CONSTRUCTING A CAREER COUNSELLING FRAMEWORK TO GUIDE ADAPTIVE BEHAVIOUR

by

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Submitted in fulfilment of the requirements for the degree

DOCTOR OF PHILOSOPHY IN PSYCHOLOGY

in the subject

CONSULTING PSYCHOLOGY

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Thesis title: Constructing a career counselling framework to guide adaptive behaviour

I declare that the above 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.

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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.

I further declare that ethics clearance to conduct the research has been obtained from the Department of Industrial and Organisational Psychology, University of South Africa, as well as from the participating organisations.

I also 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. The ethics clearance certificate for the research is attached as Appendix A. The permissions certificate is attached as Appendix B.

SIGNATURE   **DATE: 17 November 2023**

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DEGREE: Doctor of Philosophy in Psychology

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ABSTRACT

This research focused on constructing a career counselling framework that could be applied for career development support in the context of the Department of Mineral Resources and Energy (DMRE) in South Africa. The constructs of relevance to the research are adaptivity or adaptive readiness (operationalised by individuals' career agility and psychological capital), adaptability resources (operationalised by individuals' career adaptability) and mode of adaptedness (operationalised by individuals' career resilience and overall career satisfaction) as an outcome. Individuals' sociodemographic characteristics of age, gender, job level and tenure were treated as control variables to assess whether the relationship between the construct variables was conditional upon their sociodemographic characteristics and whether any significant group differences could be detected.

A quantitative cross-sectional survey was conducted on a random sample of (n = 412) DMRE employees. Correlation statistics revealed significant positive associations between the construct variables. The mediation analysis showed that career adaptability partially acted as an explanatory mechanism in understanding the link between both career agility and psychological capital and participants' career resilience. Career agility and psychological capital also directly increased the likelihood of greater levels of career resilience and career satisfaction. The moderating results revealed that participants' level of career resilience was conditional upon their tenure and mean scores on career agility. Their level of career satisfaction was conditional upon their job level and mean scores on psychological capital. The tests for significant mean differences showed that the age groups differed significantly regarding their mean scores on facets of career agility and career adaptability, including career

resilience and personal resilience. The job level groups differed significantly regarding their mean scores on self-efficacy (psychological capital) and personal resilience (career resilience). The tenure groups differed significantly regarding facets of their career agility and career adaptability.

Theoretically, the study extended the understanding of the relationship dynamics among constructs of career-adaptive behaviour. At an empirical level, the study delivered an empirically tested career counselling framework to guide organisational support interventions for adaptive behaviour. At a practical level, individual and organisational interventions regarding the career-adaptive counselling framework for enhancing career resilience and career satisfaction were recommended.

ABSTRACT/SUMMARY

UKWAKHA UHLAKA LWEZELULEKO NGEMISEBENZI YOKUHLELA UKUZIPHATHA OKUJWAYELEKILE

ngo

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ISIFINQO

Lolu cwaningo lugxile ekwakhiweni kohlaka lokwelulekwa ngokwemisebenzi olungase lusetshenziselwe ukwesekwa kokuthuthukiswa kwemisebenzi ngokwesimo soMnyango Wezimbiwa Namandla (MWN) eNingizimu Afrika. Izakhiwo zokuhambisana nocwaningo ukuzivumelanisa nezimo noma ukulungela ukuzivumelanisa nezimo (okusetshenziswa ukushesha komuntu ngamunye kwezemisebenzi kanye nemali engokwengqondo), izinsiza zokuzivumelanisa nezimo (ezisetshenziswa ngokuguquguquka kwemisebenzi yomuntu ngamunye) kanye nendlela yokuzivumelanisa nezimo (okusetshenziswa ukuqina komuntu ngamunye emsebenzini kanye nokwaneliseka kwawo wonke umsebenzi) njengomphumela. Izici zomuntu ngamunye zokuhlalisana kwabantu yobudala, ubulili, izinga lomsebenzi kanye nesikhathi sokuhlala zithathwe njengezinto eziguquguqukayo zokulawula ukuze kuhlolwe ukuthi ubudlelwano phakathi kwezinto eziguquguqukayo zokwakha babunemibandela ezicini zabo zokuhlalisana komphakathi nokuthi noma yimuphi umehluko obalulekile weqembu ongatholwa.

Inhlolovo yesimoi sezingxenye ezihlukene yenziwa ngesampula engahleliwe (n = 412) yabasebenzi be-DMRE. Izibalo zokuhlobana zembula ukuhlobana okubalulekile okuhle phakathi kokuguquguqukayo kokwakha. Ukuhlaziywa kokuxoxisana kubonise ukuthi ukuguquguquka kwemisebenzi kusebenze ngokwengxenye njengendlela echazayo ekuqondeni ukuxhumana phakathi kwakho kokubili ukushesha komsebenzi kanye nemali engokwengqondo kanye nokuqina komsebenzi wabahlanganyeli. Ukushesha emsebenzini

kanye nemali engokwengqondo nakho kukhulise ngokuqondile amathuba okuba khona kwamazinga amakhulu okuqina emsebenzini kanye nokwaneliseka emsebenzini. Imiphumela yokumodareyitha iveze ukuthi izinga lokuqina labahlanganyeli lalincike esikhathini sabo sokuphatha kanye namaphuzu asho ukushesha emsebenzini. Izinga labo lokwaneliseka emsebenzini lalincike ezingeni labo lomsebenzi futhi lisho amaphuzu emalini yengqondo. Ukuhlolwa komehluko obalulekile wabonisa ukuthi amaqembu obudala ahluka kakhulu mayelana nenani lamaphuzu awo ezicini zokushesha emsebenzini nokuzivumelanisa nezimo emsebenzini, okuhlanganisa ukukhuthazela emsebenzini nokukhuthazela komuntu siqu. Amaqembu ezinga lomsebenzi ahluke kakhulu mayelana nenani lamaphuzu awo okusebenza kahle (imali engokwengqondo) kanye nokuqina komuntu siqu (ukuqina emsebenzini). Isikhathi sokuhlala samaqembu ahluke kakhulu mayelana nezici zekhono labo lomsebenzi kanye nokuzivumelanisa nezimo emsebenzini.

Ezingeni lethiyori, ucwaningo lwandisa ukuqonda kokuguquguquka kobudlelwane phakathi kwezakhiwo zokuziphatha okuzivumelanisa nezimo emsebenzini. Ezingeni lobufakazi, ucwaningo lwethule uhlaka lokwelulekwa ngokwemisebenzi oluvivinywe ngokunamandla ukuze luqondise ukungenelela kokwesekwa kwenhlangano yokuziphatha okuguquguqukayo. Ezingeni elingokoqobo, ukungenelela komuntu ngamunye kanye nenhlangano ngokohlaka lokwelulekwa oluvumelana neokugculiseka emsebenzini ukuze kuthuthukiswe ukuqina emsebenzini kanye nokwaneliseka emsebenzini.

Amagama abalulekile:
Ukuziphatha okuguquguqukayo, ukulungela ukuzivumelanisa nezimo, ukwamukela isimo, ukuzivumelanisa nomsebenzi, ukuhambisana nezimo, ukujwayela umsebenzi, ikhono lomsebenzi, ukuzivumelanisa nezimo emsebenzini, isiqondiso somsebenzi, ukuqina emsebenzini, ukwaneliseka emsebenzini, ingqondo yomnotho wemali

KONSTRUKSIE VAN 'N LOOPBAANVOORLIGTINGSRAAMWERK OM AANPASBAARHEIDSGEDRAG TE RIG

deur

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ABSTRAK

Hierdie navorsing het op die konstruksie van 'n loopbaanvoorligtingsraamwerk gefokus wat op loopbaanontwikkelingsteun in die konteks van die Departement van Minerale Hulpbronne en Energie (DMRE) in Suid-Afrika toegepas kan word. Die tersaaklike konstrukte vir die navorsing is aanpasbaarheid of aanpassingsgereedheid (geoperasionaliseer deur individue se loopbaanbeweeglikheid en sielkundige kapitaal), aanpasbaarheidhulpbronne (geoperasionaliseer deur individue se loopbaanaanpasbaarheid) en modus van aangepastheid (geoperasionaliseer deur individue se loopbaanveerkragtigheid en algehele loopbaantevredenheid) as uitkoms. Individue se sosiodemografiese eienskappe van ouderdom, geslag, posvlak en diensstyd is as beheerveranderlikes gehanteer om te assesseer of die verhouding tussen die konstrukveranderlikes aan hul sosiodemografiese eienskappe onderhewig is en of enige belangrike groepsverskille bespeur kan word.

'n Kwantitatiewe deursnee-opname is op 'n ewekansige steekproef van (n = 412) DMRE-werknemers uitgevoer. Korrelasiestatistieke het beduidende positiewe assosiasies tussen die konstrukveranderlikes blootgelê. Die mediasieontleding het aangedui dat loopbaanaanpasbaarheid deels as verklarende meganisme opgetree het om die skakel tussen loopbaanbeweeglikheid en sielkundige kapitaal asook deelnemers se loopbaanveerkragtigheid te verstaan. Loopbaanbeweeglikheid en sielkundige kapitaal verhoog ook regstreeks die waarskynlikheid van groter vlakke van loopbaanveerkragtigheid en loopbaantevredenheid. Die modereringsresultate het getoon dat deelnemers se vlak van loopbaanveerkragtigheid van hul diensstyd en gemiddelde tellings met betrekking tot loopbaanbeweeglikheid afgehang het. Hul vlak van loopbaantevredenheid was aan hul

posvlak en gemiddelde tellings met betrekking tot sielkundige kapitaal onderhewig. Die toetse vir beduidende gemiddelde verskille het aangedui dat die ouderdomsgroepe beduidend verskil met betrekking tot hul gemiddelde tellings vir fasette van loopbaanbeweeglikheid en loopbaanaanpasbaarheid, insluitend loopbaanveerkragtigheid en persoonlike veerkragtigheid. Die posvlakgroepe het beduidend verskil met betrekking tot hul gemiddelde tellings vir selfdoeltreffendheid (sielkundige kapitaal) en persoonlike veerkragtigheid (loopbaanveerkragtigheid). Die dienstydgroepe het beduidend verskil met betrekking tot fasette van hul loopbaanbeweeglikheid en loopbaanaanpasbaarheid.

Op 'n teoretiese vlak het die studie die begrip van die verhoudingsdinamiek onder konstrukte van loopbaanaanpasbaarheidsgedrag uitgebrei. Op 'n empiriese vlak het die studie 'n empiries getoetste loopbaanvoorligtingsraamwerk daargestel om organisatoriese ondersteuningsingrypings vir aanpasbaarheidsgedrag te rig. Op 'n praktiese vlak is individuele en organisatoriese ingrypings aan die hand van loopbaanaanpasbaarheid-voorligtingsraamwerk vir die versterking van loopbaanveerkragtigheid en loopbaantevredenheid aanbeveel.

Sleutelwoorde:

Aanpasbaarheidsgedrag, aanpassingsgereedheid, aanpasbaarheid, loopbaanaanpassing, loopbaanaangepastheid, loopbaanaanpassingsvermoë, loopbaanbeweeglikheid, loopbaanaanpasbaarheid, loopbaanvoorligting, loopbaanveerkragtigheid, loopbaantevredenheid, sielkundige kapitaal

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CHAPTER 3: ANTECEDENTS OF ADAPTIVE CAREER BEHAVIOUR

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AIC:	Akaike Information Criterion
ANOVA:	Analysis of Variance
AV:	Average
AVE:	Average Variance Extracted
CAAS:	Career Adaptabilities Scale
CAS:	Career Agility Scale
CCT:	Career Construction Theory
CFA:	Confirmatory Factor Analysis
CFI:	Comparative Fit Index

CMB:	Common Method Bias
CMV:	Common Method Variance
CR:	Composite Reliability
CRQ:	Career Resilience Questionnaire
CSS:	Career Satisfaction Scale
DMRE:	Department of Mineral Resources and Energy
DPSA:	Department of Public Service and Administration
IBM:	International Business Machines Corporation
ILO:	International Labour Organisation
LLCI:	Lower-Level Confidence Interval
MTEF:	Medium Term Expenditure Framework
NDP:	National Development Plan
PCQ:	Psychological Capital Questionnaire
P-E:	Person-Environment
POPIA:	Protection of Personal Information Act
PSYCAP:	Psychological Capital
PSC:	Public Service Commission
RMSE:	Root Mean Square Error
SAQA:	South African Qualification Authority
SD:	Standard Deviation
SDR:	Socially Desirable Responding
SPSP:	Statistical Package for Social Sciences
SRMR:	Standard Root Mean Square Residual
TWA:	Theory of Work Adjustment
URL:	Uniform Resource Locator
ULCI:	Upper-Level Confidence Internal
4IR	Fourth Industrial Revolution

CHAPTER 1: SCIENTIFIC OVERVIEW OF THE RESEARCH

This research focuses on constructing a career counselling framework for career development support in the context of the Department of Mineral Resources and Energy (DMRE) in South Africa. The constructs of relevance to the research are adaptivity or adaptive readiness (operationalised by individuals' career agility and psychological capital), adaptability resources (operationalised by individuals' career adaptability) and mode of adaptedness (operationalised by individuals' career resilience and overall career satisfaction) as an outcome. Individuals' sociodemographic characteristics of age, gender, job level and tenure are treated as control variables to assess whether the relationship between the construct variables is conditional upon their sociodemographic characteristics.

This chapter provides the background and motivation for the intended research, which will result in formulating the problem statement and the research questions. Subsequently, the research aims and the paradigm perspectives, which form the definitive boundary of the research, are discussed. Further, this chapter presents the research design and method, including the steps that structure the research process, followed by the chapter outline.

1.1 BACKGROUND AND MOTIVATION FOR THE RESEARCH

The context of this research relates to employees' career development within the DMRE, a public service department in the South African government. More specifically, the research aimed to explore how constructs of adaptive career behaviour contribute to constructing a career counselling framework that guides adaptive behaviour and informs the career development support practices of public service employees. Career counselling for adaptive behaviour has become crucial in increasingly turbulent and uncertain career contexts, characterised by fragmented and unpredictable educational and vocational pathways (Coetzee et al., 2021; Johnston, 2018; Perera & McIlveen, 2017).

The goal of the 4IR was technological progress, for profit rather than to integrate technological and human strength which is the goal of 5IR. The 5th Industrial Revolution (5IR) advocates human-machine collaboration to realise a future in which humans and technology function harmoniously (Noble et al, 2022). 5IR has implications for adaptive career behaviour as it prioritizes efforts where human factors must excel to collaborate with technology factor instead of replacing the other (Noble et al, 2022).

The coming of the Fifth Industrial Revolution (5IR) has led to the probability of jobs becoming automated. Consequently, many people could face retrenchment, and their skills may become obsolete (2023/28 MTEF Human Resource Plan). There is also a probability that many job vacancies will remain vacant because more people with appropriate competencies are needed (2023/28 MTEF Human Resource Plan). The COVID-19 pandemic has led many workers in developing and emerging economies to lose jobs, resulting in significant unemployment (ILO Monitor, 2020). In South Africa, employment decreased significantly in the second quarter of 2020 compared to the previous year. According to Statistics South Africa (2023), the South African unemployment rate is 7,921 million (32.6% in the second quarter of 2023). Changes in the field of work brought on by the post-pandemic digital-driven workplace (Coetzee & Veldsman, 2022; Oosthuizen, 2022) necessitate the development of adaptive career behaviours. Chapter 4 will elaborate in more detail on the trends and patterns discussed here.

In the context of the current research, adaptive career behaviour is conceptualised as encompassing individuals' career adaptivity (i.e., adaptive readiness or dispositional willingness and flexibility to change), career adaptability (i.e., activated self-regulatory resources of career adaptability), and mode of adaptedness as outcome (i.e., career resilience and career satisfaction). Johnston (2018) explains that individuals' adaptive readiness and adaptability resources lead to adaptation or adapting outcomes such as career satisfaction, promotability, organisational commitment and turnover. Developing a career counselling framework for enhancing individuals' adaptive behaviour is therefore highly relevant and essential in today's world of work and warrants the importance of the present research.

The current research extends existing research on career adaptation by exploring, apart from the well-known construct of psychological capital, career agility as a new career construct of adaptive readiness that is relevant to the digital era (Coetzee et al., 2020; Coetzee et al., 2021). The research also explores career resilience and career satisfaction as psychological modes of adaptedness or outcomes of career adaptation. Finally, the research adds new insights by investigating the moderation role of sociodemographic variables (age, gender, job level and tenure) in the relationship dynamics among the constructs. The research endeavoured to construct a career counselling framework for guiding adaptive behaviour in the workplace.

The internal challenges of career development in the DMRE have also necessitated the construction of a career counselling framework for guiding adaptive behaviour. These include talent management; professional, technical, and scientific skill shortages; midlife career crises; employees stagnating in their positions with little hope of promotion; and the existing

employment legislation on career development (Integrated Human Resource Plan in the DMRE (2023 to 2028); Public Service Regulations, 2016, Government Gazette No: 40167; Policy on Training and Development in the DMRE 2021). The Department of Public Service and Administration (DPSA) has implemented guidelines on career management to advocate for creating an environment conducive to job satisfaction, motivation and career progression in public service departments. These guidelines promote an environment in which individual employees may plan and manage their careers and take ownership of their career development with the full support of the department involved (Human Resource Development Strategy in the South African Public Service, Vision 2015; National Policy for an Integrated Career Development System for South Africa, 2017).

In response to the challenges, the DMRE has developed and implemented a policy on implementing a career development programme (career assessment, counselling, planning guidance and advice). Since 2014, more than 600 employees have participated in this programme. Still, progress made by employees in terms of career progression, talent management and job satisfaction has been critically slow, hence the present study. (2023/28MTEF Human Resource plan; Policy on career development in the Department of Mineral Resources and Energy, 2014).

The DMRE and its employees must also respond and align with the national policy on an Integrated Career Development System for South Africa (Ministry of Higher Education and Training, 2017). The national policy prescribes the establishment of structures and frameworks to ensure the support and implementation of career development services nationwide. Currently, a career counselling framework in the DMRE is lacking (Progress report on the implementation of career development in the Department of Mineral Resources, 2019). Such a framework would assist employees to adapt to or cope with career transitions, traumas and disruptions, enhancing career resilience and career satisfaction (Lin & Chen, 2020; Peeters et al., 2022; Zhang et al., 2022).

The current study draws from the career construction theory (CCT) of career adaptation (Hirschi et al., 2015; Savickas, 2013; Savickas et al., 2018) to assess the relationship dynamics among key psychosocial constructs of career adaptation, namely, adaptivity or adaptive readiness (operationalised as career agility and psychological capital), adaptability resources (operationalised as career adaptability) and psychological modes or outcomes of career adaptedness (operationalised as career resilience and career satisfaction). According to Hirschi et al. (2015), adaptivity is a psychological trait involving the willingness to confront career disruptions, dilemmas and crossroads and the ability to negotiate such challenges.

Career adaptability involves psychological self-regulation or adapting and entails the ability to cope with tasks, transitions and traumas. Career adaptability resources are operationalised as career concern, career control, career curiosity and career confidence (Hirschi et al., 2015), where adaptation results in a psychological state exhibiting career identity, career satisfaction, career resilience, employability, promotability, and work performance (Hirschi et al., 2015; Johnston, 2018).

Career counselling is a specialised task that assists the client in coping with career transitions, dilemmas and disruptions more effectively (Niles, 2013). According to Maree (2013), career counselling involves looking for patterns of meaning in a client's life/career. The career counselling process begins by assessing career dilemmas, setting the client's career objectives and goals, designing and developing interventions, assessing that client's progress and, finally, terminating the counselling relationship with the client (Niles, 2013). In the context of the present research, it is assumed that insight into the relationship dynamics among clients' (employees') career agility (Coetzee et al., 2020; Coetzee et al., 2021) and psychological capital (PsyCap, Luthans & Youssef-Morgan, 2017), career adaptability resources (Savickas, 2013; Savickas et al., 2018), and their career resilience (Coetzee et al., 2015) and career satisfaction (Greenhaus et al., 1990; Spurk et al., 2015) will enable the construction of a career counselling framework that will help employees in adapting to changing work and career conditions in the workplace.

Career adaptivity (i.e., career agility and psychological capital [PsyCap] as states of adaptive readiness) prepares employees to cope with uncertain and turbulent career and work conditions (Coetzee et al., 2020; Luthans & Youssef-Morgan, 2017). States of adaptivity generally activate the use of career adaptability resources (Coetzee et al., 2020; Coetzee et al., 2021; Hirschi et al., 2015; Johnston, 2018) and predict their modes of career adaptedness (Savickas, 2013; Savickas et al., 2018) such as career resilience and career satisfaction (Coetzee et al., 2022; Johnston, 2018). Career adaptation occurs when clients use internal and external resources to cope with career transitions and traumas, ensuring they become career resilient and maintain career satisfaction (Hirschi et al., 2015). Chapters 2 and 3 discuss the study constructs in more detail. Chapter 4 explores the utility of the relationship dynamics among the constructs of career adaptivity, career adaptability and career adaptation in a proposed career counselling framework.

This study also explored the sociodemographic characteristics such as age, gender, job level and tenure and their possible effect in moderating the relationship dynamics between the antecedent variables (career agility and PsyCap), the mediating variable (career adaptability),

and the dependent variables (career resilience and career satisfaction). Kostal and Wiernik (2019) assert that research on the relationship between demographic characteristics and a psychological variable has been a cornerstone of psychological science for a century. These authors furthermore state that there is limited research on the implications of demographic differences for modern careers. Consequently, research has not been well integrated into the larger literature on demographic differences in psychological characteristics such as adaptivity, adaptability, career resilience and career satisfaction in the South African work context. As such, the findings of the current study contribute to an understanding of the influence of sociodemographics on career adaptive behaviour.

1.2   PROBLEM STATEMENT

The National Policy on an Integrated Career Development System for South Africa (Government Gazette number: 40795, 2017) highlights the need to construct a career counselling framework to foster career resilience (Ministry of Higher Education and Training, 2017).

Research on the relationship dynamics between the antecedent variables of career adaptivity (career agility and psychological capital), career adaptability, and the dependent variables of career resilience and career satisfaction in South African public service is scarce. Most studies focus only on career adaptability as an antecedent variable and have used it to explain how individuals cope with career adaptation. Johnston (2018) further asserts that the term "career adaptability" is related to many different concepts and constructs, and the mediating effect of career adaptability is unclear. The construct of career agility is under-researched, and limited research is available (Coetzee et al., 2020; Coetzee et al., 2021). Several researchers state that the potential for the constructs of career resilience and career satisfaction to benefit people's lives is substantial and should be further investigated (Coetzee et al., 2015; Kodama, 2017; Moorhouse & Caltabiano, 2007).

This research study makes a new contribution to the field of career development by proposing a career counselling framework to guide the career adaptive behaviour of DMRE employees when faced with career adaptation dilemmas. The research study brings new knowledge and insights into the associations between the constructs of career agility, psychological capital, career adaptability, career resilience and career satisfaction, as well as the role of sociodemographic characteristics such as age, gender, job level and tenure.

A review of the current literature on the relationship dynamics among the constructs indicates the following research problems:

- Theoretical models do not clarify the relationship dynamics between career agility and psychological capital (career adaptivity), career adaptability (adaptability resources), and career resilience and career satisfaction (outcome of adaptive behaviour) jointly in a single study.
- Currently, there is no existing career counselling framework for guiding adaptive career behaviour within the South African public service and the DMRE context.
- In the context of career development within the South African work environment, industrial psychologists, consulting psychologists, and human resources practitioners require knowledge about the nature of the theoretical and observed relationship dynamics between the study variables. The reason for this is that the knowledge gained from the research may bring new insights that could inform employees' career development practices.

The problem statement leads to the following general research question:

What are the relationship dynamics between individuals' career agility, psychological capital, career adaptability, career resilience, career satisfaction, and sociodemographic variables (age, gender, job level and tenure), and how can the core dynamics inform the construction of a career counselling framework for guiding adaptive behaviour in the context of the DMRE?

1.2.1 Research questions with regard to the literature review

In terms of the literature review, the following research questions were formulated:

- **Research question 1:** How does the literature conceptualise adaptive career behaviour in the contemporary employment context?

- **Research question 2:** What are the theoretical relationship dynamics among the constructs of career agility and psychological capital (career adaptivity), career adaptability (adaptability resources), and career resilience and career satisfaction (as an outcome of adaptive behaviour or adaptation), and how do they inform the construction of a theoretical career counselling framework for guiding adaptive behaviour?

1.2.2   Research questions with regard to the empirical study

In terms of the empirical study, the following research questions were formulated:

- **Research question 1**: What is the nature of the relationship dynamics between individuals' career agility, psychological capital, career adaptability, career resilience, and overall career satisfaction?

- **Research question 2**: Does individuals' career adaptability mediate the link between their (1) career agility and (2) psychological capital, and their career resilience and career satisfaction?

- **Research question 3**: Is there a significant interaction effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career adaptability, career resilience and career satisfaction?

- **Research question 4**: Is there a significant interaction effect between individuals' career adaptability and sociodemographic characteristics (age, gender, job level and tenure) in predicting their career resilience and career satisfaction?

- **Research question 5**: Do individuals from various age, gender, job level, and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction?

- **Research question 6**: How can the empirical results be used to construct a career counselling framework for guiding adaptive career behaviour?

- **Research question 7:** What conclusions and recommendations can be formulated for research and career counselling practices in the field of Consulting Psychology?

From the above research questions, the following general and specific aims were formulated:

1.3   GENERAL AIM OF THE RESEARCH

The general aim of the study is to critically evaluate the relationship dynamics among the constructs of career agility and psychological capital (career adaptivity), career adaptability (adaptability resources), and career resilience and career satisfaction (as outcomes of adaptive behaviour or adaptation), and the extent to which they inform the construction of a career counselling framework for guiding adaptive career behaviour.

1.3.1   Specific aims of the research

The following specific aims were formulated for the literature review and empirical study:

1.3.1.1   Literature review

The specific aims of the theoretical study are the following:

- **Research aim 1:** To conceptualise adaptive career behaviour in the contemporary employment context.

- **Research aim 2**: To conceptualise the theoretical relationship dynamics among the constructs of career agility and psychological capital (career adaptivity), career adaptability (adaptability resources), and career resilience and career satisfaction (as outcomes of adaptive behaviour or adaptation), and the extent to which they inform the construction of a theoretical career counselling framework for guiding adaptive behaviour.

1.3.1.2   Empirical study

The specific aims of the empirical quantitative study are the following:

- **Research aim 1**: To explore the nature, magnitude and direction of the statistical relationship dynamics between individuals' adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources as an adaptive response (measured by individuals' career adaptability), and adaptation (measured by individuals' career resilience and their overall career satisfaction).

- **Research aim 2**: To assess whether individuals' career adaptability mediates the link between their (1) career agility and (2) psychological capital, and their career resilience and career satisfaction.

- **Research aim 3**: To assess whether there is a significant interaction effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career adaptability, career resilience and career satisfaction.

- **Research aim 4**: To assess whether there is a significant interaction effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career resilience and career satisfaction.

- **Research aim 5**: To assess whether individuals from various age, gender, job level and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.

- **Research aim 6**: To critically evaluate how the empirical results can be used to construct a career counselling framework for guiding adaptive behaviour.

- **Research aim 7:** To formulate conclusions and recommendations for research and career counselling practices in the field of Consulting Psychology.

1.4   RESEARCH MODEL AND PARADIGM PERSPECTIVE

The seminal research model of Mouton and Marais (1996) was used as the framework for this research. In this model, social science research refers to a collaborative human activity in which social reality is studied objectively to gain a valid understanding of it. The following four dimensions of social science research are included in the framework:

- sociological (collaborative human activity in which social reality is studied objectively to gain valid knowledge of it)
- ontological (research is always directed at an aspect or aspects of reality)
- epistemological (generates results and findings which are as valid and truthful as possible) and

- methodological (planning, structure and execution of research to comply with the criteria of science).

The model of Mouton and Marais (1996) is a systems theoretical model with three subsystems interacting with each other and the research domain of a specific discipline. These subsystems include the paradigm perspective (intellectual climate), the market of intellectual resources and the research process itself.

A paradigm is the general organising framework (intellectual climate) for theory and research. Paradigms outline the definitive boundaries of the research and include the basic assumptions, key issues, models of quality research and the research methods or techniques for seeking answers (Babbie & Mouton, 2016; Neuman, 2014;2021).

1.4.1 The intellectual climate

The literature review is presented in terms of a social constructivist and developmental paradigm, whereas the empirical study is presented from a postpositivist research paradigm perspective.

1.4.1.1 Literature review

Thematically, a social constructivist paradigm relates to the constructs of adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources (measured by individuals' career adaptability) and adaptedness (measured by individuals' career resilience and overall career satisfaction). Maree (2013) states that a social constructivist paradigm enables clients to advise themselves while considering the advice and opinions of others. This paradigm is relevant in constructing a career counselling framework to guide adaptive behaviour. A developmental vocational paradigm enables researchers to study participants' vocational behaviour in coping with career transitions and career traumas at various career life stages (Savickas, 2013). In line with this, the person performs specific tasks during each life or career stage to negotiate career transitions and traumas (Coetzee & Schreuder, 2021).

1.4.1.2 Empirical research: Quantitative study

A cross-sectional quantitative research design was followed in constructing an empirical career counselling framework based on the relationship dynamics among the construct variables.

The quantitative empirical research is presented within the space of a postpositivist research paradigm. Postpositivism emphasises determination, reductionism, empirical observation and measurement, and theory verification. It is based on a deterministic philosophy with an emphasis on causality. Moreover, postpositivism is reductionist in reducing ideas to hypotheses or research questions. The knowledge derived from a postpositivist approach is based on carefully measuring and observing individual behaviour to support or contradict a theory and make necessary modifications before additional tests are conducted (Creswell, 2014).

Postpositivism is based on the following basic assumptions: (1) knowledge is conjectural in that absolute truth can never be found; (2) research is the process of making claims and then refining or rejecting some of them for other claims more strongly warranted; (3) data, evidence and rational considerations shape knowledge; (4) research seeks to develop true statements that can explain or describe causal relationships; and (5) being objective is an essential aspect of competent investigation (Creswell, 2014). Thematically, the empirical study deals with the relationship dynamics between the variables of concern to the current study.

1.4.2 The market of intellectual resources

The market of intellectual resources refers to the collection of beliefs that directly affect the epistemic status of scientific statements (Mouton & Marais, 1996). For this study, the following sections present the theoretical models, metatheoretical statements, conceptual descriptions about the constructs of concern to the study, and the central hypothesis and the theoretical and methodological assumptions.

1.4.2.1 Metatheoretical statements

Metatheoretical statements represent the assumptions underlying the theories, models and paradigms that form the definitive context of a specific study (Mouton & Marais, 1996). In this study, the disciplinary context focuses on Consulting Psychology which refers to psychology applied in industry and organisations (Strümpfer, 2007). As an applied division of industrial

and organisational psychology, Consulting Psychology is concerned with studying human behaviour related to work and applying psychological principles, theory and research to the work context (Coetzee & Schreuder, 2010).

1.4.2.2 Conceptual descriptions

As shown in Table 1.1, the following conceptual descriptions serve as points of departure: Adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources (measured by individuals' career adaptability), and adaptedness as an outcome (measured by individuals' career resilience and overall career satisfaction).

Table 1.1

Conceptual Descriptions

Construct	Subfactors	Theory	Measurement instrument
Career agility	Technological adaptivity Agile learning Career navigation	Theory of career agility (Coetzee et al., 2021)	Career Agility Scale (CAS) (Coetzee et al., 2021)
Psychological capital (PsyCap)	Self-efficacy Optimism Hope Resiliency	Theory of psychological capital (Luthans & Youssef-Morgan, 2017)	Psychological Capital Questionnaire (PCQ) (Luthans et al., 2007)
Career adaptability	Career concern Career control Career curiosity Career confidence	Career construction theory (CCT) of career adaptation (Savickas, 2013; Savickas et al., 2018)	Career Adapt-Abilities Scale (CAAS) (Savickas & Porfeli, 2012)
Resilience	Self-reliance Personal resilience Work resilience	Theory of career resilience (Fourie & Van Vuuren, 1998; Mogale, 2015)	Adapted Career Resilience Questionnaire (CRQ) (Mogale, 2015)

Career satisfaction	Career satisfaction	Theory of career satisfaction (Greenhaus et al., 1990)	Career Satisfaction Scale (Greenhaus et al., 1990)

Career adaptivity: Career agility

Career agility refers to an individual's adeptness in moving quickly and with ease through the challenges posed by an uncertain and volatile career and employment context (career–life predisposing individuals to be innovative and proactive) (Coetzee et al., 2020; Coetzee et al., 2021). The career agility model of Coetzee et al. (2021) is of relevance. The scale is the Career Agility Scale (CAS) developed by Coetzee et al. (2021), and the subscales are technological adaptivity, agile learning and career navigation.

Career adaptivity: Psychological capital

Psychological capital refers to an individual's positive psychological state comprising hope, self-efficacy, resilience and optimism (Luthans et al., 2007). The integrated psychological capital (PsyCap) theory of Luthans et al. (2007) is the theoretical model relevant to this construct. The scale is the Psychological Capital Questionnaire (PCQ), and the subscales are self-efficacy, hope, optimism and resilience (Luthans et al., 2007).

Adaptability resources: Career adaptability

Career adaptability refers to having resources such as career concern, career control, career curiosity and career confidence that the individual draws from to cope with (respond to) current or anticipated change; these are self-regulation strengths or capacities as adaptive responses (Johnston, 2018; Savickas & Porfeli, 2012). The theoretical model relevant to the construct is the career construction theory (CCT) of career adaptation (Savickas, 2013; Savickas et al., 2018). The scale is the Career Adapt-Ability Scale (CAAS) of Savickas and Porfeli (2012), and the subscales are career concern, career control, career curiosity and career confidence.

Adaptation or adaptedness as an outcome: Career resilience

Career resilience is the extent to which individuals resist career barriers or disruptions affecting their work (characterised by self-confidence, need for achievement, willingness to take risks,

and ability to act independently and cooperatively) (Arora & Rangnekar, 2016). The theory of Fourie and Van Vuuren (1998) is relevant to the construct. The instrument is the adapted Career Resilience Questionnaire (CRQ) by Mogale (2015), and the subscales are self-reliance, personal resilience and work resilience.

Adaptation or adaptedness as an outcome: Career satisfaction

Career satisfaction is an overall construct that refers to an individual's subjective evaluation of career success concerning achieving career-related goals such as employability, promotion, career interest, abilities, affiliation to a specific occupational category and progression to a particular job level (Greenhaus et al., 1990). The theory of Greenhaus et al. (1990) is relevant to the construct, and the instrument used is the Career Satisfaction Scale (CSS) developed by Greenhaus et al. (1990).

1.4.2.3 Central hypothesis

The central hypothesis of the research can be formulated as follows:

The relationship dynamics among adaptive readiness (operationalised as individuals' career agility and psychological capital), adaptability resources (operationalised as individuals' career adaptability) and adaptation or adaptedness as an outcome (operationalised as individuals' career resilience and overall career satisfaction) highlight the core dynamics that may inform the construction of a career counselling framework for guiding adaptive career behaviour among public service employees in the DMRE.

1.4.2.4 Theoretical assumptions

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

- There is a need for basic research to conceptualise adult career development and adaptive career behaviour within the contemporary employment context.
- There is a need for basic research that seeks to conceptualise and critically evaluate the relationship dynamics among the constructs of relevance to this research and the manner and the extent to which the associations inform the construction of a career counselling framework for guiding adaptive behaviour.

1.5   RESEARCH DESIGN: QUANTITATIVE RESEARCH

The research design is discussed in relation to the types of research conducted.

1.5.1   Types of research

Exploratory research aims to examine relatively unknown research areas and can almost always yield new insights into a research topic (Rubin & Babbie, 2016). Exploratory research aims to develop preliminary ideas about phenomena and move towards more refined research questions that can be addressed in future research (Neuman,2014;2021). This research is exploratory in that it compares various theoretical perspectives on the relationship dynamics between the constructs of relevance to this research.

