

**THE EFFECT OF MINDFULNESS AND
VOCATIONAL IDENTITY ON CAREER
ADAPTABILITY AMONG GRADUATES IN THE
EARLY CAREER STAGE**

by

NATALIA DE ABREU

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SUPERVISOR: MRS R. KLEYNHANS

CO-SUPERVISOR: PROF P. NEL

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DECLARATION

I, Natalia de Abreu, student number 2012172116, declare that this mini dissertation, entitled “The effect of mindfulness and vocational identity on career adaptability among graduates in the early career stage” is my own work, and that all the sources that I have used have been indicated and acknowledged by means of complete references.

I also declare that ethical approval to conduct the research has been attained from the Department of Industrial Psychology, and University of the Free State.

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N De Abreu

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Date

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ABSTRACT

The primary purpose of this study was to investigate the extent to which mindfulness and vocational identity predict career adaptability. For purely exploratory purposes, the present study also investigated the possibility that mindfulness influences career adaptability via vocational identity. The secondary aim was to determine whether gender differences exist with regard to the level of career adaptability.

A non-experimental, quantitative survey research design was used to obtain data on the constructs under investigation along with relevant biographical information. Electronic self-administered questionnaires were used to gather information from the participants. Results of the present study were based on a convenience sample of 200 respondents from a higher education institution in the Free State who were in the early career stage and have completed, or were in the process of completing, some form of tertiary education.

Correlational analysis indicated a statistically significant positive correlation between vocational identity and career adaptability. In a similar sense, the results from the multiple regression analysis indicated that vocational identity was the only statistically significant predictor of career adaptability and its associated dimensions. More specifically, the results of the current study indicated the correlation between the concern dimension of career adaptability and vocational identity to be the highest. On the other hand, no statistical significant correlation or relationship was found between mindfulness and career adaptability. Interestingly, the PLS results indicated that vocational identity acted as a significant mediator between mindfulness and career adaptability. Furthermore, the results of the current study indicated that males displayed higher levels of career adaptability than females did. However, the difference was not found to be statistically significant.

Recommendations were made to replicate the study with a larger sample size that is more representative in terms of demographics. Additionally, alternative research methodologies such as an experimental pre-test post-test design with a standardised career intervention were proposed in order to investigate the dynamic relationships between the variables in greater depth.

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CHAPTER 1: INTRODUCTION AND PROBLEM STATEMENT

1.1 INTRODUCTION

Applied science disciplines, such as career psychology, are duty-bound to go beyond the ordinary in the search for new knowledge and techniques that can address the evolving needs in society (Maree, 2019). New careers requiring new skills and attitudes arise increasingly, and career theories have to keep up-to-date of these developments if they are to remain useful and relevant in contemporary society (Maree, 2013).

In an attempt to shed light on how to assist graduates in the early career stage to deal effectively with the uncertain contemporary world of work, the focus of this mini-dissertation was to investigate the effect of mindfulness and vocational identity on career adaptability. Chapter 1 contains information on the background and problem statement, followed by an overview of the concepts based on previous research. This chapter also includes the research objectives and concludes with an outline of the study as well as chapters to follow.

1.2 PROBLEM STATEMENT

It is well noted in literature that the contemporary world of work is as dynamic as ever, with dramatic technological and social changes that affect the very notion of a career. Underpinned by the Fourth Industrial Revolution, the contemporary world of work features the constant launching of technological innovations that seems to change the way people work. Nubler (2016) notes that the rate at which today's technological advances are emerging presents change to the nature of work that has not been seen before, giving rise to a work environment that is filled with uncertainty.

The rise of artificial intelligence (AI) marks some alarming statistics. Evidence suggests that robots and computers are increasingly learning new skills at a faster pace than has ever been seen before, something that previously was believed to be unique to human accomplishment (International Labour Organisation, 2013). Adding to this, Bersin (2017) proposes that in the coming years, nearly fifty percent (50%) of existing jobs will be automated. Consequently, the pace at which technology is advancing results in many occupations, crafts, and skills becoming quickly outmoded, presenting the need for constant upskilling (International Labour Organisation, 2013).

Undeniably, technological change is disrupting many occupations and transforming the need for new skills. Various trend analysts have posited that the majority of jobs in the labour market today did not exist a few decades ago and that more than half of the current jobs will either change significantly or dissolve entirely (International Labour Organisation, 2013). It should be noted that the eradication of specific tasks within jobs does not necessarily imply that the entire job will disappear; it may also indicate that individuals will have to adapt to new work environments and learn how to co-work alongside machines and robots (McKinsey Global Institute, 2016).

Along with the rise of technology, social developments also present change in the world of work. As organisational structures change from traditional hierarchical structures to more flexible horizontal organisational structures, terms such as post-industrial careers, boundaryless careers, and protean careers are becoming well known in recent work-related literature. These terms signify that stable work environment characteristics are becoming outdated, as workers have to redefine and reinvent themselves continually in the workplace (Maree, 2014).

The changing structure of careers has significant effects on career development and how graduates manage their careers. Previously, graduates were to step into an entry-level career and climb the corporate ladder over the years as they progressed towards retirement. Today, the idea of a single, long-lasting career is becoming outdated (Bersin, 2017). Moreover, research done by Deloitte (2017) indicates that new graduates today may work for as many as five companies in their first ten years after graduation. As such, graduates approaching the labour market are undoubtedly more exposed to the inherent uncertainty of the contemporary world of work.

Indeed, the changing nature of work further poses the obstacle of job insecurity. In developing countries specifically, workers face a high risk of job loss, as educated unemployment is on the increase (International Labour Organisation, 2013). Statistics South Africa (2015) indicates the current unemployment rate as 25.1%. Moreover, Statistics South Africa (2015) emphasises that young men and women face increasing uncertainty in their hopes of experiencing a satisfactory entry to the labour market. The high level of job insecurity and unemployment is evident in the South African labour market, as 221 000 job losses among young adults, mostly craft workers and professionals, occurred from 2008 to 2015 (Statistics South Africa, 2015).

Graduates in South Africa specifically encounter even further challenges such as the economic downturn, the skill profiles demanded by employers, and the high graduate unemployment rate (Ismail, 2017). Similarly, Maree (2019) notes that contextual factors, such as the escalating unemployment rate, weak national economy, and changing requirements for entry into the labour market, continually affect South Africans and make the career development process inherently complex.

Because of the above-mentioned changes and challenges present in the contemporary world of work, graduates today find the transition from school to university and from university to work complicated and lengthy (Statistics South Africa, 2015). The challenges faced by graduates in transition from university to work include changing their role orientation from that of a student to that of a worker, entering the adult world of work successfully, sustaining employability, becoming established in an occupation, and feeling a sense of stability on the job (Savickas, 2005, 2013; Super, 1990). The transition from university to work has always been regarded as a stressful period for young adults; yet, today's world of work increasingly requires young adults to manage their careers proactively for a successful transition into the labour market (Koen, Klehe, & Van Vianen, 2012).

In the context of the rapidly evolving world of work, it is reasoned that graduates entering the workforce today need to develop career-related skills and competencies that differ significantly from those of 20th-century occupations. Del Corso (2013) states that to sustain employability, graduates entering the workforce must have the capacity to keep up with technological advances, while at the same time adapt within career and life roles at a rate that is incomparable to previous generations.

Moreover, managing career transitions and surviving the uncertain labour market can be a challenging task, especially when individuals have little knowledge about themselves and the career opportunities available to them (Ferreira & Coetzee, 2010). It may be assumed that a clear picture regarding one's goals, interests, and abilities will enable one to manage current and anticipated career adjustments better and integrate one's self-concept into the working role. In this sense, vocational identity acts as a cognitive compass that encourages individuals to adapt actively in order to realise their career goals. In essence, it is argued that in order to succeed in the ever-changing contemporary world of work, graduates need to have a well-rounded sense of self and the ability to adapt to the constant changes facing them (Ismail, 2017).

The changing nature of work, accompanied by employment uncertainty, has also encouraged interest in mindfulness as a possible means to decrease anxiety, increase self-clarity, and deal effectively with employment uncertainty (Jacobs & Blustein, 2008). Literature on mindfulness points to the ability of mindfulness to increase individual awareness, helping individuals to focus on the present moment instead of pondering on problems beyond their control. In this sense, mindfulness may have relevance to achieving greater self-awareness and enabling individuals to cope with frequent changes and transitions present in the contemporary world of work. As such, this research proposes mindfulness as a method for individuals to cultivate a clearer sense of self, thus contributing to a well-developed vocational identity, which in turn may foster career adaptability.

1.3 CONCEPT CLARIFICATION

Before proceeding to the preliminary literature review, research questions, objectives, and hypothesis, the key concepts that underlie the study are clarified as follows:

- **Graduate**

The Oxford Dictionary defines a graduate as someone who has completed a course of study or training successfully, particularly a person who has been awarded a degree. In the context of this study, when referring to a graduate, the researcher refers to an individual who has completed any form of tertiary education, including a diploma or university degree.

- **Early Career Stage**

Adult development theory (Arnett, 2000; Levinson, 1986), differentiates career development in terms of the early, middle, and late adulthood life stages (Schreuder & Coetzee, 2016). Various career development theories (discussed in subsequent chapters) describe more or less similar career development stages associated with chronological aging, as well as developmental tasks and challenges. For the purpose of this study, the early career stage is described by means of a synthesis of adult development theory (Arnett, 2000) as well as Super's (1990) and Savickas' (2005, 2013) conceptualisation of the establishment phase, which is associated with the early career stage.

