.42	1.02						
	Coloured	10	3.35	1.55						
	Indian	25	4.13	1.16						
Service or dedication to a cause	Other	6	3.71	1.92	49.47	12.37	11.52	<.0001	White - African -.83*** African - White .86***	.75 .87
	White	280	3.60	1.19						
	African	83	4.82	.89						
	Coloured	10	3.94	1.25						
	Indian	25	4.44	.85						
Pure challenge	Other	6	4.00	1.41	40.42	10.11	9.71	<.0001	White - African -.86*** African - White .77*** African - Coloured 1.04*** Coloured - African -1.04***	.87 .79 .97 .97
	White	280	3.97	1.08						
	African	83	4.70	.91						
	Coloured	10	3.66	1.22						
	Indian	25	4.23	.90						
Lifestyle	Other	6	4.00	1.34	22.62	5.66	5.95	.0001	White - African -.77*** African - White .41***	.79 .43
	White	280	3.93	1.05						
	African	83	4.66	.90						
	Coloured	10	4.04	1.09						
	Indian	25	4.94	.95						
	Other	6	3.73	1.60						
	White	280	4.25	.98						
Career Values Scale	African	83	4.14	.50	14.04	3.51	16.61	<.0001	African - White .45***	.97
	Coloured	10	3.89	.64						
	Indian	25	3.96	.51						
	Other	6	3.81	.48						
	White	280	3.68	.43						
Service orientation	African	83	4.36	.53	24.44	6.11	16.54	<.0001	White - African -.45*** White - Indian -.28*** African - White .59***	.97 .59 1.01
	Coloured	10	3.95	.72						
	Indian	25	4.17	.52						
	Other	6	4.25	.49						
	White	280	3.77	.63						
Teamwork	African	83	4.17	.62	26.78	6.69	14.81	<.0001	White - African -.59*** White - Indian -.39*** African - White .63***	1.01 .68 .98
	Coloured	10	3.84	.84						
	Indian	25	3.89	.67						
	Other	6	3.59	1.03						
	White	280	3.54	.67						
Influence	African	83	4.12	.54	10.64	2.66	8.60	<.0001	White - African -.63*** African - White .39***	.98 .71
	Coloured	10	3.98	.69						
	Indian	25	3.99	.59						
	Other	6	3.77	.53						
	White	280	3.73	.55						
Creativity	African	83	4.20	.58	14.91	3.73	8.26	<.0001	White - African -.39*** African - White .47***	.71 .73
	Coloured	10	3.90	.80						
	Indian	25	4.00	.65						
	Other	6	4.07	.32						
	White	280	3.73	.70						
Excitement	African	83	3.83	.65	19.49	4.87	11.35	<.0001	White - African -.47*** African - White .55***	.73 .85
	Coloured	10	3.42	1.04						
	Indian	25	3.43	.59						
	Other	6	3.47	.51						
	White	280	3.27	.65						
Career development	African	83	4.44	.52	10.99	2.75	8.23	<.0001	White - African -.55*** African - White .40***	.85 .72
	Coloured	10	4.33	.57						
	Indian	25	4.22	.60						

Variable	Source of difference	N	Mean	SD	ANOVA Sum of squares	Mean square	F	P	Source of significant differences between means	Cohen d
Financial rewards	Other	6	4.29	.57	6.34	1.59	4.43	.002	White - African -.40*** African - White .26***	.72 .42
	White	280	4.04	.59						
	African	83	4.09	.63						
	Coloured	10	4.07	.68						
	Indian	25	4.15	.57						
	Other	6	3.65	.83						
Prestige	White	280	3.83	.58	9.33	2.33	3.77	.005	White - African -.26*** African - White .36***	.42 .46
	African	83	3.77	.81						
	Coloured	10	3.40	.71						
	Indian	25	3.67	.79						
	Other	6	3.36	1.36						
Graduate Employability Measure (GEM)	White	280	3.40	.77	22.93	5.73	12.04	<.0001	White - African -.36*** African - White .60***	.46 .94
	African	83	4.13	.54						
	Coloured	10	3.79	.59						
	Indian	25	3.73	.84						
	Other	6	3.69	.68						
	White	280	3.54	.72					White - African -.60***	.94

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

Cohen $d < .19$ no effect; $d > .20$ small practical effect; $d > .50$ medium practical effect; $d > .80$ large practical effect; $d > 1$ very large practical effect (Cohen, 1977, p. 25)

(a) *Career Adapt-Ability Scale (CAAS)*

The results in Table 7.45 reports that the African race group scored significantly higher than the white race group on the following variables:

- Career adaptability scale (CAAS) (African: $M = 4.12$; $SD = .51$; white: $M = 3.78$; $SD = .49$; $d = .69$; moderate practical effect);
- Career concern (African: $M = 4.10$; $SD = .64$; white: $M = 3.56$; $SD = .67$; $d = .83$; large practical effect);
- Career control (African: $M = 4.14$; $SD = .62$; white: $M = 3.88$; $SD = .61$; $d = .41$; small practical effect);
- Career curiosity (African: $M = 4.07$; $SD = .60$; white: $M = 3.66$; $SD = .67$; $d = .64$; moderate practical effect);
- Career confidence (African: $M = 4.17$; $SD = .62$; white: $M = 3.94$; $SD = .59$; $d = .39$; small practical effect);

(b) *Psychosocial Career Preoccupations (PCPS)*

The results in Table 7.45 reports that the African race group scored significantly higher than the white group on the following variables:

- Psychosocial career preoccupations (PCPS) (African: $M = 3.64$; $SD = .96$; white: $M = 3.03$; $SD = .90$; $d = .65$; moderate practical effect);
- Career establishment preoccupations (African: $M = 3.88$; $SD = 1.01$; white: $M = 3.29$; $SD = .99$; $d = .58$; moderate practical effect);
- Career adaptation preoccupations (African: $M = 3.16$; $SD = 1.18$; white: $M = 2.44$; $SD = 1.03$; $d = .65$; moderate practical effect);
- Work/life adjustment preoccupations (African: $M = 3.51$; $SD = .98$; white: $M = 2.98$; $SD = 1.00$; $d = .54$; moderate practical effect).

The results in Table 7.45 further reports that the African race group scored significantly higher than the other race group on career adaptation preoccupations (African: $M = 3.16$; $SD = 1.18$; other: $M = 1.70$; $SD = .75$; $d = 1.48$; very large practical effect).

(c) *Employability Attributes Scale (EAS)*

The results in Table 7.45 reports that the African race group scored significantly higher than the white group on the following variables:

- Employability Attributes Scale (African: $M = 4.74$; $SD = .66$; white: $M = 4.31$; $SD = .71$; $d = .64$; moderate practical effect);
- Career self-management (African: $M = 4.98$; $SD = .67$; white: $M = 4.60$; $SD = .80$; $d = .51$; moderate practical effect);
- Cultural competence (African: $M = 4.63$; $SD = .96$; white: $M = 3.94$; $SD = 1.04$; $d = .69$; moderate practical effect);
- Career resilience (African: $M = 4.83$; $SD = .70$; white: $M = 4.49$; $SD = .80$; $d = .45$; small practical effect);
- Proactivity (African: $M = 4.82$; $SD = .73$; white: $M = 4.35$; $SD = .84$; $d = .59$; moderate practical effect);

- Entrepreneurial orientation (African: $M = 4.70$; $SD = .76$; white: $M = 4.35$; $SD = .85$; $d = .43$; small practical effect);
- Sociability (African: $M = 4.33$; $SD = 1.11$; white: $M = 3.90$; $SD = 1.19$; $d = .37$; small practical effect);
- Emotional literacy (African: $M = 4.69$; $SD = .80$; white: $M = 4.26$; $SD = .94$; $d = .49$; small practical effect).

(d) *Career Orientations Inventory (COI)*

The results in Table 7.45 reports that the African race group scored significantly higher than the white group on the following variables:

- Career Orientations Inventory (African: $M = 4.41$; $SD = .73$; white: $M = 3.76$; $SD = .63$; $d = .95$; large practical effect);
- General managerial competence (African: $M = 3.50$; $SD = 1.21$; white: $M = 2.45$; $SD = 1.05$; $d = .35$; small practical effect);
- Autonomy and independence (African: $M = 4.42$; $SD = 1.01$; white: $M = 4.06$; $SD = 1.01$; $d = .51$; moderate practical effect);
- Entrepreneurial Creativity (African: $M = 4.42$; $SD = 1.02$; white: $M = 3.60$; $SD = 1.19$; $d = .75$; moderate practical effect);
- Service or dedication to a cause (African: $M = 4.82$; $SD = .89$; white: $M = 3.97$; $SD = 1.08$; $d = .87$; large practical effect);
- Pure challenge (African: $M = 4.70$; $SD = .91$; white: $M = 3.93$; $SD = 1.05$; $d = .79$; moderate practical effect);
- Lifestyle (African: $M = 4.66$; $SD = .90$; white: $M = 4.25$; $SD = .98$; $d = .43$; small practical effect).

The results in Table 7.45 further reports that the African race group scored significantly higher than the other race group on and career orientations inventory (African: $M = 4.41$; $SD = .73$; other: $M = 3.58$; $SD = 1.35$; $d = .77$; moderate practical effect).

The results in Table 7.45 further indicated that the African race group scored significantly higher than the coloured race group on the following variables:

- Career orientations inventory (African: $M = 4.41$; $SD = .73$; coloured: $M = 3.51$; $SD = .95$; $d = 1.07$; large practical effect);
- General managerial competence (African: $M = 3.50$; $SD = 1.21$; coloured: $M = 2.05$; $SD = .90$; $d = 1.37$; very large practical effect);
- Pure challenge (African: $M = 4.70$; $SD = .91$; coloured: $M = 3.66$; $SD = 1.22$; $d = .97$; large practical effect).

The results in Table 7.45 further indicated that the Indian race group scored significantly higher than the white race group on the following variables:

- Cultural competence (Indian: $M = 4.56$; $SD = 1.19$; white: $M = 3.94$; $SD = 1.04$; $d = .56$; moderate practical effect);
- General managerial competence (Indian: $M = 3.13$; $SD = 1.18$; white: $M = 2.45$; $SD = 1.05$; $d = .61$; moderate practical effect);
- Lifestyle (Indian: $M = 4.94$; $SD = .95$; white: $M = 4.25$; $SD = .98$; $d = .72$; moderate practical effect).

Finally, the Indian race group scored significantly higher than the coloured race group on the career orientations inventory (Indian: $M = 4.22$; $SD = .61$; coloured: $M = 3.51$; $SD = .95$; $d = .89$; large practical effect).

(e) *Career Values Scale (CVS)*

The results in Table 7.45 reports that the African race group scored significantly higher than the white race group on the following variables:

- Career Values Scale (African: $M = 4.14$; $SD = .50$; white: $M = 3.68$; $SD = .43$; $d = .97$; large practical effect);
- Service orientation (African: $M = 4.36$; $SD = .53$; white: $M = 3.77$; $SD = .63$; $d = 1.01$; very large practical effect);
- Teamwork (African: $M = 4.17$; $SD = .62$; white: $M = 3.54$; $SD = .67$; $d = .98$; large practical effect);

- Influence (African: $M = 4.12$; $SD = .54$; white: $M = 3.73$; $SD = .55$; $d = .71$; moderate practical effect);
- Creativity (African: $M = 4.20$; $SD = .58$; white: $M = 3.73$; $SD = .70$; $d = .73$; moderate practical effect);
- Excitement (African: $M = 3.83$; $SD = .65$; white: $M = 3.27$; $SD = .65$; $d = .85$; large practical effect);
- Career development (African: $M = 4.44$; $SD = .52$; white: $M = 4.04$; $SD = .59$; $d = .72$; moderate practical effect);
- Financial rewards (African: $M = 4.09$; $SD = .63$; white: $M = 3.83$; $SD = .58$; $d = .42$; small practical effect);
- Prestige (African: $M = 3.77$; $SD = .81$; white: $M = 3.40$; $SD = .77$; $d = .46$; small practical effect).

The results in Table 7.45 further indicated that the Indian race group scored significantly higher than the white race group on the career values scale (Indian: $M = 3.96$; $SD = .51$; white: $M = 3.68$; $SD = .43$; $d = .97$; large practical effect) and service orientation (Indian: $M = 4.17$; $SD = .52$; white: $M = 3.77$; $SD = .63$; $d = 1.01$; large practical effect).

(f) *Career satisfaction scale (CSS) and Graduate employability measure (GEM)*

The results in Table 7.45 reports that the African race group scored significantly higher than the white group on the following variables:

- Graduate Employability Measure (GEM) (African: $M = 4.13$; $SD = .54$; white: $M = 3.54$; $SD = .72$; $d = .94$; large practical effect).

It can be concluded that the African race group and the white race group differ significantly on various variables. The African group scored significantly higher than the white group on career adaptability and subscales and all the psychosocial career preoccupations. The results indicated that the African racial group scored significantly higher than the white racial group on employability attributes (all subscales except on self-efficacy), career anchors (except on technical/functional competence), career values (all subscales except on independence and security) and self-perceived employability.

7.4.6.4 Tests for significant mean differences for employment status group

Table 7.46 presents a summary of the ANOVAs and post hoc tests that represent a mean difference between the biographical variable of employment status and the significant variables.

(a) Career Adapt-Ability Scale (CAAS)

No significant mean differences were reported for career adaptability in terms of employment status.

(b) Psychosocial Career Preoccupations (PCPS)

Table 7.46 reports significant mean differences between the fixed-term contract employment and self-employed employment status for the following variables:

- Psychosocial career preoccupations (PCPS) (fixed term contract: $M = 3.66$; $SD = .82$; self-employed: $M = 2.78$; $SD = .87$; $d = 1.05$; large practical effect);
- Career establishment preoccupations (fixed term contract: $M = 3.94$; $SD = .89$; self-employed: $M = 3.02$; $SD = .95$; $d = 1.0$; very large practical effect);
- Career adaptation preoccupations (fixed term contract: $M = 3.18$; $SD = .99$; self-employed: $M = 2.14$; $SD = 1.01$; $d = 1.05$; very large practical effect).

Table 7.46 reports significant mean differences between the permanent and self-employed employment status for the following variables:

- Psychosocial career preoccupations (PCPS) (permanent: $M = 3.22$; $SD = .95$; self-employed: $M = 2.78$; $SD = .87$; $d = .49$; small practical effect);
- Career establishment preoccupations (permanent: $M = 3.48$; $SD = 1.03$; self-employed: $M = 3.02$; $SD = .95$; $d = .46$; small practical effect);
- Career adaptation preoccupations (permanent: $M = 2.67$; $SD = 1.10$; self-employed: $M = 2.14$; $SD = 1.01$; $d = .51$; moderate practical effect).

(c) *Employability Attributes Scale (EAS)*

Table 7.46 reports significant mean differences between the permanent and self-employed employment status for emotional literacy (permanent: $M = 4.47$; $SD = .94$; self-employed: $M = 4.06$; $SD = .90$; $d = .44$; small practical effect).

(d) *Career Orientations Inventory (COI)*

Table 7.46 reports significant mean differences between the permanent and self-employed employment status for the following variables:

- Security and stability (permanent: $M = 4.01$; $SD = 1.08$; self-employed: $M = 3.46$; $SD = 1.05$; $d = .52$; moderate practical effect);
- Entrepreneurial Creativity (permanent: $M = 3.63$; $SD = 1.26$; self-employed: $M = 4.26$; $SD = .95$; $d = .56$; moderate practical effect).

(e) *Career Values Scale (CVS)*

Table 7.46 reports significant mean differences between the permanent and self-employed employment status for the following variables:

- Career Values Scale (permanent: $M = 3.85$; $SD = .49$; self-employed: $M = 3.64$ $SD = .41$; $d = .46$; small practical effect);
- Service orientation (permanent: $M = 4.01$; $SD = .63$; self-employed: $M = 3.70$; $SD = .62$; $d = .49$; small practical effect);
- Teamwork (permanent: $M = 3.81$; $SD = .70$; self-employed: $M = 3.38$; $SD = .65$; $d = .63$; moderate practical effect);
- Career development (permanent: $M = 4.19$; $SD = .56$; self-employed: $M = 3.95$; $SD = .64$; $d = .41$; small practical effect);
- Prestige (permanent: $M = 3.56$; $SD = .78$; self-employed: $M = 3.27$; $SD = .79$; $d = .36$; small practical effect).

(f) *Career Satisfaction scale (CSS) and Graduate Employability Measure (GEM)*

Table 7.46 reports a significant mean difference between fixed term contract employment and permanent employment status (fixed term contract: $M = 3.36$; $SD = .96$; permanent: $M = 3.94$; $SD = .78$; $d = .58$; moderate practical effect), and self-employed status (fixed term contract: $M = 3.36$; $SD = .96$; self-employed: $M = 3.95$; $SD = .76$; $d = .59$; moderate practical effect), for career satisfaction.

Table 7.46

Tests for Significant Mean Differences: Employment Status

Variable	Source of difference	N	Mean	SD	ANOVA Sum of squares	Mean square	F	P	Source of significant differences between means	Cohen d
Psychosocial career preoccupations (PCPS)	Fixed term contract	25	3.66	.82	20.97	6.99	8.13	<.0001	Fixed Term Contract - Self-employed .89***	1.05
	Permanent	287	3.22	.95					Permanent - Self-employed .45***	.49
	Self-employed	87	2.78	.87					Self-employed - Fixed Term Contract -.89***	1.05
									Self-employed - Permanent -.45***	.49
Career establishment preoccupations	Unemployed	5	3.54	1.20	21.97	7.32	7.22	<.0001	Fixed Term Contract - Self-employed .92***	1.00
	Fixed term contract	25	3.94	.89					Permanent - Self-employed .45***	.46
	Permanent	287	3.48	1.03					Self-employed - Fixed Term Contract -.92***	1.00
	Self-employed	87	3.02	.95					Self-employed - Permanent -.45***	.46
Career adaptation preoccupations	Unemployed	5	3.75	1.29	30.92	10.31	8.88	<.0001	Fixed Term Contract - Self-employed 1.05***	1.05
	Fixed term contract	25	3.18	.99					Permanent - Self-employed .53***	.51
	Permanent	287	2.67	1.10					Self-employed - Fixed Term Contract -1.05***	1.05
	Self-employed	87	2.14	1.01					Self-employed - Permanent -.53***	.51
Emotional literacy	Unemployed	5	3.28	1.40	10.85	3.62	4.28	.006		
	Fixed term contract	25	4.37	.81					Permanent - Self-employed .40***	.44
	Permanent	287	4.47	.94					Self-employed - Permanent -.40***	.44
	Self-employed	87	4.06	.90						
Security and stability	Unemployed	5	4.49	.84	20.57	6.86	5.82	.0007		
	Fixed term contract	25	3.88	1.33					Permanent - Self-employed .55***	.52
	Permanent	287	4.01	1.08					Self-employed - Permanent -.55***	.52
	Self-employed	87	3.46	1.05						
Entrepreneurial Creativity	Unemployed	5	4.05	.72	28.81	9.60	6.69	.0002		
	Fixed term contract	25	3.89	1.28					Permanent - Self-employed -.63***	.56
	Permanent	287	3.63	1.26					Self-employed - Permanent .63***	.56
	Self-employed	87	4.26	.95						
Career Values Scale	Unemployed	5	4.45	.69	3.08	1.03	4.31	.005		
	Fixed term contract	25	3.74	.65					Permanent - Self-employed .21***	.46
	Permanent	287	3.85	.49					Self-employed - Permanent -.21***	.46
	Self-employed	87	3.64	.41						
	Unemployed	5	3.84	.36						