Descriptive research aims to provide a detailed picture of a situation, social setting or relationship. Such research commences with a clearly defined issue or question, describes it accurately and delivers a detailed picture of the issue (Neuman,2014; 2021). In the literature review, descriptive research applies to conceptualising the relationship dynamics among the constructs of relevance to this research. In the empirical study, descriptive research relates to the sociodemographic characteristics of the sample and the means, standard deviations and internal consistency reliability coefficients of the constructs.

Explanatory research builds on exploratory and descriptive research (Neuman, 2014;2021) and aims to explain causal relationships between variables (Rubin & Babbie, 2016). Such research starts with an existing explanation derived from social theory or past research. Then, it extends this to explain a new issue, setting or group of people to determine how well the explanation holds up or whether it needs to be modified or is limited to specific conditions (Neuman, 2014;2021). In the empirical study, the researcher sought to explain the nature, direction and magnitude of the relationship between the variables. This form of research applies to the relationship dynamics among the constructs of relevance to this research.

Chapter 5 discusses the research design in more detail. In Chapter 4 and Chapter 7, the career counselling framework will also consider how constructs of adaptive career behaviour may guide the adaptive behaviour of DMRE employees and the implications of these constructs for career counselling practices. This research will, therefore, fulfil the requirements of this type of research as outlined above.

1.5.2 Validity

Validity suggests "truthfulness" (Neuman, 2014;2021) and refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under investigation (Rubin & Babbie, 2014). Several types of validity, namely, internal, external and measurement validity, are all important in research (Tredoux & Durrheim, 2013). Internal validity refers to the extent to which the relationships between the variables have been correctly interpreted (Punch, 2014 & 2016). In contrast, external validity refers to the generalisability of findings to settings and populations beyond the study conditions (Rubin & Babbie, 2016). Measurement validity depicts the fit between conceptual and operational definitions (Neuman, 2014;2021) and includes face, content, criterion and construct validity (Rubin & Babbie, 2016).

1.5.2.1 Validity with regard to the literature

In this research, the validity of the literature review was ensured by using relevant and up-to-date literature in terms of the nature, problem and aims of the research. Although every attempt was made to search for and use the most current literature sources, classical and contemporary mainstream publications were included owing to their relevance in conceptualising the constructs in this research.

1.5.2.2 Validity with regard to the empirical research

Research should be both internally and externally valid. Internal validity relates mainly to the issue of causality and allows a researcher to generate valid findings about a specific subject (Bryman, 2016; Punch, 2016). In the empirical study, internal validity was achieved by using appropriate and standardised measuring instruments. These instruments were examined to ensure face, content and criterion validity. In addition, the questionnaires included standard instructions and information for all participants. Statistical procedures were also used to control for sociodemographic variables (age, gender, job level and tenure). Internal validity was further ensured by minimising selection bias by using random sampling to target the total population of employees in the DMRE.

External validity implies generalising the results beyond the specific research context (i.e., the broader population) (Bryman, 2016; Rubin & Babbie, 2016). External validity was ensured by targeting the total population of employees in the DMRE. Participants from different sociodemographic groups, such as age, gender, job level and tenure, were included to reflect

the sociodemographic profile of the population. This helped to increase the generalisability of the findings to the target population (Neuman, 2014;2021).

1.5.3   Reliability

Reliability refers to the dependability or consistency of a measuring instrument (Punch, 2016; Rubin & Babbie, 2016). Reliability in the literature review is addressed by collecting information that is correct, comprehensive and unbiased (Fink, 2017). In the empirical study, internal consistency was used to assess the reliability of the measuring instruments. Internal consistency measures the degree to which the items that make up the scale all measure the same underlying construct (Wagner et al., 2012). Chapter 6 presents the measurement of internal consistency reliability of the various scales applied in this research in more detail.

1.5.4   The unit of research

In social science research, individual people are most typically the units of analysis. These units distinguish between the characteristics of individuals and groups, organisations, social artefacts and social actions (Rubin & Babbie, 2016). 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 sociodemographic characteristics (subgroup level) were considered. The purpose of this was to determine the relationship dynamics among the constructs and to develop a career counselling framework to guide the adaptive behaviour of employees and improve career development support practices.

1.5.5   The variables

The current study aimed to explore the relationship dynamics among adaptive readiness (operationalised as career agility and psychological capital), adaptability resources (operationalised as career adaptability), and adaptation or adaptedness as an outcome (operationalised as career resilience and overall career satisfaction). Individuals' sociodemographic characteristics of age, gender, job level and tenure were treated as control variables to assess whether the relationship between the construct variables was conditional upon their sociodemographic characteristics. Career agility and psychological capital, as indicators of career adaptivity or readiness to change, are treated as independent variables explaining the variance in the dependent variables, as denoted by individuals' modes of adaptedness (i.e., career resilience and career satisfaction). Career adaptability is treated as

a set of adaptability resources that function as mediating mechanisms between (1) career agility and (2) psychological capital, and career resilience and career satisfaction in the model.

Although social science researchers generally tend to criticise cross-sectional mediation designs, cross-sectional studies employing mediation analysis are also seen to contribute new theoretical insights in exploratory research (Disabato, 2016). It is important to emphasise that the research design employed mediation analysis for exploratory and explanation purposes and did not apply mediation for design (i.e., true causal effects over time) purposes. Being an exploratory study of unknown phenomena, the focus was on probing underlying mechanisms (career adaptability resources) to ascertain whether a relationship exists between a predictor (career adaptivity: career agility and psychological capital) and an outcome (adaptation: career resilience and career satisfaction). Mitchell and Maxwell (2013) posit that using cross-sectional mediation analysis for explanation lends insight into the probable reason for outcomes and, as such, helps generate ideas for future longitudinal mediational designs.

The moderating control variables in this study are age, gender, job level and tenure. A moderator variable modifies the direction and strength of the relationship between an independent and a dependent variable and helps the researcher assess whether the links are conditional or dependent on the moderating variables (McKinnon et al., 2011; Rubin & Babbie, 2016). Chapter 5 discusses the various statistical procedures employed to test the links between the variables relevant to the research.

1.5.6   Delimitations

This study was confined to research dealing with the relationship dynamics between the core variables relevant to the present research. The cross-sectional design further limits the generalisability of the research outcomes. Chapter 7 discusses the limitations of the literature review and the empirical study in more detail.

1.6   RESEARCH METHOD

The research was conducted in two phases: A literature review and an empirical study.

1.6.1   Literature review

Step 1: Conceptualising the metatheoretical context of adaptive behaviour in the changing world of work and career development challenges in the DMRE (see Chapter 2)**.**

Step 2: Conceptualising the constructs of adaptive career behaviour. This phase discusses the various constructs of relevance to the research (see Chapter 3).

Step 3: Integration – Towards constructing a theoretical counselling framework. Chapter 4 integrates the findings of the literature review, outlines the research hypotheses and postulates a theoretical career counselling framework for adaptive behaviour.

1.6.2   Empirical Study

Chapter 5 discusses the research method applied to the research in more detail. Only a brief overview (see Figure 1.1) is provided here.

Figure 1.1

Overview of the Empirical Study
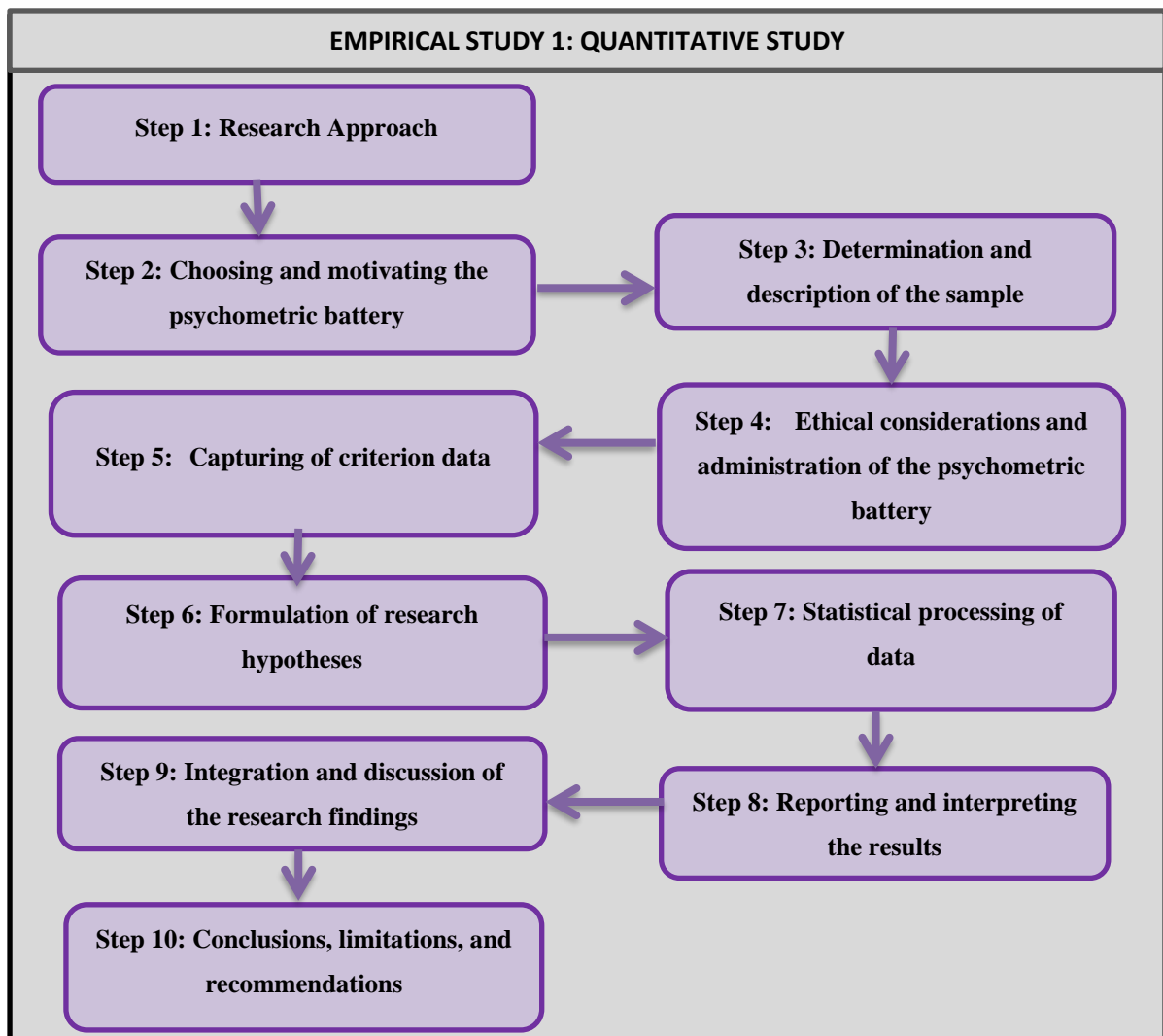
The quantitative empirical study entails the following steps:

Step 1: Research approach

Chapter 5 outlines the research approach.

Step 2: Choosing and motivating the psychometric battery

Chapter 5 describes the psychometric properties of the measuring instruments.

Step 3: Determination and description of the sample

Chapter 5 describes the characteristics of the population and the sample.

Step 4: Ethical considerations and administration of the psychometric battery

Chapter 5 describes the ethical principles adhered to and the procedure for data collection.

Step 5: Capturing of criterion data

The participants' responses to items in the measuring instrument were captured in an electronic database and converted to an SPSS data file.

Step 6: Formulation of research hypotheses

Chapters 4 and 5 describe the research hypotheses.

Step 7: Statistical processing of data

Chapter 5 describes the statistical procedures used to test the research hypotheses.

Step 8: Reporting and interpreting the results

The quantitative research results are reported in Chapter 6.

Step 9: Integration and discussion of the research findings

In Chapter 7, the results of the empirical research are integrated with the literature review findings.

Step 10: Conclusions, limitations and recommendations

Conclusions, limitations and recommendations are discussed in Chapter 7.

1.7   CHAPTER LAYOUT

The chapters are presented in the following manner:

Chapter 1: Scientific overview of the research

Chapter 2: Metatheoretical context of the study: Adaptive career behaviour in the contemporary employment context

Chapter 3: Antecedents of adaptive career behaviour

Chapter 4: Integration: Towards constructing a career counselling framework for adaptive career behaviour

Chapter 5: Research method

Chapter 6: Research results

Chapter 7: Discussion, conclusions, limitations and recommendations

1.8   CHAPTER SUMMARY

This chapter discussed the scientific orientation of the research and described the background to and motivation for the research, the aim of the study, the research model and the paradigm perspectives, the theoretical research, design and methodology, as well as the central hypothesis and research method. The research aimed to construct a career counselling framework to enhance adaptive behaviour in the DMRE. This research may inform industrial and organisational psychologists and human resources professionals about more effective career counselling practices.

CHAPTER 2: METATHEORETICAL CONTEXT OF THE STUDY: ADAPTIVE CAREER BEHAVIOUR IN THE CONTEMPORARY EMPLOYMENT CONTEXT

This chapter conceptualises adaptive career behaviour in the contemporary employment context. DMRE employees' career development challenges provide the scope for conceptualising adaptive behaviour in the rapid evolving Fourth Industrial Revolution (4IR) world of work.

2.1   THE CONTEMPORARY EMPLOYMENT CONTEXT

In the contemporary employment context, a globalised economy, the Fourth Industrial Revolution (4IR), the Covid-19 pandemic and the global economic meltdown all pose a serious threat to career development practices worldwide (Belle et al., 2022; Bonnic & Cassar, 2020; Coetzee et al., 2021; Furnes, 2020; Mimmi et al., 2021; Nalis et al., 2022; Praskova et al., 2021; Yue et al., 2022). Changes in socioeconomic and technological conditions have led to a fundamental shift in employment opportunities and pose serious challenges to career development, putting more pressure on the employable population to expend more efforts on investing in resources to enhance career adaptive behaviour (Oztemel et al., 2021). Kostal and Wiernik (2019) state that in the past, organisations attracted and retained employees for lifelong employment; currently, however, organisations are forced to plan human resources and operations flexibly and efficiently by applying downsizing, strategic organisational restructuring and short-term employment, as well as replacing human capital with automation (Coetzee & Veldsman, 2022; Oosthuizen, 2023; Wegerle & Oosthuizen, 2021).

Bilal and Hai (2019) highlight some challenges encountered in the employment context and the importance of resilience and career satisfaction as critical signs of an individual's adaptation. Bilal and Hai (2019) state that in the 21st century, career management efforts are daunting owing to an unpredictable, volatile and rapidly transforming technological environment. Bilal and Hai (2019), Bundle and Parker (2018), and Kuiper and Schaarens (2006) state that societal and technological changes cause high vulnerability and suggest that individuals are important in obtaining and sustaining the career competences required for self-development. To this end, they propose a bottom-up approach to career management to develop individual career-related competences.

2.1.1 Career development in the Fourth Industrial Revolution (4IR) context

Bilal and Hai (2019) mention changes in the technological environment, the flattening of organisational structures and the increasing gap in the labour market as major challenges in the 21st century. Maggio et al. (2020) mention that structural and international phenomena have brought about transformation and modification in work characteristics and labour market demands by offering new opportunities for work but presenting challenges and unknown risks (Cheng & Hong, 2020; Srivastava & Madan, 2020; Peeters et al., 2021; Santilli et al., 2020; Wang & Di, 2022). Frycznska (2021) states that changes, including technology, affecting employees and organisations imply new career models, including protean and boundaryless careers. According to Gaile et al. (2022), these changes necessitate individuals to practice proactive career behaviours. Mansur and Felix (2020) emphasise protean and boundaryless career models as career paradigms individuals must adopt as agentic roles in managing their careers. Orie and Semeijn (2022) state that a high turnover rate among workers is to accelerate work automation. Bonnici and Cassar (2020) state that the digital revolution and global economic crisis make the labour market more volatile and careers become diverse.

These authors describe 21st-century employment as unpredictable, volatile, and consisting of a fluctuating technological environment, globalisation, and ever-changing economic conditions. Kosovo et al. (2011;2020) state that, globally, the service industry is characterised by a turbulent work environment and high job turnover. As such, individual self-managed careers and acquiring career-related competences to circumvent societal and technological dynamics become essential. Bilal and Hai (2019) highlight career resilience and career satisfaction as important outcomes denoting adaptive career behaviour.

Bilal and Hai (2019) assert that the changing global economic landscape has significantly changed the working environment. The DMRE is no exception in this regard and faces challenges such as decreased income security, job security and status. Wang (2021) mentions that technological and social dynamics frustrate individuals' attempts to obtain and sustain career competences and opportunities and suggests that career self-development and individuals managing their careers independently as effective strategies for strengthening human capital. Bundle and Parker (2011) and Kuiper and Schraans (2006) propose a bottom-up approach to encourage individuals' interest in developing career-related competences.

Due to changing technological dynamics, employees may experience a decline in career opportunities, a lack of career progression within one organisation, redundancy, possible retrenchments, change in the scope of their jobs, and the need to redefine career success

from a subjective perspective (Bilal & Hai, 2019; Bonnici et al., 2020; Chui et al., 2023; Frycznska, 2021; Han et al., 2021; Orie et al., 2022). The subjective career perspective may be compared to an objective career success perspective, which is predominant in the traditional career paradigm. Career success is defined from a subjective perspective, and a career-oriented attitude is critical for employees seeking success in their careers (Bilal & Hai, 2019; Gaile, 2022; Wang & Gao, 2022). A subjective career success perspective is adopted in the current research and is measured by career satisfaction as an outcome of adaptive career behaviour. According to Bilal and Hai (2019), while the modern career management model remains essential and can be endorsed, a new paradigm in career management is critical because of the declining structure of traditional organisational careers and psychological benefits.

Kostal and Wiernik (2019) argue that workers should shift from the traditional approach to career development due to the changing economic situation. Instead of pursuing lifelong employment with one organisation and relying on that organisation for career development, employees need a transactional, reciprocal relationship with their employer. The main focus should be on a proactive search for development opportunities, self-interest, and career decisions based on personal values. Bilal and Hai (2019) mention that although the modern career model is endorsed and remains essential, owing to the high vulnerability of the societal and technological dynamics impacting individual careers (i.e., job security and career success), there is a paradigm shift to defining career success and adapting to a career-oriented attitude.

2.1.1.1 Career adaptation in a protean, boundaryless career context

Kostal and Wiernik (2019) and Chui et al. (2022) advocate for protean and boundaryless careers as an alternative approach to traditional career approaches in the contemporary world of work. In a protean career approach, the individual takes personal responsibility for their own career development and makes career decisions based on individual values rather than relying on organisations for career development and material benefits (Frycznska, 2021; Kostal & Wiernik, 2019). In contrast, a boundaryless career approach suggests that current employees consider resources and opportunities beyond the workplace, connect with networks outside their current employment, seek job opportunities in new geographic locations and change jobs regularly (Frycznska, 2021; Kostal & Wiernik, 2019).

Based on the recent developments and trends in career development in the workplace, such as organisational structure review, matching and placing of employees on the new staff

establishment of the new Department, DMRE employees need to adopt protean and boundaryless career development approaches. These new developments and trends resulted mainly from the merger pronounced by the President of the Republic of South Africa, Mr. Cyril Ramaphosa (State of the National Address, 2019). The current study aims to construct a career counselling framework to enhance adaptive behaviour in the contemporary, protean and boundaryless employment context, characterised by a global economy, 4IR, the digital era, changes in employment conditions and increasing automation.

Kostal and Wiernik (2019) and Srivastava and Madan (2020) state that protean and boundaryless career approaches help describe (i) the economic and cultural contextual conditions that enable employees to adapt flexibly and to adopt a self-driven approach to their careers and (ii) employee behaviour that actively seeks alternative job opportunities and careers and prefers certain types of careers and adopts specific career behaviour, perceptions and attitudes that workers hold about careers. Kostal and Wiernik (2019) and Frycznska (2021) advocate that individuals should perceive career options as boundaryless despite experienced constraints. Consistent with this research, Bilal and Hai (2019) support a paradigm shift from the traditional 20th-century career approach to a 21st-century protean and boundaryless approach.

Bilal and Hai (2019) and Gaile et al. (2022) assert that owing to changes in the technological environment, flattening organisational structures and increasing gaps in labour market skills, individuals should develop the ability to manage their careers independently. According to Bilal and Hai (2019) and Srivastava and Madan (2020), the career adaptation needed by people is that employees should maintain career-related competences to support career resilience and career satisfaction behaviour in managing career success. Bilal and Hai (2019) and Peeters et al. (2022) argue that career resilience and career satisfaction are important outcomes of adaptive behaviour. Similarly, Behester (2011) and Srivastava et al. (2020) assert that career resilience and career satisfaction are necessary career-oriented attitudes for employees seeking success in their careers. Kosovo et al. (2011;2020) and Gaile et al. (2022) suggest self-managed careers and the development of career-related competences for employees to have successful careers.

Bilal and Hai (2019) and Peeters et al. (2022) emphasise that employees' vulnerability to societal and technological dynamic changes signifies the importance of career resilience, career competences and a subjective approach to career success as adaptive behaviour resulting in career adaptation. The current study investigates the relationship dynamics between the antecedent variables of adaptivity (operationalised as career agility and PsyCap)

and career adaptability and the adaptedness outcomes of career resilience and career satisfaction.

In the current study, participants are at different life stages, and age is singled out as a critical factor in moderating individual career adaptive behaviour. Kostal and Wiernik (2019) and Lin and Chen (2020) emphasise the importance of age as a factor relating to individual career development in terms of the expected tasks of the lifespan/life space. They further suggest that several social and psychological changes occur throughout the individual lifespan. Smola and Satton (2002) mention that younger employees are inclined to attach more value to adaptability, while older employees seem to attach more importance to stability and responsibility. Morris and Venkatesh (2006) claim that younger individuals are more willing to take risks, develop skills and seek more opportunities. In contrast, Feldman and Ng (2007) argue that younger employees do not commit to staying in an organisation for long or become attached to work groups, occupations, or personal and family commitments. As such, younger employees tend to be more mobile than older employees and to pursue their goals. Similarly, Lent and Brown (2013) state that individuals in their early lifespan/life space tend to have more confidence and self-direction, and these values are inclined to increase as individuals gain more experience and develop solid career goals.

Regarding the protean and boundaryless career paradigm, younger individuals seem to take personal responsibility for their own career development and make career decisions based on individual values rather than depending on the organisation for career development and expected material benefits. At the same time, older employees may rely on their current employer for their career advancement (Brouwer et al., 2011;2023; Heckhausen et al., 2010). Lent and Brown (2013) state that as individuals progress in their careers, they become more attached to organisations and their fields of work, and they face more costs in detaching themselves from organisations, professional networks and professions. According to Kostal and Wiernik (2019), older employees seem less willing to take risks, pursue their careers within the same organisation, and engage in more flexible upward, inward and lateral mobility when faced with career transitions. Age and career orientation correlations thus decrease during the mid-career stage and significantly so during the late career stages.

Van der Horst et al. (2017) highlight the importance of age for workers' adaptation to their careers when confronted with career transitions and dilemmas. They also stress the importance of individual difference variables to facilitate adaptive responses when employees face career transitions. For example, Van der Horst et al. (2017) conducted a study on possible age-related effects on individuals' locus of control, self-efficacy and curiosity when confronted

with career orientation. Their study found that age has a negative effect on an individual's career adaptiveness and a positive effect on career adaptive behaviour. Van der Horst et al. (2017) concluded that age is important when individuals at different life stages negotiate career transitions, such as job loss.

Van der Horst et al. (2017) claim that individuals' adaptive behaviour declines with age, even though employees must adapt to career transitions as they age. As a result, older employees need to adapt to the career transitions brought about by today's labour market, including job changes and job losses. Previous research on adaptive behaviour among employees experiencing transitions, especially those who face forced career retrenchments, is limited. These authors claim that individuals who are career adaptive, that is, those who plan, make decisions and have confidence and curiosity about their careers, are predicted to deal with career transitions more effectively and become more career adaptive (Van der Horst et al., 2017). However, Buyken et al. (2015) claim that more experienced individuals with long tenure and ageing workers cannot be expected to adapt as readily to pending career transitions as their younger counterparts.

Rooij et al. (2008;2012) maintain that experienced workers are mainly concerned with maintaining and planning their existing careers, and their motivation differs from that of younger workers. Brouwer et al. (2011;2023) and Heckhausen et al. (2010) studied the effects of age on workers' adaptive behaviour and found that older employees may rely on the employer for their career advancement. Van der Horst et al. (2017) state that experienced workers invest more time and energy in their previous career choices, are reluctant to change professional fields, and have limited career/job choices compared to younger workers. Subsequently, employees working in the same profession for extensive periods find it more difficult to adapt to career changes, traumas and transitions.

2.1.2 The DMRE career environment

The globalised economy, Fourth Industrial Revolution (4IR), COVID-19, and global economic meltdown threaten career development practices worldwide and nationally, and DMRE is not an exception to this phenomenon. Due to these dynamic changes, career adaptive behaviour is relevant to the DMRE environment. As mentioned previously, the President of the Republic of South Africa, on 29 May 2019, pronounced a merger of the former Department of Energy and the Department of Mineral Resources into the DMRE. To capacitate the DMRE to deliver on its mandate, the organisational structure review was conducted, and the outcomes of matching and placing employees on the new structure were that some of the employees from

the former two departments were declared more than the new staff establishment, with resultant serious implications for their careers.

The current study was necessitated by internal career development challenges in the DMRE, such as talent management; professional, technical and scientific skill shortages; midlife career crises, and the existing employment legislation on career development (for example, the policy on career development in the DMRE (2014) and the Education Training and Development policy in the DMRE (2021)). Furthermore, the DPSA issued directives on career management to create an environment conducive to job satisfaction, motivation and career progression where individual employees can plan and manage their careers and take full ownership of their career development. Consequently, several policies, such as the policy on integrated career development for South Africa, Human Resource Development Strategy in the South African Public Service Vision, 2015, National Development Plan (NDP) Vision 2030, National Skills Development Strategy III, South African Qualifications Authority Act (SAQA), and the Employment Equity Act, posed a severe threat to DMRE employees. In addition, digitalisation and automation of business processes to align DMRE to the 4IR posed a further threat to careers due to the changing nature of competences and the need for training and retraining.

In response to the challenges, the DMRE has developed and implemented a policy on implementing a career development programme comprising career assessment, counselling, planning guidance and advice. Since 2014, more than 600 employees have participated in this programme. Still, progress in terms of career progression, talent management and job satisfaction has been critically slow, hence the present study (Report on implementation of Career Development programme in DMRE, 2019; Human Resource Plan Annual Report, Review of Regulatory Framework to facilitate change to a Career System, Chapter 7 of the Public Service Commission (PSC) Discussion document, 2015).

The DMRE and its employees must also respond and align with the national policy on an Integrated Career Development System for South Africa (Ministry of Higher Education and Training, 2017). The national policy prescribes the establishment of structures and frameworks to ensure the support and implementation of career development services nationwide. Currently, a career counselling framework in the DMRE is lacking (Progress report on the implementation of the career development programme in the DMRE, 2019). Such a framework would assist employees in adapting to or coping with career transitions, traumas and disruptions, thereby enhancing resilience and career satisfaction. The table below provides a synopsis of career development challenges facing DMRE employees and the

rationale for adopting and adapting career adaptive behaviour. Employees of the DMRE are confronted by restructuring driven by changes in the South African socioeconomic and political landscape, which adversely affect job security and lifelong career development with one employer organisation. Table 2.1 provides a summary of career challenges relevant to the DMRE context.

Table 2.1

Synopsis of Career Challenges and the Rationale for Adaptive Career Behaviour

Synopsis of Career Challenges	Rationale for Adaptive Career Behaviour
• A career counselling framework is lacking.	• It will help the DMRE to develop and implement a career development programme.
• The Department for Public Service and Administration (DPSA) guidelines on career management advocate for creating an environment conducive to job satisfaction, motivation and career progression in public service departments.	• Will assist the DMRE and its employees to respond and align themselves to the national policy on an integrated Career Development System for South Africa.
• DMRE employees across the career life stages must cope with career transitions and traumas.	• A career counselling framework will assist employees to adapt or cope with career transitions, traumas and disruptions and enhance career resilience and career satisfaction.
• Protean and boundaryless careers	• Individual employees plan and manage their careers and take ownership of their career development with the full support of the DMRE. Employees take risks, develop skills and seek more opportunities. They make their own career decisions based on their own individual values rather than depending on organisations for career development.
• Implications of sociodemographics for the new protean and boundaryless careers	• Sociodemographics such as age, gender, job level and tenure are investigated regarding their moderating effect on the relationship

	dynamics among adaptivity, adaptability, adapting, career resilience and satisfaction.
• Changes in the technological environment, flattening organisational structures and increasing gaps in the labour market. • The declining structure of traditional organisational careers and psychological benefits indicate a critical need for a new paradigm in career management	• Adoption of a new subjective career paradigm of career success compared to the objective career success perspective predominant in the traditional career paradigm.
• Fourth Industrial Revolution	• 4IR, Technology digitalisation and automation business process change/re-engineering

2.2 THEORIES OF ADAPTIVE BEHAVIOUR

Two theories that deepen understanding of adaptive career behaviour are explored in this section: Schlossberg's (1981) transition theory and Savickas's (2013) career construction theory (CCT) of adaptation.

2.2.1 Schlossberg's transition theory

Schlossberg (1981) states that four major factors influence a person's ability to cope with transitions, traumas and dilemmas. These factors are situation (S1), self (S2), support (S3) and strategies (S4). Pendleton (2007) calls these factors the "4S system" of adaptation, which functions as a person's assets and liabilities when confronted with situations demanding adaptation.

2.2.1.1 S1: Situation

Situation refers to the features of a transition and how they may influence its significance to the individual (Schlossberg, 1981). Situations involve career dilemmas, crises, and transitions that may trigger individual adaptive behaviour. Pendleton (2007) states that when career transitions confront individuals, they respond differently. Such situations allow individuals to tap into their personal assets and use them as resources to cope with or adapt to the situation. Additionally, Pendleton (2007) maintains that when individuals cannot cope with a situation, it

becomes their personal liability. Psychological features of different situations are vital in activating and inhibiting individuals' responses and in coping positively or negatively with situations of transition, trauma and dilemmas (Johnston, 2018; Mischel & Shoda, 1995). Chong and Leong (2017) mention individual environmental features and factors as part of career-related obstacles that influence career adaptation.

Johnston (2018) states that when individuals are confronted with uncertain situations such as unemployment, they must make decisions and start looking for employment. Accordingly, activating career adaptability resources and adapting responses may depend on an individual's feeling of personal control and responsibility when faced with a career crisis or dilemma. Individuals' sense of personal control and responsibility depends on the possibility that the individual can change the situation, and if the situation cannot be changed, for instance, in situations that are appraised as threatening, career adaptive behaviour may be exhausted and inhibited (Johnston, 2018).

2.2.1.2 S2: Self

The self alludes to a person's outlook on life, as influenced by personal characteristics (including demographics) and psychological resources (Schlossberg, 1981). According to Johnston (2018), it is crucial to consider the individual characteristics or environmental factors that could contribute to the development and maintenance of career adaptivity, adaptability resources and adapting responses, or factors that may hinder or inhibit adaptive behaviour.

Sulistiani and Handoyo (2017) claim that career adaptive behaviour is associated with multiple demographic factors such as age, gender and career adaptivity (conscientiousness, positive emotional deposition, belief in ability, future orientation, hope, optimism, adversity quotient and self-regulation). In the current study, age, gender, job level and tenure are studied regarding their moderating effect on the relationship dynamics between the study constructs of career adaptation. Johnston (2018) states that individual characteristics may indicate under what conditions or for whom career adaptability and adapting may show different levels of protection against threatening situations.

2.2.1.3 S3: Support

Support alludes to the resources available to people (Schlossberg, 1981). Sulistiani and Handoyo (2017) claim that career adaptation resources are not at the individual's core but at the intersection of the individual and the environment. Research provides evidence of links

between environmental factors and career adaptability, mentioning such environmental factors as parental and family support, social environment, school and friends that are critical to enhancing or inhibiting career adaptive behaviour (Sulistiani & Handoyo, 2017). Research also shows positive links between parental support, self-efficacy and career decision-making (Pianpian et al., 2016). Social support increases individuals' readiness to prepare and adapt to current and future employment, as it facilitates individual preparation activities, leading to high job and career satisfaction (Sulistiani & Handoyo, 2017). If individuals appraise situations as threatening and appraise their resources as inadequate, it could lead to insufficient response or adaptation (Johnston, 2018).

2.2.1.4 S4: Strategies

Strategies denote individuals' actions in response to transitions and changing conditions (Schlossberg, 1981). Chong and Leong (2017) found that the success of career adaptability is related to active engagement with career management strategies. Savickas and Porfeli (2012) maintain that those individuals with higher adaptation levels are more flexible and have more efficient adaptability strategies to cope with volatile conditions. When career tasks, work transitions, or work traumas occur, adaptable individuals exhibit specific career management strategies to adapt to the situation; they become concerned with the future of their careers, control their careers by preparing for the future of their careers, display curiosity and explore the possibility of self and situations of the future; and tap into their self-confidence to pursue their aspirations (Sulistiani & Handoyo, 2017).

Schlossberg (1981) postulated that integrating the 4S system into career counselling for adaptive behaviour may empower clients to engage in self-efficacious transition coping and management.

2.2.2 Savickas's career construction theory of adaptation

Savickas's (2013) career construction theory (CCT) of adaptation is anchored in the principles of social constructivism. Social constructivist theory argues that knowledge and meaning are the products of social practices, institutions, and interactions between different social groups (Maree, 2013). Furthermore, counselling for adaptive career behaviour should aim to equip career counsellors with a strategy to enable clients to choose careers and succeed (Maree, 2013). Clients are authors of their careers whose biographies are extremely important (Maree, 2017; Savickas, 2013). Counselling for career construction aims to empower clients to reflect on the main life themes on which they can construct their careers (Maree, 2017).

The career construction counselling approach merges differential positivist, developmental and psychodynamic/narrative paradigms. It also adopts a therapeutic approach in recognising a need to assist clients beyond making career decisions or choices regarding the preferred career or study field. This involves helping clients deal with epigenic blockages that negatively impact their desire to pursue life and career goals freely. In counselling, obstacles are identified and dealt with to enable clients to pursue careers with fewer barriers or limitations (Maree, 2013, 2017).

The career construction counselling approach is anchored within the basic principles of career construction (Savickas, 2013). Individuals are actors who author their own career stories; they construct an individual career that fits their own lives (Savickas, 2013). The subjective career stories of individuals direct them across job changes and occupational transitions. Individuals develop an internal sense of self-regulating agency by implementing the self-concept when choosing occupations and formulating career goals. Career construction taps into this agency when the self must adapt to transitions (Savickas, 2013).

Individual career development is powered by adaptation to a context through attitudes, beliefs, competencies and coping strategies (ABCs) rather than by growth of inner structures (Savickas, 2006). Career adaptation is an adjustment process where individuals adapt to the circumstances they face with the goal of self-realisation. The ABCs (attitudes, beliefs, competencies and coping strategies) of career construction are combined into four key dimensions of adaptability and adapting (the 4Cs: Savickas, 2013):

- Career concern: planful attitude and belief; planning as competence; and awareness as coping strategy.
- Career curiosity: inquisitive attitude and belief; exploring competence and risk-taking; and experimenting as a coping strategy.
- Career control: decisive attitude and belief; decision-making as competence; discipline and assertiveness as coping strategy.
- Career confidence: efficacious attitude and belief; problem-solving as competence; persistence industriousness as coping strategies.

The four facets of career adaptability allude to psychosocial resources for coping with current and anticipated vocational development tasks, occupational transitions and work traumas that alter social integration or person-environment congruence (Savickas, 2013). The 4Cs of career adaptability denote an individual's preparation and psychological willingness to use

diverse career management strategies to adapt to changing work and career conditions (Savickas & Porfeli, 2012).