The early career stage normally begins in the late teens (± 18 years) and culminates in the 40's (Arnett, 2000; Levinson, 1986). Moreover, Super (1990) and Savickas (2005, 2013) outline the developmental tasks and challenges associated with the early adulthood establishment phase as including entering the adult world of work, sustaining employability, becoming established

in an occupation, and feeling a sense of stability on the job (Savickas, 2005; 2013; Super, 1990).

▪ **Graduates in the early career stage**

When referring to graduates in the early career stage, the research refers to individuals aged between 18 and 40 who have completed any form of tertiary education and are faced with the task of finding their place and succeeding in the adult world of work. The terms *graduate in the early career stage* and *young adult* are often referred to interchangeably.

1.4 PRELIMINARY LITERATURE REVIEW

The subsequent section provides a preliminary literature review on the constructs of career adaptability, vocational identity, and mindfulness.

1.4.1 Career Adaptability

It is well known that human beings must adapt to all domains of life in order to survive. Doing so in the work domain requires career adaptability (Hartung & Cadaret, 2018). As a meta-competency, career adaptability involves the psychosocial resources needed to manage career-related tasks, transitions, and changes effectively. Savickas (2005; 2013) conceptualises career adaptability as self-regulatory psychosocial resources that enable individuals to manage current and anticipated career adjustments and transitions successfully, as well as integrate their self-concept with their working role. From the career construction perspective, career adaptability involves four dimensions, namely concern, control, curiosity, and confidence (Savickas, 2005, 2013).

Various research findings (Hirchi, 2012; Ismail, 2017; Zacher, 2015) indicate that career adaptability serves as a highly relevant personal resource in effective career management. Moreover, Koen, Klehe, Van Vianen, Zikic, and Nauta (2010) emphasise the relevance of career adaptability in the contemporary world of work, as it has been proven to facilitate re-employment as well as increase employment quality and the likelihood of long-term career success. Given the possibly vital upshots of career adaptability on positive career development, additional research regarding predictors of career adaptability development is of great consequence (Ebenehi, Rashid, & Bakar, 2016).

Literature also highlights the importance of investigating gender differences in a career context, as it has been found that women and men display different career needs and developmental

patterns (Creager, 2011). Although the relationship between gender and career adaptability has received increasing interest in the past decade, not all findings are consistent. For instance, researchers like Chan et al. (2015) and Han and Rojewski (2015) found that males display higher levels of career adaptability than females did. It is argued that in traditionally male-dominated societies, males are likely to display higher levels of career adaptability owing to the beliefs that males advance faster in their careers than females do due to traditional gender roles. In contrast, researchers (Coetzee & Harry, 2015; Ferreira, 2012; Ndlovu, 2017) found that females demonstrate greater levels of career adaptability than males do. It can be argued that females having higher levels of career adaptability due to the additional efforts that females make to invest in their careers to prepare for and participate in a male-dominated labour market (Skorikov & Vondracek, 2011).

1.4.2 Vocational Identity

Vocational identity seeks to answer the question: ‘Who am I at work?’ and serves as another critical construct in understanding individual career-related behaviour in the ever-changing and often turbulent world of work (Jansen & Roodt, 2015). One of the most widely used definitions of vocational identity is that of Holland, Gottfredson & Power (1980), who defines it as “the possession of a clear and stable picture of one’s goals, interests and talents” (p. 1191). In this sense, vocational identity often is regarded as a cognitive compass that motivates individuals to adapt in order to realise or create opportunities that match their career aspirations (Jansen & Roodt, 2015).

Various researchers (Galles & Lenz, 2013; Savickas, 2012) have established and recognised the important function of vocational identity in career development and decision making among young adults, who are at the stage of balancing beginning a career while establishing self-identities (Gupta, Chong, & Leong, 2014). Literature indicates that vocational identity serves to provide individuals with some sense of stability and plays a crucial role in ensuring the successful integration of individuals with the labour market (Jansen & Roodt, 2015).

Of specific interest to this study, various researchers (Ebenehi et al., 2016; Savickas & Porfeli, 2012) have investigated vocational identity as a possible predictor of career adaptability, though the findings seem somewhat inconsistent. For instance, research by Savickas and Profeli (2012) found vocational identity is a significant predictor of career adaptability, whereas a study done by Ebenehi et al. (2016) in Nigeria found that vocational identity correlates with career adaptability; however, the construct did not predict career adaptability

significantly. According to Ebenehi et al. (2016), a limitation of their study may be the use of multiple linear regression analysis instead of structural equation modelling or path analysis, which possibly could have provided more plausible causality information regarding the relationship between vocational identity and career adaptability. Ebenehi et al. (2016) suggested that considering the capacity of career adaptability to smooth the transition from school to the labour market, a similar study be done in other parts of the world.

1.4.3 Mindfulness

Mindfulness as a notion and practice has a history extending over 2 500 years. However, over the past two decades, the concept has received increasing attention in Western psychological research (Davidson & Dimidjian, 2015). Since its conception in Western psychological research, several contemporary definitions of mindfulness arose.

One of the first and most commonly used Western definition of mindfulness is that of Kabat-Zinn (1994), who describes it as the awareness that arises through “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (p. 4). In a similar sense, Bauer-Wu (2011) provides a notable description of mindfulness as being awake to the fullness of one’s life in the here and now by means of engaging one’s five senses and observing the changing situations of one’s life without holding on to or pushing away from it. In this sense, mindfulness is regarded as a psychological trait that varies within a person from moment to moment, and individuals higher in trait mindfulness are better able to perceive internal and external realities openly and without distortion (Brown & Ryan, 2003).

In today’s fast-paced work environment, mindfulness is perceived as a core component for long-term career success. Previous research (Felsman, Verduyn, Ayduk, & Kross, 2017; Jacobs & Blustein, 2008; Weinstein & Ryan, 2011) has related mindfulness empirically to various positive career-related outcomes such as reduced stress and increased resilience, problem solving, decision-making abilities, and overall increased career satisfaction. Jacobs and Blustein (2008) elaborate on mindfulness as a means to assist individuals to cope with the uncertainty of finding employment and reason that mindfulness may assist individuals with decision-making by reducing concern about the future and enhancing problem-solving abilities. Likewise, Weinstein and Ryan (2011) assert that mindfulness facilitates resilience and coping more positively with difficult events, such as career transitions, because it draws individuals into the present moment, which allows them to experience better control over current events. Mindfulness has also been associated with increased levels of behavioural,

cognitive, and psychological flexibility (Shapiro, Carlson, Astin, & Freedman, 2006). Although research hints that mindfulness may increase individual career adaptability, associations between mindfulness and career adaptability have not been examined to date.

With the significant positive career-related outcomes of vocational identity in mind, researchers investigated possible predictors of vocational identity, including mindfulness. A study conducted by Galles, Lenz, Peterson, and Sampson (2018) examined mindfulness as a possible predictor of vocational identity among a sample of students at a large U.S. university. Their findings indicated that individuals with higher levels of mindfulness reported significantly higher levels of vocational identity. These findings may suggest that higher levels of mindfulness may contribute to a clearer picture of one's goals, interests, talents, self-awareness, and acceptance.

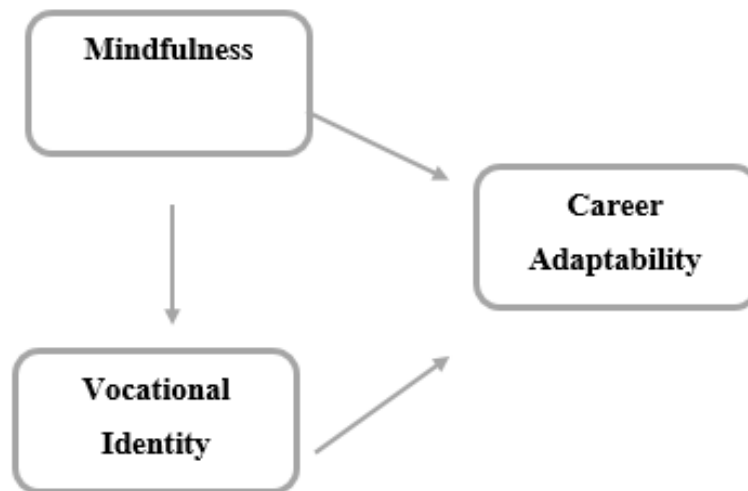
In essence, mindfulness has made a robust occurrence in psychological research over the past few decades, and various authors have recommended the usefulness of mindfulness in promoting healthy career development; however, little empirical research has been done in this area (Galles, 2013). Moreover, the current study intended to build on the preliminary evidence regarding mindfulness in a career context, which may lead to a better understanding of the benefits of including mindfulness in a career context.

1.5 THE CURRENT STUDY

The conceptual framework of this study involved an investigation of the empirical relationship dynamics between mindfulness, vocational identity, and career adaptability among graduates in the early career stage. More specifically, this study investigated the extent to which mindfulness and vocational identity predict career adaptability. For purely exploratory purposes, the present study also investigated the possibility that mindfulness influences career adaptability via vocational identity. Furthermore, the proposed research aimed to determine whether gender differences exist with regard to the level of career adaptability. The conceptual framework is portrayed in Figure 1.1.

Figure 1.1

Conceptual Framework of The Study.



1.6 RESEARCH QUESTIONS

From the preceding introduction, problem formulation, and preliminary literature review, the following research questions were identified:

Primary research question: Do mindfulness and vocational identity predict career adaptability amongst graduates in the early career stage?

Secondary research question: Do differences with regard to gender exist in levels of career adaptability among graduates in the early career stage?