Variable	Source of difference	N	Mean	SD	ANOVA Sum of squares	Mean square	F	P	Source of significant differences between means	Cohen d
Service orientation	Fixed term contract	25	3.87	.82	6.38	2.13	5.14	.002		
	Permanent	287	4.01	.63						
	Self-employed	87	3.70	.62						
	Unemployed	5	4.00	.57						
Teamwork	Fixed term contract	25	3.64	.86	12.71	4.24	8.72	<.0001		
	Permanent	287	3.81	.70						
	Self-employed	87	3.38	.65						
	Unemployed	5	3.35	.73						
Career development	Fixed term contract	25	4.19	.74	4.34	1.45	4.14	.007		
	Permanent	287	4.19	.56						
	Self-employed	87	3.95	.64						
	Unemployed	5	4.35	.61						
Prestige	Fixed term contract	25	3.48	.94	6.26	2.09	3.34	.019		
	Permanent	287	3.56	.78						
	Self-employed	87	3.27	.79						
	Unemployed	5	3.90	.66						
Career satisfaction	Fixed-term contract	25	3.36	.96	8.93	2.98	4.64	.003		
	Permanent	287	3.94	.78						
	Self-employed	87	3.95	.76						
	Unemployed	5	3.44	1.45						

Note. N = 404. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$

Cohen $d < .19$ no effect; $d > .20$ small practical effect; $d > .50$ medium practical effect; $d > .80$ large practical effect; $d > 1$ very large practical effect (Cohen, 1977, p. 25)

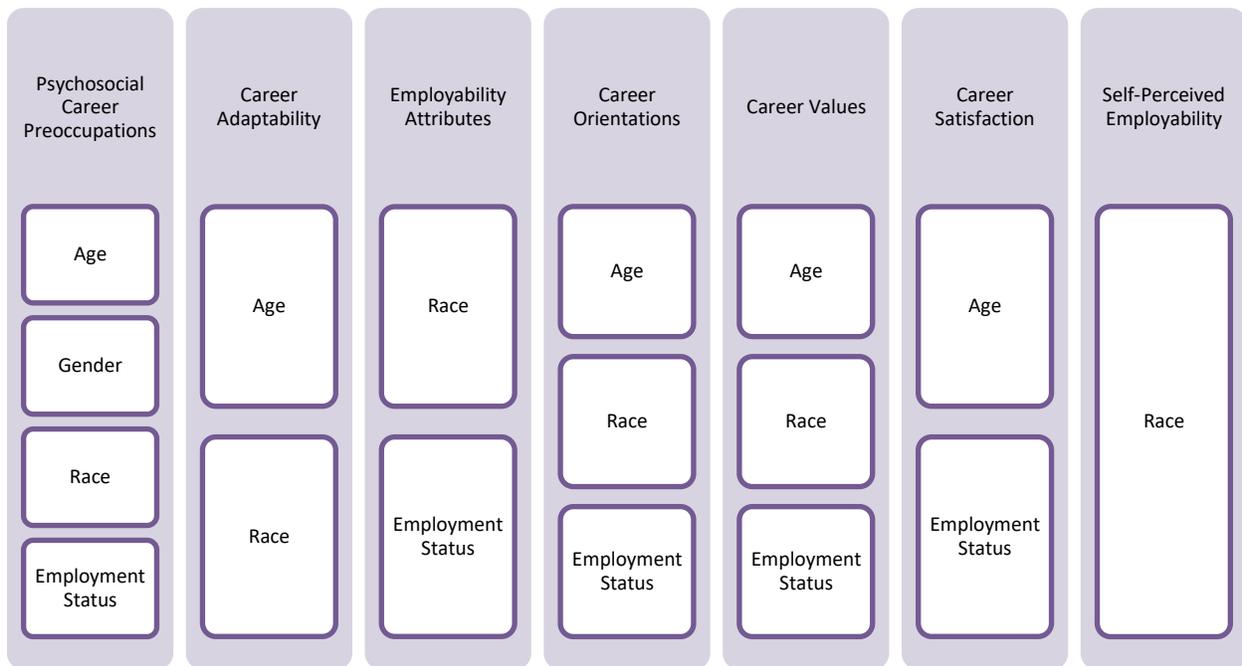
In summary, for psychosocial career preoccupations and the subscales, career establishment and career adaptation preoccupations, the fixed-term contract employment status group scored significantly higher than the self-employment status group, whereas the permanent employment status group scored significantly higher than the self-employed group.

The permanently employed group scored significantly higher than the self-employed group on the emotional literacy employability attributes; security and stability and entrepreneurial creativity career anchors; and the career values scale and service orientations, teamwork, career development and prestige career values. The fixed-term contract employment group scored significantly lower than the permanently and self-employed group on career satisfaction.

Figure 7.9 illustrates the source of significant mean differences observed.

Figure 7.9

Source of Significant Mean Differences



- The source of significant differences observed in psychosocial career preoccupations relates to age, gender, race and employment status.
- The source of significant differences observed in career adaptability relates to age and race.

- The source of significant differences observed in employability attributes relates to race and employment status.
- The source of significant differences observed in career orientations and career values relates to age, race and employment status.
- The source of significant differences observed in career satisfaction relates to age and employment status.
- The source of significant differences observed in self-perceived employability relates to race.

In summary, the younger age group (18-30 years) scored the highest on psychosocial career preoccupations, career adaptability and career anchors and career values. However, the younger age groups scored significantly lower than their older counterparts on career satisfaction. Females scored significantly higher on work-life adjustment preoccupations than males. The African race group scored significantly higher than the white racial group on career cognitions (i.e. career adaptability [and all subscales] and psychosocial career preoccupations [and all subscales]) and psychosocial career resources (i.e. employability attributes, career anchors and career values). The Indian race group scored the highest on career confidence and financial rewards career values. For the rest of the career cognitions (career adaptability and psychosocial career preoccupations), and psychosocial career resources (employability attributes, career anchors and career values) the African race group scored the highest. Fixed-term contract employees scored significantly lower on career satisfaction than permanently and self-employed individuals.

To conclude, the test for significant mean differences provided evidence to support the research hypothesis H4:

Individuals from various age, gender, race and employment status groups differ significantly regarding their career adaptability and psychosocial career preoccupations, psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability.

7.4.7 Preliminary analysis 5: Towards constructing a career satisfaction and employability profile for knowledge workers

This section assesses research hypothesis H5:

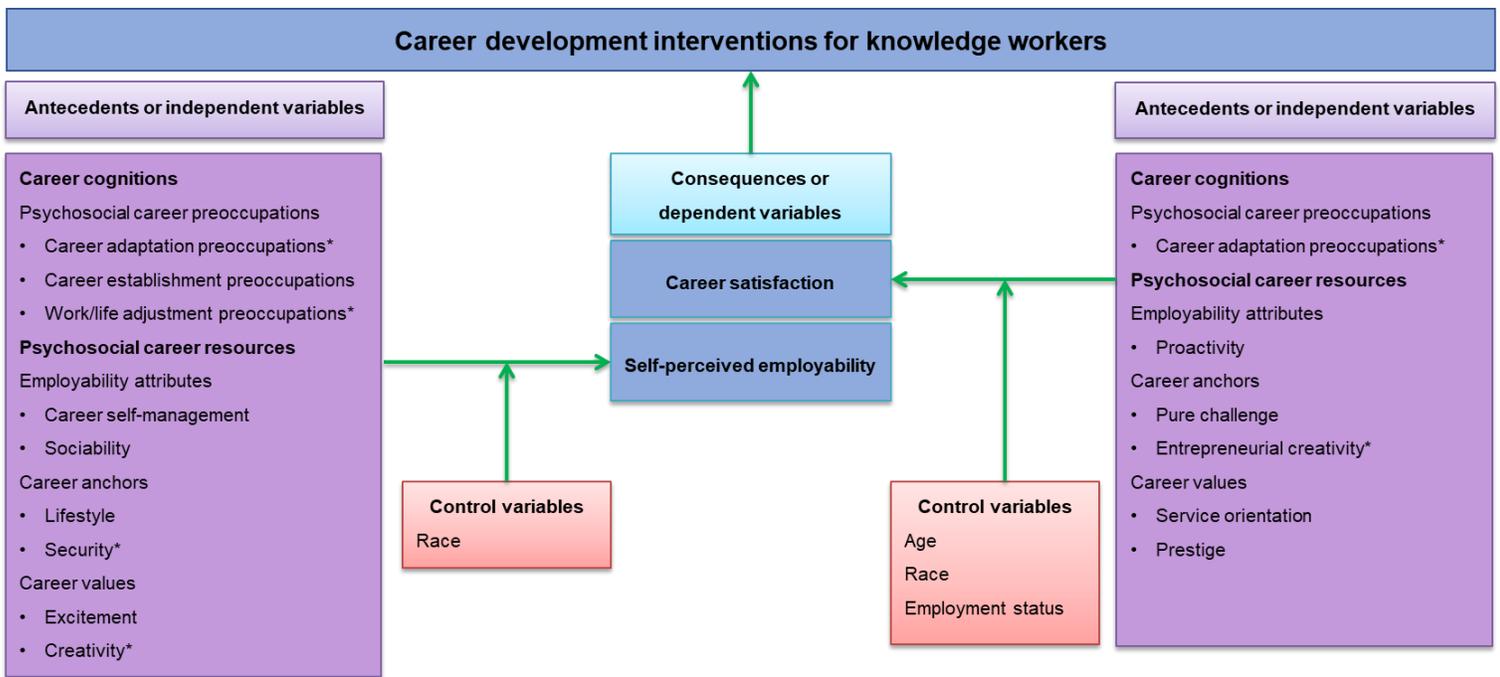
The empirically manifested relationship dynamics among the variables constitute a psychosocial profile for enhancing the career satisfaction and employability of knowledge workers.

The empirical analysis provided evidence in support of this research hypothesis, and a career satisfaction and employability profile was constructed based on the key insights derived from the core significant findings.

Figure 7.10 illustrates the empirically manifested career satisfaction and employability profile, based on the relationships that were investigated.

Figure 7.10

Empirically Manifested Career Satisfaction and Employability Profile for Knowledge Workers



Note. * Negative predictor

Source. Author's own work

The analysis focused on assessing the interaction effect between the career-related cognitions (career adaptability and psychosocial career preoccupations) and the psychosocial career resources (employability attributes, career anchors and career values) in predicting individuals' career satisfaction and self-perceived employability. However, no interaction effect was present and the results indicated that individuals' career cognitions (i.e. levels of career adaptability and psychosocial career preoccupations) were not conditional upon their psychosocial career resources (i.e. employability attributes, career anchors and career values) in explaining their levels of career satisfaction and self-perceived employability. The canonical correlation analysis, regression and structural equation modeling analysis indicated that the career satisfaction profile has unique influencing factors while the self-perceived employability profile also has its unique influencing factors. The career satisfaction profile indicated that the career cognition of career adaptation preoccupations, and psychosocial career resources of employability attributes related to proactivity; and career anchors of pure challenge and entrepreneurial creativity; and career values of service orientation and prestige were important factors. The employability profile indicated that the career cognitions of all psychosocial career preoccupations; and psychosocial career resources related to employability attributes of self-management and sociability; and career anchors of lifestyle and security; and career values of excitement and creativity were important factors. The career cognitions and psychosocial career resources had individually specific main effects to consider in understanding knowledge workers' career satisfaction and self-perceived employability.

The analysis also considered individual diversity (differences of person-centred characteristics in terms of the construct variables that constitute the profile) and its implications for career development practices. Stepwise regression and the hierarchical moderated regression analysis showed that age, race and employment status were important to consider in terms of the career satisfaction profile of knowledge workers. Race seemed especially important to consider in terms of their self-perceived employability. Differences among the biographical groups, especially in terms of age and race also suggested unique career development needs to consider in multi-culturally diverse work contexts.

The outcome of the analysis (i.e. the profile that emerged from the relationship dynamics) might help to inform career development interventions for knowledge workers.

7.5 DECISIONS REGARDING THE RESEARCH HYPOTHESES

Table 7.47 provides a summary of the core conclusions and the decisions concerning the research hypotheses.

Table 7.47

Summary of the Main Findings Relating to the Research Hypotheses

Research aim	Research hypothesis	Statistical procedure	Supportive evidence provided
Research aim 1: To assess the relationship dynamics among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables).	H1: There are statistically significant relationships among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables).	Correlations	Yes
Research aim 2: To assess whether individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables, significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables.	H2: Individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables, significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables.	Canonical correlation	Partial
Research aim 3: To assess whether the relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is more positive when their psychosocial career resources (employability attributes, career anchors and career values) are well developed or strongly crystallised than when these career resources are not well developed or strongly crystallised.	H3: The relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is moderated by their psychosocial resources (employability attributes, career anchors and career values). The relationship is more positive when their psychosocial career resources are well developed or strongly crystallised than when these career resources are not well developed or strongly crystallised.	Stepwise regression analysis Structural equation modelling (SEM) Hierarchical moderated regression	No

Research aim	Research hypothesis	Statistical procedure	Supportive evidence provided
Research aim 4: To assess whether individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability.	H4: Individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability.	Tests for significant mean differences: Parametric	Yes
Research aim 5: To construct a psychosocial profile for enhancing career satisfaction and employability based on the empirical results.	H5: The empirically manifested relationship dynamics among the variables constitute a psychosocial profile for enhancing the career satisfaction and employability of knowledge workers.	Qualitative analysis of empirically manifested profile elements	Yes

7.6 CHAPTER SUMMARY

This chapter provided the results of the preliminary statistical analysis in term of exploratory factor analysis, test for common method variance, and the validity and reliability of the measurement models. The results of the descriptive statistical analysis were reported in terms of the means, standard deviations and skewness and kurtosis. The results of the correlations analysis were reported as stage three. The results of the inferential and multivariate analysis were reported in terms of the canonical correlations analysis, stepwise regression, hierarchical moderated regression analysis and test for significant mean differences. The results of the statistical analysis aimed to determine the nature of the empirical relationship dynamics between the career cognitions (career adaptability and psychosocial career preoccupations), the psychosocial career resources (employability attributes, career anchors, and career values), and career satisfaction and self-perceived employability of knowledge workers.

Chapter 8 interprets the empirical results of the study and provides an integrated discussion of the literature with the empirical results, and finally draws conclusions and makes recommendations.

CHAPTER 8: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This chapter focuses on explaining and interpreting the results pertaining to the empirical research. This chapter further aims to address research aims 5 and 6.

Research aim 5: To construct a psychosocial profile for enhancing career satisfaction and employability based on the empirical results. This research aim relates to research hypothesis H5.

Research aim 6: To draw conclusions and make recommendations for future research and practice regarding the career development of knowledge workers.

This chapter also reflects on the limitations of the literature review and the empirical study and provides an evaluation of the contribution of this study.

8.1 DISCUSSION

As discussed in Chapter 1, this research's strategic aim was to create new understandings of existing and emerging issues related to the career satisfaction and self-perceived employability of knowledge workers.

This section includes a discussion of the results of the biographical profile of the sample and descriptive statistics and a discussion and interpretation of the results of each empirical research aim.

8.1.1 Biographical profile of the sample and descriptive statistics

The participants in the sample were predominantly white (69%) male (53%) and female (46%) permanently employed (71%) professionals in the services sector on management-level (70.3%), holding a post-graduate level qualification (80.5%), aged between 31 – 45 years (early adulthood life stage/established career stage) (42,6%), and 46 – 60 years (maintenance career stage) (29.7%). The predominant career stages represented in the sample relate to the established (31 – 45 years) and maintenance (46 – 60 years) career stages (Coetzee, 2015; Sharf, 2010; Super, 1990).

Initially, it seemed that the biographical profile (predominantly white and males) did not reflect the typical professional knowledge worker. However, when taking the level of education (post-graduate level qualification) and the predominant age group (31 – 45 years) into account, it seemed that the profile typically reflected the professional knowledge worker. This can be attributed to the high level of skills of the specific age group. In 1994, 42% of white race groups

were skilled, and in 2014, 61% of white race groups were skilled (Statistics South Africa, 2014). It can be seen that since 1994, there has been a significant shift in the white workforce towards skilled work (professional, managerial). In addition, the services sector is also demanding more relatively highly skilled workers (Bhorat et al., 2018). High levels of skills were evident in the sample. Most participants were registered at a professional board, which involves firm registration requirements in terms of providing evidence related to education, skills, relevant experience, and successfully passing the board examination. The white race group seemed more educated, earn more in the labour market, and are much less likely to be poor or unemployed than Africans (Gradín, 2019). This finding confirms the high permanently employed levels of the sample of knowledge workers, as employment in South Africa is the highest among those with higher educational attainments (Bhorat et al., 2018; Statistics South Africa, 2017).

8.1.1.1 *Mean scores: Career satisfaction and employability profile of the sample of knowledge workers – Career cognitions*

The career cognitions of career adaptability and psychosocial career preoccupations denote individuals' awareness, perceptions and self-evaluations which signal individuals' psychological readiness to adapt and respond to changes in the career environment (Coetzee, 2014a; Fugate et al., 2004). Therefore, career cognitions play an important role in the profile, as the present research considers career adaptability and psychosocial career preoccupations as important outcomes for career satisfaction and self-perceived employability of knowledge workers.

In terms of career adaptability, the career satisfaction and employability means profile revealed that participants experienced high levels of career curiosity that are considered a strength. Individuals are perceived as curious when they are curious to explore the world of work and make an effort to gain as much information as possible about the requirements, practices and rewards related to specific careers and occupations (Savickas, 2005, 2013; Savickas & Porfeli, 2012). The high levels of curiosity suggested that the sample of knowledge workers have an attitude of openness to new experiences and change, and are familiar with their current career environments, but might also be open to explore different career possibilities and opportunities to grow (Coetzee, 2019b).

The career satisfaction and employability means profile also indicated that participants experienced relatively lower levels of career concern (career adaptability) than career curiosity. However, their levels of concern was also relatively high. High levels of career concern implies that individuals were involved in their own career planning tasks and inclined to think more about their future careers (Savickas, 2005, 2013; Savickas & Porfeli, 2012). The predominant career

stages represented in the sample were related to the established (31 – 45 years) career stage, and it can thus be expected that individuals are curious and open to explore their career environments in an attempt to establish the best person-environment fit (Hardin & Donaldson, 2014) or to find their occupational niche (Sullivan & Crocitto, 2007).

In terms of psychosocial career preoccupations, the career satisfaction and employability means profile showed that participants were most concerned about career establishment preoccupations, and the least concerned about career adaptation preoccupations. These profile mean scores suggested that participants were more concerned about fitting in with a group, career and strive towards economic stability and security, and were most likely looking for opportunities for self-expression and personal growth and development, and advancing in their careers in the present organisation (Coetzee, 2014b, 2015, 2016). These concerns are typical of the career establishment stage (Coetzee & Schreuder, 2021).

Individuals were seemingly less concerned about adapting to career changes in terms of adjusting one's interests, talents and improve one's capabilities, and to fit into the employment market. These predominant and less dominant preoccupations can be expected, as individuals in the sample were related to the establishment (31 – 45 years) career stage (Super, 1957, 1990). It can be expected that individuals as knowledge workers are already highly skilled and qualified to fit into the employment market and may be more concerned about finding or establishing their professional niche in the market or profession at the establishment career stage. Furthermore, the knowledge workers presented in the sample (mostly white males) could also be more concerned about their economic stability and security, and would probably stay in their current organisation (Coetzee, 2016).

8.1.1.2 Mean scores: Career satisfaction and employability profile of the sample of knowledge workers – Psychosocial career resources

Relating to the psychosocial career resources of employability attributes, career anchors and career values, the psychosocial career resources means profile scores corroborated the findings of Oosthuizen et al. (2014). This suggested that individuals represented in the sample might have a tendency to invest in resources (setting goals, manage oneself, enhance self-knowledge) that they have control over to advance in their careers rather than to rely on social contacts and networks as a resource to advance in their careers (Bezuidenhout, 2011). This could be attributed to them being predominantly in the career establishment (niche finding) stage. The relatively low levels of sociability can be considered a career development need for the sample of knowledge

workers as utilising social contacts and networks, and being able to engage in successful networking has been related to increased career satisfaction and employment opportunities (Bezuidenhout, 2011; Forret & Sullivan, 2002; Potgieter, 2014).