Career construction theory for adaptation (Savickas, 2013) further describes adaptation as comprising four distinct self-regulatory psychological states in a linear fashion: adaptivity, adaptability, adapting and adaptation. Adaptivity is readiness or willingness of an individual to cope with career transitions and traumas; and it is a precursor of career adaptability (Hirschi eat al, 2015). Adaptability refers to individual having resources to cope with career transitions, and it is a precursor of adapting behaviour (Savickas, 2013). Adapting is an adaptability response (ie) adapting or fitting to career transition, and it is demonstrated by an individual's successful career planning, career exploration and career decision making efficiency. Career adaptation refers to the total sum of outcomes resulting from career adaptivity, adapting and career adaptability: these outcomes include life-role integration, stable role commitment and active role management (Savickas, 2013). These psychological states reflect people's readiness or willingness to change (adaptivity), differences in the use of psychosocial resources (career concern, career curiosity, career control and career confidence) that culminate in attitudes, beliefs, competencies and coping strategies (ABCs) of adapting, and result in adaptation outcomes such as success, satisfaction and development (Nilforooshan, 2020; Savickas, 2013).

Savickas (2005) mentions that coping and self-regulatory behaviour are associated with adaptability, while Leong and Otte-Holland (2014) maintain that career adaptability is relevant to stress, career dilemmas and the coping processes of employees at work. Johnston (2018) states that it is essential to consider that career adaptability resources and responses to adapting are crucial for individual adaptation outcomes; therefore, career counsellors need to nurture these resources and adapting responses.

Career construction theory of adaptation (Savickas, 2013) presents a valuable perspective in psychometrically assessing individuals' psychological states of adaptivity, level of adaptability resources, and modes of adaptedness. The theory also provides a career counselling structure to investigate how specific states, resources and modes can be developed to enable and encourage adaptive career behaviours while drawing on individuals' key life themes, thereby providing unique and specific direction on how individuals can move forward in their careers.

2.3   ADAPTEDNESS AS OUTCOME OF ADAPTIVE BEHAVIOUR

Adaptive career behaviour in the current study is conceptualised as career readiness (career adaptivity), adaptability (resources), and adaptation (adapting or fitting in), which allude to outcome modes of adaptedness as operationalised by career resilience and career satisfaction.

The current study draws from the CCT of adaptation (Savickas, 2013; Savickas et al., 2018) to elucidate the relationship dynamics between constructs of adaptive career behaviour. Career adaptivity, as the readiness to cope with career changes, is reflected in individuals' psychological states of career agility and psychological capital, which are precursors to career adaptability (Savickas et al., 2018). Career adaptivity (career readiness) is the flexibility and willingness to change the self and situations by responding effectively to career-related task transitions, traumas and dilemmas (Savickas, 2013). Adaptability is the psychosocial career resources to cope with career crises activated or predicted by individuals' career adaptivity (Savickas et al., 2018). Career adaptability pertains to individuals having the resources to cope with career transitions, while adaptation outcomes relate to improved self-regulatory goal behaviour and greater job satisfaction. The outcomes of career adaptation include modes of career adaptedness as reflected in life-role integration, stable role commitment and active role management. Hence, adaptation denotes the results that emerge from career adaptivity and adaptability (Savickas, 2013).

Career resilience and career satisfaction are psychological modes of adaptedness or degree of adaptation or outcomes of adaptivity and adaptability. Career resilience reflects self-efficacious agency in adapting to changing and adverse career and work conditions for attaining career and skills development goals (Coetzee et al., 2015; Han et al., 2021). Career satisfaction reflects a mode of satisfaction with the degree of career success achieved, progress toward meeting overall career goals and goals for advancement, income and skills development (Greenhaus et al., 1990; Matsuo, 2022; Spurk et al., 2015).

Johnston (2018) explains that individuals' adaptive readiness, adaptability resources and adapting responses lead to adaptation or adapting outcomes such as career satisfaction, promotability, organisational commitment and turnover. Hartung and Cadaret (2017) argue that adaptivity means the readiness or willingness to cope with transitions, adaptability involves having the resources to cope with or respond to career transitions, and adaptation relates to the outcomes resulting or emerging from adaptivity and adaptability.

This chapter focuses on psychological modes of adaptedness as outcomes of adaptive career behaviour, namely career resilience and career satisfaction. Chapter 3 discusses the antecedents of adaptive career behaviour, namely career agility and psychological capital, as states of adaptive readiness and career adaptability as activated resources of adapting. Career resilience and career satisfaction are important psychological modes of adaptedness that denote adaptive career behaviour.

2.3.1 Career resilience

The present research focuses on the construct of career resilience, which is the demonstration of psychological resilience in the domain of changing organisational, job and career conditions in the workplace (Coetzee et al., 2015; Peeters et al., 2022; Santilli et al., 2020).

2.3.1.1 Psychological resilience

Luthans (2015) defines psychological resilience as the coping skills of individuals in cases of uncertainty, negative situations and obstacles. Resilience is the ability of individuals to bounce back, focus on their goals and success, and recover from adversity or depressing circumstances (Luthans, 2015; Santilli et al., 2020; Srivastava, 2020; Topino et al., 2022). Masten 2002(cited in Luthans, 2015) defines resilience as people's ability to succeed and learn something from adversity, while Bilal and Hai (2019) and Santilli et al. (2020) define it as a complex phenomenon which describes an individual's capacity to satisfy needs in a highly pressured situation. Greene et al. (2004) define resilience as an individual's ability to go beyond adverse situations and become successful by searching for more strength based on the personal attributes that assist an individual in confronting adverse and stressful situations.

Bilal and Hai (2019) and Taylor et al. (2022) describe a resilient employee as being characterised by attitudes of continuous learning, flexibility in the face of unpleasant events and self-management of their career. Resilience is a positive outcome despite severe threats to adaptation or development. Masten et al. (1990), Werner and Smith (2004), and Taylor et al. (2022) mention that such assets include optimism and self-efficacy, which are internal psychological traits that promote perseverance and success on the one hand, and the ability to utilise external resources such as individuals' social networks on the other.

2.3.1.2 Career resilience

London (1983) and Peeters et al. (2022) state that career resilience is closely related to psychological resilience. However, it should be differentiated from it as career resilience focuses more on self-regulatory career management and individuals' ability to enhance their careers. Career resilience denotes individuals' perception of the self as adaptable and a versatile problem solver (Coetzee et al., 2015; Fourie & Van Vuuren, 1998). Kodama (2017) argues that career resilience can contribute to individuals' realisation of career goals. Kodama (2017) and Moorhouse and Caltabiano (2007) state that career resilience is relevant to individuals' career goals and buffers individuals from career-related stressors, traumas and barriers. Schweitzer and Ng (2004) assert that career resilience can protect an individual's psychological wellbeing from disappointments at work and assist in preventing burnout among career professionals. Toomey et al. (n.d.) state that career resilience is adaptedness viewed in the context of a specific threat, leading to coping and developing competency in the face of challenges.

In the present research, career resilience denotes a psychological mode of adaptedness that reflects self-efficacious agency in adapting to changing and adverse career and work conditions for attaining career and skills development goals (Coetzee et al., 2015; Han et al., 2021; Peeters et al., 2022). Bilal and Hai (2019) state that career resilience signals individual career adaptive behaviour in that employees are expected to cope with and adapt to career transitions and dilemmas. They argue that few studies have been conducted on career resilience, emphasising the importance of studying it as a critical construct of career adaptive behaviour.

Abujineh (2011) explains career resilience as the ability to recover from career impediments and setbacks and as involving a process of development occurring through person–environment interactions. Career resilience alludes to the extent to which individuals resist career barriers or disruptions affecting their work and is characterised by self-confidence, the need for achievement, the willingness to take risks, and the ability to act independently and cooperatively (Arora & Rangnekar, 2016; Coetzee et al., 2015). Daniels and Radel (2015) and Han et al. (2022) view career resilience as the ability to persevere, cope, survive and carry on in the everchanging and turbulent labour markets, including globalisation, increased competition, technological changes, restructuring and dismissals.

In the present research, career resilience constitutes three modes of agentic career adaptedness (Coetzee et al., 2015; Fourie & Van Vuuren, 1998): (1) self-reliance (self-

efficacious adaptedness to job changes by embracing new skills development opportunities and career goals for one's future working life), (2) personal resilience (proactively adjusting career and skills development goals in response to changes in the company's structure and strategy), and (3) work resilience (embracing turbulent changing technological and work conditions as an investment in one's career growth).

Bilal and Hai (2019) state that the psychological modes of career resilience build capacity within the individual to combat negative career experiences. The psychological resilience produced by the individual's specific skills and competencies triggers career adaptive behaviour. Resilience absorbs negative experiences as it is the capacity to bounce back from adversity and enables employees to survive unfavourable events, including attaining career goals despite changing work and organisation conditions (Bilal & Hai, 2019; Coetzee et al., 2015; Fourie & Van Vuuren, 1998). Haar and Stanland (2016) found that individuals high in career resilience reported better self-esteem and control over work in adverse conditions, which is related to higher efficiency and better productivity. Daniels and Radel (2015) identify the resilience factors required for adaptive behaviour as protective and risk factors. Protective factors are divided into internal and external factors. Internal factors include self-esteem, self-efficacy, honesty, a sense of responsibility, the ability to restrain oneself and decision-making abilities. The external factors include family support, community involvement, a caring work environment and role models.

Several researchers highlight the importance of career resilience in the 21st century (Daniels & Radel, 2015; Han et al., 2021; Peeters et al., 2022). They assert that challenges experienced by labour markets in the 21st century range from the demand for a highly skilled and competitive work cadre to shrinking economies, coupled with individual workers struggling to manage and navigate their career transitions. The Covid-19 pandemic has had a substantial negative impact on economic performance and has brought about increased levels of unemployment. As such, there is a massive increase in the need for career resilience and the application of resilience to career development. Daniels and Radel (2015) and Peeters et al. (2022) argue that despite the challenges of unemployment and competitiveness in the 21st century, little scientific research has been conducted on the potential application of career resilience to adaptive career development.

2.3.2 Career satisfaction

Career satisfaction is a psychological mode of contentedness which reflects positive career adaptedness. Individuals feel satisfied with their career success and progress toward meeting

overall career goals and goals for advancement, income and skills development (Greenhaus et al., 1990; Matsuo, 2022; Spurk et al., 2015). Hirschi et al. (2015) and Peeters et al. (2022) differentiate career satisfaction from job satisfaction, stating that job satisfaction refers to the present job experience, while career satisfaction is the overall assessment of an individual's work experiences over their entire career.

Spurk (2009) describes career satisfaction as a subjective orientation to career success. A subjective career success orientation refers to individuals' perceptions regarding the development of a career, including experienced feelings of satisfaction and a sense of achievement regarding one's career (Bilal & Hai, 2019; Carstens et al., 2021; Frycznska, 2021; Gaile et al., 2021). Bilal and Hai (2019) describe career satisfaction as the values individuals hold about subjective outcomes such as the acquisition of new skills, a sense of achievement and work–life balance as a way of evaluating their career in a boundaryless career context. Kim et al. (2016) and Wang and Gao (2022) view career success from a subjective career satisfaction point of view, including individual career decision-making ability and self-efficacy, which enhance career satisfaction. They also state that individuals with a high level of tolerance for uncertainty show higher levels of career satisfaction. In contrast, Uzonwanne and Nwauzu (2017) see career satisfaction from an objective career success viewpoint, describing career satisfaction as the positive material and psychological outcomes resulting from individuals' work and related activities and experiences. Yap et al. (2013;2016) claim that subjective career success is strongly linked to career satisfaction. Haar and Stanland (2016) found that psychological career resilience is significantly and positively associated with career satisfaction.

Hartung and Cadaret (2017) assert that there is a link between career adaptability and career satisfaction and state that career adaptability is the capacity to prepare and use psychosocial resources to bring about a change in the self and the situation, which results in career satisfaction over the individual's lifespan/life space. Maree (2015) also sees career satisfaction as being a result of career adaptability, a cardinal construct essential for assisting individuals to make changes in the self and situations to navigate work and work environments, increase their employability, and promote the self-regulatory cognitions, emotions, behaviours and attitudes needed for career satisfaction.

From a positive psychology perspective, career satisfaction can be viewed as the congruence of the person–environment fit or the adaptive interaction of the person and the environment. Career satisfaction is the sum total of expressed vocational interest and the fit between

vocational interest and abilities in relation to occupational membership and career choice (Coetzee & Takawira, 2019; Frycznska, 2021; Gaile et al., 2022; Srivastava, 2020).

2.3.3   Influence of sociodemographic characteristics

Within the context of career adaptation, the current study seeks to investigate the moderating effect of individual demographic characteristics such as age, tenure, gender and job level on the relationship between the variables of adaptivity (i.e., career agility and PsyCap), career adaptability resources, and adaptedness (i.e., career resilience and career satisfaction).

2.3.3.1 Age

The present study assessed age in terms of four generational cohorts. Van der Horst et al. (2017) state that individuals' adaptive behaviour declines with age; hence, workers must adapt to career transitions as they get older. Van der Horst et al. (2017) also assert that more senior employees need to adapt to career transitions brought about by today's labour market, such as job changes and losses.

Van der Horst et al. (2017) found that age negatively affects individuals' career adaptiveness. However, limited research has been conducted on generational cohorts in the career adaptation context (Horst et al., 2017). Kostal and Wiernik (2019) emphasise the importance of age as a factor relating to individual career development in terms of the expected tasks of the lifespan/life space, arguing that several social and psychological changes occur throughout the individual lifespan. Smola and Satton (2002) mention that younger employees value adaptability highly, while older employees value stability and responsibility. Morris and Venkatesh (2006) claim that younger individuals are more willing to take risks, develop skills and seek more opportunities.

According to Daniels and Radel (2015), younger workers build career resilience, use self-advice to help themselves, seek opportunities, persist with career dilemmas and rely on the workplace to enhance career resilience development. Daniels and Radel (2015) state that career resilience declines in the older workers. Daniels and Radel (2015) mention that Baby Boomers cope and self-manage their careers in inflexible, non-people-oriented work environments. Daniels and Radel (2015) assert that resilience is learnt and developed from the early life stages, transforms into career resilience in the middle life stage and declines in the late-life stages.

2.3.3.2 Tenure

Rooij et al. (2008;2012) maintain that experienced workers with longer tenure are mainly concerned with maintenance and planning to exit their careers. As such, their motivation differs from that of younger, less tenured workers. Buyken et al. (2008) and Peeters et al. (2022) state that ageing workers and more experienced workers with lengthy tenure cannot be expected to adapt readily to pending career transitions compared to their younger counterparts. Van der Horst et al. (2017) state that experienced workers with longer tenure invest more time and energy in previous career choices, are reluctant to change professional fields, and have limited career/job choices compared to younger, less tenured workers. They conclude that the long-tenured employees working in the same profession have more difficulty adapting to career change, traumas and career transitions.

2.3.3.3 Gender and job level

Career transitions, traumas and disruptions imply that adaptive behaviour (i.e., career adaptivity, career adaptability, adaptedness) is crucial for both male and female employees on all job levels to sustain their career pathing. However, there seems to be a paucity of research on gender and job level in the adaptive career behaviour space. Hartung and Cadaret (2017) agree that there is a need for more research on the influence of gender, job level, and tenure on career adaptive behaviour.

2.4   CHAPTER SUMMARY

This chapter discussed the conceptualisation of adaptive career behaviour in the contemporary employment context. In particular, the 4IR, which includes digitalisation and automation, were identified as critical factors that affect both employees and organisations, with implications on adopting new career models such as protean and boundaryless careers, which employees must adopt as their agentic roles in managing their careers. The reasons for the assessment of career agility, career adaptability, psychological capital, career resilience and career satisfaction, and how those career assessments assist employees in the DMRE, were discussed. Two theories that deepen understanding of adaptive career behaviour that is, Schlossberg's (1981) transition theory and Savickas career construction (CCT) of adaptation, were discussed. Adaptedness outcomes of adaptive behaviour, career resilience

and career satisfaction were explored. Lastly, the moderating effect of sociodemographic characteristics such as gender, age, and job level on the relationship dynamics between career adaptivity, career adaptability and adaptedness were discussed.

CHAPTER 3: ANTECEDENTS OF ADAPTIVE CAREER BEHAVIOUR

This chapter discusses career agility, psychological capital and career adaptability as antecedents of adaptive career behaviour.

3.1   ADAPTIVE READINESS OR ADAPTIVITY

Career agility and psychological capital (PsyCap) are treated as constructs of adaptive readiness or adaptivity. Adaptive readiness or career adaptivity is described as the dispositional willingness and flexibility to change (Hartung et al., 2015). Savickas (2013) defines adaptive readiness as flexibility and willingness to make changes in self and situations by responding effectively to career-related tasks, career transitions and career traumas. According to Savickas (2013), adaptive readiness explains the activation of career adaptability resources, adapting and adaptive career behaviour. Individuals who are flexible and willing to make changes in the self and situations, who respond effectively to career-related tasks, career transitions and dilemmas display qualities of adaptive readiness and may be more career adaptive compared to those with low adaptive readiness qualities (Hartung & Cadaret, 2017; Savickas, 2013). Van der Horst et al. (2017) agree with Savickas (2013) and assert that career adaptive individuals plan, make decisions and have confidence and curiosity about their careers. Such individuals can be predicted to deal with career transitions more effectively and become more career adaptive.

3.1.1   Career agility

Career agility refers to an agentic, malleable proactive preparedness and an anticipative motive, drive and plan to combat, mitigate or overcome the challenges facing careers, occupations and jobs in the 21st-century world of work (Coetzee et al., 2020; Coetzee et al., 2022). Coetzee et al. (2020) view career agility as externally driven positive emotional coping in anticipating and solving the challenges that the digital era brings to occupations, jobs and careers. They mention that career agility is a coping attribute essential in the current career development context, with career agility enhancing career adaptive behaviour. Coetzee et al. (2020) assert that the digital era poses new career challenges and the possibility of pressure on adaptive career capabilities. They state that these challenges include fostering new

cognitive-emotional states, which imply both negative and positive coping responses from individuals toward changing, technology-driven work contexts.

Coetzee et al. (2021) argue that career agility is a construct of career adaptation. It entails individuals' evaluation of their willingness to adapt and proactively respond to contemporary, digital-era changes that influence their career success. The volatility of modern career dynamics requires career agility as a crucial psychological resource to assist individuals in coping successfully with the demands of the digital era. Coetzee et al. (2020) single out 4IR as bringing new challenges and possibilities that pressure individuals' adaptive responsiveness. They also assert that the digital space demands new cognitive thinking and emotional states that enable individuals' agile coping capability and career satisfaction.

Coetzee et al. (2020) and Coetzee et al. (2021) mention that career agility is an under-researched construct despite emerging as an essential coping attribute of the modern career. According to these authors, career agility ensures the sustainability of careers characterised by flexibility and agility in adapting to changing needs and interests that are aligned with the changing employment context. Coetzee et al. (2020) assert that the three forms of career agility serve as motivating agents and promote the effective building of personal resources needed to achieve career goals.

According to Coetzee et al. (2021), the three states of career agility are (1) technological adaptivity (positivity and optimism that accelerated technological development opens up new job and career opportunities for career growth), (2) agile learning (eagerness to search for opportunities to learn new skills that will improve career and job success), and (3) career navigation (willingness to navigate the environment for new career opportunities, take advantage of, and remain informed of changes and opportunities in the technological-driven job market) play a significant role in promoting adaptive career behaviour. Coetzee et al. (2020) state that individuals scoring high on agile learning and technological adaptivity are future-fit career adaptive, exhibiting activated agency and motivated engagement in embracing technological advancement and change.

Coetzee et al.'s (2020) research shows that the three facets of career agility and the psychological state of adaptiveness positively predict important career coping behaviours, such as exhibiting the ability to learn new skills efficiently. Drawing from the CCT of adaptation (Savickas, 2013), Coetzee et al. (2020) postulate career agility as an attribute of self-regulating adaptivity that acts as a motivational energiser of career adaptability (i.e., the active use of the

career management coping resources of career concern, curiosity, confidence, and control). Alistio and Wiese (2020) found that a career self-management mindset and attitude, such as career agility and its outcomes of career adaptability, function as an essential psychological adaptation mechanism that reduces perceived insecurity by enhancing individual self-efficacy in career self-management. Coetzee et al. (2020) conclude that career agile people demonstrate an adaptive readiness characterised by a positive emotional disposition and a learning orientation that positively predicts their adaptability. Career agility refers to an individual's ability to move quickly and easily through the challenges posed by an uncertain and volatile career and employment context (career–life predisposing individuals to be innovative and proactive) (Coetzee et al., 2020; Coetzee, 2022).

3.1.2 Psychological capital

In the current study, psychological capital (PsyCap) refers to the hope, optimism, resiliency and self-efficacy individuals possess (Bhat, 2017; Cavus & Kapsuz, 2015; Luthans et al., 2007; Mimmi et al., 2021). These malleable psychological states synergistically facilitate the positive appraisal of circumstances and the likelihood of succeeding in a situation (Baluku et al., 2020; Luthans & Youssef-Morgan, 2017). In addition, psychological capital maintains and sustains positive energy experiences in changing conditions (Hirschi, 2009; Sulistiani & Handoyo, 2018; Tolentiono et al., 2014; Wilkins et al., 2014). Self-efficacy refers to the confidence or the perception or belief regarding an individual's ability (Castill & Lopez, 2022; Cavus & Kapsuz, 2015). Hope is energy focused on personal goals and alternative ways that direct individuals to the target (Belle et al., 2022; Bhat, 2017). Resiliency is the ability to adapt to changing demands and bounce back from adversity, uncertainty, risk or failure. Optimism denotes positive expectancies that motivate pursuing goals under challenging situations (Newman et al., 2014).

Cavus and Kapasuz (2015) and Bhat (2017) mention that resilience is linked to optimism because it allows people to look at overwhelming situations optimally. They claim that resilient people can change for the better through confronting complex, challenging situations. Cavus and Kapasuz (2015) maintain that the development of the PsyCap states of self-efficacy, hope and optimism helps to manage the adaptive career behaviour of resilience. Bandura (1997) states that the four PsyCap states interact synergistically to develop adaptive career behaviour. He claims that the interaction brings about hopeful people who are more resilient and motivated to deal with difficulties in life and can adapt easily and transfer their optimistic thoughts and resilience to changing work contexts. Individuals' PsyCap motivates individual endurance, reaction to crisis, flexibility and psychological crises, dilemmas and crossroads

(Cavus & Kapasuz, 2015). Cavus and Capasuz (2015) assert that resilience is linked to optimism and motivates people to remain hopeful about their careers when confronted with adversity.

3.2 CAREER ADAPTABILITY

Career adaptability entails readiness, having resources to cope, and adapting responses when individuals are confronted by career transitions (Savickas, 2013; Nals et al., 2022). Nilforooshan and Salin (2016) claim that research indicates career adaptability as a dynamic mechanism affecting the links between dispositional personality traits and states and career adapting behaviour. Limited research has been conducted on the relationship dynamics between adaptive readiness and adaptation outcomes of career resilience and career satisfaction. Adaptive career behaviour in the current study is conceptualised as career readiness (career adaptivity) as precursor of adaptability (resources), adaptation (adapting or fitting in as responses) resulting in outcomes of adaptive career behaviour (Hartung & Cadaret, 2017; Hirschi et al., 2015; Johnston, 2018; Magio et al., 2020; Nilforooshan, 2020; Oztemel & Akyol, 2021; Savickas, 2013).

Savickas's (2013) career construction theory (CCT) of adaptation linearly conceptualises adaptive career behaviour. As discussed in Chapter 2, Savickas (2013) distinguishes career adaptability from related concepts of adaptivity and adaptation, conceptualising career adaptability as the individual having the resources of career concern, career curiosity, career control and career confidence required to cope with career transitions. The career adaptability resources of career concern (preparing for the future through career planning), career control (ownership of one's career development and career decidedness), career curiosity (envisioning and exploring future work selves), and career confidence (self-efficacy in solving problems and achieving goals) denote self-regulatory, malleable career-related attitudes, beliefs, competencies and coping strategies (ABCs) to adapt and successfully solve unfamiliar and complex problems throughout the career (Klehe et al., 2021; Savickas, 2013; Tokar et al., 2020). Savickas (2013) associated career adaptability resources with improved goal self-regulatory behaviour (resilience) and greater job and career satisfaction.

Figure 3.1

Theoretical Psychological Model of Career Adaptation
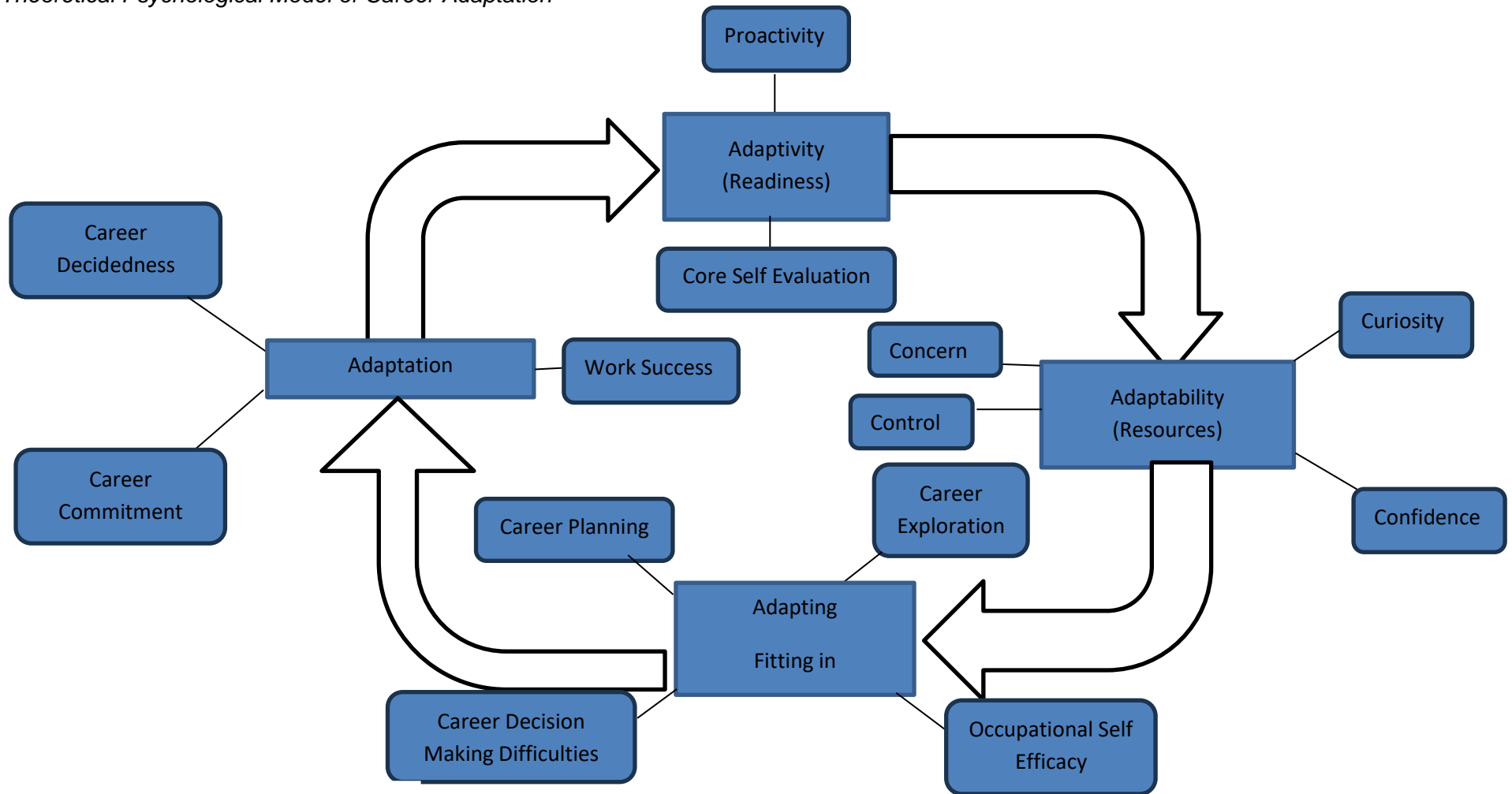
Source: Adapted from Hartung and Cadaret (2017)

As illustrated in Figure 3.1, Savickas (2013) conceptualised career adaptivity (career readiness) as the flexibility and willingness to make changes in self and situations by responding effectively to career-related task transitions, traumas and dilemmas. Career adaptation is conceptualised as the total sum of outcomes resulting from career adaptivity and career adaptability. According to Savickas (2013), the outcomes of career adaptation include life–role integration, stable role commitment and active role management that can be reflected in individuals' career resilience and career satisfaction. In addition, Savickas (2013) maintains that adaptation denotes results that emerge from career adaptivity and adaptability.

According to Masten et al. (1982), adaptivity and adaptability promote resilience (perseverance and success). Adaptivity or the readiness or willingness to cope with transition and adaptability, which involves having resources to cope with or to respond to career transitions, has a positive effect on adapting and adaptation and is reflected in modes of career adaptedness (operationalised in this study as career resilience and career satisfaction). Chong and Leong (2017) found that career adaptability relates to a career management strategy and career success. Johnston (2018) asserts that the benefit of investing in adaptability may be an increase in workers' career wellbeing, a sought-after outcome in organisational life. Johnston (2018) further emphasises that research on career adaptability would contribute to the theoretical advancement and practical utility of adaptive career behaviour in career counselling.

Hartung and Cadaret (2017) state that career adaptability is an essential, valuable construct for understanding career behaviour and designing interventions to assist individuals in making changes in self and situations to increase employability and the self-regulatory cognitions and emotions essential for career satisfaction and success. Career adaptability may assist individuals in building career resilience in the fluctuating career context. Research indicates career adaptability outcomes such as increased employability, conscious self-regulation, career satisfaction and career success (Hartung & Cadaret, 2017). Johnson (2018) mentions the importance of career adaptability assessment as a crucial instrument for career guidance counsellors and practitioners, also mentioning the presence of career adaptability resources as being key, as they indicate the strengths that the individual capitalises on to develop their careers (career resilience) and career satisfaction.

3.3   CHAPTER SUMMARY

This chapter discussed antecedent constructs of adaptivity (i.e., career agility, psychological capital and career adaptability). The three states of career agility, namely, technological adaptivity, agile learning and career navigation, were identified as critical constructs that promote adaptive career behaviour. Psychological capital constructs of hope, optimism, resiliency and self-efficacy enabling individual adaptation were discussed. Career adaptability, psychosocial resources of readiness, and having resources to cope with and adapt when individuals are confronted with career transitions were examined. Lastly, Savickas's (2013) career construction theory (CCT) of adaptation was used to conceptualise adaptive career behaviour. The career construction theory assisted the researcher in demonstrating the link between career agility, psychological capital, career adaptability, adapting response and adaptation and career resilience and career satisfaction as outcomes of adaptation.

CHAPTER 4: INTEGRATION – TOWARDS CONSTRUCTING A CAREER COUNSELLING FRAMEWORK FOR ADAPTIVE CAREER BEHAVIOUR

This chapter integrates the theoretical principles reviewed in Chapter 2 and Chapter 3 to propose a career counselling framework for adaptive career behaviour. The first literature research aim (To conceptualise adaptive career behaviour in the contemporary employment context) was achieved in Chapter 2. In this chapter, the second literature research aim is achieved (To conceptualise the theoretical relationship dynamics among career agility and psychological capital, career adaptability, career resilience and career satisfaction as constructs of career adaptation and the extent to which they inform the construction of a theoretical career counselling framework for guiding adaptive career behaviour).

4.1   OVERARCHING THEORETICAL LENS

The present research draws from the principles of career construction theory (CCT) of adaptation (Hirschi et al., 2015; Johnston, 2018; Leung et al., 2021; Savickas, 2013; Savickas et al., 2018) to study the relationship dynamics between the constructs of adaptivity (operationalised in this research as career agility and PsyCap), adapting (operationalised as career adaptability which is the integration of adaptivity and adaptability) and modes of adaptedness (operationalised as career resilience and career satisfaction). The relationship dynamics relevant to the present research need to be understood in the context of career adaptation necessitated by the changing work and career conditions.

4.1.1   Context of career adaptation

As discussed in chapter 2, employees will likely face critical challenges due to a globalised economy, the 4IR, the global economic recession, technological advancements and automation. These dynamic changes threaten career development practices worldwide and nationally, and the Department of Mineral Resources and Energy (DMRE) is not an exception to this phenomenon. Within the DMRE, employees are confronted with career transitions and traumas emanating from organisational and work-related changes. Changes, such as the merger of the former Department of Energy and the Department of Mineral Resources into a single department, the issuing of directives regarding career management in the public service, and the digitalisation and automation of business processes to align DMRE to the Fourth Industrial Revolution (4IR), poses a significant threat to employees' careers with several implications due to the changing nature of competences and the need for training and retraining.

The internal challenges concerning career development in the DMRE necessitated the current study. These challenges include talent management; professional, technical and scientific skill shortages; midlife career crises such as employees stagnating in their positions with little hope of promotion; and the existing employment legislation on career development (Policy on career development in the DMRE, policy number 6 of 2014; Education Training and Development policy in the DMRE, 2021). Subsequently, the Department of Public Service and Administration (DPSA) proposed several guidelines concerning career management, including creating an environment conducive to job satisfaction, motivation and career progression and allowing employees to plan and manage their careers and take full ownership of their career development with the full support of the department involved (Policy on Career Development in the DMRE, policy no 6 of 2014; Public Service Regulations, 2016; Government Gazette No 40167; Human Resource Development Strategy in Public Service, vision, 2016; National Policy for an Integrated Career Development System for South Africa, 2017).

DMRE challenges necessitate employees to adopt new career models of career adaptiveness (i.e., protean and boundaryless approaches) whereby they take personal responsibility for their own career development and career decisions based on unique values rather than relying on organisations for career development (Chui et al., 2020; Mansur & Felix, 2020). Consistently, Cherrynshenko (2015) and Coetzee et al. (2021) mention that for employees to survive in the 21st-century world of work, they need to be proactive and change-oriented and adapt to technological advances. Coetzee (2016) states that employees' flexibility, adaptiveness, proactivity and cognitive receptivity towards technological change and innovation are critical in the 21st-century world of work. According to Bilal and Hai (2019), career resilience and career satisfaction signal individual adaptation and resilient employees become more versatile in dealing with career unpredictability and ambiguity. They explain career satisfaction as a feeling and a sense of accomplishment regarding one's career. In addition, they highlight that career resilience and sustained career-related competences contribute to an organisational competitive advantage and signal career satisfaction behaviour in managing career success.

4.1.2 A geodesic framework for career counselling

According to Cojacariu and Puiu (2013), a career counselling framework aims to build a proactive attitude among individuals towards their professional development and provide a career counselling approach for implementing successful career plans or paths. The current

study aims to construct a career counselling framework to enhance adaptive career behaviour by drawing from the principles of the CCT of career adaptation (Savickas, 2013; Savickas et al., 2018). In this regard and concerning career adaptation, the main psychological states, resources and modes of adaptedness are as follows: (i) career adaptivity (i.e. the readiness or willingness to cope with career transitions operationalised in this study as career agility and psychological capital); (ii) career adaptability, which includes psychosocial resources for coping with career transitions, traumas and uncertainty; (iii) adapting behaviour, which in this study, comprises an integration of the psychological states (adaptivity) and activated career adaptability resources of career planning, career exploration and career decision-making efficacy; and (iv) career adaptation or psychological modes of adaptedness (career resilidence and career satisfaction), which results from career adapting behaviour (Hirschi et al., 2015; Johnston, 2018; Leung et al., 2021; Sulistiani & Handoyo, 2017).

The present study postulates that career adaptation entails individuals' adaptivity, adaptability resources and subjective modes of adaptedness as operationalised by individuals' career satisfaction and career resilience. The current research takes a new perspective on the study of career adaptation in that it treats career adaptivity, adaptability and adaptation (modes of adaptedness) as distinct psychological domains that may not only be associated in a linear fashion (movement from adaptivity to adaptability, adapting and adaptation outcomes) (Hirschi et al., 2015; Johnston, 2018) but also simultaneously interact with one another, and together form the whole in promoting career adaptive behaviour.

Figure 4.1 presents the individual career adaptation model adopted for the present study. The model is a five-modal-domain geodesic approach (Iran-Nejad, 1990; Leaf et al., 1997) that explains how the study constructs of career agility and PsyCap (as states of adaptive readiness: psychological modal domain 1) relate to resources of career adaptability (psychological modal domain 2), and when integrated (psychological domain 3: adapting), reflects two distinct psychological modes of career adaptedness (a high degree of career adaptation) as operationalised by career resilience (psychological domain 4) and career satisfaction (psychological modal domain 5). The geodesic model (Figure 4.1) illustrates the inter-relationship dynamics between the study constructs as tested in research hypothesis 1.