1.7 RESEARCH OBJECTIVES

Based on the research questions outlined above, the following research objectives were formulated:

Primary objective: To determine by means of a non-experimental research design whether mindfulness and vocational identity predict career adaptability among graduates in the early career stage.

Secondary objective: To determine by means of a non-experimental research design whether differences with regard to gender exist in the levels of career adaptability among graduates in the early career stage.

1.8 RESEARCH HYPOTHESES

From the abovementioned objectives, the following research hypotheses were identified:

Hypothesis 1

H₀: Mindfulness and vocational identity do not explain a statistically significant proportion of the variance in career adaptability among graduates in the early career stage.

H₁: Mindfulness and vocational identity explain a statistically significant proportion of the variance in career adaptability among graduates in the early career stage

Hypothesis 2

H₀: There are no statistically significant differences in the scores achieved on career adaptability with regard to gender graduates in the early career stage.

H₁: There are statistically significant differences in the scores achieved on career adaptability with regard to gender among graduates in the early career stage.

1.9 OUTLINE OF CHAPTERS

The mini dissertation will be presented as follows:

- Chapter 1 covers the introduction and problem statement, research questions, research objectives, and research hypothesis.
- Chapter 2 includes an overview of the literature regarding career adaptability including definitions, theories, models, and previous research. In addition, possible gender differences with regard to career adaptability are covered in this chapter.
- Chapter 3 includes an overview of the literature regarding vocational identity. Emphasis is placed on definitions, theories, and models, and previous research regarding vocational identity. Furthermore, the relationship between vocational identity and career adaptability is explored.
- Chapter 4 includes an overview of the literature regarding mindfulness, including its definitions, theories and models, and previous research findings. Additionally, the link between mindfulness and career adaptability will be discussed.
- Chapter 5 covers the research methodology and includes a discussion on the selection of test persons, the instruments that were used for data gathering, and the statistical methods, including descriptive statistics and inferential statistics that were used for the proposed study.

- Chapter 6 provides an overview of the research findings in terms of descriptive and inferential statistics.
- Chapter 7 elaborates on the limitations of this study, along with recommendations for possible future research.

1.10 CHAPTER SUMMARY

The current study has three main contributions. Firstly, the study will add to the literature by investigating the possible predictors of career adaptability among graduates in the early career stage. By focusing on graduates in the early career stage, the study also aimed to generate knowledge on how to prepare them better with the required competence to enter and establish themselves successfully in the world of work. Finally, the study seems to be the first study incorporating career adaptability and mindfulness in tandem, thereby shedding light on the relationship between these two variables.

Chapter 1 provided background to the identified problem and a preliminary literature review of the variables under investigation. The research questions, objectives, and hypotheses were also outlined. The following chapter provides an in-depth discussion on the variable *career adaptability*.

CHAPTER 2: CAREER ADAPTABILITY

2.1 INTRODUCTION

In light of economic, technological and social transformations, the ability to adapt has become much needed in the context of the twenty-first-century world of work (Johnston, 2016). Rooted in early career theories, career adaptability has evolved over the past decades as a critical construct for understanding individual career behaviour (Hartung & Cadaret, 2018). The aims of the current chapter are twofold. Firstly, it will provide a theoretical background of the progression of career theories and secondly, as part of the theoretical progression, the chapter will conclude with a strong focus on career adaptability.

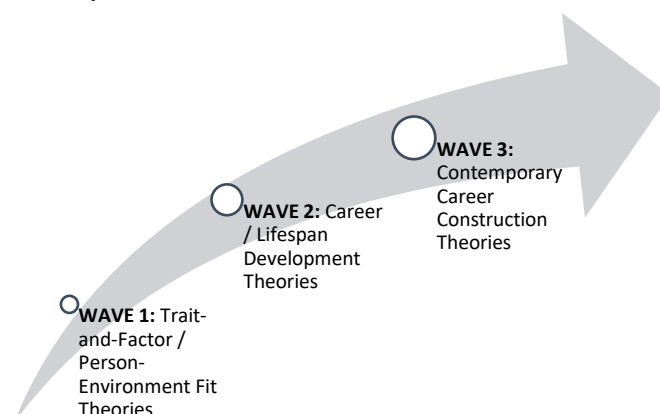
2.2 OVERVIEW OF CAREER THEORIES

To explain effectively and efficiently how individuals navigate themselves in the world of work, a clear understanding of well-established and emerging career theories is needed. Career theories and models serve to provide the foundational knowledge and concepts to understand individual behaviour, including the career problems and transitions facing them. In addition, they provide significant insight into possible strategies for career development and adapting in the context of the twenty-first century world of work (Coetzee, Roythorne-Jacobs, & Mensele, 2016).

As with any field in psychology, the field of career psychology is characterised by a variable and composite theoretical foundation. This section provides an overview of the evolution of career theories, which incorporates three waves of career theory development (depicted in Figure 2.1). In each of the three waves, attention will be given to how theoretical perspectives on career adaptability have evolved over time.

Figure 2.1

Three Waves of Career Theory.



2.2.1 Wave 1: Trait-and-factor/Person-environment Fit Theories

The first wave of career development theories arose in the first half of the twentieth century and is represented by trait-and-factor /person-environment fit. During that period, the world of work mainly provided an individual with the security of a stable, lifelong career. The main focus of career theory in this wave was on assessing and matching individual traits with the requirements and conditions of occupations in order to guide career decision-making (Sharf, 2013). The most prominent theories that arose within the first wave of career theories include Parson's (1909) trait-and-factor theory and Holland's (1973) theory of personality types.

2.2.1.1 Parson's (1909) trait-and-factor theory

A trait is described as characteristics of individuals that can be measured, while a factor refers to the characteristics necessary for successful job performance (Parsons, 1909; Sharf, 2013). In this sense, trait and factor refer to assessing the characteristics of an individual and a job. The main idea behind the trait and factor theory is that individual characteristics, such as aptitudes, achievements, interests, values, and personality, can be measured and then matched with certain occupations to assist individuals in making a career decision (Coetzee et al., 2016). Holland's theory of personality types offers a more detailed account for the principles of the trait-and-factor theory.

2.2.1.2 Holland's (1973) Theory of Personality Types

Building on the trait-and-factor theory, Holland (1973) proposes that career choice and adjustment represent an extension of an individual's personality (Coetzee et al., 2016). The main idea behind Holland's theory of personality types is that individuals and career environments can be characterised in terms of their resemblance to six orientations, or personality types, and that individuals will likely enter and stay in career environments that are similar to their personality types (Watson & Stead, 2016). These six orientations include realistic, investigative, artistic, social, enterprising, and conventional orientations, also known as the RIASEC model.

2.2.1.3 Views on Adaptability

Seeds of the career adaptability construct can be found in the trait-and-factor / person-environment fit theories. In these theories, a heightened sense of one's individual characteristics is linked to a successful career choice and therefore a higher likelihood of career success, which can also refer to adaptability (Hartung & Cadaret, 2018). In essence, this wave

of career theory associates some personality characteristics with the ability to adapt successfully to the working environment. However, recent research demonstrates adaptability as a dynamic process affecting the associations between dispositional personality traits and adaptive career behaviour (Nilforooshan & Salimi, 2016).

2.2.1.4 Strengths and weaknesses of trait-and-factor / person-environment-fit theories

Although the standardised individual assessment and occupational analysis procedures emphasised by this wave of career development theories are still considered useful today, these theories are regarded as static with an overemphasis on assessing and matching individuals to work environments (Schreuder & Coetzee, 2016). Moreover, trait-and-factor / person-environment fit theories suitably indicated which career matched an individual's unique personality. However, the theory does not consider how individuals progress in their careers (Hartung & Cadaret, 2018). With this in mind, the trait-and-factor, person-environment fit theories of this time are regarded as unsuccessful in explaining the rich complexity and subjective nature of individual life careers (Hartung & Cadaret, 2018).

2.2.2 Wave 2: Career development / Lifespan development theories

The second wave of career development theories represents a shift away from the individual differences perspective towards a growth and developmental view on careers (Sharf, 2013). Embedded in the concepts of developmental psychology, the second wave of career theory focuses on developmental stages and tasks as well as career maturity to explain how individuals deal with the development and advancement of their careers (Hartung & Cadaret, 2018).

In essence, the main idea behind this wave of career theories is that a career is a developmental process of progression comprising developmental life and career stages over an individual's life span (Coetzee et al., 2016). The most prominent career development theory from the second wave is Super's (1990) life-span, life-space theory.

2.2.2.1 Super's (1990) career development theory

Donald Super is regarded as one of the principal researchers in the field of career psychology, and to date, his work continues to influence contemporary career theories (Savickas, 2013). To reflect the advancement of the theory over time, the name changed from the original *career development theory*, to *developmental self-concept theory*, and lastly to *life-span, life-space theory* (Brown & Lent, 2012).

Super (1990) bases his theory of career development on the principles of developmental psychology and the self-concept theory and proposes the career life cycle to explain how individuals move through certain career stages over the life span and develop their self-concept (Sharf, 2013). The following section provides an overview of Super’s notion of the career life cycle.

▪ **The career life cycle**

Building on the work of Levinson’s (1986) adult development theory, Super (1990) proposes that an individual cycles and recycles through five career stages over the life span. Each career stage represents specific developmental tasks that entail the primary adaptive goal of self-concept formation (Hartung & Cadaret, 2018). The stages and associated career development tasks are discussed briefly in Table 2.1.

Table 2.1

The Developmental Stages and Tasks in Super's (1990) Career Life Cycle (Watson & Stead, 2017).