The career satisfaction and employability psychosocial career resources means profile further indicated that lifestyle was the most dominant career anchor. This suggested that individuals in the establishment career and life stage seemed to be predominantly concerned with different facets of their lives and seemingly strived to balance their careers, family, and other personal interests (Schein, 2006). This finding is in agreement with research showing that the lifestyle career anchor has become a major trend for younger generations (Chapman, 2015; Coetzee & Schreuder, 2021).

The general managerial competence career anchor represented the lowest mean score and can be considered the least dominant career anchor. This finding corroborated with research by Coetzee et al. (2007). The results suggested that the sample of knowledge workers were seemingly already established as specialists in their fields and were probably not interested in becoming general managers (Schein, 2006). Since lifestyle was the most dominant career anchor, it suggested that individuals were seemingly striving to have a work-life balance, rather than advancing up the corporate ladder to higher levels of responsibility and thereby sacrificing time for family and other personal interests. Interestingly, the lifestyle career anchor has grown in its dominance since the 1960s (Schein, 1996) showing a significant dominant pattern (Chapman, 2015; Coetzee & Schreuder, 2014, 2021).

In terms of career values, the career satisfaction and employability psychosocial career resources means profile indicated that the career development career value was the most well developed and that the career value related to excitement was the least developed. These profile mean scores suggested that personal and professional development and growth were considered much more critical for the individuals represented in the sample than to have variety, try new things out, and taking risks or having fast past work (Macnab et al., 2005). The career satisfaction and employability psychosocial career resources means profile suggested that the low levels of excitement might be a vulnerable aspect. However, in the study of Dunning (2010), individuals were asked to rank the career values in terms of importance and the career development value was rated the most important by 36.1 per cent of the sample of 29 482 participants and ranked the top three among 73.2 per cent of the sample. This finding makes sense when considering that

lifelong learning and upskilling have become essential for continued employability (Coetzee & Schreuder, 2021).

In conclusion, the mean profile's common patterns indicated that the sample of knowledge workers experiences high levels of career satisfaction and medium-high self-perceived employability. The mean profile indicated that individuals experienced high career curiosity levels and were mostly concerned about career establishment preoccupations. The knowledge workers have strong psychosocial career resources related to self-management in terms of employability attributes. The mean profile further indicated that lifestyle was the dominant career anchor with strongly crystallised self-expression values related to career development.

8.1.1.3 Mean scores: Career satisfaction and employability profile of the sample of knowledge workers – Career satisfaction and self-perceived employability

The career satisfaction and employability means profile revealed that knowledge workers experienced relatively high levels of career satisfaction and relatively medium-high levels of self-perceived employability. The high profile means score of career satisfaction suggested that individuals experienced high levels of career progress and feelings of accomplishment and satisfaction (Blokker et al., 2019; Hagmaier et al., 2018). Furthermore, it seemed that individuals were likely to feel satisfied with the overall success achieved in their careers and the progress towards meeting career goals, goals for income, career advancement and the development of new skills (Greenhaus et al., 1990). The relatively medium-high profile mean score of self-perceived employability suggested that individuals had medium-high levels of confidence in their ability to keep their employment or find new employment (Rothwell & Arnold, 2007). When considering that only 1.2 per cent of the sample was unemployed, and the relatively medium-high levels of self-perceived employability, it seemed that individuals' perceptions of their employability were likely to play a critical role for sustainable employment (Hillage & Pollard, 1998; Vanhercke et al., 2015).

Based on the profile mean scores, it further seemed that though self-perceived employability was reported as important, career satisfaction seemed to act as the fundamental and ultimate career goal. The high levels of career satisfaction were in line with Bester's (2019) view that knowledge workers in modern society are selling their competencies and expertise to organisations to gain career satisfaction and will probably move when realising their career satisfaction needs are no longer being fulfilled. The medium-high levels of self-perceived employability suggested that satisfied knowledge workers were already highly educated and seemed to be still focused on

gaining new knowledge, skills, and competencies, which increase their chances of being employed (Bester, 2019). Being employed are also associated with an increased sense of career satisfaction. This is also in line with the South African population's current reality that unemployment is the highest amongst unskilled individuals (Statistics South Africa, 2020).

8.1.2 Research aim 1: Discussion of correlation results

Research aim 1: *To assess the relationship dynamics among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables) (this aim relates to research hypothesis H1).*

The correlation results obtained provided support for research hypothesis H1.

8.1.2.1 Relationship between socio-biographic, independent, moderator and dependent construct variables

The relationship dynamics of the career satisfaction and employability profile revealed significant negative relationships between age and career cognitions of career adaptability (career concern) and all psychosocial career preoccupations (career establishment preoccupations, career adaptation preoccupations, work/life adjustment preoccupations). The negative correlations suggested differences between age groups which was further tested when conducting a test for significant differences. By implication, it seemed that age might play a significant role in understanding individuals' levels of involvement in their career planning (career concern). The negative associations further imply that individuals' age may play a significant role in understanding their levels of concerns related to career advancement and fitting in (career establishment); adapting to changing situations in the employment market (career adaptation); and achieving harmony between one's work and personal life (work/life adjustment). Research corroborates the role of age in career concern (Coetzee & Stoltz, 2015; Zacher, 2014), and psychosocial career preoccupations (Bester, 2018; Potgieter et al., 2018; Takawira, 2018).

A significant negative relationship was found between age and the general managerial competence career anchor. The negative correlations suggested differences between age groups that were further tested when testing significant differences. By implication, it seemed that age might play a significant role in understanding individuals' motivation to make career progress by climbing the corporate ladder and being promoted.

Age was significantly positively related to career satisfaction. This finding is in line with the findings of Leigh et al. (2009) and Takawira (2018). However, this finding was contrary to recent findings that found a positive relationship between age and career success and salary, but no association with career satisfaction (Blokker et al., 2019; Järnlström et al., 2020). A possible explanation is that career satisfaction in this study was measured in terms of overall career satisfaction achieved and progress towards meeting career goals, goals for income, career advancement, and the development of new skills (Greenhaus et al., 1990). The implication for career development practices is that individuals' age may be related to their experiences of overall levels of career satisfaction which may play a significant role in understanding the career satisfaction of knowledge workers.

Significant positive relationships were found between gender and psychosocial career preoccupations, career establishment preoccupations and work/life adjustment preoccupations. The implication for career development practices is that individuals' gender could play a role in understanding the psychosocial career preoccupations of knowledge workers. This further suggested that gender should be taken into account when considering the psychosocial career preoccupations related to advancing in one's career in the present organisation (career establishment preoccupations) and achieving harmony between one's work and personal life (work-life adjustment preoccupations). In contrast, Coetzee (2015) and Bester (2018) found no significant associations in terms of gender and psychosocial career preoccupations.

The relationship dynamics of the career satisfaction and employability profile revealed significant negative relationships between race and all psychosocial career preoccupations (career establishment preoccupations, career adaptation preoccupations and work/life adjustment preoccupations). This finding is in line with recent findings of Coetzee (2015), Potgieter et al. (2018) and Takawira (2018). However, Bester (2018) found significant negative associations between race and career adaptation preoccupations only. The significant negative associations suggested that racial background may play a significant role in understanding individuals psychosocial career preoccupations. This aspect was further investigated in the tests for significant mean differences.

Furthermore, race was negatively related to career adaptability and the subscales of career concern, career control, and career curiosity. This finding was partially in line with Coetzee and Stoltz's (2015) findings who found negative correlations with all career adaptability subscales. However, in another study, Coetzee et al. (2015) found significant small negative correlations

between race and career concern. The implication for career development practices related to career cognitions is that individuals' racial background should be considered when designing career development interventions to enhance individuals' psychological readiness' for proactive behaviour and embrace diversity in the organisation. The racial background of individuals should be especially considered when individuals are engaging in adaptive behaviours by reflecting on career planning tasks and possibilities (concern), career decisions and actions for career management (control), exploring the world of work and gaining information related to specific careers and roles (curiosity).

The relationship dynamics of the career satisfaction and employability profile further indicated significant negative relationships between race and employability attributes scale (EAS), and the subscales of cultural competence, proactivity, emotional literacy. Stoltz (2014) found similar significant negative correlations, but with all EAS subscales. However, unfortunately, the studies of Potgieter (2012), Oosthuizen et al. (2014) did not determine the relationship dynamics between socio-demographical characteristics and employability attributes. The implication for career development practices is that individuals' racial background could play a role in understanding the employability attributes and should be taken into account, especially in understanding and working effectively with people across groups (cultural competence), when engaging in self-initiated actions to change ourselves or one's situation (proactivity), when dealing with emotions and recognise, understand and manage emotions in oneself and others (emotional literacy).

Furthermore, race was significantly but negatively related to the career orientations inventory (COI), and the general managerial competence, entrepreneurial creativity, service/dedication to a cause, pure challenge and lifestyle career anchors, as well as the career values scale (CVS), and career values of service orientation, teamwork, influence, creativity, excitement, career development, and financial rewards. Coetzee and Schreuder (2008) found similar findings which imply that racial background could play a role in understanding the career anchors and career values of knowledge workers.

A significant negative relationship was found between race and self-perceived employability. The implication for career development practices is that individuals' racial background could play a role in understanding self-perceived employability; therefore this aspect was further investigated in the tests for significant mean differences.

Finally, the results indicated a significant positive relationship between race and career satisfaction. These relationship dynamics are supported by Takawira (2018) and Bester (2018) and implies that racial background may play a role in understanding the career satisfaction of knowledge workers. This aspect was further investigated in the inferential statistics to determine whether race was a significant predictor of career satisfaction.

Limited research has been conducted on the relationship between employment status and career anchors (Coetzee & Schreuder, 2008). The career satisfaction and employability profile revealed that employment status was significantly negatively related to the security/stability career anchor, and positively related to the entrepreneurial creativity career anchor. These results imply that employment status may play a role in understanding the career anchors of knowledge workers.

Furthermore, the career satisfaction and employment profile indicated significant negative relationships between employment status and the career values scale (CVS), service orientation, and teamwork career values. Dunning (2010) explored career values in terms of age, gender and education, however limited research explored the associations between employment status and career values. The implication for career development practices is that individuals' employment status could play a role in understanding the career values and should be taken into account, especially when considering the importance of working with others.

In conclusion, the negative relationships between the biographical (race, age and employment status), and construct variables (psychosocial career preoccupations, career adaptability, employability attributes, career orientations, career values and career satisfaction), suggested differences between biographical groups (race, age and employment status) that were further investigated at the test for significant mean differences analyses.

8.1.2.2 *Relationship between independent, moderator and dependent construct variables*

The relationship dynamics of the career satisfaction and employability profile revealed significant positive relationships between career satisfaction and the subscales career control and confidence of career adaptability. This suggests that when individuals take responsibility for managing and building their career and believe in their ability to make and implement good career decisions, they are more likely to experience career satisfaction. This finding is in line with previous research (Coetzee & Stoltz, 2015; Guan et al., 2014; Guan et al., 2015; Haenggli & Hirschi, 2020; Rudolph et al., 2017; Zacher, 2014).

The results further indicated significant positive relationships between career satisfaction and employability attributes (EAS) related to career self-management, career resilience, proactivity and sociability. These employability attributes related to proactive career management behaviour seems to be especially important for enhancing career satisfaction (Bezuidenhout, 2011; Botha, 2014; Coetzee & Beukes, 2010; Haenggli & Hirschi, 2020; Potgieter, 2014).

The results suggested that when individuals are actively engaged in career self-management and set SMART career goals, and often reflect on career goals, identify competencies required to achieve career goals, and implement appropriate actions to achieve career goals they are more likely to experience career satisfaction (Wilhelm & Hirschi, 2019). Furthermore, when individuals demonstrate a high degree of adaptability, flexibility, self-confidence, and competence, they reflect high levels of bouncing back regardless of adverse career circumstances and are thus more likely to experience career satisfaction (Bezuidenhout, 2011; Hirschi et al., 2017; Rossier et al., 2017). Individuals who are being open to building social contacts and networks and having healthy social relations with others are more likely to experience career satisfaction (Bezuidenhout, 2011; Eby et al., 2003; Forret & Sullivan, 2002; Fugate et al., 2004; Potgieter, 2014).

Furthermore, career satisfaction was positively related to self-perceived employability, which confirms that employability is a predictor of career satisfaction (de Vos et al., 2011; Forrier & Sels, 2003; Hall, 2002; Peeters et al., 2020; Rothwell & Arnold, 2007; van der Heijde & van der Heijden, 2006). This indicated that when individuals are confident in how they perceive their current and future career prospects, they are more likely to foster positive psychological attitudes towards their overall career situation and experience career satisfaction.

The results further indicated significant negative relationships between career satisfaction and all psychosocial career preoccupations. Similar results were confirmed by Bester (2018) and Takawira (2018), which suggested that when individuals are overly concerned with career issues, they are less content and satisfied with their overall career progress (Zacher, 2014). Psychosocial career preoccupations signal individuals' awareness, perceptions and self-evaluations related to career establishment, career adaptation and work-life adjustment (Coetzee, 2014a, 2015, 2016). These concerns signal individuals' psychological readiness to adapt and respond to changes in the career environment (Coetzee, 2014a; Fugate et al., 2004). The implication for career development practices is that individuals' psychosocial career preoccupations may be related to

their experiences of overall levels of career satisfaction which may play a significant role in understanding the career satisfaction of knowledge workers.

No significant relationships were found between career anchors, career values and career satisfaction. This finding is in contrast with Coetzee et al.'s (2010) findings that career anchors are significantly related to career satisfaction. The implication for career development practices is that individuals' career anchors and career values may not be related to their experiences of overall levels of career satisfaction when combined with other contemporary career constructs. To further clarify and explore the relationships, hierarchical moderated regression analyses and SEM were conducted to further investigate the relationship dynamics.

The relationship dynamics of the career satisfaction and employability profile further revealed significant positive relationships between self-perceived employability and career adaptability (CAAS), and all subscales (career concern, career control, career curiosity, career confidence), and employability attributes (EAS) and all subscales (career self-management, cultural competence, career resilience, proactivity, entrepreneurial orientation, sociability, emotional literacy). These relationship dynamics were expected as career adaptability has been shown to relate to career satisfaction (Coetzee & Stoltz, 2015; Guan et al., 2014; Guan et al., 2015; Haenggli & Hirschi, 2020; Rudolph et al., 2017; Zacher, 2014) and employability attributes (Coetzee et al., 2015; de Guzman & Choi, 2013; Rudolph et al., 2017) and is also in line with the findings of Stoltz (2014). The findings suggested that employable individuals should take a proactive approach and be engaged in proactive career management behaviour (Fugate et al., 2004; McArdle et al., 2007), which emphasised the importance of career adaptability and employability attributes for sustainable employment (Ashford & Taylor, 1990; Bezuidenhout, 2011; de Guzman & Choi, 2013; Di Fabio, 2017; Fugate et al., 2004; Potgieter, 2014; Savickas & Porfeli, 2012). The implication for career development practices is that individuals' career adaptability and employability attributes may be related to their experiences of overall levels of career satisfaction which may play a significant role in understanding the career satisfaction of knowledge workers.

The results further indicated significant positive relationships between self-perceived employability and the career orientations inventory (COI), and the subscales (related to general managerial competence, entrepreneurial creativity, service/dedication to a cause, pure challenge, lifestyle) and career values (CVS), and subscales related to service orientation, teamwork, influence, creativity, excitement, and career development. The relationship dynamics emphasised

the importance of having a strong identity (Fugate et al., 2004) and self-awareness (Peeters et al., 2020) for enhanced self-perceived employability. Finally, the importance of psychosocial career resources and career anchors' relevance and values in self-perceived employability were subsequently supported (Abessolo et al., 2017; Coetzee & Schreuder, 2011; Coetzee et al., 2010; Oosthuizen et al., 2014). The implication for career development practices is that individuals' career anchors and career values may be related to their perceptions and confidence in their employability, and may play a significant role in understanding self-perceived employability of knowledge workers.

The relationship dynamics of the career satisfaction and employability profile further revealed significant positive relationships between the career cognitions (career adaptability and psychosocial career preoccupations) and the psychosocial career resources (employability attributes, career anchors and career values). The significant positive relationships indicate that career cognitions and psychosocial career resources are related and can be considered as important psychological attributes interacting between the individual's inner (psychological) and external (social) environment (Coetzee, 2014a; Savickas & Porfeli, 2012). Similar results were found between employability attributes and career adaptability (Coetzee et al., 2015; de Guzman & Choi, 2013; Rudolph et al., 2017); employability attributes and career anchors (Ndzube, 2013; Oosthuizen et al., 2014); career anchors and career values (Abessolo et al., 2017; Wils et al., 2010); career values and psychosocial career preoccupations (Coetzee & Govender, 2020). These significant general relationships found between the constructs revealed relationship dynamics that were further investigated in the inferential statistics.

8.1.3 Research aim 2: Discussion of canonical correlation results

Research aim 2: *To assess whether individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables, significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables (this aim relates to research hypothesis H2).*

The canonical correlation results obtained provided partial support for research hypothesis H2.

Although the constructs' relationship dynamics have not been studied in a singly study before, the relationship dynamics have been explored as separate constructs. As such previous research on career adaptability and psychosocial career resources (employability attributes, career anchors and career values) as separate constructs have shown to be significant positive predictors of

career satisfaction and self-perceived employability (Abessolo et al., 2017; Akkermans et al., 2013; Bester, 2018; Coetzee, 2014a; Coetzee & Harry, 2015; Coetzee & Stoltz, 2015; Guan et al., 2015; Haenggli & Hirschi, 2020; Hirschi et al., 2017; Järllström et al., 2020; Maree, 2020; Rudolph et al., 2017; Takawira, 2018; Zacher, 2014), whereas psychosocial career preoccupations has shown to be a significant negative predictor of career satisfaction (Bester, 2018; Takawira, 2018).

The canonical cross-loadings indicated that high levels of positive career outcomes (career satisfaction combined with self-perceived employability) were associated with high levels of psychological career attributes related to career adaptability (career control) and employability attributes (career self-management, career resilience, proactivity, and sociability); and low levels of psychosocial career preoccupations (career adaptation preoccupations). In the canonical function, career satisfaction had the most substantial explanatory power, indicating that individuals are likely to experience higher levels of career satisfaction followed by self-perceived employability when their psychological career attributes are well-developed.

The relationship dynamic revealed interesting findings that indicated that when psychosocial cognitions are combined with psychosocial career resources as a set of psychological career resources to jointly predict career satisfaction and self-perceived employability, each contributed differently. Haenggli and Hirschi (2020) found similar findings when assessing the predictive power of various combined career resources for career satisfaction.

The canonical correlation analysis indicated each of the psychological career attributes' relative contribution in predicting higher levels of career satisfaction and self-perceived employability. The psychological career attributes related to career self-management, career resilience and proactivity, sociability and career control contributed the most respectively in explaining career satisfaction and self-perceived employability. Career adaptation preoccupations acted as a negative predictor for career satisfaction and self-perceived employability.