The geodesic modal relationship dynamics between the psychological states, resources and modes of adaptedness culminate in positive adaptive career behaviours. Adding a geodesic (multimodal, nonlinear) perspective on adaptive career behaviour extends current thinking about career adaptation as postulated by the CCT of career adaptation (Chui et al., 2022; Hirschi et al., 2015; Johnston, 2018; Savickas, 2013; Savickas et al., 2018). The present study

draws from the basic premises of geodesic learning theory (Gardner, 1985; Iran-Nejad, 1990; Leaf et al., 1997) that focus on cognitive principles that explain how the biological nervous system functions in human learning and cognitive development. The present study postulates that adaptive career behaviour represents a geodesic multimodal network of psychological domains that explains how optimal career adaptation occurs. Although the relationship dynamics may, at times, function linearly (as posited by the CCT of Savickas, 2013), the process of career adaptation may also be geodesic (nonlinear and multimodal). In other words, the multimodal geodesic nature of career adaptation is a simultaneous process of unconscious and conscious self-regulation in a dynamic human system of career adaptation (Johnston, 2018).

The psychological modal domains of adaptivity (operationalised as career agility and PsyCap) and career adaptability resources are modal domains of unconscious self-regulation that integrate to function as a modal domain of adapting. Unconscious self-regulatory processes of adapting resonate with psychological modal domains of exhibited (i.e., conscious self-regulated) modes of adaptedness (operationalised as career resilience and career satisfaction). The simultaneous, multimodal integration of unconscious and conscious self-regulation defines how individuals' career adaptation fosters the quality of holistic, adaptive career behaviour. The geodesic, multimodal approach is more useful in constructing a career counselling framework than a purely linear approach toward adaptive career behaviour. Individuals' career adaptation strengths and deficits can be assessed from different yet interlocking psychological modal domains of career adaptation for a more holistic career intervention approach.

Each of the psychological modal domains illustrated in Figure 4.1 is discussed below.

Psychological modal domain 1: Career adaptivity

Hirschi et al. (2015) describe career adaptivity as a psychological state of readiness or willingness to cope with career transitions and traumas. In the current study, adaptivity is operationalised by individuals' career agility (Coetzee et al., 2020; Coetzee et al., 2021) and PsyCap (Luthans & Youssef-Morgan, 2017). This study postulates that these two psychological states of adaptivity are aspects of unconscious self-regulation to adapt to changing work and career conditions. Unconscious career-related self-regulation is a function of malleable states and characteristics of adaptive readiness that interact with career adaptability resources to successfully adapt to external conditions that impact the career (Coetzee et al., 2021; Savickas, 2013). Career agility denotes the psychological states of

technological adaptivity, agile learning and career navigation (Coetzee et al., 2020), while PsyCap alludes to the psychological states of hope, optimism, resiliency and self-efficacy (Luthans-Youssef-Morgan, 2017). High levels of career agility were shown to function as critical psychological states of adaptive readiness that activate the use of career adaptability resources (Coetzee et al., 2020). Various scholars view PsyCap as a construct that may explain states of adaptivity (Hirschi, 2009; Negru-Sutaria & Pop, 2016; Sulistiani & Handoyo, 2018; Tolentino, 2014; Wilkins et al., 2014).

Adaptivity is described as readiness and willingness to adapt, which include personality factors such as emotional disposition and goal setting and the abilities and beliefs that predict career adaptability (Leung et al., 2021; Sulistiani & Handoyo, 2018; Tolentino et al., 2014). Hirschi (2009) and Sulistiani and Handoyo (2018) claim that the greater the individual's knowledge of their career, the more their career adaptivity is developed. Tolentino et al. (2014) assert that personal factors predict the orientation of learning goals, optimism and a proactive personality, which correlates with the four dimensions of career adaptability. Wilkins et al. (2014) found that optimism is positively associated with the career adaptability resources of career confidence, career concern, career curiosity and career control.

Psychological modal domain 2: Career adaptability

The career adaptability resources of career concern (preparing for the future through career planning), career control (ownership of one's career development and career decidedness), career curiosity (envisioning and exploring future work selves), and career confidence (self-efficacy in solving problems and achieving goals) denote a self-regulatory, malleable career-related capability to adapt and successfully solve unfamiliar and complex problems throughout the career (Klehe et al., 2021; Leung et al., 2021; Tokar et al., 2020). Hartung and Cadaret (2017) state that career adaptability is associated with outcomes such as improved goal self-regulatory behaviour and more significant job and career satisfaction by increasing the psychosocial capacity and skills to manage the changes in self and in situations that are needed to address the tasks, transitions and traumas associated with career exploration, career choice and work adjustment.

Figure 4.1

Model of Geodesic (Multimodal) Career Adaptation
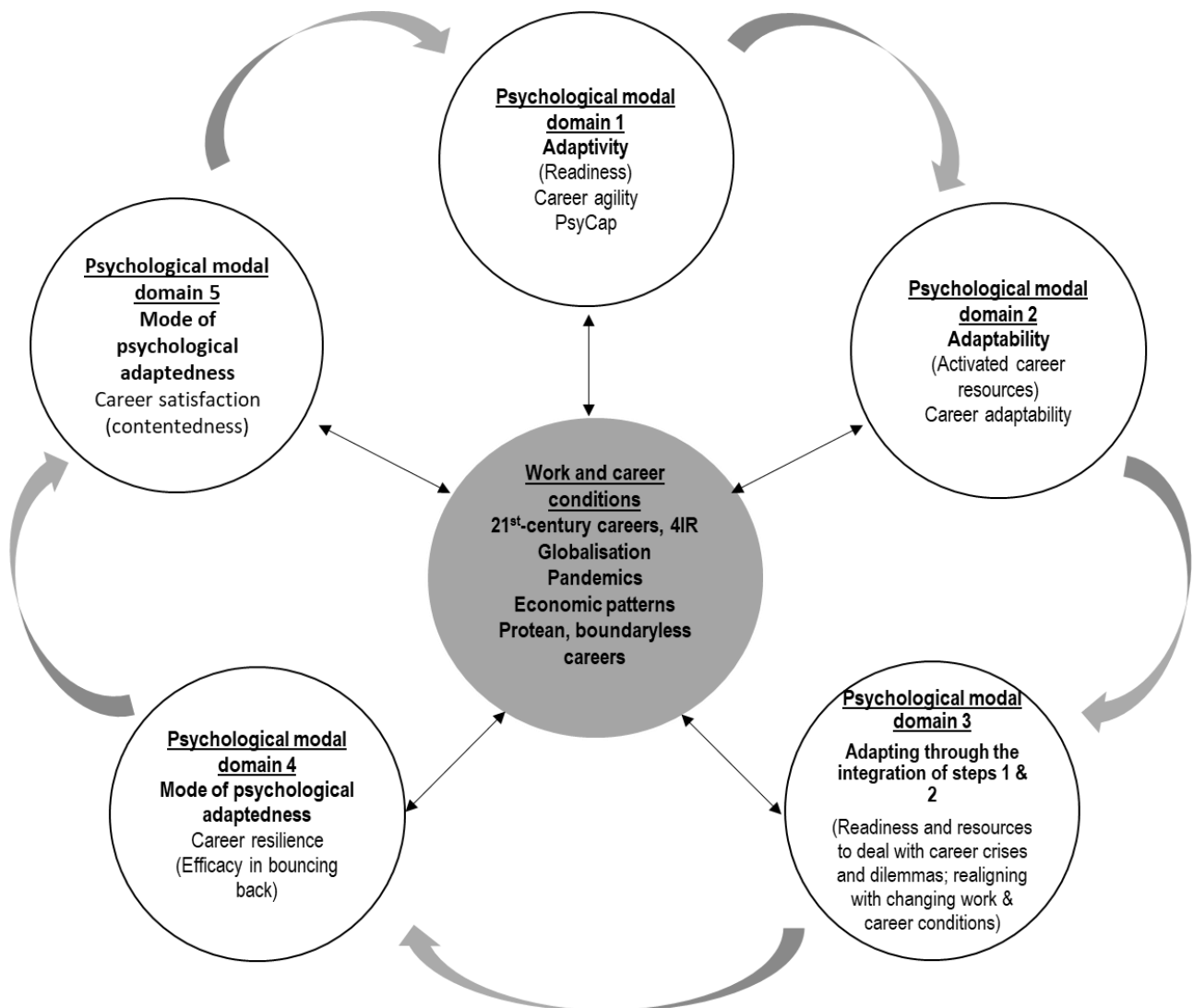
Source: Author's own work

Psychological modal domain 3: Adapting

In the current study, career adapting is the integrative presence of states of adaptivity and activated career adaptability resources. Career adapting is demonstrated by an individual's successful career planning, career exploration and career decision-making efficacy (Hirschi et al., 2015). The present study was interested in the general (correlational) inter-relationships among the constructs of adaptivity (career agility and PsyCap), career adaptability and modes of adaptedness (operationalised as career resilience and career satisfaction). The research also assessed the extent to which the activation of career adaptability resources influences

the associations between states of adaptivity (career agility and PsyCap) and modes of career adaptedness (career resilience and career satisfaction). In other words, the study assessed how unconscious adapting processes of self-regulation relate to conscious self-regulated modes of adaptedness. Pereira and Melveen (2017) view adaptation and adapting as a process of life-role integration predicted by adaptability and adaptivity. According to Savickas (2013), adaptation denotes the results that emerge from career adaptivity and adaptability. Johnson (2018) states that adapting individuals use career planning and career exploration behaviour to address career development tasks in changing work and career conditions.

Psychological modal domain 4: Career resilience as a mode of adaptedness

Career resilience reflects a psychological mode of career adaptedness (i.e., demonstrated quality of being adapted to changing work conditions). Career resilience is characterised by individuals' (1) self-reliance (self-efficacious adaptedness to job changes, including embracing new skills development opportunities and career goals for one's future working life), (2) personal resilience (proactive adjustment of career and skills development goals in response to changes in the company's structure and strategy), and (3) work resilience (turbulent changing technological and work conditions have been embraced as an investment in one's career growth: Coetzee et al., 2015). Daniels and Radel (2015) explain career resilience as the capacity to persevere, cope, survive and carry on in turbulent labour market conditions. They state that career resilience also includes the conscious self-regulatory ability to attain new skills and seize opportunities to survive changes in the demanding and competitive 21st-century labour market. Highly resilient individuals thus report better self-esteem and control over work in adverse conditions, which is related to greater efficiency, satisfaction and better productivity (Chui et al., 2022; Haar & Stanland, 2016).

Psychological modal domain 5: Career satisfaction as a mode of adaptedness

As a psychological mode of adaptedness, individuals feel satisfied (exhibit contentedness) with the career success achieved, the progress they made toward meeting overall career goals and goals for advancement, income and skills development (Greenhaus et al., 1990; Matsuo, 2022; Spurk et al., 2015). Research shows associations between psychological career states and resources of adapting and career satisfaction (Coetzee et al., 2022). Haar and Stanland (2016) found that psychological career resilience is significantly and positively associated with career satisfaction. Previous research states that employees are expected to cope with career transitions and dilemmas and, subsequently, to adapt (Bilal & Hai, 2019; Casterns et al., 2021; Santilli et al., 2020; Srivastava, 2020). These authors argue that few studies have been

conducted on career resilience and career satisfaction, emphasising the importance of studying these as critical constructs of career adaptive behaviour.

As modes of adaptedness, career resilience and career satisfaction can be viewed as the perceived congruence of person–environment, fit or the conscious adaptive interaction of the person and the environment. Hartung and Cadaret (2017) state that career adaptability is associated with outcomes such as improved goal self-regulatory behaviour and more significant job and career satisfaction by increasing the psychosocial capacity and skills to manage the changes in self and in situations that are needed to manage the tasks, transitions and traumas associated with career exploration, career choice and work adjustment. They further argue that adaptivity implies the readiness or willingness to cope with transitions, adaptability involves having the resources to cope with or to respond to career transitions, and adaptation relates to the outcomes emerging from adaptivity and adaptability. According to Masten et al. (1982), adaptivity and adaptability promote resilience (perseverance and success).

4.2   RESEARCH HYPOTHESES AND CONCEPTUAL MODEL OF THE RESEARCH

Taking theory and research together, five research hypotheses were formulated to be empirically tested.

> **Research hypothesis 1**: There is a statistically significant interrelationship between individuals' adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources (measured by individuals' career adaptability), and adapting responses (measured by individuals' career resilience and their overall career satisfaction).

This research hypothesis is illustrated by figure 4.1. Hirschi et al. (2015) found a correlation between the dimensions of career adaptability and indicators of adapting, which are career planning, career exploration and career decision-making. According to Hirschi et al. (2015), the adapting responses of career adaptability resources – career concern, career confidence, career curiosity and career control – imply career resilience and overall career satisfaction. Coetzee et al. (2020) found positive associations between career agility as a construct of adaptivity and career adaptability resources. According to Cavus and Capsuz (2015), the sub-constructs of psychological capital work synergistically to develop the career adaptive behaviour of resilience and satisfaction. Hirschi et al. (2015) mention a scientific overlap between career adaptability and adapting measures, indicating that the overlap can be

explained through the four career adaptability resources and their mutual relationship to more basic adaptivity constructs, particularly core self-evaluation and proactivity. Zacher (2014) found that changes in career adaptability were predicted by adaptivity (hope, self-efficacy, and optimism). Savickas (2005) mentions that coping and self-regulatory behaviour are associated with adaptability, while Leong and Otte-Holland (2014) maintain that career adaptability is relevant to stress, career dilemmas and the coping processes of employees at work.

Research hypothesis 2: The link between individuals' (1) career agility, and (2) psychological capital, and their career resilience and career satisfaction, is mediated by their career adaptability.

Research generally treats career adaptability as a mediating mechanism between career adaptivity and adapting responses or adaptive behaviour (Hirschi & Valero, 2015; Hirschi et al., 2015; Johnston, 2018). Accordingly, Hirschi et al. (2015) found that career adaptability mediated the effect of adaptivity (career agility and psychological capital) on adapting. These authors state that future research exploring additional mediation might be fruitful for understanding the pathways through which more context-based career agility and psychological capital manifest in adaptive attitudes and behaviour. Nilforosham and Salin (2016) highlight that research found career adaptability to function as a dynamic mechanism affecting the links between adaptive readiness and career adaptive behaviour. Hartung and Cadaret (2017) state that the constructs of agility and psychological capital are attributes of adaptivity, which denotes individuals' appropriate responsiveness to changes in the world of work.

Hirschi et al. (2013) found that adaptivity has an indirect effect (i.e., proactivity, self-efficacy, hope and optimism) on adapting (career planning, career decision-making difficulties, career exploration and occupational self-efficacy (career confidence) through increased levels of career adaptability (i.e., concern, control, curiosity, and confidence). Hirschi et al. (2015) also found that career adaptability mediates the effects of adaptivity on adapting. In other words, there was an indirect effect from adaptivity to adapting via adaptability. Hirschi et al. (2015) further found that concern and control were significant mediators of both adaptivity indicators, career planning, and decision-making difficulties. Hence, it is implied that individuals who perceive themselves as taking the initiative and being confident and efficacious tend to report higher levels of concern and control, increasing career planning and certainty about career-related decisions. Hirschi et al. (2015) also found that concern was a significant mediator of the relationship between proactivity and career exploration and the relationship between proactivity and self-efficacy. He stated that adaptability resources do not completely mediate

the effects of adaptivity on adapting responses, but adaptivity affects adapting beyond the four adaptability resources. Wilkins et al. (2014) found that curiosity and confidence mediate the relationship between hope and satisfaction, also finding that confidence mediates the relationship between the future work self and proactive skills development. Similarly, Taber and Blankenmeyer (2013) found that curiosity mediated the effect of the future work self on proactive career networking.

The present study assumes partial mediation, implying that the mediation analysis will reveal both direct and indirect effects of the antecedent variables on the independent variables. The assumption of partial mediation draws from the geodesic (multimodal) approach to adaptive career behaviour.

Research hypothesis 3: There is a significant interaction effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career adaptability, career resilience and career satisfaction.

Research hypothesis 4: There is a significant interaction effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career resilience and career satisfaction.

Van der Horst et al. (2017) highlight that research on the influence of age, gender, job level and tenure in the context of career adaptation is limited. These authors state that an individual's age influences career resilience and career satisfaction. Hartung and Cadaret (2017) state that career counsellors, in line with the CCT of career adaptation (Savickas, 2013), need to consider the implications of age, gender, job level and tenure in their career counselling practice.

Research hypothesis 5: Individuals from various age, gender job level and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.

Research emphasises the importance of considering career adaptability resources and responses as crucial for individual adaptation outcomes, and therefore, it is essential for career counsellors to nurture these resources and responses in individual career adaptation

differences (Johnston, 2018; Gregor et al., 2021; Parola & Marcionetti, 2022). Buyken et al. (2017) studied the effect of age and a long tenure on adaptive career behaviour. They found that individuals with more experience, with longer tenure and ageing, cannot be expected to adapt readily to pending career transitions compared to their younger counterparts.

In testing the research hypotheses, Figure 4.2 illustrates the conceptual research model for this study.

Figure 4.2

Conceptual Model of the Research
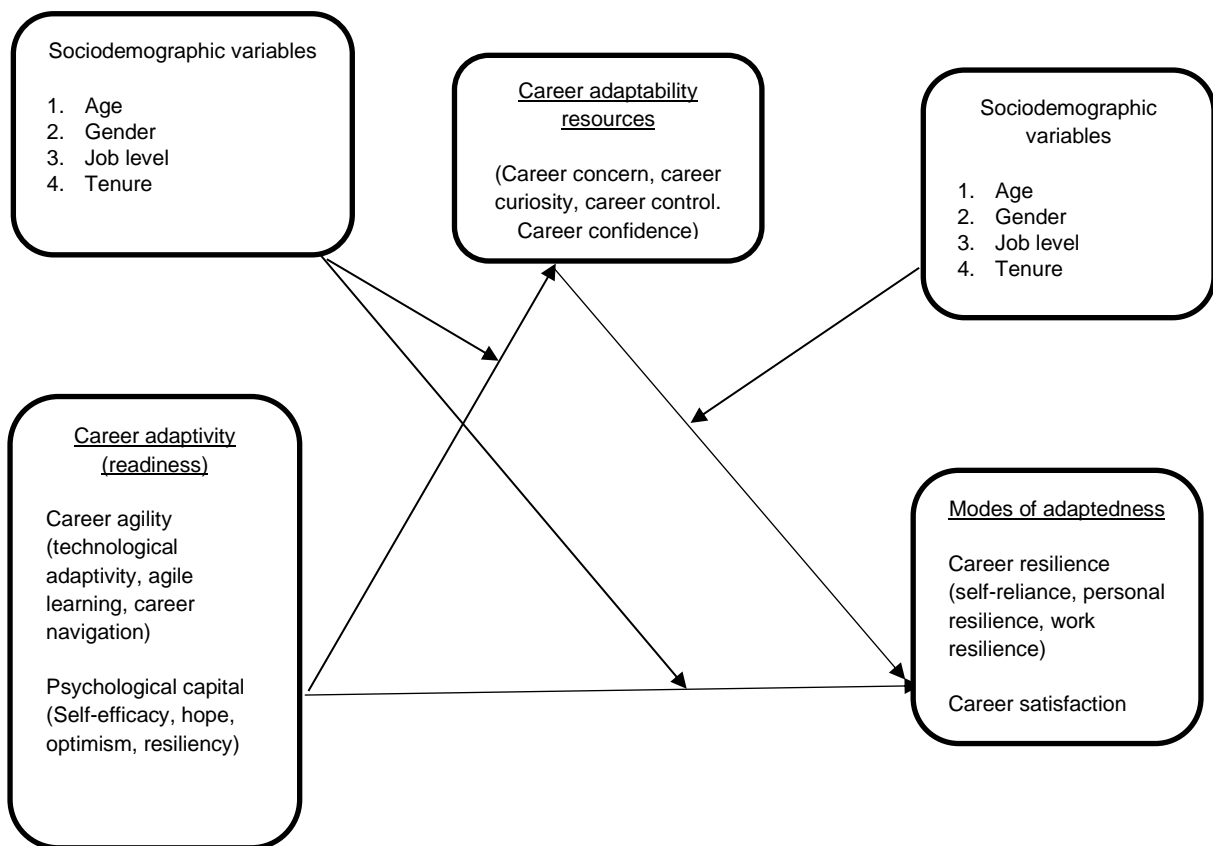
Source: Author's own work

4.3   IMPLICATIONS FOR CAREER DEVELOPMENT COUNSELLING PRACTICE

The first implication for career development counselling practice is that a developmental vocational approach must be adopted. However, most theories on career development practice adopt a linear approach to adaptive career behaviour (i.e., moving from adaptivity to adaptability to adapting to adaptation outcomes: Johnston, 2018). Second, career

development counselling practice should adopt a geodesic (multimodal) network of psychological domains approach, which advocates that the whole is more important than the sum of its parts. In a geodesic approach, the psychological domains of adaptive behaviour, namely adaptivity, adaptability, adapting and adaptation, are systematically synergised and work together to promote individual career resilience and career satisfaction (Handoyo & Sulistiani, 2018; Hirschi, 2015; Johnston, 2018). When all domains of career adaptation work simultaneously in synergy, they promote adaptive career behaviour. When career counsellors focus on one psychological domain without considering others, the results may be adverse (Hirschi, 2015; Johnston, 2018; Sultania & Handoyo, 2018). In this regard, the empirical study on the relationship dynamics between the study constructs may help deepen understanding of the multimodal links between the study constructs and inform career counselling practice.

Third, Hartung and Cadaret (2017) state that career counsellors, in line with the CCT of career adaptation for life design career counselling (Savickas, 2013), also need to consider the implications of age, gender, job level and tenure in their career counselling practice. Fourth, career counselling should address the assessment and development of the distinct, unique psychological multimodal domains of career adaptation (i.e., adaptivity, adaptability, adapting and adaptedness outcomes) (Johnston, 2018). As illustrated in Figure 4.3, the assessment of each psychological domain serves as an important feedback loop on the function of each domain in career adaptation and areas for further enrichment. In line with the present research's argument for a geodesic, multimodal approach to understanding adaptive career behaviour, Johnston (2018) and Sulistiani and Handoyo (2018) conclude that adaptivity, adaptability, adapting and adaptedness are related but distinct constructs as proposed by the geodesic, multimodal approach to understanding adaptive career behaviour.

Johnston (2018) argues that the distinction between the psychological domains of career adaptation is not always visible in career adaptability research. The current study aims to draw a distinction among the subdomains of career adaptation and use each sub-construct as a building block for constructing a career counselling framework to enhance adaptive career behaviour. Cojocariu and Puiu (2014) assert that a career counselling framework model should enhance adaptive behaviour. Adaptivity states and adaptability resources should both be treated as precursors of adapting with resultant outcomes of modes of adaptedness. Cojocariu and Puiu (2013) mention a considerable increase in interest in developing a career counselling framework or model and assert that the professional counselling process will contribute to both the theoretical and practical implementation of career counselling initiatives. In addition, they highlight the importance of further research on career counselling and the need for continued research to motivate and support the efforts of well-organised systematic

and long-term career interventions, which will result in a high degree of success in implementing career plans. Figure 4.3 illustrates how the geodesic inter-relationship dynamics among the constructs may be practically applied in career counselling.

Figure 4.3

Theoretical Counselling Lens for Adaptive Career Behaviour
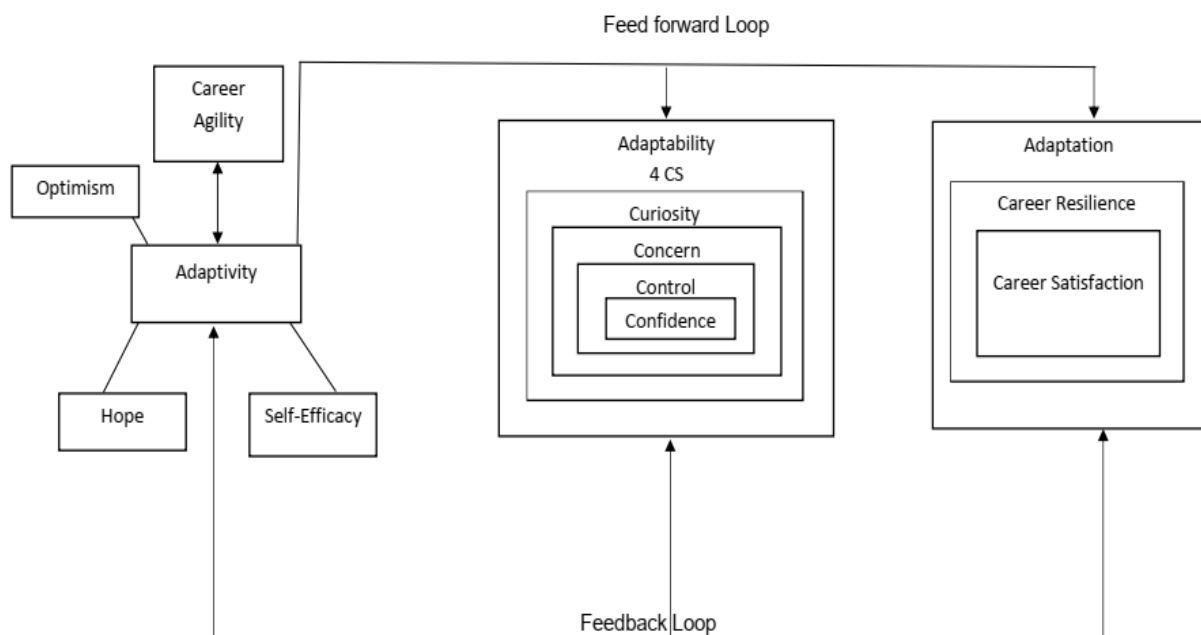
Source: Author's own work

Cojocariu and Puiu (2014) assert that the main theme and goal of career counselling is to facilitate the development and implementation of clients' career planning and pathing as essential aspects of self-regulated career management. They describe a career plan as a personal projection of one's professional becoming, including setting goals, strategies and deadlines. Cojocariu and Puiu (2014) further state that career management enhances individual career adaptive behaviour. They further argue that career management is an acquired competence that clients need to acquire and is confirmed when a client makes strides from dependent action using the required support given by the counsellor to an independent standpoint where the client takes decisions and implements actions which result in them making their own responsible career choices. Career management may be conceptualised as the operationalisation of career development at the individual level and is given effect through career counselling. In the current study, career management is identified as a starting point that triggers career counselling of clients and organisational support (Cojocariu & Puiu, 2014).

The geodesic, multimodal approach to counselling for adaptive career behaviour calls for an eclectic, integrative career counselling process that draws from various career theories to understand the inter-dynamics of psychological domains of career adaptation. The present study draws primarily from the principles of the CCT of adaptation (Savickas, 2013) but also considers principles of Schlossberg's (1981) transition theory (discussed in Chapter 2), person-environment (P-E) correspondence (Dawis & Lofquist, 1964) and Super's (1990, 1996) life-span career development theory. The theories of Dawis and Lofquist (1964) and Super (1990, 1996) support the basic premises outlined in Schlossberg's (1981) transition theory.

Dawis and Lofquist (1964) state that the P–E correspondence theory was originally called the theory of work adjustment (TWA). The theory focuses mainly on the adjustment to work and on the 'fit' of a person to a particular environment. Coetzee et al. (2012) state that P–E congruence is indicated by overall job satisfaction, career satisfaction, satisfaction with the environment, satisfaction of needs, and the fulfilment of aspirations and expectations. P–E fit congruence assumes that career development is the unfolding of the individual client's abilities and requirements in interaction with their environment, such as home, school, play and work. Adaptation alludes to the process of achieving and maintaining correspondence with each other (Dawis & Lofquist, 1964).

Super's (1990, 1996) assumptions are that individuals' career choice results from their self-concept (one's own views of personal characteristics – personal meaning of one's abilities, interests, values and choices). Individuals' self-concept develops through their interaction with the environment, in which they develop a concept of self in specific roles, such as a learner, employee, friend and family member, and even a community member (Coetzee et al., 2012). The CCT of adaptation (Savickas, 2013) also adopted certain premises of Super's theory to illustrate psychological and vocational developmental tasks across life and career stages that trigger transitions, traumas and changes that require career adaptation (Savickas, 2013). Coetzee (2012) asserts that a developmental vocational paradigm refers to a progressive developmental process over a person's lifespan that comprises several career life stages across the career life cycle. In line with this, the person performs specific developmental tasks to negotiate career transitions and traumas at each life or career stage (Schlossberg, 1981).

According to Maree (2013), career counselling involves the process of looking for patterns of meaning in a client's life/career. The career counselling process begins by assessing career dilemmas, setting the client's career objectives and goals, designing and developing interventions, assessing that client's progress and, finally, terminating the counselling relationship with the client (Niles, 2013). Career adaptive behaviour involves the client's

adaptive responses to changing conditions such as career transitions, dilemmas and career crossroads. These responses include career exploration, career planning, implementation and evaluation. At the same time, adaptive behaviour outcomes comprise career decidedness, career commitment, job satisfaction, career planning and work success for the client (Hirschi et al., 2015).

The career construction and narrative approach (career counselling for life design) to career counselling is an extension of Super's (1957, 1990) model of career development aimed at facilitating career education guidance and advice (Savickas, 2011). This approach to counselling is based on social constructivist theory, which views successful career counselling as the product of an effective relationship between the client and the counsellor (Maree, 2013). A storied (narrative) approach to counselling helps clients construct the reality of their life themes, preoccupations and career goals through meaningful, agreed-upon interaction and interpretation between client and counsellor (Maree, 2013).

Based on the empirical results, the envisaged career counselling framework, using a career construction life design/narrative approach, will guide the adaptive behaviour of DMRE employees with regard to career transitions, disruptions and traumas, thereby enhancing career resilience and, consequently, career satisfaction.

4.4   CHAPTER SUMMARY

This chapter integrated the theoretical principles reviewed in Chapters 2 and 3. The purpose of this chapter was to propose a career counselling framework for adaptive career behaviour. The proposed career counselling framework drew from the overarching theoretical lens of the career construction theory of adaptation. The globalised economy, Fourth Industrial Revolution (4IR), digitalisation and automation provided the context for discussing the career counselling framework for adaptive career behaviour. In this context, individuals are expected to adopt protean and boundaryless career models by taking personal responsibility for their career development rather than relying on organisations. This chapter adopted a geodesic framework for career counselling to enhance adaptive career behaviour and draw from the principles of career construction theory (CCT) of career adaptation. The five domains of adaptive career behaviour, vis, career adaptivity, career adaptability, adapting, career resilience and career satisfaction are linked, where career resilience and career satisfaction represent modes of adaptedness. In this chapter, theory and research are taken together, where the research hypotheses and conceptual model of the research are deliberated upon. Partial mediation was assumed, drawing from the geodesic approach to adaptive career

behaviour. The chapter concluded with implications for career counselling practice from a developmental vocational approach and the career construction and narrative approach to career counselling as an extension of Super's career development models.

CHAPTER 5: RESEARCH METHOD

This chapter represents the second phase of the empirical study outlined in Chapter 1 (see Figure 1.1 in Chapter 1). In Chapter 1, the empirical research phase was described as comprising ten steps aimed at addressing the empirical research aims:

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 data

Step 8: Reporting and interpreting the results

Step 9: Integration and discussion of the research findings

Step 10: Conclusions and recommendations

Steps 1 to 6 are addressed in this chapter. Steps 7 and 8 are discussed in chapter 6, while chapter 7 will address steps 9 and 10.

5.1   STEP 1: RESEARCH APPROACH

This study used a cross-sectional survey research approach as a strategy of inquiry. The approach is quantitative and exploratory, and aims to provide a broad overview of a representative sample of a large population (Babbie & Mouton, 2016). Creswell (2022) argued that a survey research approach provides a quantitative or numeric description of a population's trends, attitudes, or opinions by studying a sample of that population. In this study, the survey involved the assessment of the relationship dynamics between career adaptive readiness (career agility, psychological capital) as independent variables, career adaptability (career concern, career control, career curiosity and career confidence) as mediating variables, and career adaptation (career resilience and career satisfaction) as dependent variables. This study was also interested in exploring whether the relationship dynamics between independent and dependent variables are moderated by age, gender, job level and tenure and whether these groups differed significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.

Cooper and Schindler (2013) asserted that a research design is the blueprint for fulfilling research objectives and answering research questions. A research design is selected to enable the researcher to answer a research question (Ghauri et al., (1995;2020); Grimsgaard, 2022; Kerlinger, (1986;2021). In this study, the research design was selected to enable the researcher to answer the following research questions:

Research question 1: What is the nature of the relationship dynamics between individuals' career agility, psychological capital, career adaptability, resilience, and their overall career satisfaction? This research question relates to research hypothesis H1.

Research question 2: Does individuals' career adaptability mediate the link between their (1) career agility and (2) psychological capital and their career resilience and career satisfaction? This research question relates to research hypothesis H2.

Research question 3: Is there a significant interaction effect between individuals' (1) career agility and (2) psychological capital, and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career adaptability, career resilience and career satisfaction? This research question relates to research hypothesis H3.

Research question 4: Is there a significant interaction effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career resilience and career satisfaction? This research question relates to research hypothesis H4.

Research question 5: Do individuals from various age, gender, job level and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction? This research question relates to research hypothesis H5.

Research question 6: How can the empirical results be used to construct a career counselling framework for guiding adaptive career behaviour?

Research question 7: What conclusions and recommendations can be formulated for research and career counselling practices in the field of Consulting Psychology?

The research questions had to be answered as validly, objectively, accurately and economically as possible. Kerlinger (1986;2021) furthermore stated that the central purpose

of a research design and its research questions is to maximise the informativeness of results by minimising the number of plausible explanations.

Ghauri et al. (1995;2020) described a cross-sectional research design as a design where the "cause and effect" variables are measured at the same time. The choice of this design was justified because this study was not just for collecting and describing data. However, it also attempted to explore a yet unknown phenomenon by investigating the existence, magnitude and nature of certain relationships among variables. The cross-sectional research design was considered appropriate because its use in research of this type has been strongly supported for exploratory research, which could inform future longitudinal and true causal research designs.

Ghauri et al. (1995;2020) stated that in a cross-sectional research design, like in the current study, data on independent and dependent variables are gathered simultaneously. Furthermore, the researcher often uses prior knowledge to assume the time and order of variables (Ghauri et al., (1995;2020). According to Borg and Gall (2020) and Ghauri et al. (1995;2020), the major advantage of cross-sectional research designs is that they allow researchers to study relationships among variables jointly in a single research project. The major weaknesses of this design are the inability to manipulate the independent variables, lack of control of the extraneous variables, and inability to assess true causal effects.

The study was conducted in the Department of Mineral Resources and Energy (DMRE) in the South African Public Service. The study employed an exploratory quantitative research approach using a structured questionnaire to collect data. The rationale for choosing a quantitative approach is that the study is empirical in nature, assessing the relationship dynamics between the independent variables of career agility and psychological capital (adaptive readiness), a mediating variable (career adaptability) and the dependent variables of adapting (career resilience and career satisfaction), which are outcomes of adaptive career behaviour. The research was conducted by distributing a self-administered online questionnaire to participants in the DMRE through a URL link. The invitation to anonymously and voluntarily participate in the study, including the URL link, was sent to the participants using the organisational internal email platform upon permission granted by the DMRE management. This was a one-off exercise without the intent of following up. The data obtained were then analysed and interpreted, and findings and recommendations were made for career development and counselling intervention planning.

5.2   STEP 2: DETERMINATION AND DESCRIPTION OF SAMPLE

A "population" means a group with one or more similar characteristics as defined by the researcher. A population shares a set of characteristics relevant to the research project. Sampling is a process of selecting a group of units ("a part" or sample) from the target population ("the whole"), and the required information is obtained from this "part" to draw inferences about the "whole" (Robert, 2002).

Robert (2002) claims that a good sample should preferably be representative of the target population. In other words, each unit in the target population should have a known positive chance (or probability) of being included in the sample. Cooper and Schindler (2014) define a sample as part of a target population, carefully selected to represent that population. Furthermore, Cooper and Schindler (2003) stated that in sampling, the researchers are interested in estimating one or more population values and testing one or more statistical hypotheses.