Career Stage	Description and Developmental Tasks
Growth	<p>The growth stage is described as developing one’s capacities, aptitudes and interests, as well as forming a general understanding of the world of work.</p> <ul style="list-style-type: none"> – Becoming concerned about the future – Developing personal control over one’s life – Convincing oneself to achieve – Acquiring competent work attitudes and habits
Exploration	<p>The exploration stage presents attempts to understand oneself, including one’s interests and capabilities, and finding one’s place in the world of work.</p> <ul style="list-style-type: none"> – Crystallisation of a career preference – Specification of a clear career goal – Implementation of the career goal using education and entering the labour market
Establishment	<p>The establishment stage entails securing an initial position and perusing chances for further development.</p> <ul style="list-style-type: none"> – Stabilising the self-concept by means of gaining experience in one’s job – Consolidating the self-concept by means of maintaining positive work attitudes and productive habits. – Advancement by means of higher levels of responsibility and status in one’s job.

Table 2.2

Career Stage	Description and Developmental Tasks
Maintenance	The maintenance stage entails building the self-concept by means of continuous adjustment and skill development. <ul style="list-style-type: none"> – Holding on – Keeping up – Innovating
Disengagement	The disengagement stage entails the realisation of the self-concept in non-occupational roles as the individual reduces work activities and plan for retirement. <ul style="list-style-type: none"> – Deceleration – Retirement planning – Retirement living

The Developmental Stages and Tasks in Super's (1990) Career Life Cycle (Watson & Stead, 2017). (continued)

Moreover, Super (1990) proposes that as individuals enter the major life stages, they reassess their careers and go through the substages, or mini-cycles, of exploration, establishment, maintenance, and disengagement. When an individual re-enters a substage in which he or she has been before, it is believed that he or she *recycles* through it. Schreuder and Coetzee (2016) note that the concept of recycling is particularly important in the context of the twenty-first century world of work, as people experience more frequent career changes and transitions and have to readjust to new situations.

2.2.2.2 Views on adaptability

Super (1990) introduces the concept of career maturity to express the state of readiness individuals need to reach in terms of self-concept development and defines it as the ability to master the complex tasks of career developmental stages, particularly during adolescence (Johnston, 2016). Eventually, career adaptability arises as a construct within the life-span. Life-span theory as the concept of career maturity does not capture adult career development appropriately. Super later proposed career adaptability as a construct to foster development as individuals cycle and recycle through the five stages over the life span (Hartung & Cadaret, 2018). Fundamentally, this wave of career theory links career adaptability with responding effectively to the developmental tasks associated with each stage in the life cycle; hence, adaptability entails different aspects depending on the stage an individual is facing.

2.2.2.3 Strengths and weaknesses of career development / life span development theories

Super's work progressed from a career theory exclusively focussing on career behaviour to a theory focusing on how such behaviour develops over time, along with the context in which development occurs (Brown & Lent, 2012). The developmental nature of career behaviour that arose within this wave has been a critical contribution to career theory as it represented the shift away from viewing career choice as a once-off event toward viewing it as an ongoing process (Watson & Stead, 2016).

This shift was appropriate for the post-industrial era of the mid-twentieth century and paved the way for a post-modern approach to view the self in multiple contexts (Hartung & Cadaret, 2018). The life span development theories opened the door to understand the rich complexity of a career over the life span by viewing it as an ongoing, evolving process of growth and change, setting the stage for the rise of the constructionist approach to career theory (Hartung & Cadaret, 2018).

However, recently, there has been a growing agreement among scholars that to fully understand career-related behaviour within the twenty-first century, career theories need to move beyond a segmental approach towards a comprehensive, dynamic, and integrative approach (Vondracek, Donald, Ford, & Porfeli, 2014). Moreover, Maree (2013) notes that in response to the changing world of work, a more proactive approach to career theory is needed to understand how individuals adapt to the work-related changes and challenges present in the twenty-first century.

2.2.3 Wave 3: Contemporary Career Theories

Building on the theories of the first and second wave and responding to the need for integration, contemporary career theories emerged in the early twenty-first century as the third wave of career theory. Nota and Rossier (2015) note that the central notion behind contemporary career theories is to respond better to the realities of the digital age in which individuals frequently find themselves feeling uncertain and uneasy in a world of work that offers little security and stability.

The main focus of this wave of career theory is the integration between life processes and understanding contemporary career challenges, such as the widespread use of information and communication technology, the rapidity of change, and the overall changing nature of work. The critical theories that represent the contemporary wave of career theory include Patton and

McMahon’s (2006) systems theory and Savickas’ (2009, 2013) career construction / life designing theory.

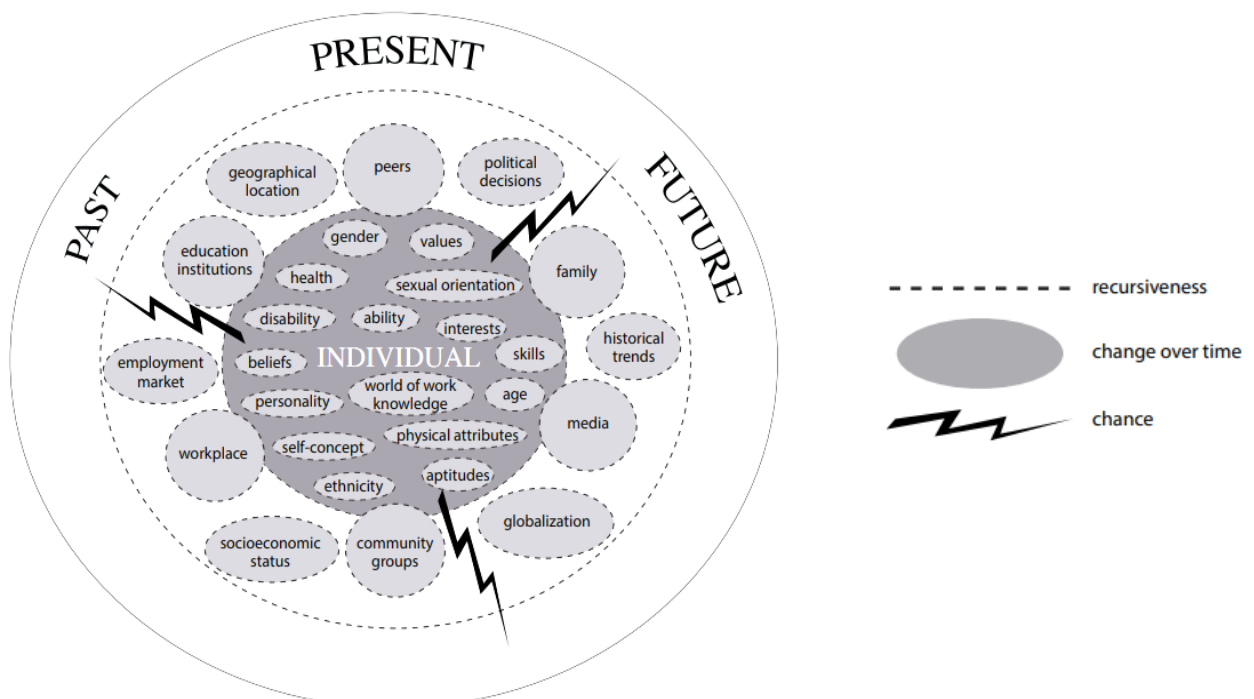
2.2.3.1 Patton and McMahon’s (2006) Systems Theory

Originally, Von Bertalanffy (1968) introduced systems thinking in 1968 and was the first to note that “single parts and processes cannot provide a complete picture to vital phenomena” (p. 64). Von Bertalanffy (1968, p. 64) defined a system as a “complex of elements standing in interaction” and particularly emphasised the concept of open systems as systems that interact and change according to their environment. Building on systems thinking and the fields of physics, biology, anthropology, and psychology, and recognising the contribution of all career theories, the systems theory framework (STF) emerged to provide a meta-theoretical framework on career behaviour (Patton & McMahon, 2017).

The STF describes the individual as an open system that constructs his or her own meaning in various contexts (Patton & McMahon, 2017). A key feature of the STF is its emphasis on interrelationships and the process of recursive interaction within and between its systems and subsystems (Patton & McMahon, 2018). Individual career behaviour is described by the STF as comprising various interrelated systems, including the individual’s intrapersonal system, social system, and broader environmental and societal system (refer to Figure 2.2).

Figure 2.2

The Systems Theory Framework (Patton & McMahon, 2018, p. 232).



The individual system comprises several intrapersonal contents, including gender, age, self-concept, interests, values, aptitudes, and skills (Patton & McMahon, 2018). The social system includes content influences such as peers, workplace, and educational settings (Patton & McMahon, 2018). The broader environmental-societal system influences include politics, history, globalisation, employment market and geographical location (Patton & McMahon, 2018).

The STF underpins various contemporary theories that acknowledge the context in which individuals construct their careers, including Savickas's (2005, 2013) career construction theory. Patton (2015) notes that the STF has established its ongoing significance as an integrative framework with the individual constructing his or her own meaning of career behaviour as a central focus. As such, the present study focuses on the STF as the foundation for an overarching, or meta-theoretical framework to understanding twenty-first century career behaviour and provides a lens through which to conceptualise constructs such as career adaptability and vocational identity can be described using specific theories. Moreover, doing so allows one to consider the various influences on career-related behaviours, such as an individual's intrapersonal aspects, including gender, which this study intended to do.