Career self-management (the tendency to proactively manages one's career) is becoming an increasingly important attribute to contribute to career satisfaction and to obtain employment in the VUCA world of work (Beukes, 2009; Bezuidenhout, 2011; Coetzee, 2014a, 2019b; Coetzee et al., 2016; Fugate et al., 2004; Lent & Brown, 2013; Potgieter, 2014; Rossier et al., 2017; Wilhelm & Hirschi, 2019). Career resilience and proactivity contributed equally to career satisfaction and self-perceived employability. The equal contribution of career resilience and proactivity can be expected as these attributes are associated elements of career self-

management, and related to positive career outcomes (Bezuidenhout, 2011; Coetzee, 2019b; Coetzee & Schreuder, 2018; Lent & Brown, 2013; Rossier et al., 2017; van der Heijde, 2014). Career resilience facilitates high degrees of adaptability, flexibility, self-confidence and competence, regardless of adverse career circumstance; and proactivity results in future-oriented and self-initiated action to change and improve oneself and/or one's situation (Bezuidenhout, 2011; Coetzee et al., 2016; Fugate et al., 2004; Hirschi et al., 2017; Rossier et al., 2017). Career control (career adaptability) also contributed to explaining higher levels of career satisfaction and self-perceived employability. The presence of career control suggested that when individuals' feel responsible for managing and building their own careers, they may experience high career satisfaction and self-perceived employability (Coetzee & Schreuder, 2018; Maree, 2020; Savickas, 2019). Rossier et al. (2017) further confirmed that career adaptability and career resilience enable individuals' to utilise environmental resource, thereby contributing to their employability. Sociability (employability attributes) also contributed to explaining high levels of career satisfaction and self-perceived employability. Sociability as social capital is important for employability (Fugate et al., 2004). In addition, social capital and human capital predicted career satisfaction (Eby et al., 2003). The relevance of sociability may be attributed to that being open to establish and maintain social contacts and to utilise formal and informal contacts to the advantage of one career are likely to enhance career opportunities and career satisfaction (Bezuidenhout, 2011; Forret & Sullivan, 2002; Potgieter, 2014).

The results further indicated that low career adaptation preoccupations were associated with higher levels of career satisfaction and self-perceived employability. This suggested that when individuals have low levels of employability concerns related to adapting to the changing career context and were less concerned about adjusting their interests, talents and capabilities to fit with opportunities in the employment market, they were more likely to experience high levels of career satisfaction and self-perceived employability. Similar conclusions were drawn by Bester (2018) and Takawira (2018) who found negative links with psychosocial career preoccupations and career satisfaction. This finding implied that having low levels of career adaptation concerns may indicate higher person-environment congruence (Coetzee, 2015, 2016), associated with confidence and feelings of competencies to engage in self-management career behaviour (Coetzee & Govender, 2020). Low levels of career adaptation concerns are further associated with less anxiety and uncertainty (Spurk et al., 2016), and fosters an environment conducive to career satisfaction and self-perceived employability (Rossier et al., 2017).

Career anchors and career values did not seem to strongly influence career satisfaction and self-perceived employability when jointly studied with career adaptability, psychosocial career preoccupations, and employability attributes as a set of psychological career attributes. Traditionally industrial psychologists assume that career anchors and value congruence will lead to career satisfaction and will determine how long individuals will stay in a specific career. (Abessolo et al., 2017; Coetzee & Schreuder, 2021; Jonck et al., 2017; Maree, 2020; Schein, 1990). However, when taking the changing nature of careers into account, it is important to determine whether career anchors and values, as psychological career attributes are still relevant in the VUCA world of work (Abessolo et al., 2017; Coetzee et al., 2010) when combined with contemporary constructs.

Career anchors (pure challenge) and career values (influence, service orientation, teamwork, career development and excitement), contributed though significantly to the variance in the set of psychological career attributes. This finding, however, confirms the significance of relationships between career anchors and career values (Abessolo et al., 2017; Wils et al., 2010), career adaptability (Coetzee et al., 2015; de Guzman & Choi, 2013; Rudolph et al., 2017), employability attributes (Ndzube, 2013; Oosthuizen et al., 2014) and psychosocial career preoccupations (Bester, 2018; Coetzee & Govender, 2020). However, it seems that the presence of contemporary career constructs such as career adaptability, psychosocial career preoccupations, and employability attributes play a more prominent role in career satisfaction and self-perceived employability (when combined) than career anchors and career values. The relevant contribution of these contemporary career constructs, might be attributed that these psychological career attributes related to employability attributes (career self-management, career resilience, proactivity, and social capital) and career adaptability (career control) seem to enhance adaptation behaviour of individuals and improves person-environment fit, which might ultimately enhance career satisfaction and self-perceived employability (Rossier et al., 2017).

In summary, it can be concluded that based on the canonical correlation analysis, the psychosocial profile indicated that proactive, adaptive behaviour (career cognitions and psychosocial career resources [employability attributes]) was essential, especially for career satisfaction and self-perceived employability when combined. The most important psychological career attributes for career satisfaction and self-perceived employability (combined) relate to the important aspects of living a life of happiness and self-fulfilment. The most important aspect relates to self-management, as individuals need to know themselves (to enhance self-awareness and identity) and their external environments (to facilitate job exploration) to set career goals,

action plans and improve skills. Next is career resilience and proactivity, which are equally important. Career resilience requires high levels of competence, self-confidence, flexibility, and adaptability to bounce back, regardless of adverse career or life circumstances (Rossier et al., 2017). Proactivity creates a sense and willingness to be future-oriented and engaging in self-initiated change actions to improve oneself and or even one's situation (Bezuidenhout, 2011; Coetzee, 2014a; Fugate & Kinicki, 2008; Fugate et al., 2004). Thirdly, career control is important as individuals need to feel responsible for their own career development by managing and building their own careers. Fourth, in importance, is sociability. As social beings, it is important that individuals be open to establish and maintain social contacts, thereby building healthy relationships with others, and utilise formal and informal networks to the advantage of one's career (Bezuidenhout, 2011; Fugate et al., 2004). Finally, it is important that individuals have confidence in their ability to adapt, and at the same time not be overly concerned and worried to make career changes too early and often, to adjust one's interest, talents and capabilities to fit with opportunities in the labour sources (Bester, 2018; Coetzee, 2015, 2016; Takawira, 2018). It is thus important that individuals be engaged in interventions to increase their career self-management skills, career resilience, proactivity, career control, sociability and address psychosocial career adaptation preoccupations appropriately and proactively while not worrying too much about it, as these are important for the combination of positive career outcomes related to career satisfaction and self-perceived employability, or career happiness.

Generally, the key new insights, corroborated insights and counterintuitive insights that emerged from the findings include the following:

New insights

- Psychosocial career preoccupations related to career adaptation preoccupations, as a negative predictor of career satisfaction and self-perceived employability, may signal a lack of individual psychological readiness and reduce individuals' ability to adapt and cope in the changing environment.
- Psychosocial career preoccupations may create uncertainty and limit individuals' self-confidence to remain employed or find employment.

Corroborated insights

- Psychosocial career preoccupations act as a negative predictor for career satisfaction.

Counterintuitive insights

- Career anchors and career values did not contribute to high levels of career satisfaction and self-perceived employability when combined with other contemporary psychological career attributes (employability attributes, career adaptability and psychosocial career preoccupations).

8.1.4 Research aim 3: Discussion of stepwise regression, SEM and moderating effects

Research aim 3: *To assess whether the relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is more positive when their psychosocial career resources (employability attributes, career anchors and career values) are well developed or strongly crystallised than when these career resources are not well developed or strongly crystallised (this aim relates to research hypothesis H3).*

The results obtained did not provide support for research hypothesis H3.

Overall, the stepwise regression results showed that the employability attribute of proactivity (self-initiated action to change and improve oneself), the career anchors of pure challenge (overcoming difficulty, strong focus on winning and competition) and entrepreneurial creativity (creating businesses with which individuals can identify and making money out of it), and the career values of prestige (obtaining recognition, status and admiration) and service orientation (helping or providing direct benefits to others), are important to consider in understanding the career satisfaction profile of knowledge workers. The predictors of career satisfaction and self-perceived employability are illustrated in Figure 8.1.

The results emphasised the role of proactivity as a contemporary career construct which reflects individuals' intrapersonal career behaviour (Bezuidenhout, 2011). Proactivity has been linked previously as a positive predictor for satisfaction with retention factors (Coetzee et al., 2016). The presence of proactivity suggested that knowledge workers who were actively engaged in role orientations, who were future-orientated and involved in self-initiated actions to change and improve oneself and the situation were more likely to achieve career goals and experience career satisfaction (Blokker et al., 2019). Work and career proactivity as a dimension of dispositional employability (Fugate & Kinicki, 2008), fosters proactive, adaptive career behaviours and positive employment outcomes, which function as a predictor for career satisfaction (Colakoglu, 2011; de Vos et al., 2011; Forrier & Sels, 2003; Hall, 2002; van der Heijde & van der Heijden, 2006). Proactive, adaptive career behaviour will enhance person-environment fit (Holland, 1997; van

Vianen, 2018) and will further motivate individuals to invest in career resources to gain positive career outcomes (Hobfoll, 1988, 1998, 2001) and thereby fulfilling intrinsic needs.

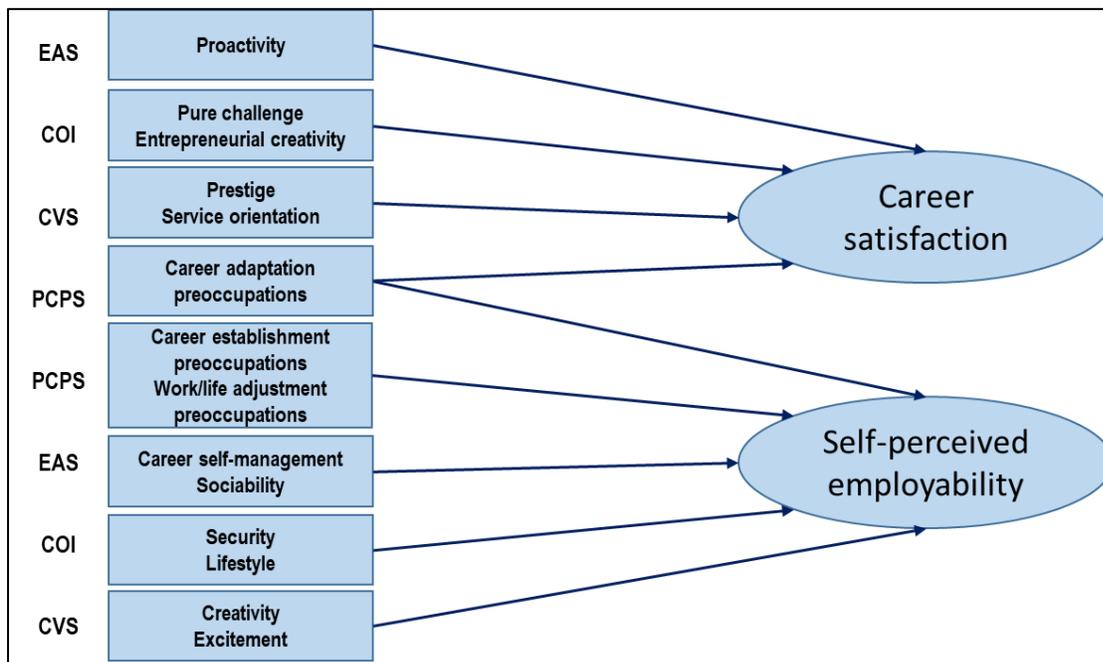
The results further imply that traditional career constructs related to career anchors and career values seem to be still relevant to explain career satisfaction in the contemporary career context (Abessolo et al., 2017; Coetzee & Schreuder, 2009, 2021; Schein, 1990, 2006; Wils et al., 2010). The career anchor related to pure challenge acted as a significant positive predictor for career satisfaction. Pure challenge reflects inherent value-based motivations related to overcoming difficulty, with a strong focus on winning and competition (Coetzee & Schreuder, 2021; Feldman & Bolino, 1996). The presence of pure challenge suggested that individuals are likely to be motivated to be open to change and reflect a sense of self-directedness (Wils et al., 2010).

The results further indicated that entrepreneurial creativity acted as a negative predictor for career satisfaction. Entrepreneurial creativity reflects talent-based motives related to opportunities for creating new products, businesses or services (Feldman & Bolino, 1996). Individuals who value entrepreneurial creativity may become obsessed with the need to create something as an extension of themselves, as they value public recognition and visibility (Schein, 1990). Organisations found it challenging to retain these individuals (Chapman, 2015). Although entrepreneurial oriented individuals may be motivated by openness to change and self-directedness (Wils et al., 2010), and tend to be behaviourally adaptable, they may become easily bored and are therefore prone to have more negative career perceptions or experiences (Chapman, 2015; Coetzee et al., 2010). Previous research confirmed entrepreneurial creativity as a negative predictor for career satisfaction (Coetzee et al., 2010).

The results further indicated that career values of prestige and service orientation acted as positive predictors for career satisfaction. The career value related to prestige reflects extrinsic rewards and suggested that individuals will be motivated to obtain recognition, status and admiration (Macnab et al., 2005). Moreover, the career value related to service orientation reflects the motivation to work with others by helping or providing direct benefits to others (Macnab et al., 2005). The presence of prestige and service orientation as positive predictors for career satisfaction suggested that knowledge workers will be motivated to help others while at the same time, they want to be recognised for the benefits they provide to others. The implication for career development practices is that career values are still good indicators of what individuals might find satisfying and rewarding in a specific career (Coetzee & Schreuder, 2021).

Figure 8.1

Predictors of Career Satisfaction and Self-Perceived Employability



Source. Author's own work

The results indicated that psychosocial career preoccupations related to career adaptation are important in understanding career satisfaction and self-perceived employability. Psychosocial career adaptation preoccupations represent employability related concerns that signal individuals' psychological readiness to adapt and adjust their interest and skills to fit in with career opportunities in the changing career context (Coetzee, 2014a, 2015, 2016). Higher levels of career adaptation preoccupations were associated with lower levels of career satisfaction and self-perceived employability. This suggests that when individuals have high levels of employability concerns related to adapting to the changing career context and are highly concerned and worried about adjusting their interests, talents and capabilities to fit with opportunities in the employment market, they might be too overwhelmed and might not be satisfied with the progress towards meeting their career goals, or progress towards developing the required new skills to advance in their careers (Bester, 2018; Takawira, 2018). Being highly concerned about employability related concerns indicated that individuals might be less confident in perceiving current and future employment prospects. By implication, these employability-related concerns may limit individuals' career adaptive behaviours and create a person-environment misfit. These psychosocial career adaptive concerns must be addressed to regain optimum person-environment fit or congruence

(Coetzee, 2015, 2016; Coetzee & Govender, 2020; Maree, 2020; Potgieter et al., 2018; Savickas, 2019).

The results further indicated that high levels of work/life adjustment preoccupations was associated with lower levels of self-perceived employability. This suggested that when individuals' are highly concerned about settling down and reducing or withdrawing from employment due to personal life responsibilities, they might be less interested in gaining and maintaining their employment. By implication, it seems that work/life adjustment preoccupations signal individuals readiness for adaptive career behaviour to prevent resource losses related to employment (Bester, 2018; Coetzee & Govender, 2020). To prevent a resource-loss cycle, individuals need to address their psychosocial work-life adjustment concerns timely and appropriately to retain their self-perceived employment confidence (Hobfoll et al., 2018).

The results further indicated that high levels of psychosocial career establishment preoccupations were associated with high levels of self-perceived employability. This suggests that when individuals are highly concerned about fitting in with a group, career and strive towards economic stability and security, and are looking for opportunities for self-expression and personal growth and development, and advancing in their careers in the present organisation, they might have higher self-perceived employability (Coetzee, 2014a, 2015, 2016). Based on dispositional employability (Fugate et al., 2004), psychosocial career establishment preoccupations supports flexibility in uncertain situations and facilitate continuous learning, and can therefore be connected to openness to changes at work (Fugate & Kinicki, 2008). Furthermore, psychosocial career establishment preoccupations foster and facilitate the identification and realisation of career opportunities in turbulent environments and can further be connected to proactivity (Fugate & Kinicki, 2008).

Moreover, the results further indicated that high levels of career self-management and sociability seemed to enhance self-perceived employability. These employability attributes explain the importance of individuals career behaviour and interpersonal behaviour (Bezuidenhout, 2011). It seemed that when individuals are proactively managing their careers by collecting career-related info to enhance self-knowledge and knowledge of the external environment; setting realistic goals and action plans; gain feedback to enhance decision making; updating skills, and seek employment opportunities and are open to establish and maintain social contacts and are utilising their networks to the advantage of their career, individuals seemed to be confident and might experience high levels of self-perceived employability (Bezuidenhout, 2011; Bridgstock, 2009;

Coetzee, 2019b; Lent & Brown, 2013; Potgieter, 2014; Wilhelm & Hirschi, 2019). In line with dispositional employability theory (Fugate et al., 2004), employability attributes can be connected to social capital that enhances individuals ability to identify and realise career opportunities congruent to individuals' human capital (Fugate et al., 2004).

The results further indicated that career anchors related to lifestyle further explained higher levels of self-perceived employability. This suggested that being concerned about striking a balance with career, family and other personal interests (Schein, 2006) are likely to predict enhanced self-perceived employability. In contrast, career anchors of security further explained lower levels of self-perceived employability. This suggested that when individuals are motivated by the need for organising their careers to feel safe and secure (Schein, 2006), they are likely to feel less confident in self-perceived employability. The lifestyle career anchor can be seen as an intrinsic value to predict self-perceived employability and, therefore, explain a more congruent person-environment fit (Sortheix et al., 2015). The security career anchor can be seen as security work values that predict higher chances of being unemployed later in life (Sortheix et al., 2015).

The career value related to excitement explained higher levels of self-perceived employability. This suggested that variety, taking risks, trying out new things, value fast-paced work positively predicted self-perceived employability. The career values of creativity, however, explained lower levels of self-perceived employability. This suggested that the motive related to developing new ideas, being innovative and solving problems can be seen as a negative predictor for self-perceived employability. Creativity and excitement reflected individuals' self-expression motives and seemed to be important sources of motivation and self-perceived employability (Macnab et al., 2005).

Based on the premises of dispositional employability theory (Fugate, 2006; Fugate & Kinicki, 2008), the relevant career anchors and career values were connected to career motivation. It seems that career motivation played an important role in individuals' self-perceived employability. These career motivations tend to activate the mastery of new skills, enable individuals to persevere, and approach new situations as opportunities that enhance work-related endeavours. Finally, career motivation is a critical aspect of employability (Fugate, 2006).

Although the hierarchical moderated regression results did not show any interaction effects between the career preoccupations and career adaptability variables (independent career cognition variables) and the moderator (psychosocial resources) variables of employability attributes, career anchors and career values in predicting the career satisfaction and self-

perceived employability profile of the sample of knowledge workers, the significant main effects of the variables on the outcome variables were interesting. The career preoccupations career cognition construct, when combined with the three moderator career resources constructs of employability attributes, career anchors and career values, all explained levels of career satisfaction and self-perceived employability. This finding emphasises the importance of career cognitions relating to career preoccupations for the career satisfaction and self-perceived employability of knowledge workers.

On the other hand, the career cognition construct of career adaptability seemed to have a stronger main effect on self-perceived employability than on career satisfaction when combined with employability attributes. When career adaptability was combined with career values in the model, a positive main effect on both career satisfaction and self-perceived employability was evident.

Moreover, overall, it was evident from the results that individuals' career cognitions (i.e. levels of career preoccupations and career adaptability) were not conditional upon their psychosocial career resources (i.e. employability attributes, career anchors and career values) in explaining their levels of career satisfaction and self-perceived employability. The career cognitions and psychosocial career resources had individually specific main effects to consider in understanding knowledge workers' career satisfaction and self-perceived employability.

Finally, the stepwise regression and the hierarchical moderated regression analysis showed that age, race and employment status were important to consider in terms of the career satisfaction profile of knowledge workers. Race seemed especially important to consider in terms of their self-perceived employability and can be explained by increased career opportunities for previously disadvantaged groups. These results suggest that it may be useful to further explore the probability of significant differences regarding these biographical variables in terms of the various constructs.

Generally, the key new insights, corroborated insights and counterintuitive insights that emerged from the findings include the following:

New insights

- The career satisfaction profile has unique influencing factors related to self-expression intrinsic motives.

- The self-perceived employability profile also has unique influencing factors related to person-environment fit motives.

Corroborated insights

- Employability attributes of career self-management, career resilience, sociability and proactivity acted as a strong explanatory variable.