Due to the cross-sectional, one-time series research design adopted in the current study, lack of time and money, and the fact that the study is exploratory, a probability simple random sampling procedure was used. As a probability random sampling technique, individuals in the targeted population had an equal and fair chance of being selected for a smaller sample of participants (Robert, 2002). Because the researcher was interested in group differences regarding the study construct variables, care was taken that the sample was relatively proportionally selected from and representative of strata including age, gender, job (salary) level and tenure groups.

Random sampling involves deciding on a sampling frame. Robert (2002) describes a sampling frame as a complete list or a map of all the (sampling) units in the target population. According to Robert (2002), a sampling frame ensures that each unit (e.g., age, gender, job level, tenure groups) belonging to the target population has a chance of being included in the sample. In this regard, the stratified random sampling procedure increased the probability of making valid statistical inferences about the targeted population group and minimised the impact of potential confounding variables.

The sample frame was the current population of DMRE employees from salary (job) levels 4-16. The Paterson job grading and salary framework is used in the DMRE. Diamond (2019) describes the Paterson grading system as an analytical job evaluation method. It is based on job or task complexity level and decision-making in job task performance. Jobs are graded

and ranked in an ascending order. Jobs with low levels of task complexity and required decision-making demands are on the lower end of the ranking, and those with high levels of task complexity and higher decision-making demands are ranked higher. The salary levels are also broad-banded. Salary level 4 is the lower-level grade. The band level includes general workers, machine operators, and registry clerks. Salary levels 5-6 include administration clerks and senior administration clerks. Salary level 7-8 includes administration officers and professional officers. Salary level 9-10 includes junior managers and technical and engineering officials. Salary levels 11-12 include middle managers and senior technical and engineering officials. Salary levels 13-16 include senior managers, chief technical/senior and chief engineers, deputy director general and director general. The total population size was ($N = \pm1450$) employees in the DMRE.

An online sample size calculator (Qualtrics, 2023) was used to determine the required sample size from the population to ensure the internal validity of statistical inferences. The confidence level was set at 95%, and the margin error (confidence interval) was at +/- 5% (.05) for the population size (N = 1450). The confidence level related to the degree of confidence the researcher had that the actual mean falls within the margin of error. The margin of error is related to the degree of difference allowed between the population mean number and the sample mean number. The standard deviation was set at .50 to ensure the sample size was adequate for valid statistical inferences (Qualtrics, 2023). The online sample size calculator (Qualtrics, 2023) indicated an ideal sample size of N = 304. However, after assigning a random sequential number to each participant in the population, the Microsoft Office's Excel spreadsheet application's RAND formula assisted in generating a random number from the total population for the final selected sample of N = 412 (±28 % response rate). The final sample was thus large enough for valid statistical inferences for the current research project.

Robert (2002) argues that the sample size affects the precision of the statistical estimators, and to decide on an appropriate (or optimal) sample size for a specific research study, both practical and theoretical considerations need to be considered. The practical considerations refer to time and budget, while theoretical considerations refer to the size of the population, the hypotheses to be tested, and the size and number of strata. In this study, a sample response rate of 28% was considered adequate when considering the study was exploratory.

The advantages of simple random sampling are that it is easy to understand and conceptualise. It is the foundation of sampling theory because it provides a baseline with other sampling, and no auxiliary information regarding the population is required. The disadvantages of simple random sampling are that the complete sampling frame is necessary

before simple random sampling can be implemented, and it is not always possible to obtain a complete sampling frame prior to sampling. Simple random sampling can, therefore, become too expensive and time-consuming to implement in practice (Christensen, 2015; Cooper & Schindler, 2022; Robert, 2002). Robert (2002) argues that although simple random sampling provides a random sample, it does not necessarily give a true representative sample of a heterogeneous population (i.e., where distinct subgroups exist). The sum of these subgroups may not be represented in a sample drawn using simple random sampling. The lack of true representativity was a potential limitation in testing for significant differences among the age, gender, job level and tenure groups.

5.2.1   Composition of age groups in the sample

The mean age of the participants was 38.79 years (SD = 9.68). Table 5.1 shows that the sample was predominantly (54%) represented by those approximately 42 years to 27/28 years of age. Those approximately 28 and younger and those approximately 63 years and older were the least represented.

Table 5.1

Age Group Distribution

Age group	Frequency	Percent (%)	Valid Percent	Cumulative Percent
Age: 28 years and younger	13	3.2	3.2	3.2
Age: 62 years to 43 years	160	38.8	38.8	42.0
Age: 42 years to 27/28 years	224	54.4	54.4	96.4
Age: 63 years and older	15	3.6	3.6	100.0
Total	412	100.0	100.0	

5.2.2   Composition of gender groups in the sample

Table 5.2 shows that the sample was more or less equally represented by female (53.6%) and male (46.4%) participants.

Table 5.2

Gender Group Distribution

Gender group	Frequency	Percent (%)	Valid Percent	Cumulative Percent
Female	221	53.6	53.6	53.6
Male	191	46.4	46.4	100.0
Total	412	100.0	100.0	

5.2.3 Composition of job level groups in the sample

Table 5.3 shows that the sample was predominantly represented by skilled levels 3 -5 (42%). Senior management (levels 13 -16) was the least represented (4.6%). Overall, participants from management/supervision levels comprised only 29.8% of the sample and staff levels participants (skilled and highly skilled production) comprised 70.2%.

Table 5.3

Job Level Group Distribution

Job level group	Frequency	Percent (%)	Valid Percent	Cumulative Percent
Highly skilled production (levels 6-8)	116	28.2	28.2	28.2
Highly skilled supervision (levels 9-12)	104	25.2	25.2	53.4
Senior Management (levels 13-16)	19	4.6	4.6	58.0
Skilled (levels 3-5)	173	42.0	42.0	100.0
Total	412	100.0	100.0	

5.2.4 Composition of tenure groups in the sample

Table 5.4 shows that the sample was predominantly represented by participants with 5 to 10 years tenure (34.5%) and those with less than five years tenure (31.8%). Overall, those with 11 years and more tenure (highly experienced) comprised 33.70% of the sample, and those with somewhat less experience (10 and fewer years of tenure) comprised 66.30%. This observation is in line with the mean age of 38.79 years.

Table 5.4

Tenure Level Group Distribution

Tenure group	Frequency	Percent (%)	Valid Percent	Cumulative Percent
11 – 15 years	78	18.9	18.9	18.9
16 – 20 years	35	8.5	8.5	27.4
21 + years	26	6.3	6.3	33.7
5 to 10 years	142	34.5	34.5	68.2
Less than five years	131	31.8	31.8	100.0
Total	412	100.0	100.0	

5.2.5   Summary: Sociodemographic profile of the sample

A random sample of (N = 412) Black African employees in a South African public service (DMRE) participated in the study. The sample comprised of women (54%) and men (46%) in staff (70%) and managerial (30%) level jobs. Most participants had up to ten years (66%) and more than ten years (34%) of job experience. The mean age of the participants was 38.79 years (SD = 9.68).

5.3   STEP 3: CHOOSING AND MOTIVATING THE PSYCHOMETRIC BATTERY

Cooper and Schindler (2014) define data collection as gathering data ranging from simple observation to conducting a survey using structured measuring instruments. The data on constructing a career counselling framework to guide adaptive behaviour were collected by applying self-administered psychometric instruments that measured participants' psychological capital, career agility, career adaptability, career resilience and career satisfaction. The psychometric battery of measures were all well-established instruments tested in the South African context. Table 5.5 summarises the measuring instruments and their psychometric properties.

Table 5.5 *Description of the Research Psychometric Battery*

Construct variable	Measuring instrument	Dimensions	Response scale and example of items	Previous research Validity and internal consistency reliability
Socio-demographic information	A self-reporting, anonymous instrument was developed to collect group-based socio-demographic information	Age, gender, job level and tenure See section 5.1 for the dimensions (categories)	N/A	N/A
Career agility	Career agility scale (CAS: Coetzee et al., 2021) The 18-item CAS is currently available in English only	*Subscale factors:* ● Technological adaptivity ● Agile learning ● Career navigation	Seven-point Likert-type scale (1 = strongly disagree; 7 = strongly agree). Technological adaptivity (7 items: e.g. "I feel my career growth and success are guided by my response to changing technological and socioeconomic conditions"); agile learning (5 items, e.g. "I continually search for opportunities to learn new skills that will improve my career and job success"); and career navigation (6 items, e.g. "I am able to navigate and adapt to change and uncertainty in my job and career environment").	Coetzee et al. (2021) reported high internal consistency reliability and construct validity of the CAS in South Africa.
Psychological capital (PsyCap)	English version of the 24-item psychological capital questionnaire (PCQ-24: Luthans et al., 2007)	*Subscale factors:* ● Self-efficacy ● Hope ● Resiliency ● Optimism	Six-point Likert-type scale (1 = strongly disagree; 6 = strongly agree): self-efficacy (6 items, e.g. "I feel confident helping to set targets/goals in my work area"); hope (6 items, e.g. "I can think of many ways to reach my current work goals"); resiliency (5 items, e.g. "I usually manage difficulties one way or another at work"); and optimism (7 items: "I'm	Baluku et al. (2020) reported acceptable internal consistency reliability and construct validity of the PCQ for the African context.

			optimistic about what will happen to me in the future as it pertains to work").	
Career adaptability	English version of the 24-item career adapt-abilities scale (CAAS: Savickas & Porfeli, 2012)	*Subscale factors:* ● Career concern ● Career control ● Career curiosity ● Career confidence	Five-point Likert-type scale (1 = not strong; 5 = strongest): career concern (6 items, e.g., "Preparing for the future"); career control (6 items; e.g. "Taking responsibility for my actions"); career curiosity (6 items; e.g. "Becoming curious about new opportunities"); and career confidence (6 items; e.g. "Overcoming obstacles").	Coetzee et al. (2020) reported high internal consistency reliability and construct validity of the CAAS for the South African context.
Career resilience	The adapted South African-based career resilience questionnaire (CRQ) of Mogale (2015) The 15-item CRQ is currently available in English only	*Subscale factors:* ● Self-reliance ● Personal resilience ● Work resilience	Seven-point Likert-type scale (1 = strongly disagree; 7 = strongly agree): self-reliance (5 items: e.g. "I feel it is important to establish a set of career goals in the planning of one's future working life"; personal resilience (4 items, e.g. "I have taken definite steps in the past year to further my career"); and work resilience (6 items, e.g., "Frequent stressful changes in one's working environment are worthwhile investments in one's career growth").	Coetzee et al. (2015) reported good internal consistency reliability and construct validity for the scale as applied in the South African Public Service context.
Career satisfaction	English version of the career satisfaction scale (CSS) of Green et al. (1990).	The CSS measures a global construct (5 items only)	Seven-point Likert-type scale (1 = strongly disagree; 7 = strongly agree). Examples of items included: "I am satisfied with the progress I have made towards meeting my goals for advancement"; I am satisfied with the progress I have made towards meeting my overall career goals".	A South African study by Coetzee et al. (2022) reported high internal consistency reliability for the CSS.

Cooper and Schindler (2014) argued that the advantage of self-administered questionnaires is that they can be emailed to participants, or participants can access them via a URL link. Cooper and Schindler (2014) also maintained that self-administered surveys of all types cost less than personal interviews. Electronic surveys have a quick turnaround, can easily reach inaccessible executives, and are perceived as more impersonal and, therefore, more anonymous than other methods. The measuring instruments suitable for this study were readily available.

This study's self-rating measuring instruments had potential limitations regarding reliability and validity since self-raters could rate themselves favourably. Van de Mortel (2008) conducted a study on social desirability response bias in self-report and discovered that a limitation of self-rating questionnaires is the tendency of people to present a favourable image of themselves, commonly known as socially desirable responding (SDR). Van de Mortel (2008) said that the participants may report information to conform to socially acceptable values, to avoid criticism, or to gain social approval. In another study conducted by Van Acker and Theuns (2009) regarding the possibilities and limitations of using self-rating scales, it was found that a larger proportion of respondents dropped out compared to a regular rating scale. However, subjective preferences for one or the other scale do not seem to differ. Similarly, De Lange et al. (2003) conducted a study and found that self-rating is often inflated. To address the issue of potential bias, tests for common method variance were conducted to ensure that valid statistical inferences of relationships between the constructs could be made (see Chapter 6).

In this study, a self-rating scale has been chosen for three reasons: (i) time constraint, (ii) cost-effectiveness, and (iii) cross-sectional survey research approach. The study was exploratory, and the results would be used for preliminary exploratory purposes leading to further research.

5.4   STEP 4: ETHICAL CONSIDERATIONS AND ADMINISTRATION OF THE PSYCHOMETRIC BATTERY

The research questionnaire integrated the various measuring instruments into an online, anonymous version. Participants received a no-reply URL link by email to voluntarily complete the research questionnaire. Principles of ethical research were applied.

5.4.1 Ethical considerations

Ethical clearance for the study was obtained from the research institution (ERC Ref: 2020_CEMS_IOP_033). Permission for the study was provided by the organisation's management (DMRE). Completion of the questionnaire was voluntary, anonymous and confidential. The participants gave informed consent that the data may be used for research purposes.

Cooper and Schindler (2014) defined ethics as norms or standards of behaviour that guide moral choices about people's behaviour and relationships with others. Ethics in research means to ensure that no one is harmed or suffers adverse consequences arising from research activities. Ethical behaviour is crucial when conducting a research study. A researcher is expected to conduct research ethically and professionally in a way that protects the interests of research participants and abides by good ethics when obtaining and utilising such information. Cooper and Schindler (2014) highlighted the importance of the ethical treatment of participants. Plagiarism was avoided at all costs during the literature review and report writing. All references included are in line with the academic reference writing requirements. The researcher abides by the "Ethical Code of Professional Standards" stipulated by the relevant bodies (Cooper & Schindler, 2003, p. 133).

The following important ethical principles were adhered to in this study:

- *Privacy and voluntary participation*: Cooper and Schindler (2014) asserted that a right to privacy means a participant can refuse to be interviewed or answer any question. Voluntary participation was central to conducting this study. Participants could refuse to reveal specific information about them and withdraw from the research study anytime.

- *Informed consent*. Participants were made aware of the consequences of participation and informed of their rights and responsibilities and the nature and purpose of the research. Research participants should be fully informed about all aspects of a research project that might influence their decision to participate. The consent form was written so that participants with different qualifications, education levels, and differing home languages could understand it (Cooper & Schindler, 2014). Thus, complex language was avoided as far as possible by eliminating terminology the participants might be unfamiliar with. Within the realm of informed consent, information is essential. Therefore, the researcher ensured that all participants were given complete information on all aspects of the research and the processes that would occur. In addition to this, they

were also informed. Cooper and Schindler (2003) said harm to participants could also be inferred by test anxiety, which was a possibility in this study. Attempts to minimise this were made and included but were not limited to explaining that:

- o Answering the research questionnaire was not a test, so there were no right or wrong answers.
- o The questionnaire was not designed to "trick" participants.
- o The study was exploratory; thus, no judgements would be made about them as individuals.
- o The results were in no way going to be linked to participants because the survey was anonymous and group-based data collection.
- o Only the researcher would have access to the results, and supervisors and colleagues would not have access to participants' responses.
- o The results in no way reflect on their intelligence, morality or conscience.

- The research was conducted in *a socially responsive and responsible manner*: Cooper and Schindler (2014) asserted that the researcher should avoid deception at all costs. Participants should be treated with respect and consideration, acknowledging them as persons in specific contexts with specific needs, protecting them from possible negative consequences of the research and requiring only them to produce relevant and reasonable information (Cooper & Schindler, 2014).

- *Invasiveness was minimised.* When conducting research, interference with participants should only occur in a manner warranted by an appropriate research design consistent with the researcher's role as a scientific investigator (Babbie & Mouton, 2017).

- *Ethical reporting:* Ethical reporting issues were irrelevant to this study. This study explored the relationship dynamics of adaptivity, adaptability, career resilience and satisfaction, culture-free and non-biased. Issues which conflicted with predominant literature and research were also reported or compared to the body of literature.

5.4.2   Information letter and informed consent

It was essential to ensure that an information letter was available to participants in this study so they could make an informed decision about whether or not they wished to participate. Thus, an information letter was constructed to provide the desired parties with sufficient background information on this study and the purposes thereof.

5.4.3 Data collection procedure

Participants were invited to participate voluntarily via a no-reply-to URL link to the research questionnaire. A specific time frame for responses was given to participants. The researcher personally followed up with participants regarding the submission of their responses. In line with the POPI Act, participants were not requested to provide identifying details about themselves (e.g. names and contact details). This was to ensure that anonymity was maintained and anxiety on the part of participants was minimised.

5.5 STEP 5: CAPTURING OF CRITERION DATA

The rationale for choosing a no-reply online (web-based) method of investigation was to allow participants to remain anonymous, thereby ensuring more open and honest responses and a higher response rate (Cooper & Schindler, 2014). The Lime Survey facilities of the University were used to capture the group-based data onto an Excel spreadsheet, which was converted into a SPSS file for statistical analyses. Only the researcher and statistician had access to the data, which were password protected.

5.6 STEP 6: FORMULATION OF RESEARCH HYPOTHESES

According to Robert (2002), a hypothesis is a logical supposition, a reasonable guess, or an educated conjecture which may give direction to the researcher's thinking concerning the problem and thus aid in solving it. A research hypothesis is a proposition or statement that is subject to empirical testing. Table 5.6 summarises the research hypotheses formulated for each empirical research aim.

Table 5.6

Research Hypotheses

Research aim	Research hypothesis	Statistical procedure
Research aim 1: To explore the nature, magnitude and direction of the statistical relationship dynamics between individuals' **adaptive readiness** (measured by individuals' career agility and psychological capital), **adaptability resources** as	H1: There is a statistically significant interrelationship between individuals' adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources (measured by individuals' career	Preliminary statistics to test for construct validity and internal consistency reliability (Cronbach alpha coefficient, AVE, CFAs) Descriptive statistics (means, standard

adaptive response (measured by individuals' career adaptability), and **adaptation** (measured by individuals' career resilience and their overall career satisfaction).	adaptability), and adapting responses (measured by individuals' career resilience and their overall career satisfaction).	deviations, skewness, kurtosis) Pearson-product moment correlations
Research aim 2: To assess whether individuals' career adaptability mediates the link between their (1) career agility and (2) psychological capital and their career resilience and career satisfaction.	**H2**: The link between individuals' (1) career agility, and (2) psychological capital and their career resilience and career satisfaction is mediated by their career adaptability.	Hayes PROCESS macro procedure for analysis of mediation effects
Research aim 3: To assess whether there is a significant interaction effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level, tenure) in predicting their career adaptability, career resilience and career satisfaction.	**H3**: There is a significant interaction (moderation) effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career adaptability, career resilience and career satisfaction.	Hayes PROCESS macro procedure for analysis of moderated regression effects
Research aim 4: To assess whether there is a significant interaction effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level, and tenure) in predicting their career resilience and career satisfaction.	**H4**: There is a significant interaction (moderating) effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career resilience and career satisfaction.	Hayes PROCESS macro procedure for analysis of moderated regression effects
Research aim 5: To assess whether individuals from various age, gender, job level, and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.	**H5**: Individuals from various age, gender, job level and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.	ANOVA (multiple groups: age, job level, tenure) Independent samples t-test for gender

5.7 STEP 7: STATISTICAL PROCESSING OF THE DATA

Hypothesis testing is a decision-making process. To conduct a study, a researcher formulates a scientific hypothesis or predicts a relationship among the variables being investigated. The researcher designs a study and collects data to test the validity of the stated hypothesis. After collecting data, a researcher must examine the data to determine whether there is support for the scientific hypothesis (Robert, 2002).

The data investigation process consisted of three major statistical processing stages, namely: (1) preliminary and descriptive statistical analysis, (2) correlational analysis, and (3) inferential and multivariate statistics. Each of these stages entailed various substages that are specified in Table 5.7.

Table 5.7

Statistical Processing of Data

Stage 1:	Preliminary and descriptive statistical analyses
	Confirmatory Factor Analysis (CFA) and Harman's single factor (testing for common method variance)
	Reliability and construct validity analysis (Cronbach alpha, composite reliability and average variance extracted)
	Means, Standard deviations, Kurtosis, Skewness, and Frequency data
	Tests for statistical assumptions
Stage 2:	Correlational analyses (H1)
Stage 3:	Inferential and multivariate statistics analyses
	Stepwise multiple regression
	Mediation analysis (H2)
	Moderated regression analysis (H3 and H4)
	Test for significant mean differences (H5)

5.7.1 Stage 1: Preliminary statistical analysis

The preliminary statistical analysis involved testing the measurement scale data for common method variance, internal consistency reliability, and convergent and discriminant (construct) validity.

5.7.1.1 Testing for common method variance and construct validity of the measurement scales

The first step was to empirically test the five scales for the presence of common method variance (CMV) as an indicator of common method bias (CMB). This step was necessary because of the cross-sectional, self-report nature of the research design and measures. Based on the guidelines of Podsakoff et al. (2003), Harman's single-factor test and a common latent factor test using confirmatory factor analysis (CFA) were applied to test for common method variance in the multi-factor scales (CAS, PsyCap, CAAS, and CRQ). Suppose the total variance for Harman's single factor is less than 50%, and the common latent factor CFA model has poor or unacceptable fit with the data. In that case, it suggests that CMB does not threaten the reliability and convergent validity of the data. Statistical associations among the construct variables may be analysed and interpreted with greater trustworthiness, and valid conclusions can be drawn (Podsakoff et al., 2003).

The IBM (2020) SPSS Statistics version 27.0 software package was used for performing Harman's one-factor test. The RStudio (Rosseel & Jorgensen, 2021) lavaan version 0.6-7 statistical package was used to test for a common latent factor using CFA (maximum likelihood estimator). A multi-factor CFA was also performed on each scale to test for the construct validity of each measurement scale. The following rules of thumb (threshold values) were applied for good model fit (Hair et al., 2010): chi-square/df ≤ 3; RMSEA ≤ .06 or ≤ .08; SRMR ≤ .05; CFI ≥ .90. The results are reported in chapter 6.

5.7.1.2 Internal consistency reliability and convergent validity of the measurement scales

Cronbach alpha coefficients, composite reliability (CR) coefficients and average variance extracted (AVE) of each measurement scale were calculated. As guided by the Fornell-Larcker (1981) criterion, the AVE values of >.50 and Cronbach alpha coefficients and CR values of >.70 indicate convergent validity and internal consistency reliability of a measurement scale (Csiernik et al., 2017). The IBM (2020) SPSS Statistics version 27.0 software package was used to calculate the Cronbach alpha coefficients. The Rstudio (Rosseel & Jorgensen, 2021) lavaan version 0.6-7 statistical package was used to calculate the composite reliability (CR) and AVE values. The results are reported in chapter 6.

5.7.1.3 Discriminant validity of the overall research measurement model

The discriminant validity of the overall measurement model was tested to assess the possibility of multicollinearity among the construct variables of the five measurement scales. A common latent factor CFA (all the subscales of the five measures loading onto an overall factor) and a multi-factor CFA (including the subscale variables of each scale loading onto their respective overall construct variable) were performed. The items of the CSS were loaded onto the overall career satisfaction construct in the multifactor CFA model. The RStudio (Rosseel & Jorgensen, 2021) lavaan version 0.6-7 statistical package was used to perform the statistics. The results are reported in Chapter 6. The following rules of thumb (threshold values) were applied for good model fit, that is, evidence of discriminant validity among the five measurement instruments (Hair et al., 2010: chi-square/df ≤ 3; RMSEA ≤ .06 or ≤ .08; SRMR ≤ .05; CFI ≥ .90).

5.7.2   Stage 1: Descriptive statistics

Descriptive statistics (means, standard deviations, kurtosis and skewness) are used to summarise data in an organised manner by describing the characteristics of a sample or population (Kaur et al., 2018). The mean (M) or average was computed by adding the values of responses and dividing them by the total number of responses. The standard deviation (SD) measures how well the mean represents the data and indicates the average distance of cases from the mean value (Neuman, 2014;2021). Kurtosis was also used to show how flat (platykurtic) or pointy (leptokurtic) the distribution of data was (Field, 2013). Skewness was employed to measure whether the distribution of data was positively skewed, negatively skewed or normal. In addition, a frequency distribution was used to indicate the distribution of sociodemographic data to describe and compare the sample population. The results are presented in tables, diagrams and graphs, and the findings are discussed systematically, ensuring that the interpretation is conveyed clearly and coherently. The standard deviation (SD) is calculated by the square root of the variance. Small standard deviations show that the data points are close to the mean instead of large standard deviations, indicating that the data points are distant from the mean. A standard deviation of 0 indicates that all the scores are the same (Huysamen,1994; 2021).

Frequency distributions can deviate from normal distributions regarding skewness (lack of symmetry) and kurtosis (pointiness). A positively skewed distribution has frequent scores clustered at the lower end, where the tail points toward the higher or more positive scores. Negative skewed distributions consist of frequent scores which are clustered at the higher

end, where the tail points towards the lower, more negative scores. Kurtosis indicates how flat or pointy a distribution is. A platykurtic distribution has many scores in the tail and will be pretty flat as opposed to a leptokurtic distribution, which is thin in the tail and looks relatively pointy. In a normal distribution, skewness and kurtosis values are 0 (i.e., perfectly symmetrical) (Field, 2013). Skewness values not close to zero indicate that the data set is not normally distributed. Kurtosis values less than three indicate that the data set had lighter tails than a normal distribution (Field, 2013).

The IBM (2020) SPSS Statistics version 27.0 software package was used to calculate the statistics. The results are reported in chapter 6.

5.7.3 Stage 1: Tests for statistical assumptions

Before conducting hierarchical multiple and moderated regression analyses, the following tests for assumptions were conducted: (1) accuracy of data and missing values; (2) ratio of cases to independent variables; (3) outliers; (4) normality, linearity, and homoscedasticity; and (5) multicollinearity and singularity. Type I and Type II error was also considered. Type I error is the false rejection of the null hypothesis (a true null hypothesis is rejected). Type II error is failure to reject the null hypothesis when it is false (false null hypothesis is accepted) (Christensen, 2015).

5.7.4 Stage 2: Correlation analyses

Bivariate correlations were computed to test research hypothesis 1:

H1: There is a statistically significant interrelationship between individuals' adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources (measured by individuals' career adaptability), and adapting responses (measured by individuals' career resilience and their overall career satisfaction).

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Bivariate correlations indicate the strength and direction of the linear relationship between the variables. Based on the tests of normality, the Pearson correlation coefficient is reported as values ranging from -1 to +1. The sign (+ or -) indicates whether there is a positive or a negative correlation, while the size of the value indicates the strength of the relationship. A correlation coefficient of +1 indicates a perfect positive relationship, a correlation coefficient of -1 indicates a perfect negative relationship, whereas a correlation coefficient of 0 indicates no linear relationship between the variables. In addition, practical effect sizes are used to determine whether the relationship between two variables is statistically significant and are interpreted according to the following guidelines: $r = .10$ (small practical effect), $r = .30$ (medium practical effect), and $r = .50$ (large practical effect) at $p \le .05$ (Cohen, 1988). The IBM (2020) SPSS Statistics version 27.0 software package was used to calculate the statistics. The results are reported in chapter 6.

5.7.5 Stage 3: Inferential and multivariate statistics analyses

Inferential statistics were used in this study to make inferences about the population from which the sample was drawn. The inferential statistics involved four substages of analysis:

Substage 1: Stepwise multiple regression analysis
Substage 2: Mediation analysis (testing H2)
Substage 3: Moderated regression analysis (testing H3 and H4)
Substage 4: Tests for significant mean differences (testing H5)

5.7.5.1 Stepwise multiple regression analysis

Stepwise multiple regression analysis was first performed to identify the best predictors of career resilience and career satisfaction adaptation outcome variables. The IBM (2020) SPSS Statistics version 27.0 software package was used to calculate the statistics. Chapter 6 reports the results.

According to Christensen (2015), stepwise multiple regression refers to a specific combination of adding or removing variables from the equation sequentially. The independent variable that contributes the most to explaining dependent variables is added first, and subsequent variables are included based on their incremental contribution over the first variable and whether they meet the criterion for entering the equation. Variables may be removed at each step if they meet the removal criterion, which is a larger significant level than entry. The value of R^2 was used to determine the proportion of the total variance of the dependent variable that

is explained by the independent variables (Neuman, (2014;2021). In addition, the F-statistic indicates whether there is a significant regression ($p \le .05$) between the independent and dependent variables. Beta values (β) are also reported in order to compare the contribution of each independent variable at $p \le .05$. The significant practical effect size is interpreted as small ($R^2 = .02$), medium ($R^2 = .13$) or large ($R^2 = .25$) at $p \le .05$ (Cohen, 1992).

5.7.5.2 Mediation analysis

Mediation analysis was performed to test research hypothesis 2:

H2: The link between individuals' (1) career agility, and (2) psychological capital and their career resilience and career satisfaction, is mediated by their career adaptability.

The Hayes (2018) PROCESS Procedure for SPSS Version 3.5.3 was used for the statistical analysis. A heteroscedasticity consistent standard error and covariance matrix estimator was used. The more stringent bootstrap 95% lower-level confidence interval (LLCI) and upper-level confidence interval (ULCI) range, not including zero, was used to assess for significant direct and mediation effects. The significant practical effect size of the F statistic is interpreted as small ($R^2 = .02$), medium ($R^2 = .13$) or large ($R^2 = .25$) at $p \le .05$ (Cohen, 1992).

A mediation analysis refers to the causal sequence whereby an independent variable A indirectly affects a dependent variable B through a mediator variable C (Hayes & Preacher, 2014). In other words, a mediating variable provides a causal link between an independent and dependent variable. In this study, a mediation analysis (direct and indirect effects) was used to explore whether the link between individuals' (1) psychological capital and their (2) career agility and their career resilience and career satisfaction is mediated by their career adaptability (H2). The results are reported in chapter 6.

It should be noted that the exploratory cross-sectional design of the present study did not allow for assessing true causal effects but only the direction and magnitude of the potential causal effect. The exploratory mediation analysis was used for explanatory purposes and to inform future longitudinal studies that could investigate true causal effects.

5.7.5.3 Moderated regression analysis

Moderated regression analysis was performed to test research hypotheses H3 and H4.

H3: There is a significant interaction (moderation) effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career adaptability, career resilience and career satisfaction

H4: There is a significant interaction (moderating) effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career resilience and career satisfaction.

The Hayes (2018) PROCESS Procedure for SPSS Version 3.5.3 was used to perform the statistical analysis. A heteroscedasticity consistent standard error and covariance matrix estimator was used. The construct variables were mean-centered prior to analysis. The more stringent bootstrap lower-level confidence interval (LLCI) and upper-level confidence interval (ULCI) range, not including zero, was used to assess for significant main and interaction effects. The significant practical effect size of the F statistic is interpreted as small ($R^2 = .02$), medium ($R^2 = .13$) or large ($R^2 = .25$) at $p \leq .05$ (Cohen, 1992). The practical significance of the significant moderating effect was calculated as Cohen's $f^2 = R^2/1 - R^2$. The f^2 is interpreted as $\leq .02$ (small practical effect); $\geq .15$ to $.34$ (moderate practical effect), and $\geq .35$ (large practical effect) (Cohen, 1992).

Moderated multiple regression involves a relationship among three or more variables, and the presence of a multiplicative relationship characterises it. An interaction occurs when two or more variables, for example, where variables x, y have a joint effect in accounting for a variable such as variable y, over and above an additive combination of their separate effects (Landis & Dunlap, 2000). According to Landis and Dunlap (2000), a moderator is a variable that affects the direction and/or strength of the relationship between the independent or predictor variable and the dependent (criterion variable). While a mediating variable explains the process through which an independent and dependent variable is related, a moderating variable helps explain whether the link between an independent variable and a dependent variable is conditional upon the moderator (Hair et al., 2019).

5.7.5.4   Tests for significant mean differences

Tests for significant mean differences were performed to test research hypothesis 5:

H5: Individuals from various age, gender, job level and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.

The IBM (2020) SPSS Statistics version 27.0 software package was used to calculate the statistics. The results are reported in chapter 6. ANOVAs were performed to assess for significant mean differences ($p \leq .05$) among the age, job level and tenure groups. A significant F statistic indicates that the null hypothesis can be rejected since there is more variability between the groups than within the groups. In terms of statistical significance, if the significance level is less than or equal to .05, there is a significant difference among the mean scores on the dependent variable for the different groups (Pallant, 2016). The independent sample T-test was used to test for significant mean differences ($p \leq .05$) between male and female participants. The eta-squared effect size ($p \leq .05$) was used as an indication of the practical significance of mean differences (age, job level, tenure), and Cohen's d for the practical significance ($p \leq .05$) of mean differences between males and females. The following guidelines applied:

- Eta-squared: $\leq .01$ (small practical effect); $\geq .06$ to .13 (moderate practical effect); $\geq .14$ (large practical effect)
- Cohen's d: $\leq .20$ (small practical effect); $\geq .50$ to .79 (moderate practical effect); $\geq .80$ (large practical effect)

5.8   CHAPTER SUMMARY

This chapter described the research method for testing the research hypotheses and achieving the empirical research aims. The psychometric properties of the measuring instruments were described, including the various statistical procedures applied for testing the research hypotheses. Ethical issues were also considered to ensure that the research participants' rights were not violated, and that the data were not obtained in an unethical manner.

CHAPTER 6: RESEARCH RESULTS

This chapter represents the empirical study and reports the statistical results in terms of descriptive, correlational, inferential and multivariate statistics.

6.1   PRELIMINARY STATISTICAL ANALYSIS OF MEASUREMENT SCALES

This section reports each measurement scale's construct validity and internal consistency reliability. The following five scales were applied in the present research:

1. Career Agility Scale (CAS)
2. Psychological Capital Questionnaire (PCQ)
3. Career Adapt-Ability Scale (CAAS)
4. Career Resilience Questionnaire (CRQ)
5. Career Satisfaction Scale (CSS)

6.1.1   Testing for common method variance and construct validity of the measurement scales

The first step was to empirically test the five scales for the presence of common method variance (CMV) as an indicator of common method bias (CMB). As explained in Chapter 5, based on the guidelines of Podsakoff et al. (2003), Harman's single factor test and a common latent factor test using confirmatory factor analysis (CFA) were applied to test for common method variance in the multi-factor scales (CAS, PsyCap, CAAS, and CRQ).

The IBM (2020) SPSS Statistics version 27.0 software package was used for performing Harman's one-factor test. The RStudio (Rosseel & Jorgensen, 2021) lavaan version 0.6-7 statistical package was used to test for a common latent factor using CFA (maximum likelihood estimator). A multi-factor CFA was also performed on each scale to test for the construct validity of each measurement scale.

Table 6.1 summarises the results.

Table 6.1

Testing for Common Method Bias and Construct Validity: Harman's One Factor, CFA Common Latent Factor Solution and CFA Multi-factor Solution

Measurement scale	Harman's single-factor	Common latent factor CFA	Multi-factor CFA Model
Career Agility Scale (CAS) *Subscale factors:* ● Technological adaptivity ● Agile learning ● Career navigation	10%	Chi-square = 521.97 Df = 119 Chi-square/df = 4.39 *p* = .000 RMSEA = .14 SRMR = .07 CFI = .83 AIC = 18453.55	Chi-square = 280.72 Df = 131 Chi-square/df = 2.14 *p* = .000 RMSEA = .09 SRMR = .05 CFI = .94 AIC = 18776.01
Psychological Capital Questionnaire (PsyCap) *Subscale factors:* ● Self-efficacy ● Hope ● Resiliency ● Optimism	6.98%	Chi-square = 910.31 Df = 252 Chi-square/df = 3.61 *p* = .000 RMSEA = .08 SRMR = .09 CFI = .71 AIC =26448.60	Chi-square = 285.50 Df = 164 Chi-square/df = 1.74 *p* = .000 RMSEA = .06 SRMR = .05 CFI = .93 AIC = 20120.56
Career Adapt-Ability Scale (CAAS) *Subscale factors:* ● Career concern ● Career control ● Career curiosity ● Career confidence	13%	Chi-square = 1143.96 Df = 230 Chi-square/df = 4.97 *p* = .000 RMSEA = .09 SRMR = .07 CFI = .83 AIC = 18327.79	Chi-square = 545.74 Df = 246 Chi-square/df = 2.22 *p* = 0,000 RMSEA = .05 SRMR = .04 CFI = .95 AIC = 18177.39
Career Resilience Questionnaire (CRQ) *Subscale factors:* ● Self-reliance ● Personal resilience ● Work resilience	7.40%	Chi-square = 417.35 Df = 90 Chi-square/df = 4.64 *p* = .000 RMSEA = .09 SRMR = .07 CFI = .80 AIC = 17243.49	Chi-square = 158.27 Df = 70 Chi-square/df = 2.26 *p* = .000 RMSEA = .08 SRMR = .05 CFI = .95 AIC = 15556.64
Career Satisfaction Scale (CSS)	4%	Chi-square = 19.65 Df = 5 Chi-square/df = 3.93	N/A

Note: The CSS measures a global construct (5 items only)		p = .001 RMSEA = .08 SRMR = .02 CFI = .98 AIC = 6033.31	

Note: N = 412. Df: difference. RMSEA: Root Mean Square Error of Approximation. SRMR: Standardised Root Mean Square Residual. CFI: Comparative fit index. AIC: Akaike Information Criterion. RMSEA values reported at a 90% upper-level confidence interval.