2.2.3.2 Savickas' (2005, 2013) career construction theory

In contemporary career theory, Savickas (2005, 2013) extends the theories of the first and second wave and describes individuals as holistic, self-directed, self-organising beings, capable of ascribing meaning to life by using work. As such, individuals construct their own reality and serve as active agents in developing their careers (Maree, 2012).

The main idea behind the career construction theory (CCT) is that as individuals navigate through life and make career choices to express their self-concept, a career unfolds, and a life story develops (Coetzee et al., 2016). Moreover, Savickas (2005; 2013) uses Holland's hexagon model of personality types and Super's stages of career development as social constructions and proposes career construction theory to serve as a metatheory for explaining four main areas of an individual's career story (Sharf, 2013). These four areas include life themes and vocational personality (identity), dimensions of career adaptability, and developmental tasks of career adaptability.

▪ Life themes and vocational personality (identity)

The concept of life themes serves as an important component within the CCT, as it provides a means to gain understanding into individual career behaviour. Savickas (2005, 2013)

introduced the concept of life themes as the product of an individual's life experiences that serves to guide individual career-related behaviour.

Savickas (2005, 2013) views the traits outlined in Holland's personality types as socially constructed attitudes, interests, abilities, and values that represent an individual's self-concept. These traits are used to explain why individuals engage in certain types of career behaviour and are used as a lens to understand the individual's career story and life themes (Coetzee et al., 2016).

▪ **Dimensions of career adaptability**

Building on the work of Super, Savickas (2005) presents the concept of career adaptability as a substitute for the concept of career maturity and describes it as an individual's ability to navigate the career decision-making process (Johnston, 2016). Later, Savickas (2005) grounds the concept of career adaptability in the career construction framework as a multi-dimensional construct that plays a central role in developing and integrating one's vocational self-concept.

Savickas (2005) defines career adaptability as "a psychosocial construct that denotes an individual's readiness and resources for coping with current and imminent vocational development tasks, occupational transitions, and personal traumas" (p. 51). As such, the concept of career adaptability consists of the attitudes, behaviours, and competencies that individuals use to make adjustments in the work environment, and serves as an indicator of how individuals deal with the developmental tasks and transitions facing them (Savickas, 2012). Savickas's (2005) conceptualisation of career adaptability was used as basis for this study.

From the career construction perspective, career adaptability consists of four psychosocial dimensions known as concern, control, curiosity, and confidence. These dimensions represent an individual's readiness to cope with current and anticipated work demands and to manage developmental tasks more effectively (Sharf, 2013). Each dimension incorporates a set of explicit attitudes, beliefs, competencies, and associated coping behaviours that allow individuals to master, negotiate and/or resolve career changes (Hartung & Cadaret, 2018). Each of these elements is discussed next.

a) Concern

Concern refers to the degree to which an individual is future-orientated and proactive in preparing for future career tasks and challenges. Concern refers to planning for one's future and becoming aware of the necessary preparation for

one's future career. In essence, career concern refers to looking forward and planning.

b) Control

Control refers to one's perceived responsibility to create preferable and alternative solutions and ideas regarding one's self and career-related decisions. Career control describes the extent to which individuals take personal responsibility with regard to shaping their development and career using self-discipline, effort, and determination.

c) Curiosity

Curiosity comprises exploring potential future selves and opportunities while considering the influence of various work roles and environments. Curiosity is initiated by one's interest to explore different career-related opportunities, situations and roles and requires an open attitude towards options, feedback and information. To adapt to changing environments, curiosity encourages individuals to explore alternatives to oneself and the environment.

d) Confidence

Confidence refers to an individual's belief that one is capable of transforming career goals into reality and conquering any obstacles successfully. Career confidence is revealed in the manner in which individuals deal with the stressors that they might come across during their career journey; for instance, unforeseen workplace adversities, transformations, or pressure to learn a new skill.

In the face of change, adaptable individuals are regarded as concerned about their future, take control in preparing for it, explore alternative options using curiosity, and pursue aspirations through confidence (Savickas & Porfeli, 2012). As a meta-competency for successful career construction and life design, career adaptability offers a conceptual and practical framework for assisting individuals in managing their careers in the dynamic contemporary world of work (Hartung & Cadaret, 2018). As such, Savickas's (2005) conceptualisation of career adaptability was used as basis for this study.

▪ **Developmental tasks of career adaptability**

Savickas (2005, 2013) views age-normed adulthood life stages (early, middle and late adulthood) and their related tasks or challenges as themes and preoccupations in an individual's career life story. Moreover, Savickas (2005, 2013) uses Super's theory of life stages as a framework and refers to the adult developmental stages as orientation, exploration,

establishment, management, and disengagement. Furthermore, Savickas (2005, 2013) describes these stages as mini-cycles of activities of career adaptability. Similar to Super, Savickas proposes that each of these career stages has a set of associated tasks, which entail a primary adaptive goal that, when achieved, builds a foundation for success and growth (Hartung, 2013). A discussion of the developmental stages and associated developmental tasks of career adaptability is presented in Table 2.2.

Table 2.3

Developmental Stages and Tasks of Career Adaptability (Savickas, 2013).

Stages	Tasks of Career Adaptability
Orientation	The orientation stage presents the career adaptability task of exploring one's interests, values, and beliefs while one acquires knowledge about occupations and the world of work.
Establishment	The establishment stage presents the career adaptability task of being concerned about advancing in one's work, feeling a sense of stability in one's job, comprehending the basic requirements of the job, and ultimately establishing oneself in one's chosen path.
Management	The management stage represents the career adaptability tasks of maintaining oneself in the job while gaining more knowledge about the job requirements, advancing one's performance and dealing with new technological advances.
Disengagement	The disengagement stage entails the career adaptability task of disengaging from one's current position.

It is expected that graduates in the early career stage are mainly preoccupied with the developmental tasks of the establishment phase. However, Savickas (2012) notes that the uncertainty associated with a contemporary career gives rise to other career tasks that may also be prominent throughout an individual's career, including concerns about employability, continuous learning, training and development of skills, adaptability to cope with more frequent change, and greater self-awareness.

2.3 RESEARCH DONE ON CAREER ADAPTABILITY

With the introduction of career construction theory, career adaptability has evolved into a fundamental construct for career success in the twenty-first century (Hartung & Cadaret, 2018). Over the past decade, research publications on the construct of career adaptability have received increasing attention. This section outlines some of the significant research findings on career adaptability.

2.3.1 Outcomes Associated with Career Adaptability

In existing research, the concept of career adaptability has been well established as a necessary resource for successful career development in the twenty-first century. Literature indicates that career adaptability is associated with various positive career-related outcomes, such as successful career transitions (Brown, Bimrose, Barnes, & Hughes, 2012), as well as reduced career anxiety and work stress (Johnston, 2016; Maggiori, Johnston, Krings, Massoudi, & Rossier, 2013). Career adaptability has also been associated with overall increased life and career satisfaction (Chan, Mai, Kuok, & Kong, 2016; Guan et al., 2015; Zacher, 2015), including work engagement and well-being (Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012).

Research regarding the relationship between career adaptability and career satisfaction (Chan et al., 2016; Guan et al., 2015; Zacher, 2015) suggests equally strong relationships between all four dimensions of career adaptability and career satisfaction. The findings from Chan et al. (2016) indicate that individuals with higher levels of career adaptability have healthier perceptions of their career progression and general career satisfaction. Moreover, Chan et al. (2016) found a particularly strong relationship between the concern dimension of career adaptability and career satisfaction. Research (Hirchi, 2012; Koen et al., 2012) also report a positive relationship between career adaptability and job satisfaction. These results may imply that as a critical individual resource, career adaptability can help individuals to manage their career development successfully, thereby also improving subjective career success (Savickas & Porfeli, 2012).

As career adaptability is generally regarded as one's readiness for adapting to change, researchers have also examined its effects on perceived job stress. Studies investigating the relationships between career adaptability and job stress indicate that individuals with increased levels of career adaptability report lower levels of perceived job stress (Johnston, 2016). Furthermore, researchers have also sought to investigate whether career adaptability could address the insecurity levels present in the ever-evolving twenty-first century world of work. Spurk, Kauffeld, Meinecke, and Ebner (2015) consider career adaptability as an important career competence to explain positive work and career-related outcomes in terms of reduced insecurity and therefore reduced perceived job stress. To test the assumption, Spurk et al. (2015) researched a group of academic researchers employed at German universities and found

that individuals who reported higher levels of career adaptability, also reported higher levels of job and career security.

Researchers have also found evidence for a particularly strong positive relationship between career adaptability and employability (Coetzee, Ferreira, & Potgieter, 2015; De Guzman & Choi, 2013; Ismail, 2017). A South African study conducted by Ismail (2017) investigated whether career adaptability promoted employability among graduates as a possible means to address the youth unemployment rate in South Africa. The results indicated that all four dimensions of career adaptability related to graduate employability, particularly the control dimension, as individuals with greater levels of career adaptability, reported improved confidence in their ability to obtain a job.

In a similar sense, Koen et al. (2012) conducted research to determine whether career adaptability may help graduates experience a more satisfactory entry into the labour market. To do this, Koen et al. (2012) conducted longitudinal, quasi-experimental research on university graduates from the Universities in the Netherlands. Comparing the development of the various career adaptability dimensions over three stages (pre-training measurement, post-training measurement, and follow-up measurement), the research found that participants who had received career adaptability training, reported greater levels of employment quality than did individuals who had not received career adaptability training.

Collectively, these findings support the notion of career adaptability as an essential resource for successful career management in the twenty-first century and highlight the importance of examining the possible predictors of career adaptability.