Counterintuitive/contrasting insights

- Career anchors and career values did not play a significant explanatory role when combined with all psychological attributes to predict career satisfaction and self-perceived employability.

Though some significant main effects of the career cognitions and psychosocial career resources were present in predicting career satisfaction and self-perceived employability, no interaction effects were present. Therefore, employability attributes, career anchors, and career values do not act as significant moderators.

In conclusion, for the purpose of the construction of a career satisfaction and self-perceived employability profile of the knowledge worker, that it may be more useful to consider the unique main effects that career cognitions and psychosocial career resources individually have on career satisfaction and self-perceived employability as unique constructs on their own. In other words, the career satisfaction profile has unique influencing factors, while the self-perceived employability profile also has its unique influencing factors. This finding is important to consider in drawing conclusions and making recommendations for career development practice.

8.1.5 Research aim 4: Discussion of tests for significant mean differences

Research aim 4: *To assess whether individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability (this aim relates to research hypothesis H4).*

The results obtained provided support for research hypothesis H4.

The test for significant mean differences revealed differences amongst age groups in terms of the career cognitions (i.e. levels of career adaptability and psychosocial career preoccupations), psychosocial career resources (i.e. career anchors and career values) and career satisfaction.

More specifically the results indicated that younger individuals (18 – 30 years) scored significantly higher than older individuals for the career adaptability subscale career concern. This suggested that younger individuals were more concerned and involved in their own career planning tasks and were thinking more about their career future than their older counterparts. Based on the test for significant differences, it seemed that older individuals were less concerned and probably more content and satisfied with their careers, which is in line with the findings of Coetzee and Stoltz (2015) and Zacher (2014). The implication for career development practices is that younger individuals should be supported to address career concerns to experience career satisfaction.

The results further indicated that younger (18 – 30 years) individuals scored significantly higher on psychosocial career preoccupations as well as for all subscales than their older counterparts. These differences suggested that younger participants were more concerned about fitting in and advancing in their careers, adapting to the changing career context to fit employment opportunities in the employment market, and achieving harmony between their work and personal life than individuals in the older age groups. This finding corroborates with other research on psychosocial career preoccupations (Bester, 2018; Potgieter et al., 2018; Takawira, 2018). The implication for career development practices is that younger individuals should be supported and guided to address concerns about fitting in, adapting to the changing career context, and balancing work, family and personal matters by actively engaging in career discussions and interventions. This further implied that older individuals were less concerned and probably more content and satisfied with their careers than younger individuals, which is in line with Zacher's (2014) findings.

No significant differences were found for employability attributes related to age. This implied that individuals can always develop their employability attributes, regardless of age.

The results further indicated that younger (18 – 30 years) individuals scored higher than older (46 – 60 years; 60 years and older) individuals on the career anchor of general managerial competence. Moreover, individuals in the establishment career stage (31 – 45 years) scored also higher than the older age group (60 years and older) on general managerial competence. These differences suggested that younger individuals were more inclined to climb the corporate ladder, were more driven to become general managers and be promoted than older individuals.

For the career anchor of lifestyle, individuals in the age group of 31 – 45 years (establishment) scored significantly higher than other younger and older individuals (18 – 30 years and 60 years and older). This suggested that the establishment career age group (31 – 45 years) has stronger

lifestyle career anchors and has stronger lifestyle motivations related to balancing personal and family responsibilities with work commitments than their counterparts. Possible explanations for these differences can relate to when people are young, they want to advance in their careers and want to climb the corporate ladder, more than older individuals. However, when individuals reached the established career stage (31 – 45 years), they value having a balanced lifestyle between all the various facets of their lives (careers, family and other personal interests). The implications are that individuals who value lifestyle career anchors are less likely to take promotions that would involve geographical moves (Coetzee & Schreuder, 2021), as individuals might have to consider family needs related to children and even parents.

The results further indicated that individuals in the age group 18 – 30 years scored significantly higher on teamwork than individuals who were 60 years and older. This suggested that individuals who are in the emerging adulthood phase values collaboration and positive working relationship more than individuals who are in late adulthood. This result can be explained that individuals who are near retirement might thus not place the same value on working relationship than individuals who are in the emerging adulthood, as these young individuals still need to spend many years in their careers, they are more likely to invest in good working relationships with co-workers and want to work in a collaborative work unit.

The results of significant mean differences revealed that the age group 60 years and older experienced the highest levels of career satisfaction. Furthermore, the age group 46 – 60 years scored significantly higher than the 31 – 45 years and 18 – 30 years. This suggested that older individuals experienced higher levels of career satisfaction than their younger counterparts. Similar findings were found by Bester (2018), who explained that older individuals could have achieved their career outcomes, as they also had more time passing their progress towards their career goals.

In terms of gender, the results of significant mean differences revealed that females were significantly more concerned than males regarding work/life adjustment preoccupations. This suggested that women were more concerned than men about achieving high levels of harmony between their career and personal lives. These observed differences suggested that women were more concerned than men regarding psychosocial career preoccupations related to achieving harmony between one's work and personal life (work-life adjustment preoccupations). In contradiction, Coetzee (2015) and Bester (2018) found no significant differences in terms of gender and psychosocial career preoccupations. This result can be explained that although

women are more involved in careers, they may still be very much involved in primary family care responsibilities and are thus more concerned to adjust their careers and might even consider reducing their workload or withdraw from paid employment to consider family needs and responsibilities (Coetzee, 2016).

The results of significant mean differences revealed differences amongst racial groups, especially between the African and white racial groups. The results indicated that the African racial group scored significantly higher than the white racial group on career cognitions (i.e. career adaptability [and all subscales] and psychosocial career preoccupations [and all subscales]), psychosocial career resources (i.e. employability attributes, career anchors and career values), and self-perceived employability. Similar results were found on career adaptability (Coetzee & Stoltz, 2015) and psychosocial career preoccupations (Bester, 2018; Takawira, 2018). Coetzee and Stoltz (2015) explained that enhanced levels of career adaptability for the African race group might be attributed to the increase of career opportunities for previously disadvantaged groups, and thus require higher levels of career adaptability.

The results further indicated significant mean differences between African and white racial groups on psychosocial career resources. The results indicated that the African racial group scored significantly higher than the white racial group on employability attributes (all subscales except on self-efficacy), career anchors (except on technical/functional competence), career values (all subscales except on independence and security). The results suggested that the African race group has higher capacities related to managing their career proactively; working with people across different groups; bouncing back after adverse career circumstances, being innovative and inclined to take risks, establishing and maintaining social contact to the advantage of their careers; proactively engaged in activities to change and improve themselves and their circumstances and managing emotions in themselves and others than the white race group.

The results suggested that the African race group has, therefore, stronger drives to become general managers and to advance in their careers; to create businesses and to make money, to experience independence, seek a balance between work and family responsibilities, want to make the world a better place, and want to overcome challenges; than the white race group. Coetzee et al. (2007) found that the African race group scored the highest on service/dedication to a cause and pure challenge, whereas the white race group scored the highest on lifestyle and technical/functional competence. However, a comprehensive study on career anchors with a

sample of 2978 respondents indicated that the African and white race group have similar career anchor preferences.

The results further suggested that the African race group values relationships and personal services, collaborative efforts, new ideas, variety and risk-taking, personal growth, high salaries, recognition and status more than the white race group.

The results finally indicated that the African racial group scored significantly higher than the white racial group on self-perceived employability. The results suggested that the African race group has more confidence in finding new employment or keeping their current employment than the white race group.

These significant differences between the African race group and white race group may be attributed to the South African labour context and legislation in terms of employment equity, affirmative action, Black Broad-Based Economic Empowerment and skills development that provides more career advancement opportunities and career development support for the African race group (João & Coetzee, 2012).

It can be concluded that the biographical differences, especially in terms of age and race, should be taken into account when constructing a career satisfaction and employability profile.

8.1.6 Research aim 5: Constructing a psychosocial profile for enhancing the career satisfaction and employability of knowledge workers

The central hypothesis of the research was:

The main effects of and the interaction (moderating) effects between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents of their career satisfaction and self-perceived employability) and their employability attributes, career anchors and work values (as psychosocial career resources acting as moderator variables), in relation to their career satisfaction and self-perceived employability (as consequences or outcomes) will constitute a psychosocial profile that may potentially inform career development interventions for knowledge workers.

It was assumed that the relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is more positive when their psychosocial career resources (employability attributes, career anchors and career values) are well developed or strongly crystallised than when these resources are not well developed or strongly crystallised.

In addition, individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations), psychosocial career resources (employability attributes, career anchors and career values), career satisfaction and self-perceived employability.

Though the central research hypothesis can only be partially accepted, as no interaction effects were observed, the research aim 5 was still achieved:

Research aim 5: To construct a psychosocial profile for enhancing career satisfaction and employability based on the empirical results

Supplementary to the canonical correlation analysis, regression and structural equation modeling analysis indicated that the career satisfaction profile has unique influencing factors while the self-perceived employability profile also has its unique influencing factors. Moderated regression analysis showed that individuals' career cognitions (i.e. levels of career adaptability and psychosocial career preoccupations) were not conditional upon their psychosocial career resources (i.e. employability attributes, career anchors and career values) in explaining their levels of career satisfaction and self-perceived employability. The career cognitions and psychosocial career resources had individually specific main effects to consider in understanding knowledge workers' career satisfaction and self-perceived employability. Stepwise regression and the hierarchical moderated regression analysis showed that age, race, and employment status were important to consider in terms of knowledge workers' career satisfaction profile. Race seemed especially important to consider in terms of their self-perceived employability of knowledge workers. Differences among the different age and race biographical groups also suggested unique career development needs to consider in multi-culturally diverse work contexts relevant in the South African career context. The career satisfaction and employability profile was constructed based on the key insights derived from the core significant findings.

8.1.6.1 *Integration of the results*

This section provides an integration of the results and explains the predictors of career satisfaction and self-perceived employability.

The canonical correlation results (as reflected in Figure 8.1) showed that when career satisfaction and self-perceived employability were jointly considered in a model in terms of the bi-directional association with the composite set of psychological career attribute variables (career cognitions and psychosocial career resources), the following psychological career attributes played an

explanatory role: career adaptability (career control), employability attributes (career self-management, career resilience, proactivity, and sociability) and psychosocial career preoccupations (career adaptation preoccupations) while career satisfaction had the most substantial explanatory power.

The results emphasised the importance of career cognitions (career adaptability) to signal individuals' psychological readiness to engage in psychosocial career resources (employability attributes), which facilitate adaptive career behaviours in an attempt to gain positive career outcomes (career satisfaction and self-perceived employability combined) and to achieve an optimum person-environment fit or congruence (Coetzee, 2015, 2016; Coetzee & Govender, 2020; Maree, 2020; Potgieter et al., 2018; Savickas, 2019). Importantly, the career cognition psychosocial career preoccupations related to adaptation acted as a negative predictor, emphasising that knowledge workers should be mindful of their career adaptation preoccupations. This emphasised that when individuals are overly concerned about adapting to career changes and adjusting one's interests, talents, and improving one's capabilities to fit the labour market, they may experience uncertainty, anxiety and elevated stress levels, thus limiting their career satisfaction and self-perceived employability.

The results further emphasised the importance of employability attributes in helping individuals adopt and achieve a combined sense of career satisfaction and self-perceived employability (Blokker et al., 2019; Fugate & Kinicki, 2008; Potgieter, 2014). Based on the conservation of resources theory, individuals are likely to conserve and acquire resources related to career satisfaction and self-perceived employability to survive or facilitate a sustainable career (Hobfoll et al., 2018). This implies that employability attributes can be seen as an important psychosocial career resource that individuals should invest in, that might protect them against unemployment and career dissatisfaction (resource loss), and enhances their career satisfaction and self-perceived employability (resource gain). When taking into consideration that only employability attributes as a career resource (not career anchors and career values) played an explanatory role in the combination of career satisfaction and self-perceived employability, employability attributes can be seen as a resource that can help individuals to attain a goal (career satisfaction) or satisfy a need (employment), and therefore, should have more value (Halbesleben et al., 2014; Hobfoll, 2001).

The VUCA world of work exposes knowledge workers to constantly changing and uncertain employment environments that demand proactive career adaptive behaviours (career control,

career self-management, career resilience, proactivity, and sociability) to sustain employability and career satisfaction as combined career outcomes (Akkermans et al., 2020; Blokker et al., 2019; Coetzee & Schreuder, 2021; Fugate et al., 2004; Haenggli & Hirschi, 2020; Hirschi et al., 2017; Spurk et al., 2019).

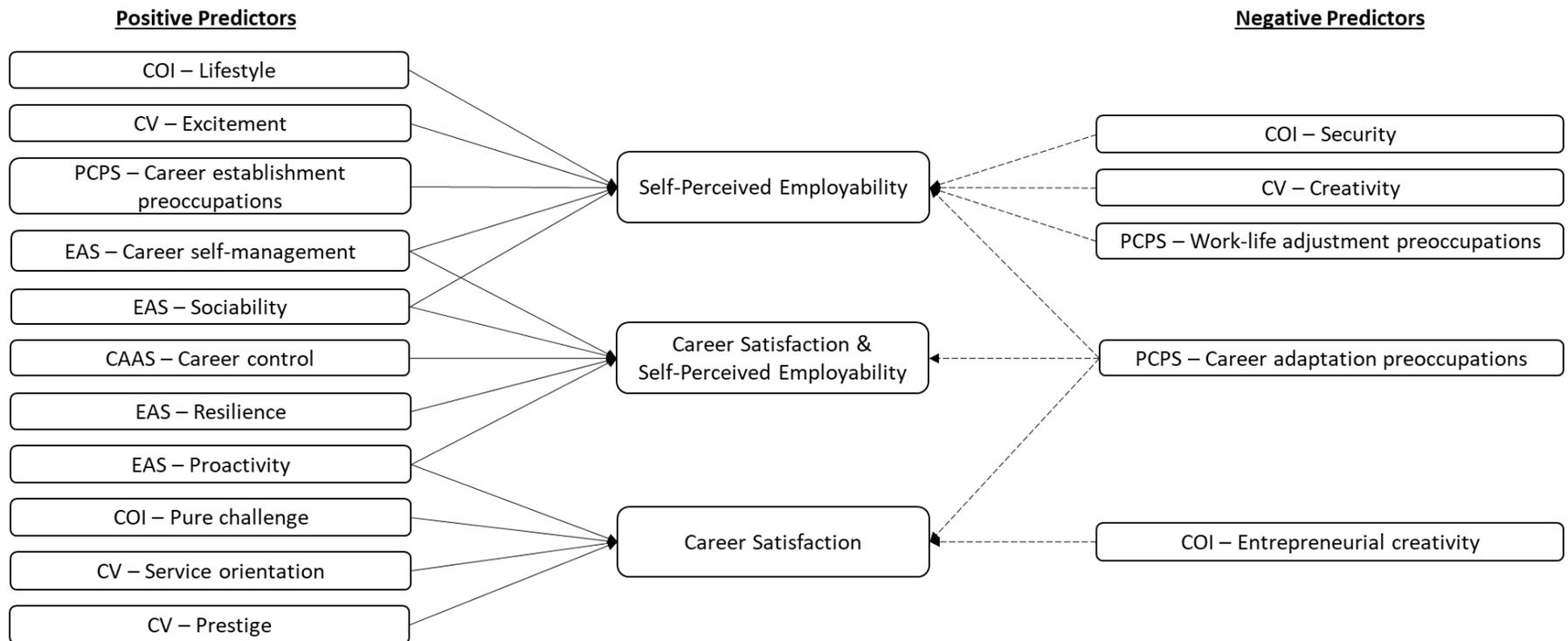
The results further suggested that the combination of career satisfaction and self-perceived employability (as positive career outcomes) is a function of the dynamic interaction between career cognitions, behaviours and attributes of proactive adaptability, which is in line with Fugate et al.'s (2004) dispositional theory of employability. Dispositional career cognitions were studied in interaction with dispositional psychosocial career resources. The premise that career cognitions are not sufficient on their own to predict individuals' career satisfaction and self-perceived employability can thus be confirmed.

Career anchors and career values did not play a significant explanatory role when combined with all psychological career attributes to explain career satisfaction and self-perceived employability as a combined set of positive career outcomes. This may suggest that when individuals are already engaged in proactive adaptability behaviour (as key resources to regulate their careers) to protect their most valuable career resource (career satisfaction and self-perceived employability-by implication employment) (Hobfoll, 1988, 1998, 2001), they may be less likely to further invest in psychosocial career resources, such as career anchors and career values. However, career anchors (pure challenge) and career values (influence, service orientation, teamwork, career development and excitement) played a significant explanatory role in psychological career attributes. Bravo et al. (2015) also found supporting evidence of correlations between career anchors and proactive personality and career self-management behaviours, which might further explain why career anchors and career values did not play a significant explanatory role when combined with career cognitions and employability attributes.

It finally seems that career cognitions (career concern and psychosocial career adaptation preoccupations) and psychosocial career resources associated with employability attributes (career self-management, career resilience, proactivity, and sociability) will most likely determine how individuals construct their careers for career satisfaction and sustainable employment.

Figure 8.2

Predictors of Career Satisfaction and Self-Perceived Employability



Source. Author's own work

For the purpose of the construction of a career satisfaction and self-perceived employability profile of the knowledge worker, it may be more useful to consider the unique main effects that career cognitions and psychosocial career resources individually have on career satisfaction and self-perceived employability as unique constructs on their own. In other words, the career satisfaction profile has unique influencing factors, while the self-perceived employability profile also has its unique influencing factors. For the career satisfaction and self-perceived employability profile, it seems that self-expression drives (to meet intrinsic needs) related to the dispositional aspects (individual factors) explain career satisfaction, whereas the person-environment fit concerns explain self-perceived employability.

Career satisfaction profile

The career satisfaction profile indicated that the career cognition related to career adaptation preoccupations, and psychosocial career resources of employability attributes related to proactivity; and career anchors of pure challenge and entrepreneurial creativity; and career values of service orientation and prestige were important factors.

The sample of knowledge workers were highly educated and might have more freedom and opportunity to focus on intrinsic career needs and rewards (Dunning, 2010; du Toit, 2014; Sortheix et al., 2015). It is also expected that highly educated individuals may have more work opportunities and financial resources available, and may have, therefore, more meaningful work experiences (career satisfaction) as they are less concerned about primary survival needs (Dunning, 2010; Sortheix et al., 2015). This might therefore explain the high levels of career satisfaction in the sample of knowledge workers.

The relevance of the self-expression drives as important predictors that explain high levels of career satisfaction might be attributed to the high educational levels of the sample of knowledge workers. Research found that highly educated individuals placed more value on intrinsic needs and values (interesting job, that meet one's ability, achieve something, be useful for society, take initiative and advancement opportunities), whereas less educated individuals valued financial rewards and security to meet extrinsic needs and values (Johnson, 2002; Sortheix et al., 2015; Warr, 2008). Even more than a decade later, it seems that self-expression drives (intrinsic needs and values) are still relevant for career satisfaction.

The sample of knowledge workers was highly educated, employed and shown a high level of career satisfaction, which emphasised the importance of intrinsic values. Being a professional

with an advanced qualification are often considered prestigious in the South African society (Bhorat et al., 2018; de Beer, 2015; Statistics South Africa, 2017, 2020). This perception may be one of the reasons that explain the relevance of prestige as a predictor for career satisfaction for the sample of knowledge workers. Since knowledge workers are considered highly educated and concerned about fulfilling intrinsic needs, it is expected that prestige which is associated with intrinsic feelings of satisfaction related to recognition, admiration and status, be an important predictor for career satisfaction.

Employability profile

The employability profile indicated that the career cognitions of all psychosocial career preoccupations; and psychosocial career resources related to employability attributes of self-management and sociability; and career anchors of lifestyle and security; and career values of excitement and creativity were important factors. This finding is important to consider in drawing conclusions and making recommendations for career development practice.