Career Agility Scale

Table 6.1 shows that Harman's single factor accounted for only 10% of the common variance among the subscale variables. When loading the three subscales of the CAS onto a CFA common latent factor, the fit indices showed that the common latent factor model did not have an acceptable fit with the data: chi-square/df = 4.39; p = .000; RMSEA = .14; SRMR = .07; CFI = .83. These results suggest that common method bias did not pose a serious threat to the interpretation of the research findings. The multi-factor CFA model indicated a good fit with the data: chi-square/df = 2.14; p = .000; RMSEA = .09; SRMR = .05; CFI = .94. These results showed that the three subscales converged well onto the career agility construct and have discriminant validity by also measuring unique contributing facets of the overall career agility construct.

Psychological Capital Questionnaire

Table 6.1 shows that Harman's single factor accounted for only 6.98% of the common variance among the subscale variables. When loading the four subscales of the PCQ onto a CFA common latent factor, the fit indices showed that the common latent factor model did not have an acceptable fit with the data: chi-square/df = 3.61; p = .000; RMSEA = .08; SRMR = .09; CFI = .71. These results suggest that common method bias did not pose a serious threat to the interpretation of the research findings. The multi-factor CFA model indicated a good fit with the data: chi-square/df = 1.74; p = .000; RMSEA = .06; SRMR = .05; CFI = .93. These results showed that the four subscales converged well onto the psychological capital construct and have discriminant validity by also measuring unique contributing facets of the overall psychological capital construct.

Career Adapt-Ability Scale

Table 6.1 shows that Harman's single factor accounted for only 13% of the common variance among the subscale variables. When loading the four subscales of the CAS onto a CFA common latent factor, the fit indices showed that the common latent factor model did not have an acceptable fit with the data: chi-square/df = 4.87; p = .000; RMSEA = .09; SRMR = .07; CFI = .83. These results suggest that common method bias did not pose a serious threat to the interpretation of the research findings. The multi-factor CFA model indicated a good fit with the data: chi-square/df = 2.22; p = .000; RMSEA = .05; SRMR = .04; CFI = .95. These results showed that the four subscales converged well onto the career adaptability construct and have discriminant validity by also measuring unique contributing facets of the overall career adaptability construct.

Career Resilience Questionnaire

Table 6.1 shows that Harman's single factor accounted for only 7.40% of the common variance among the subscale variables. When loading the three subscales of the CRQ onto a CFA common latent factor, the fit indices showed that the common latent factor model did not have an acceptable fit with the data: chi-square/df = 4.64; p = .000; RMSEA = .09; SRMR = .07; CFI = .80. These results suggest that common method bias did not pose a serious threat to the interpretation of the research findings. The multi-factor CFA model indicated a good fit with the data: chi-square/df = 2.26; p = .000; RMSEA = .08; SRMR = .05; CFI = .95. These results showed that the three subscales converged well onto the career resilience construct and have discriminant validity by also measuring unique contributing facets of the overall career resilience construct.

Career Satisfaction Scale

The CSS measured a global construct of career satisfaction (5 items). Harman's single factor accounted for only 4% of the common variance among the five items, suggesting a lack of possible common method bias. The one-factor CFA model indicated a good fit with the data: chi-square/df = 3.94; p = .001; RMSEA = .08; SRMR = .02; CFI = .98. The results indicated construct validity of the CSS as a global construct. In summary, all five measurement scales showed acceptable construct validity and minimal presence of common method variance as an indicator of common method bias.

6.1.2 Internal consistency reliability and convergent validity of the measurement scales

Table 6.2 reports the Cronbach alpha coefficients, composite reliability (CR) coefficients and average variance extracted (AVE) of each measurement scale. The IBM (2020) SPSS Statistics version 27.0 software package was used to calculate the Cronbach alpha coefficients. The RStudio (Rosseel & Jorgensen, 2021) lavaan version 0.6-7 statistical package was used to calculate the composite reliability (CR) and AVE values.

Table 6.2

Internal Consistency Reliability and Convergent Validity of Measurement Scale

Measurement scale	Cronbach alpha coefficient	Composite reliability (CR)	Average variance extracted (AVE)
Overall career agility scale (CAS)	.95	.95	.52
Technological adaptivity	.90	.89	.55
Agile learning	.91	.90	.67
Career navigation	.91	.90	.60
Overall Career Adaptability	.96	.96	.52
Career concern	.90	.90	.60
Career control	.91	.90	.62
Career curiosity	.90	.90	.60
Career confidence	.92	.91	.66
Overall Psychological Capital	.86	.86	.21
Self-efficacy	.81	.81	.43
Hope	.81	.81	.44
Resiliency	.70	.70	.36
Optimism	.69	.69	.36
Overall Career Resilience	.92	.91	.42
Self-reliance	.83	.83	.50
Personal resilience	.73	.73	.39
Work resilience	.88	.88	.54
Overall Career Satisfaction	.94	.94	.77

Note: N = 412

Career Agility Scale

Table 6.2 shows that the CAS and its subscales had good internal consistency reliability: Overall CAS α = .95; technological adaptivity α = .90; agile learning α = .91; career navigation α = .91. Table 6.2 shows the subscales had AVE values of >.50 and CR values of >.70, which indicate convergent validity and internal consistency reliability of the CAS.

Psychological Capital Questionnaire

Table 6.2 shows that the PCQ and its subscales had good internal consistency reliability: Overall PsyCap α = .86; Self-efficacy α =.81; hope α = .81; resilience α = .70; optimism α =.69 Table 6.2 shows the subscales had AVE values of below <.50 and CR values of >.70. Although the composite reliability coefficients confirm internal consistency reliability, the below .50 AVE estimates points to potential issues of convergent validity. This finding will be considered as a potential limitation in interpreting the findings.

Career Adapt-Ability Scale

Table 6.2 shows that the CAAS and its subscales had good internal consistency reliability: Overall CAAS α = .96; career concern α = .90; career control α = .91; career curiosity α = .90; Career confidence α=.92. Table 6.2 shows the subscales had AVE values of >.50 and CR values of >.70, which indicate convergent validity and internal consistency reliability of the CAAS.

Career Resilience Questionnaire

Table 6.2 shows that the CRQ and its subscales had good internal consistency reliability: Overall CRQ α = .92; self-reliance α = .83; personal resilience α = .73; work resilience α = .81. Table 6.2 shows the subscales had AVE values of ≤ .50 and CR values of >.70. Although the composite reliability coefficients confirm internal consistency reliability, the below .50 AVE estimates points to potential issues of convergent validity. This finding will be considered as a potential limitation in interpreting the findings.

Career Satisfaction Scale

Table 6.2 shows that the CSS as a global measure had good internal consistency reliability: Overall CSS α =. 94. Table 6.2 shows an AVE estimate of >.50 and a CR value of >.70, indicating the CSS's convergent validity and internal consistency reliability.

In summary, the five measurement scales had good internal consistency reliability and acceptable convergent validity for the purposes of the present research.

6.2   DISCRIMINANT VALIDITY OF THE OVERALL RESEARCH MEASUREMENT MODEL

As explained in Chapter 5, the discriminant validity of the overall measurement model was tested to assess the possibility of multicollinearity among the construct variables of the five measurement scales. A common latent factor CFA (all the subscales of the five measures loading onto an overall factor) and a multi-factor CFA (including the subscale variables of each scale loading onto their respective overall construct variable) were performed. The items of the CSS were loaded onto the overall career satisfaction construct in the multifactor CFA model. The RStudio (Rosseel & Jorgensen, 2021) lavaan version 0.6-7 statistical package was used to perform the statistics.

The following rules of thumb (threshold values) were applied for good model fit, that is, evidence of discriminant validity among the five measurement instruments (Hair et al., 2010): chi-square/df ≤ 3; RMSEA ≤ .06 or ≤ .08; SRMR ≤ .05; CFI ≥ .90. Table 6.3 summarises the results.

Table 6.3

CFA Results of the Research Measurement Model

Model	Chi-square	df	Chi-square/ df	p	RMSEA	SRMR	CFI	AIC
Common latent factor CFA	9774.97	3.159	3	.000	.07	.08	.58	84262.48
Multi-factor model CFA	4596.10	3049	1.51	.000	.04	.05	.90	77564.81

Note: N = 412. Df: difference.   RMSEA: Root Mean Square Error of Approximation. SRMR: Standardised Root Mean Square Residual. CFI: Comparative fit index. AIC: Akaike Information Criterion. RMSEA values reported at a 90% upper-level confidence interval.

Table 6.3 shows that the CFA common latent factor model did not fit the data well with RMSEA (.07), SRMR (.08) and CFI (.58). The multifactor CFA had good fit with the data: chi-square/df = 1.51; p = 0,00; RMSEA = .04; SRMR = .05; CFI = .90; AIC = 77564.81. The results supported the discriminant validity of the research measurement model and that multi-collinearity was not a potential threat to the interpretation of the research findings.

In conclusion, the preliminary statistical analysis provided evidence of the construct validity and internal consistency reliability of the measurement scales and the discriminant validity of the overall research measurement model.

6.3.1 DESCRIPTIVE STATISTICS

This section reports the means, standard deviations, skewness and kurtosis results of each measurement scale. The IBM (2020) SPSS Statistics version 27.0 software package was used to perform the statistics. Table 6.4 summarises the results.

The following Likert-type response scales for each of the five scales were applied in the present research:

- Career Agility Scale (CAS): 7-point Likert scale (1 = strongly disagree; 7 = strongly agree)
- Psychological Capital Questionnaire (PCQ): 6-point Likert scale (1 = strongly disagree; 6 = strongly agree)
- Career Adapt-Ability Scale (CAAS): 5-point Likert scale (1 = not strong; 5 = strongest)
- Career Resilience Questionnaire (CRQ): 7-point Likert scale (1 = strongly disagree; 7 = strongly agree)
- Career Satisfaction Scale (CSS): 7-point Likert scale (1 = strongly disagree; 7 = strongly agree).

Table 6.4

Descriptive Statistics

Measurement scale	Mean	Standard deviation	Skewness	Kurtosis
Overall career agility	5.73	.89	-1.07	1.17
Technological adaptivity	5.55	1.01	-.83	.43
Agile learning	5.92	.98	-1.45	2.34
Career navigation	5.80	.95	-1.10	1.38
Overall Psychological Capital	4.99	0.55	-0.63	0.69
Hope	4.99	0.69	-0.73	0.47
Self-efficacy	5.05	0.65	-0.80	0.10
Resiliency	4.96	0.72	-0.83	1.06
Optimism	4.93	0.73	-0.95	1.32
Overall Career Adaptability	4.16	0.63	-0.80	-0.07

Career concern	4.16	0.75	-0.98	0.45
Career control	4.13	0.70	-0.41	0.41
Career curiosity	4.12	0.71	-0.34	-0.34
Career confidence	4.20	0.69	-0.64	-0.28
Career satisfaction	4.91	1.50	-0.70	-0.21
Overall Career Resilience	5.79	0.89	-1.01	1.28
Self-reliance	5.74	0.93	-0.97	0.99
Personal resilience	5.56	1.02	-0.76	0.29
Work resilience	5.77	0.92	-0.89	0.88

Note: N = 412

Career Agility Scale

The CAS measured participants' responses on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree). Table 6.4 shows that the participants had moderate to high mean scores on the overall career agility scale: overall career agility (mean = 5.73; SD = .89). Participants scored the highest on the agile learning subscale (mean = 5.92; SD = .98) and the lowest on the technological adaptivity subscale (mean = 5.55; SD = 1.01). The skewness values ranged between -.83 (technological adaptivity) and -1.10 (career navigation). The skewness values were not close to zero, indicating that the data set was not normally distributed. The kurtosis values were less than 3, indicating that the data set had lighter tails than a normal distribution.

Psychological Capital Questionnaire

The PCQ measures four facets on a six-point Likert-type scale (1 = strongly disagree; 6 = strongly agree). Table 6.4 shows that the participants had relatively high mean scores on the overall PCQ (mean = 4.99; SD=.55). Participants scored the highest on the hope subscale (mean = 4.99; SD = .6.9) and the lowest on the optimism subscale (mean = 4.93; SD = .73). The skewness values ranged between -0.73 (optimism) and -0.95 (optimism). The skewness values were not close to zero, which indicated that the data set was not normally distributed. The kurtosis values were less than 3, which indicated that the data set had lighter tails than a normal distribution.

Career Adapt-Ability Scale

The CAAS measures four facets of career adaptability on a five-point Likert-type scale (1 = not strong; 5 = strongest). Table 6.4 shows the participants had relatively high mean scores on the overall CAAS (mean = 4.16; SD=0.63). Participants scored the highest on the career concern subscale (mean = 4.16; SD = 0.75) and the lowest on the career curiosity subscale (mean = 4.12; SD = 0.71). The skewness values ranged between -.34 (career curiosity) and -.98 (career concern). The skewness values were not close to zero, which indicated that the data set was not normally distributed. The kurtosis values were less than 3, indicating that the data set had lighter tails than a normal distribution.

Career Resilience Questionnaire

Participants' career resilience was measured on a seven-point Likert-type scale (1 = strongly disagree; 7 = strongly agree). Table 6.4 shows that the participants had moderate to relatively high mean scores on the overall Career Resilience scale (mean = 5.79; SD=.89). Participants scored the highest on the work resilience subscale (mean = 5.77; SD = 1.02) and the lowest on the personal resilience subscale (mean = 5.56; SD = .93). The skewness values ranged between -0.76 (personal resilience) and -.97 (self-reliance). The skewness values were not close to zero, indicating that the data set was not normally distributed. The kurtosis values were less than 3, indicating that the data set had lighter tails than a normal distribution.

Career Satisfaction Scale

The five-item CSS measured participants' career satisfaction as a global construct on a seven-point Likert-type scale (1 = strongly disagree; 7 = strongly agree). Participants scored somewhat to moderately high on the career satisfaction (mean = 4.91; SD =1.50). The skewness was -.70. The skewness values were not close to zero, which indicated that the data set was not normally distributed. The kurtosis values were less than 3, which indicated that the data set had lighter tails than a normal distribution.

Preliminary analysis 1: Psychological career adaptation profile of participants

Overall, the psychological career adaptation profile of the participants shows strengths and areas for further enrichment through career development support interventions. The career resilience capacity of the participants seems relatively high and suggests a sound sense of self-efficacy in adapting to changing and adverse career and work conditions. The somewhat

to moderate high mean scores on career satisfaction suggest that career development interventions are needed to identify the root cause of career dissatisfaction and what type of career development participants desire for career adaptation.

The participants' mean scores reflect a well-established sense of adaptive readiness (career agility), hope, optimism, resiliency, and self-efficacy to mobilise needed psychological resources (psychological capital) for agentic goal pursuit. Their career adaptability mean scores reflect the active and confident use of career self-management resources for adaptive career goal achievement.

The correlational analysis may help to enrich insight into the relationship dynamics among the participants' psychological career adaptation attributes and the degree to which the various attributes help to strengthen the career adaptation profile of the participants.

6.3.2 BI-VARIATE CORRELATION ANALYSIS

This section addresses research aim 1:

> **Research aim 1**: To explore the nature, magnitude and direction of the statistical relationship dynamics between individuals' adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources as an adaptive response (measured by individuals' career adaptability), and adaptation (measured by individuals' career resilience and their overall career satisfaction).

The IBM (2020) SPSS Statistics version 27.0 software package was used to calculate the statistics.

6.3.3 Correlations between career agility, career resilience and career satisfaction

Table 6.5 shows that the bi-variate correlations between the career agility, career resilience and career satisfaction variables were significant and positive at $p = .000$. The correlations ranged between $r \geq .35$ [moderate practical effect] and $r \leq .74$ [large practical effect].

Table 6.5

Bi-Variate Correlations: Career Agility, Career Resilience and Career Satisfaction

	Scale variable	1	2	3	4	5	6	7	8	9
1	Overall career agility	-								
2	Technological adaptivity	.93	-							
3	Agile learning	.87	.71	-						
4	Career navigation	.88	.70	.73	-					
5	Overall career resilience	.74	.65	.62	.74	-				
6	Self-reliance	.71	.63	.61	.70	.84	-			
7	Personal resilience	.59	.51	.51	.61	.87	.63	-		
8	Work resilience	.69	.61	.57	.69	.92	.69	.70	-	
9	Career satisfaction	.45	.42	.35	.40	.92	.38	.44	.48	-

Note: N = 412. All correlations were significant at ***p = .000

6.3.4 Correlations between psychological capital, career resilience and career satisfaction

Table 6.6 shows that the bi-variate correlations between the psychological capital, career resilience and career satisfaction variables were significant and positive at p = .000. The correlations ranged between $r ≥ .23$ [small practical effect] and $r ≤ .57$ [large practical effect].

Table 6.6

Bi-Variate Correlations: Psychological Capital, Career Resilience and Career Satisfaction

	Scale variable	1	2	3	4	5	6	7	8	9	10
1	Overall PsyCap	-									
2	Self-efficacy	.79	-								
3	Hope	.87	.59	-							
4	Resiliency	.73	.43	.55	-						
5	Optimism	.74	.44	.57	.49	-					
6	Overall Career Resilience	.57	.41	.51	.44	.51	-				
7	Self-reliance	.52	.43	.45	.38	.42	.84	-			
8	Personal resilience	.43	.26	.42	.35	.42	.87	.63	-		
9	Work resilience	.56	.42	.50	.44	.50	.92	.69	.70	-	
10	Career satisfaction	.43	.29	.43	.23	.41	.92	.38	.44	.48	-

Note: N = 412. All correlations were significant at ***p =.000

6.3.5 Correlations between career adaptability, career resilience and career satisfaction

Table 6.7 shows that the bi-variate correlations between the career adaptability, career resilience and career satisfaction variables were significant and positive at p = .000. The correlations ranged between $r \geq .24$ [small practical effect] and $r \leq .60$ [large practical effect].

Table 6.7

Bi-Variate Correlations: Career Adaptability, Career Resilience and Career Satisfaction

	Scale variable	1	2	3	4	5	6	7	8	9
1	Overall Career Adaptability	-								
2	Career Concern	.84	-							
3	Career Control	.89	.69	-						
4	Career Curiosity	.88	.67	.71	-					
5	Career Confidence	.86	.59	.71	.72	-				
6	Overall Career Resilience	.60	.48	.53	.56	.54	-			
7	Self-Reliance	.58	.49	.52	.54	.52	.84	-		
8	Personal Resilience	.47	.38	.42	.44	.42	.87	.63	-	
9	Work Resilience	.57	.45	.50	.54	.51	.92	.69	.70	-
10	Career Satisfaction	.32	.24	.26	.30	.27	.92	.38	.44	.48	-

All correlations were significant at ***p =.000

6.3.6 Correlations between career agility, psychological capital and career adaptability

Table 6.8 shows that the bi-variate correlations between the career agility, psychological capital and career adaptability variables were significant and positive at p = .000. The correlations ranged between $r \geq .36$ [moderate practical effect] and $r \leq .74$ [large practical effect].

Table 6.8

Bi-Variate Correlations: Career Agility, Psychological Capital and Career Adaptability

	Scale variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Overall Career Agility	-													
2	Technological adaptivity	.93	-												
3	Agile learning	.87	.71	-											
4	Career navigation	.88	.70	.73	-										
5	Overall PsyCap	.64	.60	.59	.56	-									
6	Self-Efficacy	.48	.44	.45	.42	.79	-								
7	Hope	.57	.54	.53	.49	.87	.59	-							
8	Resilience	.46	.42	.43	.39	.73	.43	.55	-						
9	Optimism	.56	.52	.49	.49	.74	.44	.57	.49	-					
10	Overall Career Adaptability	.74	.70	.69	.63	.60	.45	.54	.44	.50	-				
11	Career Concern	.61	.56	.60	.52	.49	.36	.49	.36	.43	.84	-			
12	Career Control	.64	.61	.59	.56	.53	.42	.47	.39	.44	.89	.69	-		
13	Career Curiosity	.70	.66	.63	.60	.50	.40	.45	.39	.41	.88	.67	.71	-	
14	Career Confidence	.68	.64	.63	.58	.56	.41	.57	.41	.46	.86	.59	.71	.72	-

In summary, the bi-variate correlations were all positive and significant. The correlations were all below <.80 and thus indicated that the various measurement scales were distinct constructs and that multi-collinearity was not a threat to the interpretation of the findings (Hair et al., 2010).

In conclusion, the bi-variate correlation results provided evidence in support of research hypothesis 1:

H1: There is a statistically significant interrelationship between individuals' adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources (measured by individuals' career adaptability), and adapting responses (measured by individuals' career resilience and their overall career satisfaction).

Preliminary analysis 2: Psychological career adaptation profile of participants

The bi-variate correlations provided evidence of positive associations between participants' adaptive readiness (career agility and psychological capital), adaptability resources of career self-management (career adaptability) and adapting responses (career resilience and career satisfaction). The results suggest positive dynamics among the constructs, which may be further investigated using inferential statistics. The bi-variate correlations further suggest that the various constructs are malleable and that the observed associations may help to enhance participants' career adaptation attributes within a dynamic career adaptive behavioural framework.

6.4 INFERENTIAL STATISTICS

The inferential statistics involved four substages of analysis:

Substage 1: Stepwise multiple regression analysis
Substage 2: Mediation analysis
Substage 3: Moderated regression analysis
Substage 4: Tests for significant mean differences

6.4.1 Stepwise multiple regression analysis

As explained in Chapter 5, stepwise multiple regression analysis was first performed to identify the best predictors of the adaptation outcome variables of career resilience (Table 6.9) and career satisfaction (Table 6.10). The following variables were entered into the stepwise regression model: sociodemographic variables of age [year born], gender, job level and tenure), independent (adaptive readiness) variables of career agility and psychological capital, and the adaptability resources variable of career adaptability. The IBM (2020) SPSS Statistics version 27.0 software package was used to calculate the statistics. Table 6.9 and Table 6.10 report the final steps of each of the regression models.

Table 6.9 shows that in the final stepwise regression model, the ANOVA F (= 137.23) was significant (p = .000) and explained a large, practically significant percentage of the combined variance in career resilience (R^2 = .62; 62%). The variance inflation values (VIF) were less than 2.50, and the tolerance values were above .40, indicating a lack of multicollinearity. Career navigation [career agility] (β = .52; p = .000; LLCI = .39; ULCI = .55) contributed the most in predicting career resilience. Technological adaptivity [career agility] (β = .14; p = .002; LLCI = .05; ULCI = .20), hope [psychological capital] (β = .13; p = .001; LLCI = .06; ULCI = .25), career control [career adaptability] (β = .11; p = .004; LLCI = .04; ULCI = .24), and job level [highly skilled production: level 6 to 8] (β = .07; p = .02; LLCI = .02; ULCI = .25) also acted to a lesser extent as significant and positive predictors of career resilience

Table 6.9

Stepwise Regression Results: Significant Predictors of the Outcome Variable Career Resilience

Model variables	Unstd β	SE	Std β	t	p	95% LLCI	95% UCLI	F	p	Adj R²	▲F	p	▲R²
(Constant)	.928	.207		4.491	.000	.522	1.334	137.23	.000	.62	5.33	.02	.01
Career_navigation	.467	.042	.522	11.254	.000	.386	.549						
Technological_adaptivity	.121	.039	.144	3.111	.002	.045	.198						
Hope	.154	.047	.125	3.286	.001	.062	.246						
Career_control	.140	.049	.114	2.875	.004	.044	.236						
Joblevel=Highly skilled production (levels 6-8)	.133	.058	.071	2.308	.021	.020	.247						

Table 6.10

Stepwise Regression Results: Significant Predictors of the Outcome Variable Career Satisfaction

Model variables	Unstd β	SE	Std β	t	p	95% LLCI	95% UCLI	F	p	Adj R²	▲F	p	▲R²
(Constant)	-.512	.538		-.952	.341	-1.570	.545	38.36	<.001	.27	9.31	<.001	.02
Hope	.672	.129	.310	5.217	<.001	.418	.925						
Optimism	.437	.115	.212	3.791	<.001	.211	.664						
Technological_ adaptivity	.275	.077	.185	3.556	<.001	.123	.427						
Resiliency	-.325	.107	-.157	-3.052	.002	-.534	-.116						

Table 6.10 shows that in the final stepwise regression model, the ANOVA F (= 38.36) was significant (p = <.001) and explained a large, practically significant percentage of the combined variance in career resilience (R^2 = .27; 27%). The variance inflation values (VIF) were less than 2.50, and the tolerance values were above .40, indicating a lack of multicollinearity. Hope [PsyCap] (β = .31; p = <.001; LLCI = .42; ULCI = .93) contributed the most in predicting career satisfaction. Optimism [PsyCap] (β = .21; p = <.001; LLCI = .21; ULCI = .66), technological adaptivity [career agility] (β = .19; p = <.001; LLCI = .12; ULCI = .43) also acted to a lesser extent as significant and positive predictors of career satisfaction. Resiliency (PsyCap) (β = -.16; p = .002; LLCI = -.53; ULCI = -.12) acted as a significant and negative predictor of career satisfaction.

In summary, technological adaptivity and hope were positive predictors of career resilience and career satisfaction. Career navigation, career control and job level were predictors of career resilience, while optimism and resiliency were predictors of career satisfaction.

6.4.2 Mediation analysis

Mediation analysis was performed to achieve research aim 2:

> **Research aim 2:** To assess whether individuals' career adaptability mediates the link between their (1) career agility and (2) psychological capital and their career resilience and career satisfaction.

As explained in Chapter 5, the Hayes (2018) PROCESS Procedure for SPSS Version 3.5.3 was used to perform the statistical analysis. A heteroscedasticity consistent standard error and covariance matrix estimator was used. The more stringent bootstrap lower-level confidence interval (LLCI) and upper-level confidence interval (ULCI) range, not including zero, was used to assess for significant direct and mediation effects.

Career resilience as the dependent variable

In Table 6.11, the two ANOVA models were significant: **Model 1**: F = 509.75; p = .000; R^2 = .58 (large practical effect). **Model 2**: F = 234.13; p = .000; R^2 = .58 (large practical effect). Table 6.11 shows that career agility had a significant and positive direct pathway to career adaptability (β = .76; p = .000; LLCI = .49; ULCI = .58). Career agility also had a direct and significant pathway to career resilience (β = .67; p = .000; LLCI = .53; ULCI = .74). Career adaptability had a significant, positive and direct pathway to career resilience (β = .12; p = .03; LLCI = .01; ULCI = .30).

Career adaptability also had a significant and positive mediating effect (β = .09; LLCI = .01; ULCI = .17). The significant direct pathway of career agility to career resilience suggests that career adaptability had only a partial mediating effect on the career agility-career resilience link, and that career agility had an additional effect on career resilience that is not mediated by career adaptability.

Table: 6.11

Results of Mediation Analysis: Career Agility as the Independent Variable and Career Resilience as Dependent Variable

Model 1 Career adaptability (DV)	β	SE	t	*p*	LLCI	UCLI	*F*	*p*	*R²*
Career agility (IV)	.76	.02	22.58	.000	.49	.58	509.75	.000	.58
Model 2: Career resilience (DV)	β	SE	t	*p*	LLCI	UCLI	*F*	*p*	*R²*
Career agility (IV)	.67	.05	11.88	.000	.53	.74	234.13	.000	.58
Career adaptability (IV)	.12	.07	2.15	.03	.01	.30			
Indirect (mediating) effect of career adaptability in the career agility – career resilience link									
	β	Boot SE	-	-	Boot LLCI	Boot ULCI			
Career adaptability (MV)	.09	.04			.01	.17			

Note: N = 412. LLCI: Lower-level confidence interval. UCLI: Upper-level confidence interval

In Table 6.12, the two ANOVA models were significant: **Model 1**: F = 241.52; p = .000; $R²$ = .35 (large practical effect). **Model 2**: F = 165.70; p = .000; $R²$ = .46 (large practical effect). Table 6.12 shows that psychological capital had a significant and positive direct pathway to career adaptability (β = .59; p = .000; LLCI = .59; ULCI = .76). Psychological capital also had a direct and significant pathway to career resilience (β = .35; p = .000; LLCI = .39; ULCI = .68). Career adaptability had a significant, positive and direct pathway to career resilience (β = .42; p = .000; LLCI = .43; ULCI = .70).

Career adaptability also had a significant and positive mediating effect (β = .25; LLCI = .19; ULCI = .31). The significant direct pathway of psychological capital to career resilience suggests that career adaptability had only a partial mediating effect on the psychological capital-career resilience link and that psychological capital had an additional effect on career resilience that is not mediated by career adaptability.

Table 6.12

Results of Mediation Analysis: Psychological Capital as Independent Variable and Career Resilience as Dependent Variable

Model 1: Career adaptability (DV)	β	SE	t	*p*	LLCI	UCLI	*F*	*p*	*R²*
Psychological capital (IV)	.59	.04	15.54	.000	.59	.76	241.521	0.000	.35
Model 2: Career resilience (DV)	β	SE	t	*p*	LLCI	UCLI	*F*	*p*	*R²*
Psychological capital (IV)	.35	.07	7.44	.000	.39	.68	165.70	.000	.46
Career adaptability (IV)	.42	.07	8.40	.000	.43	.70			
Indirect (mediating) effect of career adaptability in the psychological capital – career resilience link									
	β	Boot SE	-	-	Boot LLCI	Boot ULCI			
Career adaptability (MV)	.25	.03	-	-	.19	.31			

Note: N = 412. LLCI: Lower-level confidence interval. UCLI: Upper-level confidence interval

Career satisfaction as the dependent variable

In Table 6.13, the two ANOVA models were significant: **Model 1**: F = 509.75; p = .000; $R²$ = .58 (large practical effect). **Model 2**: F = 49.52; p = .000; $R²$ = .19 (moderate practical effect). Table 6.13 shows that career agility had a significant and positive direct pathway to career adaptability (β = .76; p = .000; LLCI = .49; ULCI = .58). Career agility also had a direct and significant pathway to career satisfaction (β = .45; p = .000; LLCI = .52; ULCI = .98). Career adaptability did not have a significant and direct pathway to career resilience (β = -.02; p = .75; LLCI = -.40; ULCI = .29). Career adaptability did not have a significant mediating effect (β = -.02; LLCI = -.13; ULCI = .10).

Table 6.13

Results of Mediation Analysis: Career Agility as Independent Variable and Career Satisfaction as Dependent Variable

Model 1: Career adaptability (DV)	β	SE	t	*p*	LLCI	UCLI	*F*	*p*	*R²*
Career agility (IV)	.76	.02	22.58	.000	.49	.58	509.75	.000	.58
Model 2: Career satisfaction (DV)	β	SE	t	*p*	LLCI	UCLI	*F*	*p*	*R²*
Career agility (IV)	.45	.12	6.42	.000	.52	.98	49.52	.000	.19
Career adaptability (IV)	-.02	.18	-.33	.75	-.40	.29			
Indirect (mediating) effect of career adaptability in the career agility – career satisfaction link									
	β	Boot SE	-	-	Boot LLCI	Boot ULCI			
Career adaptability (MV)	-.02	.06	-	-	-.13	.10			

Note: N = 412. LLCI: Lower-level confidence interval. UCLI: Upper-level confidence interval

In Table 6.14, the two ANOVA models were significant: **Model 1**: $F = 241.52$; $p = .000$; $R² = .35$ (large practical effect). **Model 2**: $F = 46.02$; $p = .000$; $R² = .18$ (moderate practical effect). Table 6.14 shows that psychological capital had a significant and positive direct pathway to career adaptability ($β = .59$; $p = .000$; LLCI = .59; ULCI = .76). Psychological capital had also a direct and significant pathway to career resilience ($β = .36$; $p = .000$; LLCI = .67; ULCI = 1.29). Career adaptability did not have a significant direct pathway to career resilience ($β = .10$; $p = .09$; LLCI = -.04; ULCI = .53). Career adaptability did not have a significant mediating effect ($β = .06$; LLCI = -.01; ULCI = .13).

Table 6.14

Results of Mediation Analysis: Psychological Capital as Independent Variable and Career Satisfaction as Dependent Variable

Model 1: Career adaptability (DV)	β	SE	t	*p*	LLCI	UCLI	*F*	*p*	*R²*
Psychological capital (IV)	.59	.04	15.541	.000	.59	.76	241.521	.000	.35
Model 2: Career satisfaction (DV)	β	SE	t	*p*	LLCI	UCLI	*F*	*p*	*R²*
Psychological capital (IV)	.36	.16	6.24	.000	.67	1.29	46.02	.000	.18
Career adaptability (IV)	.10	.14	1.72	.09	-.04	.53			
Indirect (mediating) effect of career adaptability in the psychological capital – career satisfaction link									
	β	Boot SE	-	-	Boot LLCI	Boot ULCI			
Career adaptability (MV)	.06	.04	-	-	-.01	.13			

Note: N = 412. LLCI: Lower-level confidence interval. UCLI: Upper-level confidence interval

In conclusion, the mediation analysis provided partial evidence in support of research hypothesis 2:

● The link between individuals' career agility and career resilience is mediated by their career adaptability.
● The link between individuals' psychological capital and career resilience is mediated by their career adaptability.

> **H2**: The link between individuals' (1) career agility, and (2) psychological capital and their career resilience and career satisfaction, is mediated by their career adaptability.

The link between individuals' (1) career agility and (2) psychological capital and their career satisfaction was not mediated by career adaptability.

Preliminary analysis 3: Psychological career adaptation profile of participants

The mediation analysis showed that career adaptability partially acted as an explanatory mechanism in understanding the link between both (1) career agility and (2) psychological capital and participants' career resilience. The results suggest that both career agility and psychological capital are likely to positively predict higher levels of career resilience. In addition, career adaptability and psychological capital may also enhance the use of career adaptability resources, which in turn further enhance levels of career resilience. Career agility and psychological capital also directly increase the likelihood of greater levels of career satisfaction. This finding informs career development interventions for career adaptation.

Additionally, career development interventions should consider that (as indicated by the regression analysis) the development of technological adaptivity and hope will likely enhance both career resilience and career satisfaction. Development of career navigation and career control is likely to increase career resilience, while strong levels of optimism and resiliency are likely to enhance career satisfaction.

6.4.3 Moderated regression analysis

Moderated regression analysis was performed to achieve research aims 3 and 4:

Research aim 3: To assess whether there is a significant interaction (moderation) effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level, tenure) in predicting their career adaptability, career resilience and career satisfaction.

Research aim 4: To assess whether there is a significant interaction (moderation) effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level, tenure) in predicting their career resilience and career satisfaction.

As explained in Chapter 5, the Hayes (2018) PROCESS Procedure for SPSS Version 3.5.3 was used to perform the statistical analysis. A heteroscedasticity consistent standard error and covariance matrix estimator was used. The construct variables were mean-centered prior to analysis. The more stringent bootstrap lower-level confidence interval (LLCI) and upper-

level confidence interval (ULCI) range, not including zero, was used to assess for significant main and interaction effects.