2.3.2 Predictors of Career Adaptability

In the past decade, numerous studies aimed to understand the predictors of career adaptability. Buyukgoze-Kavas (2015) examined positive psychological traits as possible predictors of career adaptability of emerging adults. The findings indicated moderate to strong correlations between the variables hope, resilience and optimism and career adaptability. Additionally, a study conducted by Coetzee et al. (2015) in South Africa among human resource professionals found that lifelong learning capacities, problem solving, and interactive skills significantly predicted career adaptability.

Savickas and Porfeli (2012) suggest that career adaptability is sensitive to context and various demographics. Research conducted on the influence of different demographic variables on career adaptability highlights that gender significantly predicts career adaptability.

2.3.3 Gender Differences Regarding Career Adaptability

Although research has documented that gender significantly predicts career adaptability, the findings are inconsistent. Various researchers have found that males display higher levels of career adaptability than females do (Chan et al., 2015; Han & Rojewski, 2015). It is argued that in traditionally male-dominated societies, males are likely to display higher levels of career adaptability owing to the beliefs that males advance faster in their careers than females do due to traditional gender roles. In contrast, various researchers have found that females display greater levels of career adaptability than their male counterparts do (Coetzee & Harry, 2015; Ferreira, 2012; Ndlovu, 2017). It can be argued that the reason behind females having higher levels of career adaptability may be due to the additional efforts that females have to make to invest in their careers to prepare for and participate in a male-dominated labour market (Skorikov & Vondracek, 2011). In addition, research has indicated that gender does not have a significant effect on career adaptability (Ferreira & Coetzee, 2016).

2.4 CHAPTER SUMMARY

Chapter 2 explored the development of career theory with a focus on the concept of career adaptability. Emphasis was placed on Patton and McMahon's (2006) systems theory and Savickas's (2009, 2013) career construction / life designing theory. For the purpose of the present study, career adaptability was conceptualised in the career construction framework as consisting of four psychosocial dimensions, known as concern, control, curiosity, and confidence, which represent an individual's readiness and resources for coping with career development tasks, transitions, and changes (Savickas, 2005).

The latter part of this chapter provided an overview of the significant research findings, including gender differences, with regard to career adaptability. The following chapter provides an in-depth discussion of the variable *vocational identity*.

CHAPTER 3: VOCATIONAL IDENTITY

3.1 INTRODUCTION

Vocational identity serves as another critical construct in career theory, which strives to explain career-related behaviour and may provide insight into how individuals navigate themselves in the uncertain contemporary world of work. Against the backdrop of the previous chapter, which elaborated on the theoretical background and progression of career theories with an emphasis on career adaptability, the current chapter focuses on vocational identity theory. More specifically, this chapter provides a discussion of the definitions, theories, and models surrounding the construct. Additionally, a review of documented research on the causes and outcomes of vocational identity is also presented, followed by an analysis of the connections between vocational identity and career adaptability.

3.2 THEORIES OF VOCATIONAL IDENTITY

Understanding identity phenomena is not an easy task, as they involve various complex concepts and processes. This section provides a discussion on the various theories of vocational identity.

3.2.1 Erikson's (1959) Theory of Psychosocial Development

Erikson (1959), who often is regarded as the father of identity, was one of the first theorists to introduce the concept of identity to describe how individuals typically think of themselves in relation to various roles.

Erikson (1950) identified eight stages of growth and development and conceptualised these stages along a bipolar continuum, with the one extreme signifying success and the other extreme signifying failure. Erikson (1950) claims that these stages occur over the life span towards the acquisition of ego identity, which is obtained by resolving the conflicts in each of these eight stages. Erikson's (1950) eight stages of growth and development are discussed briefly in Table 3.3.

Table 3.4*Erikson's Eight Stages of Development (Bergh, 2012).*

Psychosocial Crisis / Task	Successful Resolution	Failure to Resolve
Trust versus Mistrust	Because of satisfactory care, one develops feelings of mutuality and a sense of trust.	Mistrust is manifested in a sense of rejection, resulting in general mistrust and fear towards people and events.
Autonomy versus Shame and Doubt	With the maturation of physical functions, one develops a sense of self-control and adequacy, which fosters pride and autonomy.	Failure to develop autonomy results in feelings of shame and doubt, including feelings of inadequacy and a lack of assertiveness.
Initiative versus guilt	Initiative is learnt by sharing responsibilities and exploring the environment. The successful development of initiative results in the ability to self-initiate one's own activities.	Failure to develop initiative results in a sense of guilt and inadequacy to be one's own along with the inhibition of potential.
Industry versus Inferiority	Industry entails the development of a sense of learning, accomplishment and competency, including the ability to learn, understand, organise, and acquire the qualities of productivity.	Failure to develop a sense of industry results in a sense of inferiority manifested in an overall sense of helplessness and fear of success.
Identity versus Identity diffusion	The previous tasks lead to the development of overall identity in which the individual's starts to perceive him or herself as a unique and integrated person.	The inability to develop identity results in identity diffusion where the individual experiences confusion as to who he or she is.
Intimacy versus Isolation	As young adults share their identity, they develop affiliations and friendships with others. This is accompanied by the ability to make commitments to others.	A lack of intimacy creates a sense of isolation and the inability to form affectionate relationships.
Generativity versus Stagnation	As individuals proceed into adult life, they seek a sense of meaningful interaction in the social environment. This need is satisfied by involvement with one's family and society in general.	A lack of generativity results in pre-occupation and concern only for oneself.
Integrity versus Despair	When all the previous tasks have been resolved positively, the individual experiences a sense of integrity and fulfilment.	Despair is manifested by dissatisfaction with life and feelings of bitterness.

Although all stages are regarded as having significant implications for career development, the establishment of identity serves as a particular important task. This is indicated in the often-quoted statement of Erikson, 'In general, it is primarily the inability to settle a vocational identity which disturbs individuals' (Erikson, 1959, p. 92). Erikson's work inspired researchers in the field of developmental and career psychology and served as a productive avenue for research on vocational identity

3.2.2 Holland's (1973) Person-Environment Fit Theory of Personality Types

As stated previously, the main focus of person-environment fit theories was on identifying personality traits as a means to achieve an optimal fit between individuals and their work environments (Coetzee et al., 2016). In this sense, person-environment fit theories view the self as corresponding to personality (Di Fabio & Maree, 2013).

Holland (1973) serves as one of the first career theorists to conceptualise vocational identity. He includes the construct in his person-environment fit theory as a secondary explanation that supplements his assumption on matching individual characteristics to an environment. Moreover, one of the most widely used and accepted definitions of vocational identity is that of Holland (1996), who describes it as a clear and stable image of one's goals, interests, personality, and talents. As such, individuals with a well-developed vocational identity have a clearer understanding of their career goals, interests and abilities, which enhances the process of finding a suitable occupation (Holland, 1996). The current research uses Holland's (1996) definition of vocational identity as a one-dimensional construct tapping mainly into how much one is aware of his or her career goals, interests, and abilities owing to the fact that this definition serves as the basis for the works of other theorists, such as Super and Savickas, and that the intended measure is based on this definition.

The linear approach followed within Holland's (1973) person-environment fit theory serves to provide a connection between the self, or identity, and career behaviour; however it does not consider the role of context or the dynamic nature of vocational identity (Towsley, 2017). As such, career theory evolved to take on a more developmental approach, and the focus changed from viewing identity as static, to viewing identity as a dynamic, continuous process of development rather than the discovery of a fixed idea of the self (Towsley, 2017).

3.2.3 Super's (1990) Career Development Theory

Proposing a shift away from the individual differences perspective to a view based on change and growth over the lifespan, theorists started to regard the self as a subject, resulting in a shift from understanding the self in relation to personality, to understanding personhood as a self-concept (Coetzee et al., 2016).

Super (1990) defines self-concept as one's view of one's personal characteristics, including one's abilities, skills, and interests. Super (1992) proposes that the self-concept develops as one interacts with the environment, resulting in different views of oneself in certain roles. Super (1990) indicates that individuals occupy various roles over the course of their lives, including career, work, home and family, community, student and leisure roles, and that the particular life roles in which individuals function affect the construction of a vocational identity.

Moreover, Super (1992) conceptualises vocational identity as a collection of vocational behaviours that are expected at a specific stage of an individual's career development. In Super's model of career development, the early career, emerging adulthood phase represents a central formative period of the identity (Arnett, 2006).

The primary developmental tasks of the emerging adulthood phase include the crystallisation of the self-concept and identity development. Super (1992) notes that the crystallisation of the self-concept, and therefore the successful establishment of vocational identity, occurs as individuals interact with and seek information about themselves and their work environments. The product, vocational self-concept crystallisation, refers to achieving self-awareness of one's qualities, characteristics, values, motives, interests, and capabilities, along with how it plays out in one's career in successful preparation and participation in the world of work (Coetzee et al., 2016).

Owing to constantly shifting organisational structures and occupations becoming more blurred in the twenty-first century, individuals need to adjust, revise and renew their vocational identities constantly to remain relevant in the job marketplace (Coetzee et al., 2016). As such, identity development and adjustment remain lifelong tasks for adults.

3.2.4 Savickas's (2009) Career Construction Theory

Building on the work of Holland and Super, CCT proposes a shift from personhood to identity and views the self as a project for meaning making (Coetzee et al., 2016). Within CCT, the self is regarded as being under constant development as individuals' experience life and transform

life experiences into meanings (Coetzee et al., 2016). As such, vocational identity is described as a collection of self-descriptions that people ascribe to themselves as they interact with their work environments (Di Fabio & Maree, 2013).