The employability profile reflects the contemporary career context characterised by self-drive, adaptability, insecurity, and concerns related to balancing family and personal needs (Coetzee & Schreuder, 2021; Greenhaus & Kossek, 2014; Maree, 2020). The employability profile also portrays person-environment fit concerns and motives that are at the core of sustainable careers; adapting and changing to match the changing environmental needs reflects the dynamic fit between a person and career (de Vos et al., 2020).

Moreover, overall, it was evident from the results that individuals' career cognitions (i.e. levels of career preoccupations and career adaptability) were not conditional upon their psychosocial career resources (i.e. employability attributes, career anchors and career values) in explaining their levels of career satisfaction and self-perceived employability. This finding was unexpected, as psychosocial career resources are seen as valuable personal resources that enable individuals to proactively manage their environment effectively and regulate their behaviour to achieve important career outcomes related to career satisfaction and sustained employability (Abessolo et al., 2017; Blokker et al., 2019; Coetzee, 2014a; Coetzee & Schreuder, 2014; Potgieter, 2014).

The career cognitions and psychosocial career resources had individually specific main effects to consider in understanding knowledge workers' career satisfaction and self-perceived employability.

Finally, the stepwise regression and the hierarchical moderated regression analysis showed that age, race and employment status were important to consider in terms of the career satisfaction profile of knowledge workers. Race seemed especially important to consider in terms of their self-perceived employability.

8.1.6.2 Proposed career satisfaction and employability profile for knowledge workers

The core insights derived from the empirical results informed the construction of the proposed career satisfaction and employability profile of knowledge workers.

The traditional person-environment fit approach towards career counselling seems to be still useful, even in the VUCA world of work. Schein (1978) said it perfectly with: “The ultimate challenge is to be able to match the future needs of the organisation with the future needs of the individual so that as organisations and careers evolve, they remain in some kind of synchrony” (p. 242).

Career anchors and career values play an essential role in contemporary careers (Coetzee & Schreuder, 2011, 2014, 2021; Coetzee et al., 2010; Schein, 1990). When individuals achieve congruence between their career anchors (pure challenge, lifestyle) and career values (service orientation, prestige, excitement); and their career environment they are more likely to experience career satisfaction and even an enhanced sense of confidence in self-perceived employability. However, as a dominant career anchor, entrepreneurial creativity is likely to thwart career satisfaction; an obsession with the need to create may lead to restlessness, boredom, and a sense of career unfulfillment (Coetzee et al., 2010). Moreover, security/stability as a dominant career anchor and creativity as a prominent career value are likely to thwart self-perceived employability. Chapman (2015) emphasised that individuals oriented towards security/stability seek employment at stable and reliable organisations. However, the contemporary career context is associated with a lack of security, job losses and uncertainty (Savickas, 2019), and organisations can no longer guarantee stable and lifetime employment (Maree, 2020). Therefore individuals who placed their security on organisations will be disappointed and are more likely to find it challenging to adapt to the changing career context. Abessolo et al. (2017) found a negative relationship between mobility preference (which shows links to self-perceived employability) and extrinsic rewards related to security, which further explain why security/stability career anchors are likely to thwart self-perceived employability.

Today, in Industry 4.0, the “future is here”, and professional knowledge workers need to engage in proactive career behaviour (Akkermans et al., 2020; Blokker et al., 2019; Coetzee & Schreuder,

2021; Fugate et al., 2004; Haenggli & Hirschi, 2020; Hirschi et al., 2017; Spurk et al., 2019). Psychosocial career preoccupations related to career establishment signal psychological readiness and individuals who are concerned about fitting in with a group; economic stability and security, who are looking for self-expression and personal growth and development opportunities and who are concerned about advancing in their careers in the present organisation, are more likely to experience confidence in their self-perceived employability (Blokker et al., 2019; Peeters et al., 2020). It seems that psychosocial career establishment preoccupations play an important role to achieve or regain person-environment congruence (Coetzee, 2016). Thus, psychosocial career establishment preoccupations, as cognitive judgement signal individuals' psychological readiness and ability to adapt and cope in the changing career environment. However, being overly concerned about adapting and work-life adjustment are more likely to thwart career satisfaction and self-perceived employability (Bester, 2018; Takawira, 2018). Therefore, individuals should be mindful of being overly concerned about their ability to adapt, as behaviourally adaptable individuals may have more negative perceptions towards their careers (Coetzee et al., 2010).

The conservation of resources theory (Hobfoll, 1988, 1998, 2001) emphasises the importance of psychosocial resources in coping successfully with demanding environments. Psychosocial career resources denote individuals' skills set (employability attributes), unique views and motivations (career anchors and career values) in navigating their careers (Coetzee & Govender, 2020), and are seen as valuable personal resources that enable the achievement of important career goals, career satisfaction and sustained employability (Abessolo et al., 2017; Blokker et al., 2019; Coetzee, 2014a; Coetzee & Schreuder, 2014; Potgieter, 2014).

Conclusive insights

The dispositional model of employability of Fugate and Kinicki (2008) served as one of the overarching theoretical lenses in considering the core elements of the career satisfaction and employability profile constructed for the sample of knowledge workers who participated in the present research study. The following six premises of the dispositional model of employability (Fugate & Kinicki, 2008) guided the underlying tenets of the career satisfaction and employability profile. Overall, the insights generated by the present research extend the six premises by showing that career satisfaction and self-perceived employability are positively associated, and that dispositional employability and career satisfaction of knowledge workers are informed by various attributes that seem to serve as important psychosocial resources in their career development.

Premise 1: *Openness to changes at work supports flexibility in uncertain situations and facilitates continuous learning as an aspect of employability (Fugate & Kinicki, 2008).*

The insights generated by the present research shows that the attributes of career self-management and career adaptation preoccupations are important to cultivate in knowledge workers for enhanced career satisfaction and employability. These attributes all allude to an openness to change and being preoccupied about opportunities that changes offer for one's careers. Career anchors such as pure challenge and entrepreneurial creativity may further be posed as important orientations to cultivate for the knowledge worker.

In terms of the current sample, the strengths appear to be related to high levels of career self-management and low levels of psychosocial career adaptation preoccupations. The research further indicates differences among age groups, racial background and employment status in terms of psychosocial career adaptation preoccupations. Younger individuals (18-30 years) scored significantly higher than their older counterparts on psychosocial career adaptation preoccupations. Fixed-term contract employees scored significantly higher than self-employed individuals on career adaptation preoccupations, whereas permanently employed individuals scored significantly higher than self-employed individuals on career adaptation preoccupations.

These differences among age groups, racial background and employment status in terms of psychosocial career adaptation preoccupations imply unique career development needs for knowledge workers.

Premise 2: *Work and career resilience fosters the identification and realisation of career opportunities (employability) in turbulent environments (Fugate & Kinicki, 2008).*

The present research extends this premise by showing that career resilience, as an employability attribute, predicts career satisfaction and self-perceived employability as a composite construct. The attribute of career resilience is an important resource in enhancing jointly the career satisfaction and self-perceived employability of knowledge workers. In terms of the current sample, the strengths appear to be related to high levels of career self-management and low levels of psychosocial career adaptation preoccupations.

The research further indicates differences among racial background in terms of career resilience. The African race group scored significantly higher than the white race group on career resilience. These differences among racial background in terms of career resilience imply unique career development needs for knowledge workers.

Premise 3: *Work and career proactivity facilitate the identification and realisation of opportunities (employability) (Fugate & Kinicki, 2008).*

The present research extends this premise by showing that proactivity, as an employability attribute, predicts career satisfaction and self-perceived employability as a composite construct. The attribute of career proactivity is an important resource in enhancing jointly the career satisfaction and self-perceived employability of knowledge workers. The present research further extends this premise by showing that proactivity, as an employability attribute, predicts career satisfaction. The attribute of proactivity alludes to individuals' tendency and actions in gaining knowledge regarding the environment, career interests and even their employer, which further facilitates the identification and realisation of opportunities (to enhance career satisfaction). The attribute of career proactivity is an important resource in enhancing career satisfaction.

The research further indicates differences among racial background in terms of proactivity. The African race group scored significantly higher than the white race group on proactivity. These differences among racial background in terms of proactivity imply unique career development needs for knowledge workers.

Premise 4: *Career motivation activates the mastering of new skills, approaching new situations as opportunities, and the willingness to adapt to changing circumstances for employability (Fugate & Kinicki, 2008).*

The present research extends this premise by showing that prestige and service orientation as career values predicts career satisfaction. These attributes allude to career motivation that activates enhanced drives for work-related endeavours related to the direct benefit to others and obtaining recognition. The present research further extends this premise by showing that lifestyle career orientation and excitement as career value predicts self-perceived employability. These attributes allude to career motivation that activates the willingness to adapt to changing circumstances to address person-environment fit concerns and approach new situations as opportunities for employment. These attributes are important resources in enhancing the career satisfaction and self-perceived employability of knowledge workers.

To further extend this premise, security as a career anchor and creativity as a career value predict relatively low self-perceived employability levels. The attribute of creativity alludes to career motivation that might limit persistence during periods of boredom or frustration. The attribute of security alludes to career motivation that activates work-related endeavours related to having a

steady and predictable career that might limit the willingness to adapt to changing circumstances for employability.

The research further indicates differences among age groups, racial background and employment status in terms of prestige. The younger age group (18 – 30 years) scored significantly higher on the prestige career value than other age groups (31 – 45; 46 – 60; and 60 years and older). The African race group scored significantly higher than the white and coloured race group on prestige. Permanently employed individuals scored significantly higher than self-employed individuals on prestige. These differences among age groups, racial background and employment status in terms of prestige imply unique career development needs for knowledge workers.

The research further indicates differences among racial background and employment status in terms of service orientation. The African race group scored significantly higher than the white race group on service orientation. In addition, the Indian race group scored significantly higher than the white race group on service orientation. Permanently employed individuals scored significantly higher than self-employed individuals on service orientation. These differences among racial background and employment status in terms of service orientation imply unique career development needs for knowledge workers.

The research further indicates differences among age groups and racial background in terms of lifestyle. The establishment career age group (31 – 45 years) scored significantly higher on the lifestyle career anchor than other younger and older age groups (18 – 30 and 60 years and older). The African and Indian race groups scored significantly higher than the white race group on lifestyle. These differences among age groups and racial background in terms of lifestyle imply unique career development needs for knowledge workers.

The research further indicates differences among racial background in terms of excitement. The African race group scored significantly higher than the white race group on excitement. These differences among racial background in terms of excitement imply unique career development needs for knowledge workers.

The research further indicates differences among employment status in terms of security as a career anchor. Permanently employed individuals scored significantly higher than self-employed individuals on the security career orientations. These differences among employment status in terms of security imply unique career development needs for knowledge workers.

The research further indicates differences among racial background in terms of creativity as career values. The African race group scored significantly higher than the white race group on creativity. These differences among racial background in terms of creativity imply unique career development needs for knowledge workers.

Premise 5: *Individual's ability to identify and realise career opportunities is greatly influenced by their social and human capital as resources of employability (Fugate et al., 2004).*

The present research extends this premise by showing that sociability, as an employability attribute, predicts career satisfaction and self-perceived employability as a composite construct. As expected, the attribute of sociability also predicts self-perceived employability. The attribute of sociability alludes to social capital as resources available in individuals' social networks that can be utilised to the advantage of one's employment. The attribute of sociability is an important resource in enhancing the self-perceived employability and; jointly the career satisfaction and self-perceived employability of knowledge workers. In terms of the current sample, career development interventions should be aimed at increasing individuals' social capital as sociability presents low mean profile scores, and can be seen as an area that can be developed.

The research further indicates differences among racial background in terms of sociability. The African race group scored significantly higher than the white race group on sociability. These differences among racial background in terms of sociability imply unique career development needs for knowledge workers.

Premise 6: *Career identity drives the career direction and goals needed to manage the boundaryless careers that characterise the new world of work; it provides a clear path and understanding of oneself in the working context and remain employable (Fugate & Kinicki, 2008).*

The insights generated by the present research shows that career control as career adaptability is important to cultivate in knowledge workers for enhanced career satisfaction and employability. The present research extends this premise by showing that career control, as career adaptability, predicts career satisfaction and self-perceived employability as a composite construct. The attribute of career control alludes to career identity that drives the career direction and goals needed to manage the boundaryless careers that characterise the new world of work, as career control signals the degree to which individuals feel responsible for managing and building their own careers. The attribute of career control is an important resource in enhancing jointly the career satisfaction and self-perceived employability of knowledge workers.

The present research further extends this premise by showing that career establishment preoccupations predict self-perceived employability. The attribute of career establishment preoccupations alludes to career identity that provides a clear path and understanding of oneself in the working context that signal career concerns about fitting in and establish opportunities for self-expression and personal growth and development, and to remain employable. The attribute of career establishment preoccupations is an important resource in enhancing the self-perceived employability of knowledge workers.

The present research further extends this premise by showing that work-life adjustment preoccupations predict rather low self-perceived employability levels. The attribute of work-life adjustment preoccupations alludes to career identity that assembles the past, present and future career and life experiences and aspirations into an understandable whole, and it also acts as the cognitive glue that integrates one's work and personal life, which might even involve the withdrawal of employment (lack of employment). The attribute of work-life adjustment preoccupations is an important concern to address appropriately to prevent a lack of employment.

The research further indicates differences among racial backgrounds in terms of career control, career establishment, and work-life adjustment preoccupations. The African race group scored significantly higher than the white race group on career control, career establishment, and work-life adjustment preoccupations. These differences among racial backgrounds in terms of career control, career establishment, and work-life adjustment preoccupations imply unique career development needs for knowledge workers.

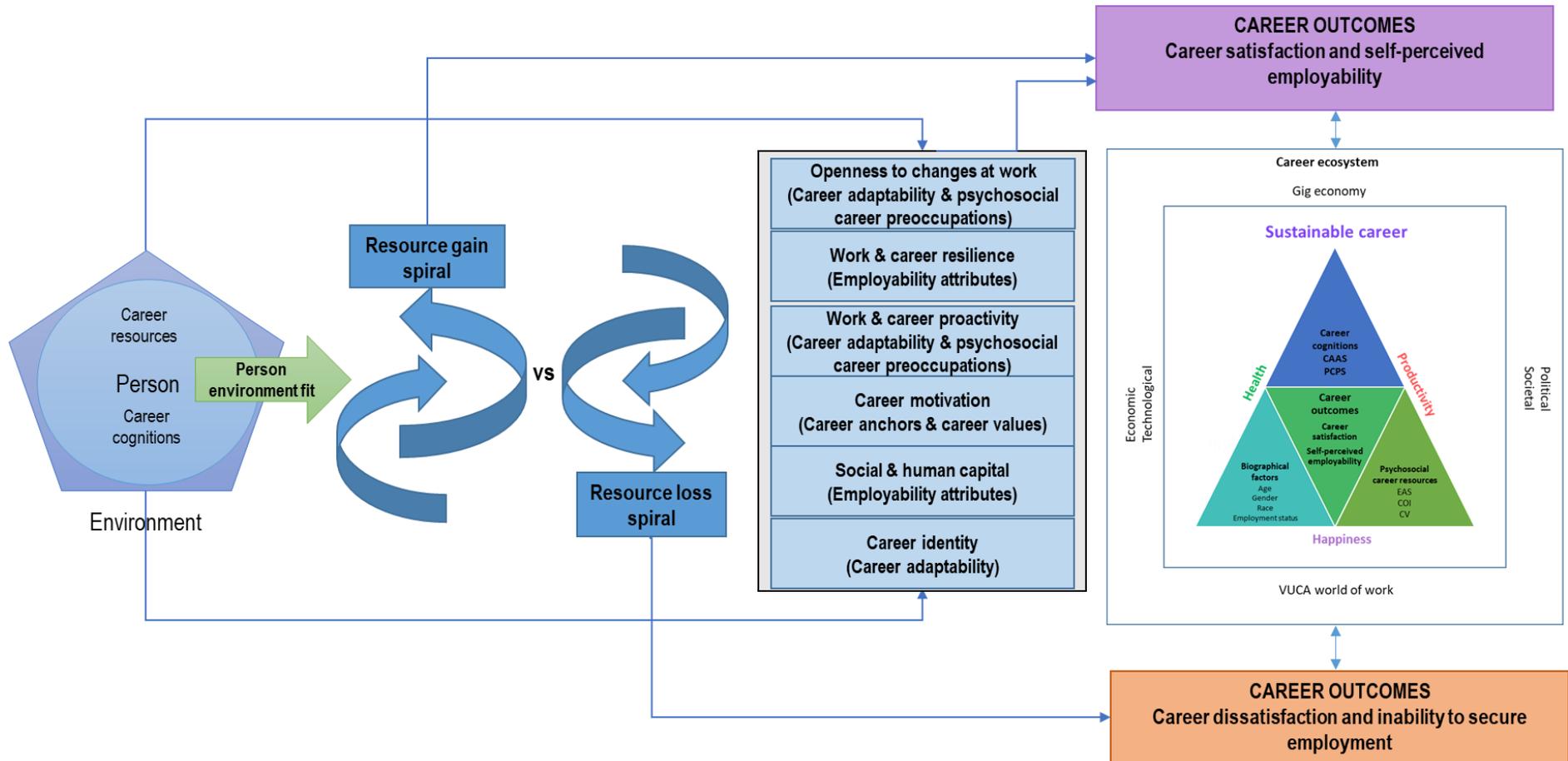
The research further indicates differences among employment status in terms of career establishment preoccupations. Fixed-term contract employees scored significantly higher than self-employed individuals on career establishment preoccupations. Permanently employed individuals scored significantly higher than self-employed individuals on career establishment preoccupations. These differences among employment status in terms of career establishment preoccupations imply unique career development needs for knowledge workers.

The core conclusion is the three theoretical perspectives of person-environment fit (PE-fit) (Holland, 1997; van Vianen, 2018), conservation of resources (COR) (Hobfoll, 1988, 1998, 2001), and dispositional employability (DE) (Fugate et al., 2004) applied in this study as theoretical lenses provided significant insights in exploring the constructs' relationship dynamics. These theoretical perspectives are especially relevant to utilise in the light of the global COVID pandemic, as they relate to individuals' adaptation responses to challenging environments, in order to achieve person-environment congruence.

Figure 8.3 depicts the empirical integration of the three theoretical perspectives to facilitate sustainable career development.

Figure 8.3

Empirical Integration of PE-fit, COR and DE to Facilitate Sustainable Career Development



Source. Author's own work

8.2 LIMITATIONS

This section reflects on the limitations of the literature review and the empirical study.

8.2.1 Limitations of the literature review

This study was limited to explorative, descriptive, and explanatory research related to the relationship dynamics between career cognitions, psychosocial career resources and career outcomes of knowledge workers in the South African context. The study was limited by the following aspects:

- Various career-related construct variables exist and may influence career-related outcomes, whether positive or negative. The literature review, however, explored only the constructs of career adaptability and psychosocial career preoccupations (as career cognitions) and employability attributes, career anchors and career values (as career resources) and career satisfaction and self-perceived employability (as positive career outcomes).
- There are various career cognitions and psychosocial career resources construct variables; however, this study explored only two career cognitions (career adaptability and psychosocial career preoccupations) and three psychosocial career resources (employability attributes, career anchors and career values).
- There are various positive career development outcomes; however, this study explored only career satisfaction and self-perceived employability from an individual's perspective.

Though various traditional and contemporary career constructs were included in the study, future research should provide an even more holistic indication of career-related constructs and career-related outcomes, that may potentially impact on career development intervention strategies.

Furthermore, the literature review of the relevant constructs was conducted and limited to the following three theoretical lenses:

- Person-environment fit theory (Holland, 1997; van Vianen, 2018)
- Conservation of resources theory (Hobfoll, 1988, 1998, 2001)
- Dispositional employability (Fugate & Kinicki, 2008; Fugate et al., 2004)

Various contemporary career theories exist, and the study was therefore unable to extend and contribute to other contemporary career theories such as the self-determination theory of Deci

and Ryan (2000) and the career construction theory of Savickas (2013) and the social cognitive career theory (Lent & Brown, 2006, 2008, 2013).