For parsimony reasons, this section reports only the significant interaction (moderating) effects. The following dummy codes were used for the sociodemographic variables:

Age
Born between 1981-1995 and after 1995 [27 to 41 years: early career] = 1
Born before/in 1960 & 1961 to 1980 [42 – 62 years: mid-late career] = 0

Gender:
Female = 1
Male = 0

Job level
Senior management/highly skilled supervision = 1
Skilled/highly skilled production = 0

Tenure
More than 11 years = 1
Less than 10 years = 0

6.4.3.1 Career resilience as the dependent variable

- Interaction: Psychological capital and socio-demographic variables: No significant interaction effects observed (H3)
- Interaction: Career adaptability and socio-demographic variables: No significant interaction effects (H4)

Significant interaction effect: Career agility and the socio-demographic variable of tenure (H3)

Table 6.15 shows that the ANOVA model was significant and explained a large practical effect percentage (58%) of the variance in career adaptability: F = 163.08; p = .000; R^2 = .58. The interaction (moderating) effect of age was of practical large significance (f^2 = 1.38*).* Career agility (β = .78; LLCI = .69; ULCI = .86) had a significant main effect on career resilience. There

was also a significant and negative interaction effect between career agility and tenure in predicting career resilience (β = -.14; LLCI = -.27; ULCI = -.01). Figure 6.1 illustrates the interaction effect of tenure.

Table 6.15

Results of Moderated Regression Analysis: Career Resilience as Dependent Variable

Variable	β	SE	t	*p*	LLCI	UCLI	*F*	*p*	*R²*	*f²*
Constant	5.69	.03	173.30	.000	5.63	5.76	163.08	.000	.58	1.38
Career agility (A)	.78	.04	18.10	.000	.69	.86				
Tenure (B)	.01	.06	.13	.90	-.11	.13				
Interaction (moderating) effect: A x B	-.14	.07	-2.07	.04	-.27	-.01				

Note: N = 412. High tenure (more than 11 years). Low tenure (less than 10 years).

Figure 6.1

Interaction Effect: Career Agility and Tenure in Predicting Career Resilience
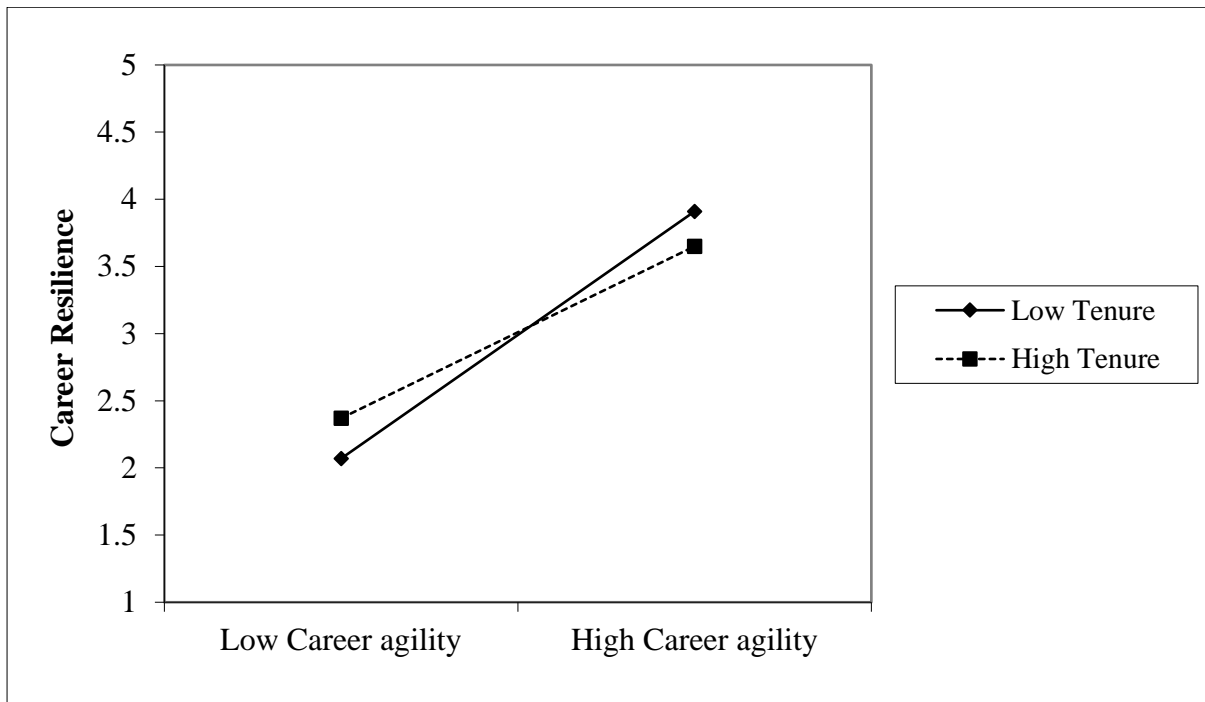
Note: High tenure (more than 11 years). Low tenure (less than 10 years).

Figure 6.1 shows that when participants with high tenure (more than 11 years) and low tenure (less than 10 years) scored high on career agility, they also had higher mean scores on career resilience. When they scored low on career agility, they also had significantly lower mean scores on career resilience (especially the low tenure participants). The interaction (moderating) results suggest that career agility and resilience scores were conditional upon tenure.

6.4.3.2 Career satisfaction as the dependent variable

● Interaction: Career agility and socio-demographic variables: No significant interaction effects (H3)
● Interaction: Career adaptability and socio-demographic variables: No significant interaction effects (H4)

Significant interaction effect: Psychological capital and the socio-demographic variable of job level (H3)

Table 6.15 shows that the ANOVA model was significant and explained a moderate practical effect percentage (19%) of the variance in career satisfaction: $F = 218.68$; $p = .000$; $R^2 = .19$. The interaction (moderating) effect of job level was of practical moderate significance ($f^2 = .23$). Psychological capital ($\beta = .98$; LLCI = .69; ULCI = 1.28) had a significant main effect on career satisfaction. There was also a significant and positive interaction effect between psychological capital and job level in predicting career satisfaction ($\beta = .55$; LLCI = .02; ULCI = 1.08). Figure 6.2 illustrates the interaction effect of job level.

Table 6.15

Results of Moderated Regression Analysis: Career Satisfaction as Dependent Variable

Variable	β	SE	t	p	LLCI	UCLI	F	p	R²	f²
Constant	4.94	.08	59.02	.000	4.78	5.11	31.59	.000	.19	.23
Psychological capital (A)	.98	.15	6.60	.000	.69	1.28				
Job level (B)	-.15	.14	-1.05	.29	-.42	.13				
Interaction (moderating) effect: A x B	.55	.27	2.05	.04	.02	1.08				

Note: N = 412. High job level (senior management/highly skilled supervision). Low job level (skilled/highly skilled production)

Figure 6.2 shows that when participants on a high job level (senior management/highly skilled supervision) and low job level (skilled/highly skilled production) scored high on psychological capital, they also had higher mean scores on career satisfaction. This was especially true of the high job level participants. When they scored low on psychological capital, they also had significantly lower mean scores on career satisfaction (especially the high job level participants). The interaction (moderating) results suggest that mean scores on psychological capital and career satisfaction were conditional upon job level.

Figure 6.2

Interaction Effect: Psychological Capital and Job Level in Predicting Career Satisfaction
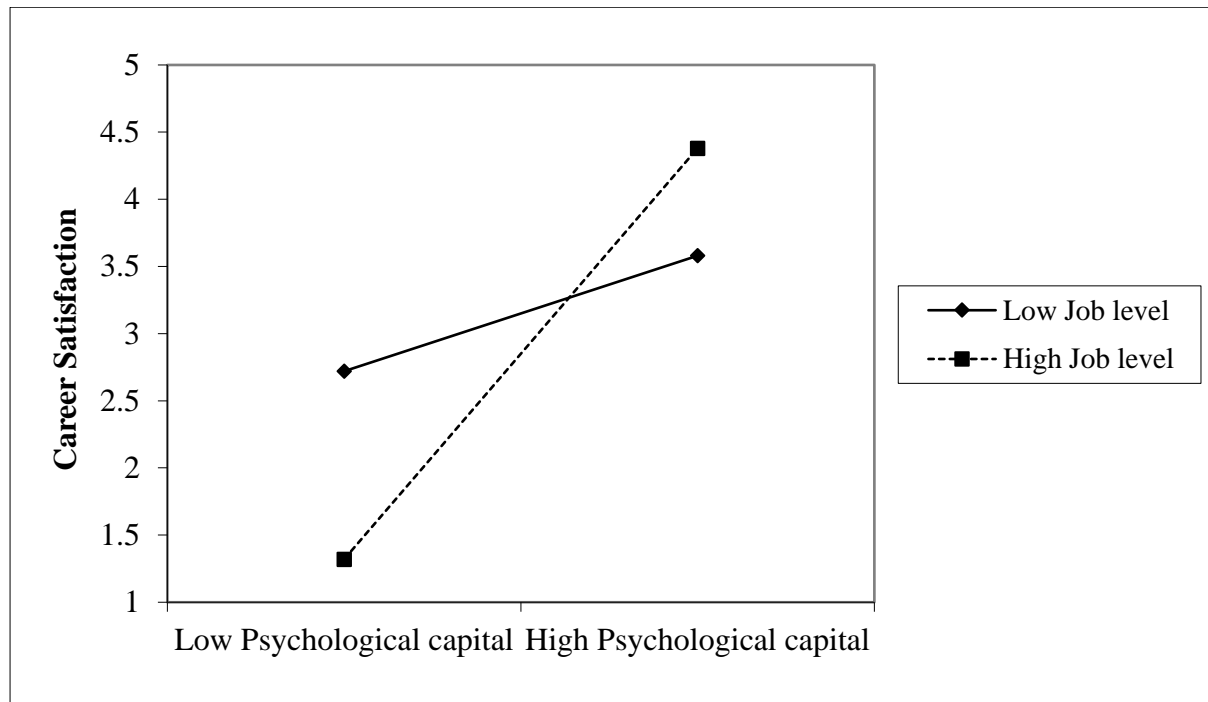
Note: High job level (senior management/highly skilled supervision). Low job level (skilled/highly skilled production)

In conclusion, the moderated regression analysis provided partial evidence in support of research hypothesis 3 but no supportive evidence for research hypothesis 4:

H3: There is a significant interaction effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career adaptability, career resilience and career satisfaction.

H4: There is a significant interaction effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career resilience and career satisfaction.

Preliminary analysis 4: Psychological career adaptation profile of participants

The moderating results revealed that participants' level of career resilience was conditional upon their tenure and mean scores on career agility. High mean scores on career agility for both high (more than 11 years) and low tenure (less than 10 years) groups were associated with high career resilience mean scores and vice versa for both groups.

Participants' level of career satisfaction was conditional upon their job level and mean scores on psychological capital. When the high job level participants (senior management/highly skilled supervision) had high scores on psychological capital, they tended to have extremely high mean scores on career satisfaction compared to the high-scoring skilled/highly skilled production job levels. Similarly, if they had low scores on psychological capital, their career satisfaction mean score were extremely low compared to the low-scoring skilled/highly skilled production job levels.

The conditional effect of tenure and job level should be considered when planning career development interventions for career adaptation.

6.4.4 Tests for significant mean differences

Tests for significant mean differences were performed to achieve research aim 5:

> **Research aim 5**: To assess whether individuals from various age, gender, job level, and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.

The IBM (2020) SPSS Statistics version 27.0 software package was used to calculate the statistics. Only the significant mean differences are reported in this section for parsimony reasons.

<u>Age</u>

Table 6.18 reports the significant mean differences only.

Table 6.18

ANOVA Results of Tests for Significant Mean Differences: Age

Variable	Source of difference	Mean (SD)	Sum of squares	df	Mean square	*F*	*p*	Eta-squared effect size η²
Career concern	Born after 1995 (n = 13)	4.36 (.96)	13.37	3	4.46	8.42	.000	.06
	Born between 1981 and 1995 (n = 224)	4.30 (.63)						
	Born between 1961 and 1980 (n = 160)	3.98(.79)						
	Born between/before/in 1960 (n = 15)	3.70 (1.07)						
Career Control	Born after 1995 (n = 13)	4.45 (.75)	7.42	3	2.47	5.30	.0001	.04
	Born between 1981 and 1995 (n = 224)	4.28 (.64)						
	Born between 1961 and 1980 (n = 160)	4.00 (.72)						
	Born between/before/in 1960 (n = 15)	4.00 (.78)						
Career Curiosity	Born after 1995 (n = 13)	4.14(.84)	7.56	3	2.52	5..31	0.001	.04
	Born between 1981 and 1995 (n = 224)	4.23 (.67)						
	Born between 1961 and 1980 (n = 160)	3.98 (.69)						
	Born between/before/in 1960 (n = 15)	3.78 (.78)						
Career Confidence	Born after 1995 (n = 13)	4.46 (.57)	8.21	3	2.74	5.88	0.001	.04
	Born between 1981 and 1995 (n = 224)	4.31 (.65)						
	Born between 1961 and 1980 (n = 160)	4.03 (.71)						
	Born between/before/in 1960 (n = 15)	4.11 (0.92)						
Career Adaptability	Born after 1995 (n = 13)	4.35 (.72)	8.59	3	2.86	7.64	0.000	.05
	Born between 1981 and 1995 (n = 224)	4.28 (.57)						
	Born between 1961 and 1980 (n = 160)	4.00(.63)						

	Born between/before/in 1960 (n = 15)	3.90 (.85)						
Technological Adaptability	Born after 1995 (n = 13)	5.70 (.89)	13.24	3	4.41	4.45	.004	.03
	Born between 1981 and 1995 (n = 224)	5.70(.88)						
	Born between 1961 and 1980 (n = 160)	5.36 (1.13)						
	Born between/before/in 1960 (n = 15)	5.13 (1.03)						
Agile Learning	Born after 1995 (n = 13)	5.49 (1.46)	18.63	3	6.21	6.18	.000	.05
	Born between 1981 and 1995 (n = 224)	6.11(.80)						
	Born between 1961 and 1980 (n = 160)	5.72 (1.07)						
	Born between/before/in 1960 (n = 15)	5.53 (1.40)						
Career Navigation	Born after 1995 (n = 13)	5.63 (1.18)	13.36	3	4.45	5.08	.002	.04
	Born between 1981 and 1995 (n = 224)	5.96 (.84)						
	Born between 1961 and 1980 (n = 160)	5.63 (1.03)						
	Born between/before/in 1960 (n = 15)	5.36 (1.05)						
Career Agility	Born after 1995 (n = 13)	5.62(1.03)	13.95	3	4.65	6.04	.000	.04
	Born between 1981 and 1995 (n = 224)	5.90(.77))						
	Born between 1961 and 1980 (n = 160)	5.55 (.99)						
	Born between/before/in 1960 (n = 15)	5.32(1.03)						
Career Resilience	Born after 1995 (n = 13)	5.79(.89)	6.54	3	2.18	3.06	.03	.02
	Born between 1981 and 1995 (n = 224)	5.80 (.77)						
	Born between 1961 and 1980 (n = 160)	5.60 (.94)						
	Born between/before/in 1960 (n = 15)	5.27 (.87)						
Personal resilience	Born after 1995 (n = 13)	5.67 (.95)	10.79	3	3.60	3.53	.02	.03
	Born between 1981 and 1995 (n = 224)	5.68 (.94)						
	Born between 1961 and 1980 (n = 160)	5.42 (1.08)						
	Born between/before/in 1960 (n = 15)	5.05 (.77)						

Table 6.18 shows that the age groups differed significantly in terms of the following variables:

- **Career concern**: The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored significantly higher (mean = 4.30; SD = .63) than the other age groups on career concern. The participants born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on career concern (mean = 3.70; SD = 1.07). The significant mean differences were practically significant ($p < .05$; $\eta^2 = .06$; moderate practical effect).

- **Career control:**
  The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored higher (mean = 4.3; SD = .64) than the other age groups on career control. The participants who were born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on career control (mean = 4.0; SD = .78). The significant mean differences were practically significant ($p < .05$; $\eta^2 = .04$; small practical effect).

- **Career curiosity:**

  The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored significantly higher (mean = 4.0; SD = .68) than the other age groups on career curiosity. The participants who were born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on career curiosity (mean = 3.8; SD = .78). The significant mean differences were practically significant ($p < .05$; $\eta^2 = .04$; small practical effect).

- **Career Confidence:**

  The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored higher (mean = 4.3; SD = .65) than the other age groups on career confidence. The participants born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on career confidence (mean = 4.1; SD = 0.92). The significant mean differences were practically significant ($p < .05$; $\eta^2 = .04$; small practical effect).

- **Career Adaptability:**

The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored significantly higher (mean = 4.3; SD = .57) than the other age groups on career adaptability. The participants who were born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on career adaptability (mean = 3.9; SD = .85). The significant mean differences were practically significant ($p < .05$; $\eta^2 = .05$; small practical effect).

- **Technological Adaptability:**

The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored significantly higher (mean = 5.70; SD = .85) than the other age groups on technological adaptability. The participants born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on technological adaptability (mean 5.13; SD = 1.03). The significant mean differences were practically significant ($p < .05$; $\eta^2 = .03$; small practical effect).

- **Agile Learning:**

The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored significantly higher (mean = 6.11; SD = .80) than the other age groups on agile learning. The participants born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on agile learning (mean = 5.53; SD = 1.40). The significant mean differences were practically significant ($p < .05$; $\eta^2 = .05$; small practical effect).

- **Career Navigation:**

The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored significantly higher (mean = 5.96; SD = .84) than the other age groups on career navigation. The participants born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on career navigation (mean = 5.36; SD = 1.05). The significant mean differences were practically significant ($p < .05$; $\eta^2 = .04$; small practical effect).

- **Career Agility:**

The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored significantly higher (mean = 5.90; SD = 1.03) than the other age groups on career agility. The participants born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on career agility (mean = 5.32; SD = 1.03). The significant mean differences were practically significant ($p <$ .05; η^2 = .04; small practical effect).

- **Career Resilience:**

The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored significantly higher (mean = 5.80; SD = .77) than the other age groups on career resilience. The participants who were born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on career resilience (mean = 5.30; SD = .87). The significant mean differences were practically significant ($p <$ .05; η^2 = .02; small practical effect).

- **Personal Resilience:**

The participants born between 1981 and 1995 [approximately 27 to 41 years of age] scored significantly higher (mean = 5.68; SD = .94) than the other age groups on personal resilience. The participants who were born before/in 1960 (approximately 63 years of age) scored significantly lower than the other age groups on personal resilience (mean = 5.05; SD = .77). The significant mean differences were practically significant $p <$ .05; (η^2 = .03; small practical effect).

Gender

An independent samples t-test showed that the male and female participants did not score significantly different on the various scale and subscale variables.

Job level

Table 6.19 reports the significant mean differences only.

Table 6.19

ANOVA Results of Tests for Significant Mean Differences: Job level

Variable	Source of difference	Mean (SD)	Sum of squares	df	Mean square	*F*	*p*	Eta-squared effect size η²
Self-Efficacy	Skilled (Level 3-5) (n = 173)	4.90 (.63)	9.29	3	4.10	7.85	.000	.06
	Highly Skilled Production (Level 6-8) (n = 116)	5.01 (.66)						
	Highly Skilled Supervision (Level 9-12) (n = 104)	5.22 (.62)						
	Senior Management (Level 13-16) (n = 19)	5.46 (.33)						
Personal Resilience	Skilled (Level 3-5) (n = 173)	5.67 (.98)	19.92	3	6.64	6.66	.000	.05
	Highly Skilled Production (Level 6-8) (n = 116)	5.73 (.95)						
	Highly Skilled Supervision (Level 9-12) (n = 104)	5.26 (1.06)						
	Senior Management (Level 13-16) (n = 19)	5.04 (1.09)						

● **Self-Efficacy:**

Participants in Senior Management (Level 13-16) scored significantly higher on self-efficacy (mean = 5.46; SD = .33), and those on skilled level 3-5 the lowest (mean = 4.90; SD = .63) than the other job levels. The significant mean differences were practically significant (p = .000; η^2 = .06; moderate practical effect).

● **Personal Resilience:**

On Highly Skilled Level 13-16, participants scored significantly higher on personal resilience (mean = 5.73; SD = .95), and those on the senior management level the lowest (mean = 5.04; SD = 1.09) than the other job levels. The significant mean differences were practically significant (p = .000; η^2 = .05; small practical effect).

Tenure

Table 6.20 reports the significant mean differences only.

Table 6.20

ANOVA Results of Tests for Significant Mean Differences: Tenure

Variable	Source of difference	Mean (SD)	Sum of squares	df	Mean square	*F*	*p*	Eta-squared effect size η²
Career Concern	Less than 5 years (n = 131)	4.37 (.58)	14.09	4	3.52	6.655	.000	.06
	5-10 years (n = 142)	4.16 (.78)						
	11-15 years (n = 78)	4.05 (.80)						
	16-20 years (n = 35)	3.93 (.92)						
	21+ years (n = 26)	3.70 (.92)						
Career Control	Less than 5 years (n = 131)	4.38 (.58)	8.51	4	2.13	4.54	.0.00	0.04
	5-10 years (n = 142)	4.10 (.73)						
	11-15 years (n = 78)	4.15 (.69)						
	16-20 years (n = 35)	3.99 (.76)						
	21+ years (n = 26)	3.97(.77)						
Career Curiosity	Less than 5 years (n = 131)	4.24 (.69)	6.09	4	1.523	3.179	0.014	0.03
	5-10 years (n = 142)	4.11 (.70)						
	11-15 years (n = 78)	4.10 (.62)						
	16-20 years (n = 35)	3.99 (.74)						
	21+ years (n = 26)	3.77 (.81)						
Career Confidence	Less than 5 years (n = 131)	4.38 (.63)	7.37	4	1.84	3.93	0.004	0.04
	5-10 years (n = 142)	4.10 (.71)						
	11-15 years (n = 78)	4.20 (.66)						
	16-20 years (n = 35)	4.09 (.77)						

	21+ years (n = 26)	3.97 (.77)						
Career Adaptability	Less than 5 years (n = 131)	4.34 (.55)	8.116	4	2.039	5.370	0.000	.05
	5-10 years (n = 142)	4.12 (.65)						
	11-15 years (n = 78)	4.13 (.57)						
	16-20 years (n = 35)	3.99 (.72)						
	21+ years (n = 26)	3.83 (.73)						
Agile Learning	Less than 5 years (n = 131)	6.14 (.75)	2.187	4	5.47	5.92	0.000	0.05
	5-10 years (n = 142)	5.86 (.94)						
	11-15 years (n = 78)	6.00 (.81)						
	16-20 years (n = 35)	5.40 (1.18)						
	21+ years (n = 26)	5.30 (1.26)						
Career Navigation	Less than 5 years (n = 131)	5.97 (.81)	21.58	4	5.40	6.28	0.000	0.06
	5-10 years (n = 142)	5.73 (.97)						
	11-15 years (n = 78)	6.00 (.77)						
	16-20 years (n = 35)	5.38 (1.18)						
	21+ years (n = 26)	5.26 (.126)						
Career Agility	Less than 5 years (n = 131)	5.89 (.77)	13.19	4	3.250	4.26	0.000	0.04
	5-10 years (n = 142)	5.70 (.89)						
	11-15 years (n = 78)	5.83 (.75)						
	16-20 years (n = 35)	5.40 (1.17)						
	21+ years (n = 26)	5.28 (1.17)						

- **Career Concern**

  Participants with less than 5 years of tenure scored significantly higher on career concern (mean = 4.37; SD = .58), and those with 16-20 years of tenure had the lowest (mean = 3.98; SD = .92) than the other tenure groups. The significant mean differences were practically significant (p = .000; η^2 = .06; moderate practical effect).

- **Career Control:**

  Participants with 11-15 years of tenure scored significantly higher on career control (mean = 4.15; SD = .69), and those with 21+ years of tenure the lowest (mean = 3.97; SD = .77) than the other tenure groups. The significant mean differences were practically significant (p = .000; η^2 = .04; small practical effect).

- **Career Curiosity**

  Participants with less than 5 years of tenure scored significantly higher on career curiosity (mean = 4.24; SD = .69), and those with 21+ years of tenure the lowest (mean = 4.38; SD = .63) than the other tenure groups. The significant mean differences were practically significant (p <.05; η^2 = .03; small practical effect).

- **Career Confidence**

  Participants with less than 5 years of tenure scored significantly higher on career confidence (mean = 4.38; SD = .63), and those with 21+ years of tenure the lowest (mean = 3.97; SD = .77) than the other tenure groups. The significant mean differences were practically significant (p <.05; η^2 = .04; small practical effect).

- **Career Adaptability**

  Participants with less than 5 years of tenure scored significantly higher on career adaptability (mean = 4.34; SD = .55), and those with 21+ years of tenure the lowest (mean = 3.83; SD = .73) than the other tenure groups. The significant mean differences were practically significant (p = .000; η^2 = .05; small practical effect).

- **Agile Learning**

  Participants with 11-15 years of tenure scored significantly higher on agile learning (mean = 6.00; SD = .81), and those with 21+ years of tenure the lowest (mean = 5.30; SD = 1.26) than the other tenure groups. The significant mean differences were practically significant (p = .000; η² = .05; small practical effect).

- **Career Navigation**

  Participants with 11-15 years of tenure scored significantly higher on career navigation (mean = 6.00; SD = .77), and those with 21+ years of tenure the lowest (mean = 5.26; SD = 1.20) than the other tenure groups. The significant mean differences were practically significant (p = .000; η² = .06; moderate practical effect).

- **Career Agility**

  Participants with less than 5 years of tenure scored significantly higher on career agility (mean = 5.89; SD = .77), and those with 21+ years of tenure the lowest (mean = 5.28; SD = 1.17) than the other tenure groups. The significant mean differences were practically significant (p = .000; η² = .04; small practical effect).

In conclusion, the tests for significant mean differences analysis provided evidence in support of research hypothesis 5 (except for gender):

> **H5:** Individuals from various age, gender job level and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.

Preliminary analysis 6: Psychological career adaptation profile of participants

The tests for significant mean differences showed that the age groups differed significantly regarding their mean scores on facets of career agility and career adaptability, including career resilience and personal resilience. The job level groups differed significantly regarding their mean scores on self-efficacy (psychological capital) and personal resilience (career resilience). The tenure groups differed significantly regarding facets of their career agility and career adaptability. These differences in age, job level and tenure groups should be considered in career development interventions for enhancing career adaptation behaviour.

Table 6.21 provides a synopsis of the key findings to consider in the career adaptation profile of the participants.

Age:

Participants born between 1961 and 1980 and born before and in 1960 need more assistance developing attributes of career concern and career curiosity. Participants born before and in 1960 need more assistance in developing attributes of career adaptability (career confidence), career agility (career navigation), technological adaptability, agile learning, and career resilience (personal career resilience).

Job level:

Participants below the senior management level need more assistance developing attributes of self-efficacy. Participants on the senior management level need more assistance in developing attributes of personal resilience.

Tenure:

Participants whose tenure is 16-20 years and 21 and above need more assistance in developing an attribute of career concern, curiosity, and career adaptability. Participants whose tenure is 21 years and above need more assistance in developing attributes of career confidence.

Table 6.21

Summary of Key Observations: Integration of Significant Group Differences and Moderating Effects

Career adaptive construct	Socio-demographic group	Career adaptive strengths (highest mean scores)	Groups in need of career adaptive behaviour guidance and support (lowest mean scores)	Significant moderators to consider in career guidance for adaptive behaviour
Career adaptability	Age	Born after 1995 (28 years and younger) Born between 1981 – 1995 (28-42 years) Active engagement in career self-management and use of adaptability resources (career concern, career control, career curiosity, career confidence)	Older generations: born between 1961 - 1980 (43-62 years) and born before/in 1960 (63 years and older) Lower active engagement in career self-management and use of career adaptability resources	N/A
	Gender	No significant differences	No significant differences	N/A
	Job level	No significant differences	No significant differences	N/A
	Tenure	Less experienced (<5 years tenure): higher engagement in career concern activities <5-11 years tenure: higher engagement in career control, career curiosity and career confidence activities (especially less than 5 years tenure)	Longer tenure: lower engagement in career concern activities Longer years of tenure (>16 years): lower engagement in career control, career curiosity and career confidence activities (especially less than 5 years tenure)	N/A
Career agility	Age	Born between 1981 – 1995 (28-42 years) and born after 1995 (28 years and younger) Career agility strengths (technological adaptivity, agile learning, career navigation). They seem to be agile learners actively navigating the tech-driven career	Older generations: born between 1961 - 1980 (43-62 years) and born before/in 1960 (63 years and older) Somewhat lower strengths on career agility and may need guidance and	N/A

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		environment for new career and development opportunities.	support to remain active adaptive learners for career success	
	Gender	No significant differences	No significant differences	N/A
	Job level	No significant differences	No significant differences	N/A
	Tenure	Less experienced (<5 years tenure) and 11-15 years tenure: higher mindsets of agile learning, career agility, career navigation	Longer years of tenure (>16 years): lower mindsets of agile learning, career agility, and career navigation	Tenure (when high scores on career agility also higher scores on career resilience)
Psychological capital	Age	No significant differences	No significant differences	N/A
	Gender	No significant differences	No significant differences	N/A
	Job level	Senior management (Levels 13-16) and highly skilled supervision (Levels 6-8) (although a bit lower): Self-efficacy strengths	Skilled (level 3-6) [lowest], highly skilled production (level 6-8): Lower levels of self-efficacy and may need additional guidance in developing self-efficacy	High job level (management/supervision) and lower job level (skilled/highly skilled): when high scores on psychological capital also high scores on career satisfaction -especially high job levels
	Tenure	No significant differences	No significant differences	N/A
Career resilience	Age	Born after 1995 (28 years and younger) and born between 1981 – 1995 (28-42 years) Strengths in career resilience and personal resilience (able to adjust to changing work circumstances for career success)	Older generations: born between 1961 - 1980 (43-62 years) and born before/in 1960 (63 years and older) Somewhat lower strengths on career resilience and work resilience (may need guidance and support in adjusting to	N/A

			changing work circumstances influencing their careers)	
	Gender	No significant differences	No significant differences	N/A
	Job level	Skilled (level 3-6) [lowest], highly skilled production (level 6-8): Personal resilience strengths	Senior management (Levels 13-16) and highly skilled supervision (Levels 6-8): Lower strengths in personal resilience and may need support and guidance	N/A
	Tenure	No significant differences	No significant differences	Tenure (when high scores on career agility also higher scores on career resilience)
Career satisfaction	Age	No significant differences	No significant differences	N/A
	Gender	No significant differences	No significant differences	N/A
	Job level	No significant differences	No significant differences	High job level (management/supervision) and lower job level (skilled/highly skilled): when high scores on psychological capital also high scores on career satisfaction -especially high job levels
	Tenure	No significant differences	No significant differences	N/A

6.5 DECISIONS REGARDING THE RESEARCH HYPOTHESES

Table 6.22 summarises the key decisions made in terms of achieving the research aims and supportive evidence for the research hypotheses.

Table 6.22

Decisions Regarding the Research Hypotheses

Research aim	Research hypothesis	Statistical procedure	Decision: Supportive evidence Yes/No
Research aim 1: To explore the nature, magnitude and direction of the statistical relationship dynamics between individuals' **adaptive readiness** (measured by individuals' career agility and psychological capital), **adaptability resources** as an adaptive response (measured by individuals' career adaptability), and **adaptation** (measured by individuals' career resilience and their overall career satisfaction).	**H1**: There is a statistically significant interrelationship between individuals' adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources (measured by individuals' career adaptability), and adapting responses (measured by individuals' career resilience and their overall career satisfaction).	Preliminary statistics to test for construct validity and internal consistency reliability (Cronbach alpha coefficient, AVE, CFAs) Descriptive statistics (means, standard deviations, skewness, kurtosis) Pearson-product moment correlations	YES
Research aim 2: To assess whether individuals' career adaptability mediates the link between their (1) career agility and (2) psychological capital and their career resilience and career satisfaction.	**H2**: The link between individuals' (1) career agility, and (2) psychological capital and their career resilience and career satisfaction is mediated by their career adaptability.	Hayes PROCESS macro procedure for mediation effects	Partially YES

Research aim 3: To assess whether there is a significant interaction effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level, tenure) in predicting their career adaptability, career resilience and career satisfaction.	**H3**: There is a significant interaction (moderation) effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career adaptability, career resilience and career satisfaction.	Hayes PROCESS macro procedure for moderated regression effects	Partially YES
Research aim 4: To assess whether there is a significant interaction effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level, tenure) in predicting their career resilience and career satisfaction.	**H4**: There is a significant interaction (moderating) effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level and tenure) in predicting their career resilience and career satisfaction.	Hayes PROCESS macro procedure for moderated regression effects	NO
Research aim 5: To assess whether individuals from various age, gender, job level, and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.	**H5:** Individuals from various age, gender, job level and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.	ANOVA (multiple groups: age, job level, tenure) Independent samples t-test for gender	YES

6.6   CHAPTER SUMMARY

This chapter reported the results of the empirical study in testing the research hypotheses. Chapter 7 interprets and discusses the results of constructing the proposed career counselling framework for guiding adaptive behaviour.

CHAPTER 7: DISCUSSION, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The literature review is integrated in this chapter, and the results are discussed. The chapter also draws conclusions and makes recommendations for research and career counselling practices in consulting and industrial and organisational psychology.

7.1   DISCUSSION AND INTEGRATION OF RESULTS

This section includes an integration of the results of the study, as well as a discussion of the results of the sociodemographic profile of the participants, the descriptive statistics, and the empirical research aims.

7.1.1   Profile of the sample

The results are interpreted within the context of the sample of participants. The sociodemographic profile showed that participants in the sample were predominantly Black African employees between 28 and 63 years of age. The mean age of the sample of participants was 38.79. Most participants were female and skilled (levels 3 to 5) with 5 to 10 years of working experience.

The mean age of 38.79 implies that most of the participants were in the establishment stage of their life-careers. The establishment life-career stage involves individuals' desire to stabilise in a job, gain greater employment security and have clear options for career advancement (Coetzee & Schreuder, 2021; Super, 1992). In this regard, the mean age suggests a great need for a career counselling framework that may help participants master the career adaptation tasks of the life-career stage and having clarity on career pathways for growth and advancement.

The career resilience capacity of the participants seems relatively high and suggests a sound sense of self-efficacy in adapting to changing and adverse career and work conditions. The somewhat low career satisfaction suggests that career development interventions are needed to identify the root cause of career dissatisfaction and what type of career development participants desire for career adaptation. Low career satisfaction implies that individuals perceived slow progress towards meeting their career goals for advancement, income and skills development (Greenhaus et al., 1990).

The participants had a well-established sense of adaptive readiness (career agility), hope, optimism, resiliency and self-efficacy to mobilise needed psychological resources (psychological capital) for agentic goal pursuit. Employee career agility (i.e., flexibility and agility in adapting to change) and psychological capital, which sustained and maintained positive energy experience, enhanced career

agility and psychological capital. The participants had well-developed career adaptability, suggesting the active and confident use of career self-management resources for adaptive career goal achievement. DMRE employees' career self-management behaviour seemed to have enhanced their individual sense of self-efficacy.

7.1.2   Empirical research aim 1: Interpretation of the bi-variate correlation results

> **Research aim 1:** To explore the nature, magnitude and direction of the statistical relationship dynamics between individuals' adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources as an adaptive response (measured by individuals' career adaptability), and adaptation (measured by individuals' career resilience and their overall career satisfaction.

Overall, the results showed positive associations between participants' adaptive readiness (career agility and psychological capital), adaptability resources of career self-management (career adaptability) and adapting responses (career resilience and career satisfaction. These findings suggest that the participating DMRE employees' career agility, psychological capital, and career adaptability resources are likely associated with higher levels of career resilience and career satisfaction. Findings by Johnston (2018) support this relationship, suggesting that individuals' adaptive readiness and adaptability resources lead to adapting outcomes such as career satisfaction. Similarly, Coetzee et al. (2020) found positive associations between career agility and career adaptability resources, whereas Savickas (2013) reported a positive relationship between career adaptability resources and resilience as well as job and career satisfaction.

7.1.3   Empirical research aim 2: Interpretation of the mediation results

> **Research aim 2:** To assess whether individuals' career adaptability mediates the link between their (1) career agility and (2) psychological capital and their career resilience and career satisfaction.