Savickas (2005, 2013) describes the traits outlined in Holland's personality types as socially constructed attitudes, interests, abilities, and values that represent an individual's vocational identity. These traits are used to explain why individuals engage in certain types of career behaviour and as a lens to understand the individual's career-life story (Coetzee et al., 2016).

Additionally, similar to Super (1993), Savickas (2005, 2013) identifies forming a personally meaningful vocational identity as a key life task during the early career establishment phase. Although Savickas (2005, 2013) also notes that vocational identity is formed as individuals go through life experiences, identity development is regarded as a lifelong process that could assist individuals in coping with the uncertainties prompted by the twenty-first century world of work (Coetzee et al., 2016).

It is argued that individuals have to revise and adjust their identities constantly as they are confronted with a new set of demands inflicted by the fast-paced world of work today so as to integrate the new life experiences adaptively into the ongoing career life story (Coetzee et al., 2016). As such, it can be argued that individuals with well-developed vocational personalities are more likely to be aware of their own strengths and career preferences.

Building on Holland's (1996) definition of vocational identity, this study also utilises Savickas' (2005, 2013) career construction theory to conceptualise vocational identity as socially constructed attitudes, interests, abilities, and values, which is a lifelong process, and which can be used to explain why individuals engage in certain types of career behaviour.

3.3 MODELS OF VOCATIONAL IDENTITY

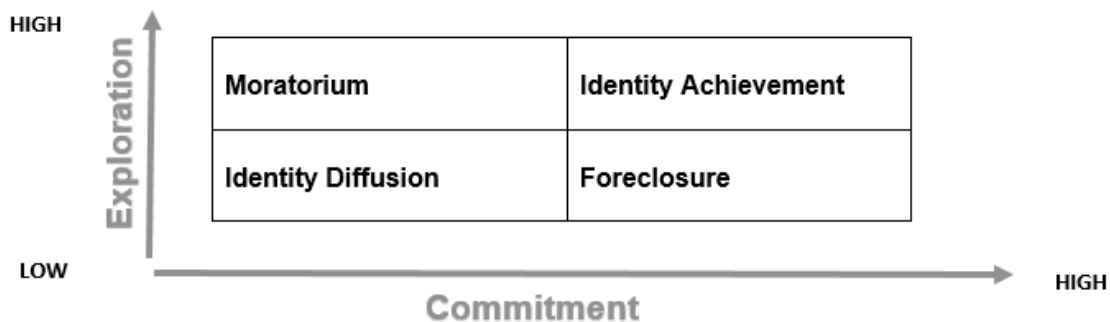
Erikson (1959) notes that there are various avenues in the pursuit of identity. Individuals generally begin with an underdeveloped identity, which grows stronger and becomes more established as they gain experience and become committed to specific beliefs and goals. The next section provides an overview of the models explaining the formation of vocational identity.

3.3.1 Marcia's (1996) Two-dimensional Model of Identity Statuses

Marcia (1996) conceptualised and operationalised Erikson's theory of identity development and introduced vocational identity statuses as a methodological means to investigate identity empirically. Marcia (1994) views identity as a consistent sense of one's meaning to oneself and others within a specific social context. That is, one's identity is how one views oneself as a product of and in relation to one's goals and values and the values of the individuals in one's environment. From this view, Marcia (1996) identifies two processes of identity formation known as exploration and commitment. Exploration refers to the scope of an individual's experimentation with alternative directions and beliefs, while commitment refers to choosing a path from various options (Marcia, 1996). As such, the successful formation of vocational identity (identity achievement) in the early career establishment stage requires individuals to move from a strong sense of exploration to stable commitment to their chosen paths.

Figure 3.1

The Two-Dimensional Model of Vocational Identity (Marcia, 1996, p. 29).



From the level of exploration and commitment, Marcia (1996) distinguishes four possible identity statuses, including identity achievement, moratorium, foreclosure, and identity diffusion (Figure 3.2). Next, these identity statuses are discussed briefly.

- **Identity Achievement**

This identity status is characterised by high exploration along with high commitment. This identity status represents an individual with a clear sense of commitment towards a specific identity after actively exploring various identities.

- **Moratorium**

Individuals with this identity status lack commitment but are extensively involved with exploring alternatives while actively battling with commitment.

- **Foreclosure**

The foreclosure identity status entails expressing commitment without any exploration. Individuals with this status usually assume an identity that their parents or someone of significance subscribe to them without exploring any options.

- **Identity Diffusion**

Individuals with this identity status may experience some degree of exploration, but lack the initiative to commit. This lack of commitment marks identity diffusion.

Marcia's two-dimensional model of identity statuses has been used frequently to describe the process of vocational identity development, and various empirical researches have adopted Marcia's (1996) model of vocational identity development among young adults. However, Marcia's work has been criticised that it oversimplifies identity development and focuses almost exclusively on a psychological perspective, thus neglecting the notion that development occurs because of the interplay between sociological, historical, and psychological factors (Vondracek, 1992).

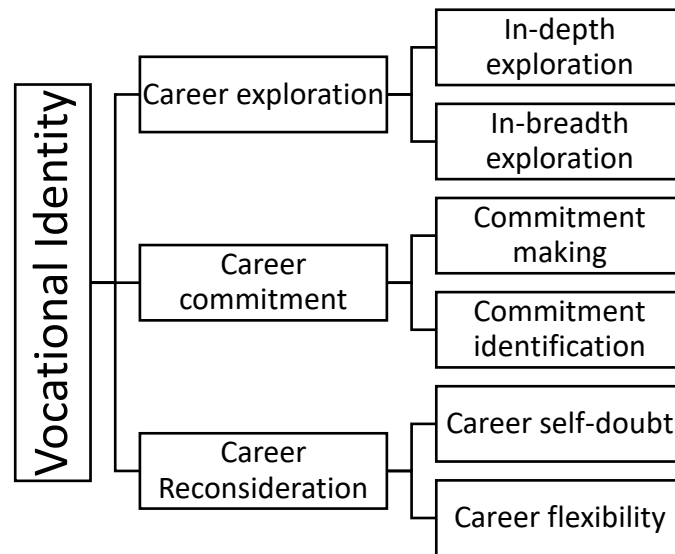
3.3.2 The Six Process Model of Vocational Identity Formation

Based on Marcia's (1996) two-dimensional model of identity development, Porfeli, Lee, Vondracek, and Weigold (2011) propose three dimensions of vocational identity development, including career exploration, career commitment, and career reconsideration, along with two sub dimensions or processes for each.

As depicted in Figure 3.3, there are two sub dimensions for career exploration known as in-depth career exploration and in-breadth career exploration. There are two sub dimensions for career commitment known as commitment making and commitment identification. There are two sub dimensions for career reconsideration known as career self-doubt and career flexibility (Porfeli et al., 2011). These sub dimensions are discussed next.

Figure 3.2

The Six Process Model of Vocational Identity Formation (Porfeli et al., 2011, p. 861).



- **In-depth exploration**
In-depth exploration refers to in-depth inquiry into one's perceptions of the self and career goals and ultimately integrating the two. That is, a specific career choice is explored.
- **In-breadth exploration**
In-breadth exploration entails acquiring a broad knowledge base about the world of work as well as the self by means of experimenting with various career opportunities.
- **Commitment making**
Commitment making describes one's level of certainty regarding a career choice and commitment towards it.
- **Commitment identification**
Commitment identification denotes to the degree to which an individual identifies with the occupation to which he or she is committed; that is the degree of identification with a specific career choice.

- **Career self-doubt**

Career self-doubt entails a potential negative outcome of the commitment process, characterised by feelings of doubt, uneasiness, and concern regarding one’s career choice.

- **Career Flexibility**

Career flexibility refers to the active process of considering career alternatives and recognising that it is possible to change one’s career choice, interests, and values in the future as a result of learning and experience.

From the dimensions and sub dimensions, Porfeli et al. (2011) identifies six identity statuses, as presented in figure 3.3.

Figure 3.3

Six Identity Statuses (Porfeli et al., 2011, p. 862).

Vocational Identity Achievement	• High exploration and high commitment.
Vocational Identity Foreclosure	• Low exploration and high commitment.
Vocational Identity Moratorium	• High exploration and low commitment.
Vocational Identity Diffusion	• Low exploration and low commitment.
Vocational Identity Searching Moratorium	• Moderate levels of career exploration and commitment along with high reconsideration.
Vocational Identity Undifferentiated	• Moderate levels of exploration, commitment and reconsideration.

Although an understanding of identity processes serves as important in comprehending identity phenomenon, this research project views vocational identity as a one-dimensional construct tapping primarily on how much one is aware of his or her career goals, interests, and abilities (Holland, 1996).

3.4 RESEARCH DONE ON VOCATIONAL IDENTITY

Numerous scholars have recognised the influential role of vocational identity in the process of career development. Moreover, existing research has demonstrated vocational identity as a predictor of a wide variety of positive career-related outcomes, especially among individuals in the early career stage. Graduates in the early career stage face the beginning of the transition to the working world, which requires various coping and adaptability skills (Ismail, 2017). Fernandez, Fouquereau, and Heppner (2008) note that the successful transition from university to work requires a reorientation of one's career goals, attitudes, identity, and behaviours from that of a student to that of a worker. Ismail (2017) claims that a clear sense of vocational identity may serve as a guide during career transitions and in identifying career opportunities. Moreover, Savickas (2012) states that vocational identity represents a key driver of employability by acting like a cognitive compass that encourages one to adapt actively and revises the identity narrative so as to realise and create opportunities that match one's career objectives.

The following section outlines some of the research findings on vocational identity with a specific focus on vocational identity among graduates in the early career stage, as well as its relationship with career adaptability.