Although various research studies have been conducted on the relevant constructs, limited research has been conducted in combining the relevant constructs to explore the relationship dynamics which can be utilised by industrial psychologists in society and in organisations to inform career development practices.

Career development in the contemporary world of work involves a wide variety of aspects; however, in this study, it was limited to the constructs of career satisfaction and self-perceived employability as career outcomes. Furthermore, only career adaptability, psychosocial career preoccupations, employability attributes, career anchors and career values were considered in constructing a psychosocial career satisfaction and employability profile for knowledge workers.

8.2.2 Limitations of empirical study

The empirical findings were limited to the specific research sample of knowledge workers and the psychometric properties of the specific psychometric test battery. The empirical study was, therefore, limited by the following aspects:

- The cross-sectional research design limited causal inferences between significant relationships.
- The sample comprises only N = 404 knowledge workers, mainly white males, between the ages of 31 – 45 years, registered at various professional boards. Therefore, it limits the generalisability of the findings to the larger population of knowledge workers in South Africa.
- The inclusion and exclusion criteria of the purposive sampling strategy (knowledge workers registered at certain professional boards) limits the generalisability of the findings to the larger population of adult workers in South Africa, and an extensive range of manual labour, skilled and unskilled, technical and professional workers were excluded.
- The biographical variables were limited to age, gender, race, and employment status. Other biographical variables might have provided different influencing dynamics on the constructs studied in the research study.
- All the measuring instruments (CSS, GEM, CAAS, PCPS, EAS, COI and CVS) chosen for this study were self-report instruments, and results were thus based on individuals own

views and perspectives of the relevant constructs, which might have a prejudiced effect on the validity of the results. However, the test for common method bias revealed that common method variance was not a potential threat for the research findings.

- Several contemporary career-related construct variables influencing the career satisfaction and self-perceived employability of knowledge workers were excluded from this study, which might have added different influencing dynamics to the research.
- The specific sequence (career cognitions as independent variables, psychosocial career resources as moderators) in which the constructs variables were investigated might also limit the influencing dynamics between the relevant outcome variables (career satisfaction and self-perceived employability).
- The inclusion of a large number of scales and constructs in the research made it challenging to control the research variables.
- The psychometric test battery had acceptable internal consistency reliability in general, indicating that further statistical analyses may provide useful information. However, some concerns arose pertaining to some of the scales' subscales' convergent and discriminant validity.

Despite the highlighted limitations related to the empirical study, a scientifically rigorous study was conducted to investigate the relationship dynamics between individuals' biographical characteristics (age, gender, race and employment status); career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables); psychosocial career resources (employability attributes, career anchors and career values as moderators); career satisfaction and self-perceived employability (as consequences or dependent variables) as manifested in a sample of knowledge workers in the South African organisational context.

8.3 CONCLUSIONS

This section presents the conclusions of this research regarding the literature review and the empirical study, in accordance with the research aims outlined in Chapter 1.

8.3.1 Conclusion regarding the literature review

The general aim of the research was to investigate the nature of the psychosocial profile that manifests from the relationship dynamics among individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents), their psychosocial career resources (employability attributes, career anchors and career values as moderators) and their

career satisfaction and self-perceived employability (consequences or outcomes); and to evaluate the implications for the career development of knowledge workers critically.

8.3.1.1 Literature research aim 1

Literature research aim 1: *To conceptualise the variables of relevance to the research (career satisfaction, self-perceived employability, career adaptability, psychosocial career preoccupations, employability attributes, career anchors and career values).*

The first aim was accomplished in Chapter 2, 3 and 4.

The conceptualisation of the relevant constructs provided insights into the relevance of traditional career constructs (career anchors and career values) and contemporary career constructs (career adaptability, psychosocial career preoccupations and employability attributes) in the changing VUCA world of work in understanding career satisfaction and self-perceived in Industry 4.0. It is important to consider various psychological career attributes and follow a holistic approach that informs career development practices.

8.3.1.2 Literature research aim 2

Literature research aim 2: *To postulate a theoretical psychosocial career satisfaction and employability profile (based on the theoretical relationship dynamics among the constructs) for enhancing the career satisfaction and self-perceived employability of knowledge workers.*

The second aim was accomplished in Chapter 5.

The theoretical relationship dynamics among the constructs signify that individuals' who value career satisfaction and self-perceived employability are proactive and may demonstrate high levels of career adaptability (career concern, career control, career curiosity, career confidence), as well as strong career preoccupations (career establishment, career adjustment and work-life adjustment).

Career adaptability enhances individuals' adaptive coping behaviour mechanisms in the dynamic and boundaryless work context; therefore, career adaptability should be positively linked to career satisfaction and self-perceived employability. Psychosocial career resources may moderate this positive link. Thus, employability attributes may strengthen the link, whereas certain career anchors and career values may either strengthen or weaken the positive link between career adaptability and career satisfaction and self-perceived employability.

Individuals may experience psychosocial career preoccupations as part of their career stories. Though psychosocial career preoccupations may manifest as proactive and adaptive career behaviour that can motivate individuals to satisfy career-related concerns, these cognitive judgements may also induce feelings of uncertainty and anxiety. Therefore, psychosocial career preoccupations may be negatively linked to career satisfaction and self-perceived employability. It is expected that individuals will be less concerned and anxious when experiencing career satisfaction and self-perceived employability. Psychosocial career resources may moderate the negative link between psychosocial career preoccupations and career satisfaction and self-perceived employability. A loss and deficit in employability attributes may strengthen the negative link, whereas certain career anchors and career values may either strengthen or weaken the negative link between psychosocial career preoccupations and career satisfaction and self-perceived employability.

8.3.1.3 Literature research aim 3

Literature research aim 3: *To evaluate the implications of the hypothesised psychosocial profile for the career development of knowledge workers in the contemporary employment context.*

The third aim was accomplished in Chapter 5.

By taking the relationship dynamics of the hypothesised psychosocial career satisfaction and employability profile into account, the implications are that several interventions can be developed to enhance the career satisfaction and self-perceived employability of knowledge workers. Individual-level interventions should be designed for enhancing career adaptability, addressing psychosocial career preoccupations, developing employability attributes, and establishing well-developed career anchors and career values. Organisations should aim to provide conducive environments for lifelong learning and create a sense and culture of taking shared responsibility for individuals' career development. Organisations should motivate knowledge workers to enhance their self-awareness by identifying their dominant career anchors and most valued career values and should provide support mechanisms to be actively engaged in adaptive career behaviour. A holistic approach should be followed in career development by providing comprehensive career development support, assessment centres for developmental purposes, career coaching and discussions, executive coaching, and in-depth individual career counselling and customised interventions to enhance individuals' career satisfaction and self-perceived employability.

8.3.2 Conclusions regarding the empirical study

The general aim of the research was to construct a career satisfaction and employability profile for knowledge workers based on the relationship dynamics among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents), their psychosocial career resources (employability attributes, career anchors and career values as moderators) and their career satisfaction and self-perceived employability (consequences or outcomes). The research's end goal was to draw conclusions on the relationship dynamics (magnitude and direction) between the constructs for the purpose of proposing organisational career development practices.

This section thus addresses research aim 6.

Research aim 6: *To draw conclusions and make recommendations for future research and practice regarding the career development of knowledge workers.*

8.3.2.1 Conclusion pertaining to research aim 1

Research aim 1: *To assess the relationship dynamics among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables), psychosocial career resources (employability attributes, career anchors and career values as moderators), and career satisfaction and self-perceived employability (as consequences or dependent variables).*

Supportive evidence was provided for the research hypothesis H1.

The relationship dynamics revealed significant negative relationships between the biographical (race, age and employment status), and construct variables (psychosocial career preoccupations, career adaptability, employability attributes, career orientations, career values and career satisfaction). The core conclusion is that individuals' racial background, age, and employment status may play a significant role in understanding the construct variables. Further to this, the negative relationship dynamics suggested differences between biographical groups (race, age and employment status) that were further investigated at the test for significant mean differences analyses.

The relationship dynamics further revealed significant positive relationships between the career cognitions (career adaptability and psychosocial career preoccupations) and the psychosocial career resources (employability attributes, career anchors and career values). The core conclusion is that career cognitions and psychosocial career resources play a significant role in

understanding the relationship dynamics between psychological career attributes and career satisfaction and self-perceived employability. Furthermore, the significant general relationships found between the constructs revealed relationship dynamics that were further investigated in the inferential statistics.

8.3.2.2 Conclusion pertaining to research aim 2

Research aim 2: *To assess whether individuals' career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), as a composite set of independent variables, significantly and positively predict their career satisfaction and self-perceived employability as a composite set of dependent variables.*

Evidence was provided to support the research hypothesis H2 partially.

Core conclusion: Psychological career attributes related to career self-management, career resilience, proactivity, career control, sociability (employability attributes and career adaptability) significantly and positively predict career satisfaction and self-perceived employability as a composite set of career outcomes, whereas career adaptation preoccupations related to psychosocial career preoccupations acts as a significant negative predictor. These proactive career adaptive behaviours should be considered and addressed in the career development of knowledge workers.

8.3.2.3 Conclusion pertaining to research aim 3

Research aim 3: *To assess whether the relationship between individuals' career cognitions (career adaptability and psychosocial career preoccupations as antecedents) and their career satisfaction and self-perceived employability (consequences or outcomes) is more positive when their psychosocial career resources (employability attributes, career anchors and career values) are well developed or strongly crystallised than when these career resources are not well developed or strongly crystallised.*

No evidence was provided to support the research hypothesis H3.

The following core conclusions were drawn:

- Psychosocial career preoccupations and psychosocial career resources (employability attributes, career anchors and career values) are significant predictors in explaining individuals career satisfaction and self-perceived employability. However, the prediction effect is not conditional upon individuals' psychosocial career resource.
- Career adaptability and employability attributes are significant predictors in explaining individuals self-perceived employability. However, the prediction effect is not conditional upon individuals' psychosocial career resources.
- When combining career adaptability with employability attributes, employability attributes are important in understanding individuals' career satisfaction.
- When combining career adaptability with career anchors, career adaptability is important in understanding individuals' career satisfaction and self-perceived employability.
- Career adaptability and career values are significant predictors in explaining individuals' career satisfaction and self-perceived employability. However, the prediction effect is not conditional upon individuals' psychosocial career resources.

Core conclusion: The relationship dynamics between career adaptability and psychosocial career preoccupations as career cognitions and career satisfaction and self-perceived employability are not conditional upon individuals employability attributes, career anchors and career values (psychosocial career resources).

8.3.2.4 Conclusion pertaining to research aim 4

Research aim 4: *To assess whether individuals from various age, gender, race and employment status groups differ significantly regarding their career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values), and career satisfaction and self-perceived employability.*

The following differences related to age and gender should be considered in career development practices that focus on enhancing career satisfaction and self-perceived employability:

- The younger age group (18 – 30 years) has greater career concerns (career adaptability) about their career future and are more likely to be involved in their own career planning tasks than their older counterparts.

- The younger age group (18 – 30 years) has greater career establishment preoccupations and are more concerned about fitting in and advancing in one's career than older individuals.
- The younger age group (18 – 30 years) has greater career adaptation preoccupations and has greater employability related concerns about adapting to the changing career context to fit employment opportunities in the employment market than older individuals.
- The younger age groups (18 – 30 years; 31 – 45 years) have greater work-life adjustment preoccupations and are more concerned about achieving harmony between their work and personal life than individuals in the older age groups (46 – 60 years; 60 years and older).
- The younger age group (18 – 30 years) has stronger general managerial competence career anchors and are more driven to advance in their careers and climbing the corporate ladder than the older age groups (46 – 60 years; 60 years and older). The career establishment age group (31-45 years) are more driven to become general managers than the older age group (60 years and older).
- The establishment career age group (31 – 45 years) has stronger lifestyle career anchors and has stronger lifestyle motivations related to balancing personal and family responsibilities with work commitments than other younger and older age groups (18 – 30 years and 60 years and older).
- The younger age group (18 – 30 years) has stronger teamwork career values and values positive working relations more than the older age group (60 years and older).
- The younger age group (18 – 30 years) has stronger prestige career values and are more driven to obtain recognition and status than other age groups (31 – 45 years; 46 – 60 years; and 60 years and older).
- The younger age group (18 – 30 years) experienced lower career satisfaction and are less satisfied with their career progress, income, career advancement and the development of new skills than the older age groups (31 – 45 years; 46 – 60 years; and 60 years and older).
- Women have greater work-life adjustment preoccupations and are more concerned about achieving harmony between their work and personal life than men.

The following differences related to racial background should be considered in career development practices that focus on enhancing career satisfaction and self-perceived employability:

- The African race group has higher career adaptability and can better cope with developmental tasks, career transitions, career trauma and challenges, and has a higher level of career control, concern, curiosity, and confidence than the white race group.
- The African race group has greater concerns about career development tasks of adaptability and are more concerned about fitting in, adapting to changing employment contexts, and finding harmony between their work and personal life, than the white race group.
- The African race group has stronger psychosocial career resources related to employability attributes than the white race group. The African race group has higher capacities related to managing their career proactively; working with people across different groups; bouncing back after adverse career circumstances, being innovative and inclined to take risks, establishing and maintaining social contact to the advantage of their careers; proactively engaged in activities to change and improve themselves and their circumstances and managing emotions in themselves and others than the white race group.
- The African race group has stronger career anchors related to general managerial competence, entrepreneurial creativity, autonomy, lifestyle, service/dedication, and pure challenge than the white race group. The African race group has, therefore, stronger drives to become general managers and to advance in their careers; to create businesses and to make money, to experience independence, seek a balance between work and family responsibilities, want to make the world a better place, and want to overcome challenges; than the white race group.
- The African race group has stronger career anchors related to general managerial competence and pure challenge than the coloured race group. Therefore, the African race group has a stronger desire to become general managers and advance in their careers and to compete and win than for the coloured race group.
- The Indian race group has stronger psychosocial career resources in terms of cultural competence (employability attributes) and overall career anchors related to general managerial competence and lifestyle than the white race group. Therefore, the Indian race

group has more capacity to understand and work effectively with people across different groups and stronger drives to become general managers and advance in their careers and find harmony between family and work responsibilities than the white race group.

- The Indian race group has stronger overall career anchors than the coloured race group.
- The African race group has stronger crystallised career values related to service orientation, teamwork, influence, creativity, excitement, career development, financial rewards, and prestige, than the white race group. Therefore, the African race group values relationships and personal services, collaborative efforts, new ideas, variety and risk-taking, personal growth, high salaries, recognition and status more than the white race group.
- The Indian race group has stronger crystallised career values, especially related to service orientation than the white race group. The Indian race group has, therefore, stronger motivations to help and provide direct benefits to others than the white race group
- The African race group has stronger levels of self-perceived employability than the white race group. Therefore, the African race group has more confidence in finding new employment or keeping their current employment than the white race group.

The following differences related to employment status should be considered in career development practices that focus on enhancing career satisfaction and self-perceived employability:

- Fixed-term contract employees have greater concerns about career development tasks of adaptability than self-employed individuals. Fixed-term contract employees are more concerned about fitting in with a group, advancing in their career, and more concerned about adapting to changing employment contexts to fit employment opportunities than self-employed individuals.
- Permanently employed individuals have greater concerns about career development tasks of adaptability than self-employed individuals. Therefore, permanently employed individuals are more concerned about fitting in with a group and adapting to changing employment contexts to fit employment opportunities than self-employed individuals.
- Permanently employed individuals have stronger emotional literacy capacities than self-employed individuals. Therefore, permanently employed individuals have more

confidence in recognising, understanding, and managing their emotions and others than self-employed individuals.

- Permanently employed individuals have stronger crystalised career anchors related to security/stability than self-employed individuals. Therefore, permanently employed individuals have higher needs of organising their careers to feel safe and secure, than self-employed individuals.
- Self-employed individuals have stronger crystalised career anchors related to entrepreneurial creativity than permanently employed individuals. Therefore, self-employed individuals have higher aspirations to create businesses that they can identify with than permanently employed individuals.
- Permanently employed individuals have stronger crystalised career values related to service orientation, teamwork, career development and prestige than self-employed individuals. Therefore, permanently employed individuals have stronger drives towards positive and collaborative working relationships and providing direct benefits to others, personal growth, and recognition and status than self-employed individuals.
- Fixed-term contract employees experience less career satisfaction in terms of overall career success achieved, meeting career goals, goals for income, career advancement, and new skills development than permanently employed and self-employed individuals.

Evidence was provided to support the research hypothesis H4.

8.3.2.5 Conclusion pertaining to research aim 5

Research aim 5: *To construct a psychosocial profile for enhancing career satisfaction and employability based on the empirical results.*

For the purpose of the construction of the empirical career satisfaction and employability profile of knowledge workers, it may be more useful to consider the unique main effects that career cognitions and psychosocial career resources individually have on career satisfaction and self-perceived employability as unique constructs on their own.

Self-expression drives related to individual dispositional factors associated with psychosocial career preoccupations of career adaptation preoccupations, and employability attributes associated with proactivity; and career anchors associated with pure challenge and entrepreneurial creativity; and career values associated with service orientation and prestige are important psychological career attributes explaining career satisfaction and should be considered

in career development. The socio-biographical factors related to age, race, and employment status should also be considered in knowledge workers' career development.

For the employability profile, it seems that person-environment fit concerns related to all psychosocial career preoccupations and employability attributes of self-management and sociability; and career anchors of lifestyle and security; and career values of excitement and creativity are important psychological career attributes explaining self-perceived employability and should be considered in career development. The racial background of individuals should also be considered in career development.

8.4 RECOMMENDATIONS

This section provides recommendations for future research and career development practices.

8.4.1 Recommendations for future research

No causal inferences could be made between significant relationships due to the research design's cross-sectional nature; therefore, future research should focus on longitudinal studies to examine how the relevant career constructs change over time.

The sample of knowledge workers was limited to predominantly white males in the established career stage from a population of knowledge workers registered at various professional boards. Thus, future research is recommended to target a larger heterogeneous population of knowledge workers representing the diverse socio-biographical population of knowledge workers in South Africa.

The sample of the study was further limited to knowledge workers. Given the COVID-19 pandemic, thousands of people lost their lives (Department of Health, 2021) and income (Statistics South Africa, 2020). Though only the future will tell, it is assumed that only those who were able to adapt and develop psychosocial career competencies were able to remain employable and ultimately experience career satisfaction. It is thus recommended to extend this study to other occupational groups and settings such as to manual workers and to further investigate the relationship dynamics between –individuals' biographical characteristics (age, gender, race and employment status); career cognitions (career adaptability and psychosocial career preoccupations as antecedents or independent variables); psychosocial career resources (employability attributes, career anchors and career values as moderators); career satisfaction (perception of intrinsic career success) and self-perceived employability (as consequences or dependent variables).

This study explored broad relationship dynamics between the relevant construct variables. It is further recommended that the relationship dynamics between the relevant constructs be explored in more detail by applying mediational designs. More research on improving the construct validity of the scales are also recommended.

It is further recommended to explore the relevance of new knowledge and constructs relevant to the relationship dynamics between career cognitions, psychosocial career resources and positive career outcomes. The construct of psychosocial career preoccupations needs to be explored further and has the potential to develop and extend knowledge and theory related to career cognitions by exploring an additional career construct: psychosocial career affirmations.

8.4.2 Recommendations for career development practices

Specific recommendations for career development practices on an individual and organisational level as well as for professional bodies are stipulated.