Overall, the results showed that career agility and psychological capital may enhance career adaptability resources which further enhance career resilience. Previous research supports this finding, indicating that career adaptability mediates the relationship between career adaptivity and adapting responses or adaptive behaviour (Hirschi & Valero, 2015; Hirschi et al., 2015; Johnston, 2018). Nilforosham and Salin (2016) reported that career adaptability functions as a dynamic mechanism affecting the links between adaptive readiness and career adaptive behaviour.

Career agility and psychological capital further seem to directly increase the likelihood of greater levels of career resilience and career satisfaction. Consistent with previous research, Hartung and Cadaret (2017) found that agility and psychological capital are features of adaptivity. Cavus and Kapasuz (2015) also found that the psychological capital states comprising hope, self-efficacy and optimism help manage the adaptive career behaviour of resilience. Research by Coetzee et al. (2021) further supports this finding and argues that career agility is crucial in assisting individuals to be resilient in coping effectively in demanding work contexts.

7.1.4 Empirical research aims 3 and 4: Interpretation of the moderated regression results

Research aim 3: To assess whether there is a significant interaction (moderation) effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level, tenure) in predicting their career adaptability, career resilience and career satisfaction.

Research aim 4: To assess whether there is a significant interaction (moderation) effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level, tenure) in predicting their career resilience and career satisfaction.

The results suggest that tenure may influence the effect of career agility on the development of career resilience. This finding is consistent with previous research that longer tenure employees are primarily concerned with maintaining and planning on exiting their careers (Buyken et al., 2008; Rooij et al., 2008;2012). Also supporting this finding, Van der Horst et al. (2017) indicated that long-tenured employees struggle to adapt to career change and transitions.

Job level may influence the effect of psychological capital on career satisfaction. While there appears to be a paucity of previous research concerning job level (Hartung & Cadaret, 2017), the present study provides original findings regarding job level as a condition for understanding the effect of PsyCap on career satisfaction.

The effect of career adaptability on both career resilience and career satisfaction was not influenced by the participants' sociodemographic characteristics. This is a new finding that is inconsistent with previous research (Hirschi et al., 2015; Van der Horst et al., 2017).

7.1.5 Empirical research aim 5: Interpretation of the tests of significant mean differences

Research aim 5: To assess whether individuals from various age, gender, job level, and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.

The results revealed that staff from the older generations (age > 43 years: Gen X and Baby Boomers), in comparison to the younger generations (Gen Z and Gen Y/Millenials), had significantly lower levels of career agility (adaptive readiness), career adaptability (adapting resources) and career resilience (especially work resilience). Supporting this finding, Van der Horst et al. (2017) indicated that individuals' adaptive behaviour declines with age. Daniels and Radel (2015) reported similar findings for resilience. They found that resilience is learnt from early life stages, transforms into career resilience in middle life and declines in late-life stages. Career resilience may be more pertinent in the establishment stage of the career because of the focus on aligning inner career needs and outer opportunities for career advancement and success in changing work conditions (Coetzee et al., 2015).

Longer tenure employees (>16 years), in comparison to shorter tenure employees, had significantly lower levels of career agility (adaptive readiness) and career adaptability (adapting resources). This finding corroborates previous research that ageing workers with long tenure have more difficulty adapting to career change, traumas and career transitions (Van der Horst et al., 2017). The results further revealed that skilled and highly skilled employees, compared to supervisors and senior management staff, had significantly lower psychological capital resources, especially self-efficacy for adaptive readiness. This finding implies that skilled and highly skilled staff may be in need for tailored interventions aimed at enhancing their psychological capital resources. Well-developed psychological capital resources such as self-efficacy, hope, resiliency and optimism function synergistically to facilitate positive career adaptive behaviours because of positive motivations to, and expectations of achieving goals despite adverse situations (Luthans et al., 2007).

Supervisor and senior management staff, in comparison to skilled and highly skilled staff, had significantly lower levels of career resilience (especially work resilience). This aligns with previous research suggesting that older employees (e.g. supervisors and senior management employees) attach more importance to stability and responsibility (Smola & Satton, 2002). This finding implies that supervisors and senior management may be in need for tailored interventions aimed at enhancing especially their work resilience which is the proactive embracing of uncertain, changing work and technological conditions as an investment in personal career growth (Coetzee et al., 2015).

7.1.6 Synthesis: Constructing a career counselling framework for guiding adaptive behaviour

The synthesis of the findings relates to research aim 6:

Research aim 6: To critically evaluate the manner in which the empirical results can be used to construct a career counselling framework for guiding adaptive behaviour.

The positive associations between the constructs of adaptive readiness (career agility and psychological capital), career adaptability, and adapting responses or adaptedness (career resilience and career satisfaction) provide support for the proposed multimodal geodesic nature of career adaptation (see chapter 4) as a simultaneous process of unconscious and conscious self-regulation in a dynamic human system of career adaptation (Johnston, 2018).

With reference to the proposed geodesic (multimodal) model of adaptive career behaviour (see chapter 4), the mediation findings support the notion that unconscious states of adaptive readiness (psychological modal domain 1: career agility and psychological capital) are likely to positively enhance the active use of resources of career adaptability (psychological modal domain 2) resulting in the active regulation of adapting. High levels of career agility were shown to function as critical psychological states of adaptive readiness that activate the use of career adaptability resources (Coetzee et al., 2020). Wilkins et al. (2014) found that psychological capital states are positively associated with the career adaptability resources of career confidence, career concern, career curiosity and career control.

The integration of self-regulatory attributes of adaptive readiness (career agility and psychological capital states) and adaptability (use of career adaptability resources) facilitates conscious, positive adapting (psychological domain 3) which in turn promotes the psychological mode of career adaptedness (a high degree of career adaptation) as operationalised by career resilience (psychological domain 4). Unconscious career-related self-regulation is a function of malleable states and characteristics of adaptive readiness that interact with career adaptability resources to successfully adapt to external conditions that impact the career (Coetzee et al., 2021; Savickas, 2013).

The mediating findings further suggested geodesic modal relationship dynamics between the psychological states (career agility and psychological capital) and the modes of adaptedness (career resilience and career satisfaction) without the intervening of career adaptability resources (or process of adapting). This finding points to the importance of the unconscious psychological state of adaptivity or adaptive readiness (represented by career agility and psychological capital) as dynamic supporting states of career resilience and career satisfaction (conscious states of positive adaptedness). The interlocking of these unconscious and conscious psychological modal domains of career adaptation

allows for a more holistic career intervention approach toward cultivating adaptive career behaviour among DMRE employees.

Career adaptability reflects important career self-management resources that seem to strengthen the link between individuals' adaptive readiness states of career agility and psychological capital and their career resilience (adaptedness) but not their career satisfaction. The positive association between career adaptability and career resilience may be attributed to research showing that career adaptability increases the conscious self-regulatory capacity and skills to manage the changes in self and in situations that are needed to address the tasks, transitions and traumas associated with career exploration, career choice and work adjustment (Hartung & Cadaret, 2017). In the present study career satisfaction denoted a state of contentedness with one's career progress toward meeting one's goals for career advancement, income and skills development (Greenhaus et al., 2015). In the presence of career agility and psychological capital, career adaptability did not seem to contribute to perceptions of career satisfaction as did career agility and psychological capital.

The finding may be attributed to career adaptability involving the self-regulatory, malleable career-related capability to adapt and successfully solve unfamiliar and complex problems throughout the career (Klehe et al., 2021; Leung et al., 2021; Tokar et al., 2020) which relate strongly with career resilience (the agentic adaptedness and thriving in one's career despite changing, turbulent work conditions (Peeters et al., 2022). Taylor et al. (2022) state that fostering resilience is a positive psychological resource that assists individuals in implementing strategies towards their desired goal, expecting positive career outcomes, and increasing their ability to think about the future and adapt to change. Generally, career resilience prepares career adaptive individuals for their future. Praskova and Johnston (2021) describe career resilience as a future orientation associated with work effort and proactive career behaviour as forms of adaptive career behaviour.

The following section deals with the conclusions, limitations, and recommendations.

7.2   CONCLUSIONS

This section focuses on the conclusions based on the literature review and the empirical study, per the research aims outlined in Chapter 1.

7.2.1   Conclusions relating to the literature review.

The conclusions relating to the theoretical relationship dynamics between the variables are summarised as follows:

- Career adaptive behaviour is contingent upon the interaction between the individual and the environment. According to Bornicci and Cassar (2020), employees become increasingly required to engage actively in the construction of their professional lives to build resilience in a rapidly changing environment.

- Career adaptive behaviour depends on individuals' self-regulation capacity.

- Career adaptive behaviour will enhance career resilience and help individuals realise high levels of career satisfaction. Individuals will learn how to structure their careers, anticipate future challenges related to their careers and cope with career transitions.

- Career adaptive behaviour may enhance self-career management. Positive and planned attitudes towards the future are significant predictors of career adaptive behaviour (Wang & Gao, 2022).

- Understanding the predictors of career adaptive behaviour is essential for career counselling and career development support practice.

- The constructs of career agility and psychological capital (mindsets and resources of adaptive readiness) and career adaptability (career self-management resources of adapting) may act as useful adaptive attributes that facilitate career adaptedness in the form of career resilience and career satisfaction.

- Career adaptedness signals well-rounded adaptive behaviour and the ability to adjust to work and career changes for better person-environment congruence (career resilience) and career satisfaction.

- Principles of career construction theory (adaptivity, adapting and adaptation) informed various geodesic psychological modal domains of adaptive behaviour that elucidated the theoretical dynamics among the study constructs. The dynamics among the study constructs may inform a career counselling framework for adaptive behaviour.

7.2.2 Conclusions relating to the empirical study.

The empirical results yielded several core conclusions in relation to the empirical research aims.

7.2.2.1 Research aim 1

> To explore the nature, magnitude and direction of the statistical relationship dynamics between individuals' adaptive readiness (measured by individuals' career agility and psychological capital), adaptability resources as an adaptive response (measured by individuals' career adaptability), and adaptation (measured by individuals' career resilience and their overall career satisfaction).

The first aim was achieved in Chapter 6, which provided supportive evidence for research hypothesis 1 (H1). Based on the empirical results, the following core conclusions were drawn:

- Constructs of adaptive career behaviour (relevant to the present study) are positively interrelated and support the career construction principles of career adaptation (adaptivity, adapting and adaptation).
- The positive inter-relationships reflect geodesic-oriented psychological modal dynamics among career agility and psychological capital (mindsets and resources of adaptive readiness), career adaptability (career self-management resources of adapting) and behaviours of adaptedness (career resilience and career satisfaction).

7.2.2.2 Research aim 2

To assess whether individuals' career adaptability mediates the link between their (1) career agility and (2) psychological capital and their career resilience and career satisfaction.

The second aim was achieved in Chapter 6, which provided supportive evidence for research hypothesis 2 (H2). Based on the empirical results, the following core conclusion was drawn.

- Career agility and psychological capital (mindsets and resources of adaptive readiness) enhance the use of career adaptability resources (adapting), which in turn further enhance levels of career resilience (adaptedness) but not career satisfaction.
- Career adaptability reflects important career self-management resources that strengthen the link between individuals' adaptive readiness states of career agility and psychological capital and their career resilience (adaptedness) but not their career satisfaction

7.2.2.3 Research aim 3

To assess whether there is a significant interaction effect between individuals' (1) career agility and (2) psychological capital and their sociodemographic characteristics (age, gender, job level, tenure) in predicting their career adaptability, career resilience and career satisfaction.

The third aim was achieved in Chapter 6, which provided supportive evidence for research hypothesis 3 (H3). Based on the empirical results, the following core conclusions were drawn:

- Career counselling for adaptive behaviour should consider tenure as a boundary condition in the development of career agility to raise career resilience.
- Career counselling for adaptive behaviour should consider job level as a boundary condition in the development of psychological capital to raise career satisfaction.

7.2.2.4   Research aim 4

> To assess whether there is a significant interaction effect between individuals' career adaptability and their sociodemographic characteristics (age, gender, job level, tenure) in predicting their career resilience and career satisfaction.

The fourth aim was achieved in Chapter 6, which provided supportive evidence for research hypothesis 4 (H4). Based on the empirical results, the following core conclusion was drawn:

- The development of career adaptability for higher levels of career resilience and career satisfaction is not conditional upon age, gender, job level and tenure.

7.2.2.5   Research aim 5

> To assess whether individuals from various ages, gender, job level, and tenure groups differ significantly regarding their career agility, psychological capital, career adaptability, career resilience and career satisfaction.

The fifth aim was achieved in Chapter 6, which provided supportive evidence for research hypothesis 5 (H5). Based on the empirical results, the following conclusions were drawn:

- Older generations (age > 43 years: Gen X and Baby Boomers) may need specific career counselling for developing career agility (adaptive readiness), career adaptability (adapting) and career resilience (especially work resilience) for adaptedness.
- Longer tenure staff (>16 years) may need specific career counselling for developing career agility (adaptive readiness) and career adaptability (adapting).
- Skilled and highly skilled staff may need specific career counselling for developing psychological capital resources, especially self-efficacy for adaptive readiness.
- Supervisor and senior management staff may need specific career counselling for developing career resilience (especially work resilience).

7.2.2.6 Central research hypothesis

The relationship dynamics among adaptive readiness (operationalised as individuals' career agility and psychological capital), adaptability resources (operationalised as individuals' career adaptability) and adaptation or adaptedness as an outcome (operationalised as individuals' career resilience and overall career satisfaction) highlight the core dynamics that may inform the construction of a career counselling framework for guiding adaptive career behaviour among public service employees in the DMRE.

Based on the empirical results, the following general conclusion was drawn:

- The core multimodal dynamics among career agility, psychological capital, career adaptability, career resilience and career satisfaction inform the construction of a career counselling framework for guiding adaptive career behaviour among public service employees in the DMRE.

7.2.3   Conclusions relating to the field of consulting psychology

- The study findings extend career construction theory on career adaptation by introducing under-researched constructs of career adaptation (career agility, psychological capital, career resilience, career satisfaction) in relation to the well-research construct of career adaptability. The relationship dynamics among the study construct enrich understanding of the dynamics of adaptivity, adapting and adaptedness as attributes of adaptive behaviour.
- The study findings inform the construction of an integrative career counselling framework for guiding adaptive behaviour in the DMRE. This framework may be helpful for career development support consulting services to employees in the public service.

7.3   LIMITATIONS

The limitations of the literature review and the empirical study are discussed below.

7.3.1   Limitations of the literature review

The research was limited to the relationship dynamics between the constructs of adaptivity or adaptive readiness (operationalised by individuals' career agility and psychological capital), adaptability resources (operationalised by individuals' career adaptability) and mode of adaptedness (operationalised by individuals' career resilience and overall career satisfaction). Hence, a holistic view of the career-related constructs that influence career-related outcomes could not be provided. In

addition, this study used the social constructivist and developmental vocational paradigm and the career construction theory (CCT) as an overarching theoretical lens to study the dynamics between the constructs. The interpretation of the findings was therefore limited to the basic premises of the CCT.

7.3.2   Limitations of the empirical study

The study had the following limitations. The study represented a relatively small sample from a single organisation in South Africa. Including predominantly Black African employees from a government department limits the generalisability of the findings to the larger population of employees working in South Africa. Given the study's cross-sectional design and the use of self-report instruments, no inferences about causation could be made, and results were based on individuals' views and perspectives of the relevant constructs.

7.4   RECOMMENDATIONS

Based on these research findings, conclusions and limitations, the following recommendations for career counselling practices in the DMRE, consulting psychology and further research are discussed below.

7.4.1   Recommendations for career counselling in the DMRE

The research findings culminated in an integrative career counselling framework for adaptive behaviour for employees in the DMRE. Figure 7.1 outlines the recommended framework that career counsellors, industrial or consulting psychologists and human practitioners with expertise in career counselling can apply to cultivate adaptive career behaviour in the organisation. The following career counselling interventions are recommended:

- Consider the impact of the organisational context (for example, DMRE organisational culture and climate, business and performance goals, merger/change, career development support practices) in which employees are pursuing the career.
- Assess employees' career development needs in the light of their career stage. The mean age of 39 years signals that most employees are in the establishment stage of their careers, which requires them to master the career adaptability tasks of stabilisation, consolidation and advancement (Coetzee et al., 2022). The establishment career stage is a stage of psychological adaptation to a new position or job role, establishing positive relationships with peers, supervisors, and managers, aligning personal values with those of the organisation, and assuming greater responsibilities for potential career advancement (Coetzee et al., 2022).

- Establish a career development support system that enables employees to master the career adaptability tasks of their career stage.

- Apply career adaptation principles in assessing employees' ability to adapt to the organisational culture and goals, including mastering the psychological tasks of adaptability of the career establishment stage.

- Career assessments should assess employees' level of adaptive behaviour across the four geodesic psychological modal domains of adaptive behaviour described in Chapter 4: (1) adaptivity (career agility and psychological capital); (2) adaptability (career adaptability); (3) adapting (integrating adaptivity and adaptability to assess the level of career self-management); (4) adaptedness (career resilience as the demonstrated quality of being adapted to changing work conditions) and; (5) adaptedness (career satisfaction as a sense of contentedness with the career success achieved, the progress they made toward meeting overall career goals and goals for advancement, income and skills development). Psychological modes 4 and 5 reflect the perceived congruence of person–environment fit or the conscious adaptive interaction of the person and the environment that enable career establishment and optimal performance.

- To cultivate career resilience as a state of adaptedness, career counselling should consider job level as a boundary condition for developing personal and work resilience (i.e., staff on different job levels may exhibit different levels of personal and work resilience). Consider tenure when engaging in career agility development interventions, as longer tenure employees may be less prone to developing career agility. Generally, counsel employees on developing career agility (mindset toward adapting to changing career circumstances) and psychological capital (resources for adopting a positive mindset toward adaptation). Counselling interventions should further focus on interventions for developing employees' career adaptability as career self-management resources for adapting.

- To cultivate career satisfaction as a state of adaptedness, career counselling should consider job level as a boundary condition for developing psychological capital (i.e., employees on different job levels may exhibit different levels of psychological capital, which may adversely affect their career satisfaction). Counselling interventions should further focus on interventions for developing employees' career agility and psychological capital as important mindsets and resources for being willing to adapt and actively engage in career self-management.

- Career counselling interventions should consider the unique needs of age, tenure, and job level groups. Older generations (>43 years: Baby Boomers and Gen X) exhibited the lowest level of career agility (adaptivity), career adaptability (adapting) and career resilience (especially work resilience). Longer tenure employees (>16 years) exhibited the lowest levels of career agility and career adaptability. Skilled and highly skilled staff levels exhibited the lowest levels of psychological capital (especially self-efficacy). Supervisors and senior management employees exhibited the lowest levels of career resilience (especially personal resilience).

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Figure 7.1

Empirical-based Integrative Career Counselling Framework to Guide Adaptive Behaviour in the DMRE

Client: Adult workers (African)
Career stage: Establishment (mean age = 39 years)
Context: DMRE (digital era; merger)

Career development tasks of adaptability

- Stabilising: adapting to job/position, organisational culture, understand performance and competency expectations, take responsibility
- Consolidating job/career position for job security: developing good work habits, positive attitudes, disciplined work ethic, establishing collaborative, constructive relationships, cooperative attitude toward colleagues and supervisors/manager
- Advancing: adapt and align oneself to company and team goals, work toward career advancement and growth, show

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DMRE adult worker: General career counselling for adaptive behaviour – career assessment to raise

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Assessing Adaptivity (mindset/readiness to adapt)	Assessing Adapting (active adaptive behaviour)	Assessing Adaptedness (exhibiting adaptive behaviour)
Career agility	Career adaptability	Career resilience
Psychological capital	*Geodesic psychological domains 2&3*	Career satisfaction
Geodesic psychological domain 1		*Geodesic psychological domains 4&5*

DMRE adult worker: Specific career counselling considerations for cultivating adaptive behaviour

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Cultivating Adaptedness Career resilience	**Conditions**: Job level (personal and work resilience), tenure (career agility) **Develop**: • **Adaptivity**: career agility (career navigation, agile learning, technological adaptivity); psychological capital (hope, self-efficacy) • **Adaptability/Adapting**: career adaptability (career control, career concern, career curiosity, career confidence)
Cultivating Adaptedness Career satisfaction	**Conditions**: Job level (psychological capital) **Develop**: • **Adaptivity**: career agility (technological adaptivity); psychological capital (hope, optimism. resiliency)

DMRE adult worker: Other career counselling considerations for cultivating adaptive behaviour

Age	Older generations (>43 years: Baby Boomers and Gen X): lowest levels of career agility (adaptivity), career adaptability (adapting), and career (especially work) resilience (adaptedness)
Tenure	Longer tenure (>16 years): lowest levels of career agility (adaptivity) and career adaptability (adapting)
Job level	• Skilled and highly skilled staff: lowest levels of psychological capital (especially self-efficacy): adaptedness • Supervisor and senior management: lowest levels of career resilience (especially personal resilience): adaptedness

7.4.2   Recommendations for the field of consulting psychology

Based on the theoretical relationships, industrial and consulting psychologists and career psychologists could implement initiatives to develop career agility, which may foster many other

relevant skills to enhance career resilience and satisfaction. Career development interventions that build on the underlying capacities of psychological capital and career adaptability could also benefit employees. More specifically, industrial and consulting psychologists could develop and implement various initiatives, including the following:

- Organisational culture, climate and change management as results of merger.
- Identify skills and knowledge gaps, new roles and responsibilities, and necessary skills or experience employees need. Interventions will include training needs analysis, implementation of training programmes, coaching and mentoring programmes.
- Implement career development and assessments in line with career stages and assess employees' level of adaptation behaviour.
- Establish a career development support system such as career counselling, career planning and career reviews.
- Interventions to raise career resilience (especially personal and work resilience of supervisors and senior management).
- Interventions to raise career adaptability (career self-management resources).
- Interventions to raise career satisfaction (career agility and psychological capital) for employees by providing counselling on career self-management.
- Provide career counselling for the older generation- baby boomers (career agility, career adaptability, and career resilience (especially work resilience).
- Skilled /Highly skilled levels – interventions to raise psychological capital (especially self-efficacy).
- Supervisor and senior management – interventions to raise career resilience – especially personal resilience.
- Long tenured employees: interventions to raise career agility and career adaptability assessment, career plans and career counselling.
- Older generations – interventions to raise career agility, career adaptability and career resilience (especially work resilience).

7.4.3   Recommendations for future research

Due to the relatively small sample comprising predominantly black employees, it is recommended that future research include a larger and more representative sample from various organisations across South Africa. In addition, the study's cross-sectional design enabled examination of the constructs at one point; therefore, a longitudinal study is recommended to study the relationship between these variables over a more extended period and suggest cause-and-effect relationships. Future research

could include additional constructs, such as [include relevant constructs here], which may potentially develop or extend knowledge and theory related to career adaptive behaviour.

7.5   EVALUATION OF THE STUDY

The study is evaluated in terms of its value-added on theoretical, empirical and practical levels.

7.5.1   Value added on a theoretical level

Theoretically, the study added value to conceptualising adult career development and career adaptive behaviour in the contemporary employment context. The study conceptualised the theoretical relationship dynamics among the constructs of career agility and psychological capital (adaptivity), career adaptability (adapting resources), and career resilience and career satisfaction (adaptedness as an outcome of adaptive behaviour), and how they inform the construction of a career counselling framework for guiding adaptive behaviour. The literature review and empirical findings enriched the CCT of career adaptation (Savickas, 2013) by elucidating the extent to which career agility and psychological capital act as states of adaptivity that have positive links with career adaptability resources and the adaptedness modes of career resilience and career satisfaction. The findings are useful for digital-era career adaptation theory and organisational career development practice in work domains such as public service. The study extended the CCT of Savickas (2013) by proposing that the process of career adaptation may not always be linear (adaptivity-adaptability-adapting-adaptedness) but may also be geodesic (nonlinear and multimodal). Individuals' career adaptation strengths and deficits can be assessed from different yet interlocking psychological modal domains of career adaptation for a more holistic career intervention approach.

7.5.2   Value added on an empirical level

The research findings contributed to constructing an empirically tested career counselling framework that could guide adaptive behaviour and inform career counselling practices for diverse employees of the Department of Minerals and Energy (DMRE) employees. The empirical results provided evidence of both a linear and geodesic (nonlinear and multimodal) process for enhancing adaptive career behaviour.

7.5.3   Value added on a practical level

The study delivered an integrative career counselling framework to guide adaptive behaviour in the DMRE. The suggested empirical-based framework may furthermore contribute to the body of

knowledge that relates to career development practice. Practically, the findings suggest that industrial psychologists and career and human resource practitioners should assess employees' level of adaptive readiness (i.e., career agility and psychological capital), career adaptability (resources of adapting) and state of adaptedness (career resilience and career satisfaction). Such an approach opens new avenues for enhancing employees' career resilience and satisfaction in work domains characterised by limited and uncertain career progression opportunities (e.g., public services). Career counselling discussions could explore the extent to which employees perceive the constructs measured in this study as resources for enhancing their career resilience and career satisfaction within a workspace that appears career-thwarting with constraining and uncertain career development conditions.

7.6   REFLECTION ON DOCTORATENESS

The study has encouraged me as a doctoral student to work independently of others, recognise and accept challenges in my research journey, take proactive and reactive measures whenever necessary, and continue being a responsible citizen in research communities within South Africa and globally. The research has broadened my understanding of DMRE employee career challenges, career transitions and their strategies to cope with career dilemmas, given their history and current challenges. It could also enhance my critical skills in terms of my career counselling, advice, and guidance (career development practice).

The results will open up avenues for me to apply the knowledge competently, ethically, and creatively to contribute to vocational behaviour and guide those needing career guidance and counselling. The research results contribute to the implementation of national policy for an integrated career development system for South Africa and the policy on career development in the Department of Mineral Resources and Energy (DMRE)

7.7   CHAPTER SUMMARY

This chapter covered the discussion and integration of results. An overview of the empirical manifested career counselling framework was provided, and conclusions relating to the literature review and empirical study of the field of industrial and organisational psychology and consulting psychology were drawn. Limitations of the literature review and empirical study were discussed, and recommendations for the field of Industrial and organisational psychology for future research were made. An evaluation of the study in terms of the value added on empirical and practical levels was conducted. Lastly, the reflection on the doctorateness of the study was made.

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APPENDIX A: Ethics clearance letter

UNISA IOP ETHICS REVIEW COMMITTEE

02 November 2020

Dear Mr. Headman Nkosiyakhetha Mbiko,

NHREC Registration # : (if applicable)
ERC Reference :
2020_CEMS_IOP_033
Name/s :   Mr. Headman Nkosiyakhetha Mbiko

Decision: <u>Ethics Approval</u> from 02 November 2020 to 02
November 2023

Researcher(s):   Name: Mr. Headman Nkosiyakhetha Mbiko
                              Address: P O Box 562, Uitenhage 6230
                              E-mail address, telephone:Headman.Mbiko@dmre.gov.za, 0824652525

Co-Researcher(s): Name: Prof Melinde Coetzee
                              Address: Unisa, Muckleneuk Campus, Preller Street, Pretoria, 0003
                              E-mail address, telephone: Coetzm1@unisa.ac.za, 0124298204

                              Name: Prof Elizabeth Nel
                              Address: Unisa, Muckleneuk Campus, Preller Street, Pretoria, 0003
                              E-mail address, telephone: Coetzec1@unisa.ac.za, 0124298561

Constructing a Career Counselling Framework to guide adaptive behaviour.

Qualification: Masters (MCom) – **Postgraduate degree**

Thank you for the application for research ethics clearance to the Unisa IOP Ethics Review Committee for the above-mentioned research. Ethics approval is granted for a period of **Three (3) years**.

---

*The **low risk application** was **reviewed** by the IOP Research Ethics Review Committee on **2ⁿᵈ November 2020** in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment. The amendment to your original Ethics Application was approved on **2ⁿᵈ November 2020.***

You are reminded of the following:

---

1. ***The researcher will ensure that the research project adheres to the relevantguidelines set out in the Unisa COVID-19 Position Statement on research ethics dated 26 June 2020 which is attached.***
2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the Unisa Policy on Research Ethics.
3. Any adverse circumstance arising in the undertaking of the research project that isrelevant to the ethicality of the study should be communicated in writing to the Unisa CEMS/IOP Research Ethics Review Committee.
4. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
5. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
6. 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. Adherence to the followingSouth African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National HealthAct, no 61 of 2003.
7. No field work activities may continue after the expiry date **(02 November 2023)**

8. Submission of a complete research ethics progress report will constitute an application for the renewal of Ethics Research Committee approval.

Note:

The reference number **MbikoHN_2020/CEMS/IOP/033** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,

Prof RT Mpofu
Deputy
Executive
Dean (on
behalf of Prof
Mogale)

Signature   Signature

Chair of IOP ERC   Executive Dean : CEMS
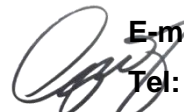
E-mail: vnieka2@unisa.ac.za   **E-mail:** mogalmt@unisa.ac.za

Tel: (012) 429-8231   **Tel: (012) 429-4805**

URERC 16.04.29 - Decision template (V2) - Approve

APPENDIX B: DMRE Permission letter

DEPARTMENT MINERAL RESOURCES

ROUTE FORM FOR DG AND/OR MINISTERIAL SUBMISSIONS

DG-Memo No :		File No :		Submission No :	2020 / 17812
Urgent	False	Reason :			

Component : Director: HRD

Subject : REQUEST APPROVAL FOR GRANTING PERMISSION TO MR HEADMAN NKOSIYAKHETHA MBIKO TO CONDUCT RESEARCH STUDY THE DEPARTMENT OF MINERAL RESOURCES AND ENERGY

	Drafter		Supervisor	
Surname & Initials	MBIKO HN		RAPOO N	
Date	14/09/2020		14/09/2020	
Tel no & Room no	012 444 3727	2B	012 444 3657	2B

On Route To ⬆			On Route Back From ⬇		
Component	Signature	Date	Component	Signature	Date
Director-General	28/9/2020		Director-General		
Deputy Director-General Corporate Services	21/09/2020		Deputy Director-General Corporate Services		
Chief Director: Human Resources	17/09/2020		Chief Director: Human Resources		
Director: HRD	20/09/14		Director: HRD		

Instructions/Remarks:

DIRECTOR-GENERAL

SUBJECT

REQUEST APPROVAL FOR GRANTING PERMISSION TO MR HEADMAN NKOSIYAKHETHA MBIKO TO CONDUCT RESEARCH STUDY IN THE DEPARTMENT OF MINERAL RESOURCES AND ENERGY

1.   PURPOSE

1.1   To obtain approval from the Director-General to conduct Research Study in the

Department of Mineral Resource and Energy.

2.   BACKGROUND AND MOTIVATION

2.1 Mr Headman Mbiko is a DMRE bursary holder, enrolled with the University of South Africa, as a Doctor of Psychology in Consulting Psychology student. Mr Mbiko is a Director: Human Resource Utilization and Development. Among his functions, Mr Mbiko is responsible for Career Development (career assessments, career advice, career counselling and therapy). To meet his job demands, Mr Mbiko enrolled for PhD in Psychology (Consulting Psychology) degree at the University of South Africa in 2019 academic year; and has successfully completed his first year programme. The University has granted him permission to proceed with his dissertation on the research topic titled: **Constructing a Career Counselling Framework to Guide Adaptive Behaviour,** hence the requested approval for granting him permission to conduct the research study in the Department.

2.2 Benefit of the study to Department of Mineral Resources and Energy

2.2.1   The South African government is currently confronted by a huge budget deficit as a

result of the increase in budget spending required to carry out its mandate amidst changes such as merging some of the departments into one department, and Covid 19 pandemic, to name but few. The Department of Mineral Resources and Energy is no exception to this phenomenon. These changes have serious implications on employee careers.

2.2.2 To help address the ongoing changes, the National Career Development Framework has been developed and implemented to provide career development for all South Africans. In line with this national initiative, the DMRE has developed a policy on career education, career assessment, career counselling and therapy in order to enhance career adaptivity among its employees. The purpose is to support and encourage employees to develop and implement career plans in the face of the persistent increase in the unemployment rate, precarious job tenure, unpredictable employment opportunities, lifespan life space career transitions, disruptions, and traumas, to give effect to employee career development with the full support of the employer.

2.2.3 The purpose of the research study is to construct a career counselling framework to enhance DMRE employee adaptive behaviour when confronted with career transitions, disruption and traumas.

2.2.4 Contribution/ value-add is that findings of the research study may provide preliminary insights that expand body of knowledge regarding the career development of employees in the DMRE within the South African public service.

2.3 Research method

2.3.1 A quantitative survey approach using standardized, valid, and reliable measuring instruments will be followed. Random sampling of employees from the DMRE will be conducted, and employees will be selected in terms of age, gender, job level and tenure. In addition, to supplement the quantitative approach, a qualitative approach will be adopted in terms of the case study method involving in depth interviews.

3.2 The data will be analyzed statistically, and report / recommendations drawn and made available to key stakeholders, where necessary and with permission from the Department.

3.   IMPLICATIONS

3.1   COMMUNICATION

3.1.1 University of South Africa (UNISA)

3.2 FINANCIAL

3.3.1 The research study if fully sponsored through DMRE Bursary scheme, and funds are available under item: Internal Bursaries.

3.4   SECURITY

3.4.1 None

4. RECOMMENDATIONS

4.1   It is recommended that:-

4.1.1 Approval is granted for research study to be conducted due to the following reasons:

4.1.1.1   Mr Mbiko is a bursary holder, and the approval of the research study will enable him to fulfil the requirements of the degree.

4.1.1.2   More than six hundred employees in the Department have participated in career assessments, guidance, career counseling and therapy programme but they seem not to be coping with career transitions, hence the need for the study to construct a career counselling framework that will enhance adaptive behaviour among employees.

4.1.1.3   The research may potentially inform career development practices of employees in the DMRE by constructing a career counselling framework for enhancing adaptive behaviour of employees in dealing with career transitions, disruptions and traumas in their life space/career space.

4.1.1.4   Mr Mbiko has experience and technical researching skills, research ethics such as confidentiality of information about the Department, participating employees; and non-violation of participants' rights, will be adhered.

HN MBIKO (Applicant)

DIRECTOR: HUMAN RESOURCE UTILIZATION AND DEVELOPMENT

DATE: 14/09/2020

4. RECOMMENDATIONS

4.1   It is recommended that:-

4.1.1 Approval is granted for research study to be conducted due to the following reasons:

4.1.1.1   Mr Mbiko is a bursary holder, and the approval of the research study will enable him to fulfil the requirements of the degree.

4.1.1.2   More than six hundred employees in the Department have participated in career assessments, guidance, career counseling and therapy programme but they seem not to be coping with career transitions, hence the need for the study to construct a career counselling framework that will enhance adaptive behaviour among employees.

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4.1.1.4   Mr Mbiko has experience and technical researching skills, research ethics such as confidentiality of information about the Department, participating employees; and non-violation of participants' rights, will be adhered.

Recommendation in paragraph 4.1….. supported. / not supported ………

N RAPOO

CHIEF DIRECTOR: HUMAN RESOURCE
DATE: 17/09/2020

Recommendation in paragraph 4.1….. supported. / not supported ………

P GAMEDE

DDG: CORPORATE SERVICES
DATE: 21/09/2020.

4. RECOMMENDATIONS

4.1   It is recommended that:-

4.1.1 Approval is granted for research study to be conducted due to the following reasons:

4.1.1.1   Mr Mbiko is a bursary holder, and the approval of the research study will enable him to fulfil the requirements of the degree.

4.1.1.2   More than six hundred employees in the Department have participated in career assessments, guidance, career counseling and therapy programme but they seem not to be coping with career transitions, hence the need for the study to construct a career counselling framework that will enhance adaptive behaviour among employees.

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4.1.1.4   Mr Mbiko has experience and technical researching skills, research ethics such as confidentiality of information about the Department, participating employees; and non-violation of participants' rights, will be adhered.

Recommendation(s) in paragraph 4.1 approved	Recommendation(s) in paragraph 4.1 not approved
ADV T MOKOENA	ADV T MOKOENA
DIRECTOR-GENERAL	DIRECTOR-GENERAL
DATE: 28/09/2020	DATE:
Comments/amendments -----------------	Comments/amendments----------------