8.4.2.1 *Individual-level career development interventions*

Knowledge workers in modern society should take responsibility for their own career development and have an open mindset and engage in lifelong learning. The following valid career development practices and interventions related to employability attributes, career adaptability and psychosocial career preoccupations are aimed to improve individuals' overall sense of career satisfaction and self-perceived employability (Coetzee & Schreuder, 2021; Duarte et al., 2017; Greenhaus et al., 2010; Maree, 2020; Schreuder & Coetzee, 2016; Seibert et al., 2016; van Zyl & Stander, 2019):

Career self-management

- Have a love for a learning attitude (lifelong learning)
- Read often and register for online courses (even if already highly educated)
- Enhance self-knowledge and be aware of one's career identity, career aspirations, values, abilities
- Get to know the external environment, such as the VUCA world of work
- Become aware of the skills needed to be successful
- Develop clear career goals that are aligned with personal values
- Develop action plans to achieve career goals

- Obtain feedback that enhances career decision-making by updating one's skills and seeking job opportunities
- Reflect regularly on career aspirations and progress

Career resilience

- Engage in activities that enhance career competencies, adaptability, flexibility and self-confidence
- Learn to adapt and increase one's ability to bounce back regardless of adverse career circumstances
- Be open to feedback from others, and learn from mistakes
- Focus on one's good qualities

Proactivity

- Take responsibility for decisions
- Be actively engaged in and apply future-orientated and self-initiated actions to change and improve oneself and or one's situation
- Set challenging targets
- Learn to persist despite challenging circumstances

Career control

- Take responsibility for managing and building one's career
- Be active engage in self-discipline
- Manage one's career by planning, organising, leading and control
- Keep motivation
- Enhance feelings of agency and self-determination

Sociability

- Build positive relationships with others
- Practice and express gratitude and appreciation towards colleagues and others

- Practice forgiveness, practice meditation by focusing on “letting go” of issues
- Establish and maintain social contacts
- Utilise formal and informal network ethically to the advantage of career
- Enhance social and emotional intelligence
- Show empathy

Career adaptation preoccupations

- Build confidence in their ability to adapt
- Engage in activities that enhance one's ability to adjust quickly and become accustomed to routines as effective as possible
- Revise and adjust career strategy
- Adjust interests, talents and capabilities to fit with employment opportunities
- Reflect on feelings related to low career satisfaction and low self-perceived employability
- Engage in coping with failure (low career satisfaction) and unemployment
- Utilise positive career affirmations to address work-life adjustment preoccupations
- Seek professional career counselling and guidance

Career development interventions related to proactivity and career adaptation preoccupations (already mentioned) and the following career anchors and career values are aimed to enhance career satisfaction:

Pure challenge

- Engage in overcoming challenging obstacles
- Engage in a variety of career tasks to prevent boredom
- Create a healthy sense of competitiveness and a winning attitude

Entrepreneurial creativity

- As a knowledge worker, be mindful of the career anchor related to entrepreneurial creativity as it is a negative predictor of career satisfaction

- Be mindful of being overly entrepreneurial creativity-orientated and having an unhealthy desire to express and extend oneself through a product or company with their name on
- Be careful about taking uncalculated risks and avoid money-making schemes
- Practice patience; one needs an income and not necessarily a fortune to be secure
- Be mindful of being overly entrepreneurial creativity-oriented as individuals will not stay long in an organisation as they become easily bored and restless
- Being overly orientated to create a personal fortune, and having one's name attached to all that one is involved in, will not enhance career satisfaction

Prestige

- Reward and recognise oneself and others' outstanding performance

Service orientation

- Develop a sense of service
- Value personal relationships
- Develop a sense and attitude of work as a mean of social connection
- Develop emotional intelligence to become aware of one's own feelings and those of others
- Develop curiosity to help people with challenges by evaluating their thoughts and feelings
- Make an effort to help others
- Be engaged to work with people
- Be actively engaged in motivating oneself to provide excellent service
- Find meaning and fulfilment by engaging in a career that fit one's life purpose (congruent person-environment fit)
- Show empathy

The following career development interventions related to career self-management, sociability, psychosocial adaptation preoccupations (already mentioned) and the following psychosocial career preoccupations, career anchors and career values are aimed to enhance self-perceived employability:

Career establishment preoccupations

- Engage in opportunities for self-expression and personal growth, and career advancement
- Engage in developing a good sense of oneself, and career identity
- Engage in active learning and competency improvement to improve the person-environment fit
- Review the current person-environment fit, and reflect on self-perceived employability
- Keep up to date and remain competent in the changing world of work
- Be mindful of concerns related to career establishment
- Utilise positive career affirmations to address career establishment preoccupations

Work-life adjustment preoccupations

- Be mindful of concerns related to work-life adjustment, but not overly concerned as it may reduce the sense of self-perceived employability and confidence to find employment
- Review commitments related to personal, family and career events to make informed career decisions
- Adjust the career-life strategy according to concerns related to settling down
- Explore all possible options available when considering reducing workload or withdrawal from paid employment
- Make sure to assess the implications for the future realistically
- Decide to accept the present or strive towards future goals and make new arrangements in terms of family and work responsibilities
- Deal with unemployment, fears of loss of employment, competence and family; and develop appropriate support mechanisms for coping
- Reflect on self-perceived employability and weight entire career progress

- Reinvest in personal relationships and find new sources of fulfilment, i.e. community involvement, engage in social and family responsibilities, find new hobbies, engage in part-time work
- Make an effort to maintain one's identity and self-worth
- Utilise positive career affirmations to address work-life adjustment preoccupations
- Seek professional career counselling and guidance

Security

- Knowledge workers should be mindful of the security career anchor
- An overly strong desire to feel safe and secure, and a mindset that the future at a specific organisation is predictable and stable when good retirement plans and benefits are in place, and no history of retrenchment will only disappoint individuals and lower their self-perceived employability
- Be mindful to not rely heavily on specific organisations for security, be open to other employment opportunities, and develop a healthy enhanced sense of self-perceived employability

Lifestyle

- Engage in activities to create a harmonious balance between personal, family and career commitments
- Manage potential conflict between family and career demands
- Strive towards balance and engage in self-development
- Engage in developing and balancing various aspects of one's life by utilising talents and abilities in a wide range (career, family and community) of tasks
- Accept new realities and search for meaning in one's career, family and self or make new decisions and head towards other directions
- Practice mindfulness (being actively aware) and being present in every moment, whether at work or with family

Creativity

- Be mindful of being overly creative as it can limit self-perceived employability
- Engage in generating new ideas and being innovative as a team
- Explore unconventional approaches with good judgement and use imagination appropriately

Excitement

- Seen variety to prevent boredom
- Take calculated risks to enhance self-perceived employability
- Engage in learning new skills and trying out new things
- Be ready for uncertainty and expect changes in employment.
- Engage in fast-paced work

8.4.2.2 Organisational level career development interventions

By providing effective and valid organisational-level career development interventions, organisations can enhance individuals' ability to plan their careers in harmony with organisational needs (Coetzee & Schreuder, 2021; Greenhaus et al., 2010; Maree, 2020; Schreuder & Coetzee, 2016). As human capital, knowledge workers is critical for organisational survival, and satisfied employees will be more committed to increased performance (Coetzee & Schreuder, 2021; Ng & Feldman, 2014; van Zyl & Stander, 2019). Though employees need to take responsibility for their own career development, organisations should provide career development support structures in the form of career counselling; mentoring and coaching programmes; employee assistance programmes, and training and development interventions to enhance the career satisfaction and self-perceived employability of knowledge workers. The diverse South African socio-demographic population needs in terms of age and race should be considered as individuals have unique career development needs. The dominant career anchor represented in the sample was work-life balance. Organisations should support work-life balance by considering flexible working hours, work-family enrichment programmes, spouse support, and childcare facilities.

To enhance the value of management development programmes, career anchors should be utilised and explored to diagnose managerial development needs.

8.4.2.3 Professional body-level career development interventions

Professional bodies play an important role in the knowledge economy in South Africa and can contribute to career development practices in communities (Coetzee & Schreuder, 2021; Department of Higher Education and Training, 2015; Maree, 2020; Schreuder & Coetzee, 2016). The lack of education and skills are an enormous challenge for the South African economy. This challenge creates an opportunity for professional bodies to identify talented individuals at school level and sponsor comprehensive career counselling for individuals from previously disadvantaged groups. This initiative may guide and enhance vulnerable individuals' capacity to make informed choices regarding higher education opportunities in their career exploration journey. Professional bodies need to encourage young talent to invest in their career competencies to enhance their career satisfaction and self-perceived employability later in their careers. Professional bodies should be encouraged to instil hope in future knowledge workers' lives and send out a message that career satisfaction can be found in future employment.

Furthermore, professional bodies can create awareness among their members on the predictors of career satisfaction and self-perceived employability by emphasising the importance of career cognitions (career adaptability and psychosocial career preoccupations) and psychosocial career resources (employability attributes, career anchors and career values) in their relevant newsletters. Professional bodies can further provide career development interventions related to (1) self-awareness of psychosocial career preoccupations, career anchors and career values, (2) enhancing career satisfaction and self-perceived employability, and (3) enhancing career adaptability and employability attributes of their members.

8.5 EVALUATION OF CONTRIBUTION OF THE STUDY

The research findings revealed important aspects of the relationship dynamics among the constructs, which contributed on a theoretical, empirical, and practical level to the body of knowledge on the career satisfaction and perceived employability of knowledge workers.

8.5.1 Contribution to theory and field of industrial and organisational psychology

The literature contributed to career and employability theory by conceptualising and providing a better understanding of the constructs.

Three overarching theoretical lenses (person-environment fit, conservation of resources, dispositional employability) were considered in constructing the theoretical psychosocial profile for the career satisfaction and perceived employability of knowledge workers.

The investigation of the relationship dynamics between knowledge workers' career satisfaction and self-perceived employability and their career cognitions (career adaptability and psychosocial career preoccupations) and their psychosocial career resources (employability attributes, career anchors, and career values) contributed towards constructing a theoretical career satisfaction and employability profile for knowledge workers that could be utilised by industrial psychologists in society and in organisations to inform career development interventions. This research was a starting point for adopting a dynamic approach towards exploring the relationship dynamics between knowledge workers' career satisfaction and self-perceived employability (as dependent variables); career adaptability and psychosocial career preoccupations (as independent variables); and employability attributes, career anchors and career values (as moderator variables); and the way their biographical characteristics (age, gender, race and employment status) contribute to the dynamic interplay between these variables.

8.5.2 Contribution to research

Organisational career psychology research in South Africa is underdeveloped when compared to the rest of the world in terms of international trends in research focus areas in career psychology (Schreuder & Coetzee, 2012). A need for more research related to psychosocial career preoccupations and additional career-related constructs and measures was identified by Coetzee and Govender (2020). Therefore, this research aimed to address this gap by further exploring the dynamic relations between the constructs of career satisfaction, self-perceived employability, career cognitions, and psychosocial career resources.

Furthermore, there is a gap in research related to the predictors of career satisfaction and employability (Niu et al., 2019); the relative importance of different predictors, the relationship dynamics among different predictors (career resources), and the circumstances under which different career resources are activated (Blokker et al., 2019; Haenggli & Hirschi, 2020; Peeters et al., 2020; Spurk et al., 2019). This research gap was addressed by further focusing on approaches related to resource management behaviours and attitudes; and resource accumulation and dynamics (Spurk et al., 2019). For this reason, the research study potentially contributed new knowledge to contemporary career theory by exploring the empirically manifested relationship dynamics between the constructs from three theoretical perspectives: person-environment fit (PE-fit) (Holland, 1997; van Vianen, 2018), conservation of resources (COR) (Hobfoll, 1988, 1998, 2001) and dispositional employability (Fugate et al., 2004).

This study aimed to contribute to transformation goals in South Africa through new knowledge production by constructing an empirically tested career satisfaction and employability profile for

knowledge workers. The development of an empirical career satisfaction and employability profile for knowledge workers was a complex and varied task, with many factors either hindering or promoting its development. This was particularly true since the role of career adaptability, psychosocial career preoccupations, employability attributes, career anchors, and career values, in relation to career satisfaction and employability of knowledge workers, is complex and has not yet been well researched in a single study in the South African context before.

New insights pointed out that the relationship dynamics revealed different predictors of different relative importance for the career satisfaction and employability profiles as separate career outcomes and when these career outcomes were combined. The psychosocial profile revealed that career satisfaction and self-perceived employability (as joint career outcomes) is a function of the dynamic interaction between career cognitions, behaviours and attributes of proactive, adaptive behaviour. Career cognitions (career concern and psychosocial career adaptation preoccupations) and psychosocial career resources associated with employability attributes (career self-management, career resilience, proactivity, and sociability) were important predictors for career satisfaction and self-perceived employability, jointly.

The psychosocial profile revealed that career satisfaction is a function of self-expression drives (to meet intrinsic needs) related to the dispositional aspects (individual factors). Career cognitions (psychosocial career adaptation preoccupations) and psychosocial career resources associated with employability attributes (proactivity), career anchors (pure challenge and entrepreneurial creativity), and career values (service orientation and prestige) were important predictors for career satisfaction.

The psychosocial profile further revealed that self-perceived employability is a function of person-environment fit concerns or motives. Career cognitions (psychosocial career preoccupations, related to the establishment, adaptation and work-life adaptation); and psychosocial career resources associated with employability attributes (self-management and sociability); career anchors (lifestyle and security) and career values (excitement and creativity) were important predictors for employability.

The premises of Fugate et al.'s (2004) dispositional theory of employability were enhanced, strengthened and extended to career satisfaction. The theoretical extension of Fugate et al.'s (2004) theory provided conclusive insights and postulated that career satisfaction and self-perceived employability is a function of the dynamic interaction between cognitions (career adaptability and psychosocial career preoccupations), behaviours and attributes of proactive

adaptability (employability attributes, career anchors and career values). This theory extension further accepted that career cognitions on their own are not sufficient to predict individuals' career satisfaction and self-perceived employability but need proactive, adaptive behaviour such as employability attributes (proactivity, resilience and openness to change), well-developed career anchors and values (strong identity) to help attain goals that facilitate career satisfaction and self-perceived employability.

8.5.3 Contribution to industrial and organisational psychology practice

On a practical level, this research constructed an empirically tested profile for enhancing the career satisfaction and employability (as combined career outcomes; and as separate career outcomes) of knowledge workers in the diverse South African context. Based on these psychosocial profiles, specific recommendations for career development interventions were made on an individual level, organisational level, and professional board level. The psychosocial profiles and recommended career development interventions can assist industrial psychologists and HR professionals in understanding the relationship dynamics between traditional and contemporary career constructs that would enhance the career satisfaction and employability of knowledge workers. Hopefully, industrial psychologists, HR professionals, organisations, professional boards and knowledge workers will apply some of these strategies in career development practices.

It is hoped that this research highlighted the importance of career satisfaction and employability in the VUCA world of work and may be better understood in career psychology, especially in the challenging time associated with the COVID-19 world pandemic. Finally, it is hoped that the research findings, associated conclusions and recommendations for career development practices will be seen as providing a significant contribution to the field of industrial and organisational psychology in the South African context.

8.5.4 Contribution to researcher's graduateness and doctorateness

During the research journey, the researcher developed a deep knowledge and was able to conceptualise the career constructs relevant to the study through three theoretical lenses and create new knowledge by extending career satisfaction and employability theory. The research study further enhanced the researcher's ability to contribute to national human capacity development goals and Unisa's niche areas of (1) knowledge generation and human capital development in response to the needs of South Africa and the African continent; especially (a) new knowledge contextualised to South Africa and the African continent, and (b) human capital development contextualised to South Africa and the African continent.

To construct a career satisfaction and employability profile for knowledge workers based on the relationship dynamics among individuals' biographical characteristics (age, gender, race and employment status), career cognitions (career adaptability and psychosocial career preoccupations as antecedents), their psychosocial career resources (employability attributes, career anchors and career values as moderators) and their career satisfaction and self-perceived employability (consequences or outcomes), was indeed a complex process. The researcher thus developed advanced problem solving/decision-making skills through active critical reasoning; analytical skills by providing accurate explanations and rational judgements regarding the literature review and empirical research, and drawing logical and insightful conclusions; presenting and applying information skills by presenting work (knowledge, facts, information, ideas and opinions) that is clear and substantial, and that offers solutions that may potentially benefit industrial psychologists and HR practitioners and contributes to the field and practice of career development.

Throughout the research journey, the researcher acted ethically and responsibly by upholding to the code of ethical research practices and the code of moral beliefs and values of the HR and industrial psychology professions governed by the SABPP and HPCSA. The researcher's interactive skills improved, and new social relationships were formed. The researcher has a continuous learning orientation mindset and was engaged in various self-improvement initiatives, such as the Young Academics Programme, which enhanced her ability to manage herself and her activities effectively and responsibly. This study enhanced the researcher's professional employability. It motivated the researcher to identify consulting opportunities and being active in community engagements.

The researcher strived to demonstrate and adhere to the components of scholarly doctorateness. A knowledge gap was identified in Chapter 1. Explicit research questions were formulated, and a conceptual framework was presented. The researcher applied an appropriate methodology and correct fieldwork. The researcher provided a clear and concise presentation of the results and engagement of the theory. The arguments in the thesis were coherent, and the research questions were answered. Conceptual conclusions were drawn, and the study contributed to knowledge related to career satisfaction and employability. The researcher will apply the findings of the study in practice in a consulting capacity by providing career counselling to knowledge workers. As part of career counselling services, she will make knowledge workers aware of the importance of contemporary career constructs such as career adaptability, psychosocial career preoccupations and employability attributes, and will therefore include these constructs in career

assessment practices. Furthermore, she will provide comprehensive feedback and a career development plan with strategies on how to enhance career adaptability and employability attributes and how to deal with psychosocial career preoccupations appropriately. Furthermore, the researcher will provide feedback to professional boards on the research findings and, where necessary, will provide advice and workshops on how to enhance the career satisfaction and employability of knowledge workers.

This research was an extraordinary journey for the researcher, which only made sense towards reaching the end. It started making sense only when being mindful that she should only focus her thoughts on whatever is true, just, commendable, excellent and worthy of praise. There were indeed tough times of going back and forth and back again before making progress. There were times of feeling lost and overwhelmed. However, there were also times of seeing the light so bright and clear, times of discovery, and finally creating the endpoint. At the endpoint of this journey, the researcher finally realised that this is not the end of the journey but the beginning of many new journeys.

8.6 CHAPTER SUMMARY

This final chapter interpreted the study's empirical results and provided an integrated discussion of the literature with the empirical results. The limitations and conclusions related to the literature review and empirical study were discussed. Recommendations for future research and career development practices were made. Finally, the researcher reflected on the evaluation of the contribution of the study in terms of the theory and field of industrial and organisational psychology, research, career development practice and her own graduateness and doctorateness.

The following final research aim was thus achieved:

Research aim 6: To draw conclusions and make recommendations for future research and practice regarding the career development of knowledge workers.

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APPENDIX A: ETHICAL CLEARANCE CERTIFICATE



CEMS/IOP RESEARCH ETHICS REVIEW COMMITTEE

20 October 2015

Ref #: 2015_CEMS/IOP_036
Name: Louise Engelbrecht
Student #: 57661642

Dear Louise Engelbrecht

Decision: Ethics Approval

Address: Department of Human Resource Management
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Tel: 012 429 4993

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Supervisor: Prof Melinde Coetzee **Co-supervisor:** N/A

Proposal: Constructing a Career Adaptability and Employability Profile for Knowledge Workers

Qualification: Postgraduate degree

Thank you for the application for research ethics clearance by the CEMS/IOP Research Ethics Review Committee for the above mentioned research.

The resubmitted documentation was reviewed in compliance with the Unisa Policy on Research Ethics by the CEMS/IOP on 16 October 2015.

The proposed research may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*
- 2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the CEMS/IOP Ethics Review Committee.*
- 3) An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*



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- 4) *The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.*

Note:

The reference number **2015_CEMS/IOP_036** should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the CEMS/IOP RERC.

Kind regards,



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