3.4.1 Outcomes Associated with Vocational Identity

Various research findings support the notion that higher levels of vocational identity relate to several positive career-related outcomes, such as higher levels of career decision self-efficacy as well as engagement with career exploration tasks (Baglama, 2017), less negative thinking (Galles & Lenz, 2013) and overall satisfaction and psychological well-being outcomes (Strauser, Lustig, & Ciftci, 2008).

More specifically, Meeus, Iedema, Helsen, and Vollebergh (1999) established that stronger levels of vocational identity are related to enhanced adjustment, self-esteem, and overall life satisfaction. Likewise, a more recent study conducted by Nazar and Van der Heijden (2012) found that vocational identity facilitates individual career engagement and adjustment.

Also, a recent study conducted by Haibo, Guan, Zheng, and Zhijin (2017) investigating the relationship between career adaptability and individual career success with the moderating role of vocational identity, found that career adaptability correlated positively with career satisfaction. In addition, the positive relationship between career adaptability and career

satisfaction was greater for individuals with higher levels of vocational identity. As such, it is reasoned that career adaptability and vocational identity serve as critical resources in facilitating career success.

3.4.2 The Relationship between Vocational Identity and Career Adaptability

According to CCT, career adaptability and vocational identity are two critical meta-competencies for career development in the twenty-first century (Savickas, 2002). Combined, these to meta-competencies serve to provide individuals with a sense of when it is time to change and whether they are capable of change (Haibo et al., 2017). CCT theory also proposes that vocational identity provides direction for individual careers and assist in developing career adaptability (Ebenehi et al., 2016). In this sense, vocational identity is regarded as supporting the forming of successful career adaptability, and successful career adaptability contributes to vocational identity (Ebenehi et al., 2016; Hirschi & Valero, 2015; Savickas & Porfeli, 2012).

Savickas and Porfeli's (2012) research has proven that vocational identity strongly correlates with career adaptability. Similarly, Negru-Subtirica, Pop, and Crocetti (2015) conducted a longitudinal study to analyse the connections between vocational identity and career adaptability and found that vocational identity was closely related to the development of career adaptability – having a clear sense of one's goals, interests, and values results in a vocational commitment that predicts career adaptability in time (Negru-Subtirica et al., 2015). In essence, they found that having a sense of vocational identity leads to higher levels of commitment and reduces levels of self-doubt, which in turn benefits career adaptability dramatically. Thus, it may be assumed that a clear picture regarding one's goals, interests, and abilities will enable one to better manage current and anticipated career adjustments and integrate one's self-concept with the working role.

3.5 CHAPTER SUMMARY

Chapter 3 included a discussion on vocational identity, including the theories and models surrounding the construct. Drawing on the works of Holland (1996) and Savickas (2005, 2013), vocational identity was conceptualised as a one-dimensional construct referring to an individual's level of clarity regarding his or her goals, interests and abilities which explains why individuals engage in certain types of behaviour.

Additionally, this chapter provided an overview of documented research highlighting the positive career-related outcomes and possible predictors of vocational identity. The following

chapter provides an in-depth discussion on mindfulness as a possible means to cultivate career adaptability and vocational identity.

CHAPTER 4: MINDFULNESS

4.1 INTRODUCTION

This chapter includes a discussion of the various definitions, theories, and models of mindfulness. Moreover, the documented outcomes of mindfulness in a career context are presented, followed by an exploration of the relationship between mindfulness, career adaptability, and vocational identity as alluded to in the conceptual model in Chapter 1.

4.2 DELINEATING MINDFULNESS

Initially, mindfulness found its roots in the Buddhist tradition, which refers to the concept over 2500 years ago (Black, 2011). The term *mindfulness* comes from the Pali language “Sati”, meaning awareness or the presence of mind (Brown, Ryan, & Creswell, 2007). At first, many scholars thought of mindfulness as esoteric, attached to religious beliefs and a capacity achievable only by specific individuals (Black, 2011). However, over the past two decades, the concept of mindfulness has received increased attention in Western science. A number of scientific investigations on mindfulness have led scholars today to view mindfulness as an inherent quality of human consciousness that varies within and between individuals and is independent of religious beliefs (Black, 2011).

Since its appearance in Western psychological research, several contemporary definitions of mindfulness arose. A classical and widely used definition of mindfulness is that of Kabat-Zinn (1994, 2003) who describes mindfulness as a state of being in which one is nonjudgmentally aware of one’s thoughts, emotions, bodily sensations, and external stimuli, together with the characteristics of openness, acceptance, and curiosity. Similarly, Brown and Ryan (2003) define mindfulness as a dynamic, trait-like state of attention to and awareness of present-moment events. Brown et al. (2007) describe mindfulness as the ability to be fully aware, from moment to moment, of all interpersonal experiences including body, mind, people, the environment, and events. Relating to the systems theory framework (Patton & McMahon, 2006), discussed in Chapter 2, mindfulness can be regarded as a means and open system for the individual to be more fully aware of the various interrelated systems, such as the mind, environment, and events that affect career behaviour.

Although literature presents varying definitions of mindfulness, most definitions provided correspond with each other in one way or another, with common themes across the multiple

conceptualisations (Williams & Kabat-Zinn, 2011). The main themes that arise from these definitions include attention, awareness and openness towards the present moment. The divergent counterpart of mindfulness is mindlessness, in which one's attention and awareness are strewn due to fixating on past memories or future worries (Black, 2011). According to Littman-Ovadia, Zilcha-Mano, and Langer (2013), mindlessness occurs when an individual is stuck in patterns of behaviour that result in inattentiveness to context and perspective.

For the purpose of this study, emphasis will be placed on Brown and Ryan's (2003) definition of mindfulness as a dynamically changing state that entails attention to and awareness of present events and experiences. The reason is that it links well with the measurement used to measure mindfulness as a one-dimensional construct signifying the presence or absence of present-moment awareness.

4.3 THEORIES AND MODELS OF MINDFULNESS

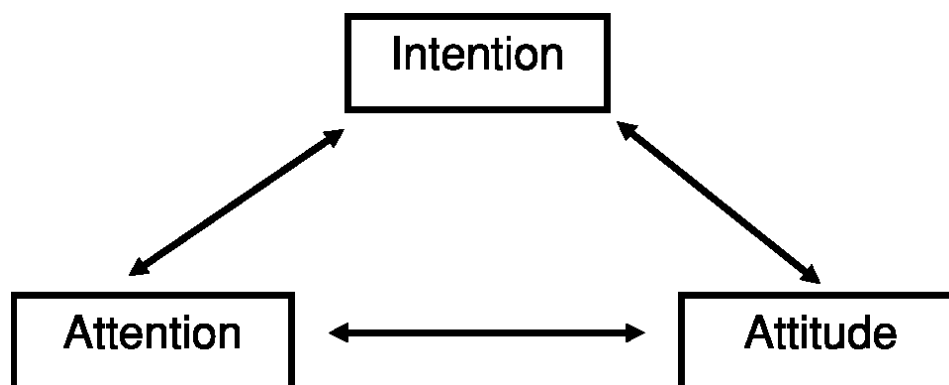
Since its conception in Western psychological research, scholars have striven to document and explain the mechanisms of mindfulness. The various models of mindfulness are discussed next.

4.4.1 The Axiom Model of Mindfulness (Shapiro, Carlson, Astin & Freedman, 2006)

Based on Kabat-Zinn's (1994) definition of mindfulness, Shapiro, Carlson, Astin, and Freedman (2006) propose a three-axiom model to explain the mechanisms and processes of mindfulness (depicted in Figure 4.1). According to Shapiro et al. (2006), the three axioms that underlie the concept of mindfulness are intention, attention and attitude, which are discussed next.

Figure 4.1

Conceptual Outline of The Axiom Model (Shapiro et al., 2006, p. 375).



- **Intention:**
Intention refers to one's personal vision of what one wishes to achieve by being mindful. As stated by Kabat-Zinn (1994), one's intention sets the stage for what is possible and serves as a reminder of what we believe is most important (Shapiro et al., 2006). Generally, Intention refers to knowing what it is that one is doing, and why one is doing it.
- **Attention:**
Attention entails directing one's focus of awareness using sustained attention, attention switching and cognitive inhibition (Shapiro et al., 2006). This component refers to the present moment awareness, which is essential if one wants to see things clearly.
- **Attitude:**
Attitude refers to the qualities of attention and is the affective and evaluative component directed towards a certain object or activity (Shapiro et al., 2006). Thus, attitude refers to how one is paying attention.

Shapiro et al. (2006) state that 'intentionally attending with openness and non-judgmentalness results in a significant shift in perspective known as *reperceiving*' (p. 377). *Reperceiving* entails becoming aware of the content of consciousness by adopting an observer perspective (Shapiro et al., 2006). They further stipulate that *reperceiving* results in improved self-regulation, values clarification, cognitive, emotional, and behavioural flexibility, as well as a situation of exposure (Shapiro et al., 2006).

Self-regulation improves, as *reperceiving* allows one to observe the contents of consciousness, which in turn allows one to become more aware of one's internal reactions that may have directed one's behaviour previously. In turn, being aware of one's internal reactions serves as information that the individual can use to decide how to respond to a situation instead of reacting to it habitually (Shapiro et al., 2006). Indeed, Brown and Ryan (2003) found that participants who scored higher on mindfulness, subsequently reported higher levels of self-regulation. Clarification of values improves, as individuals are better aware of the contents of their mental arena that direct their values and behaviours.

Moreover, cognitive, emotional, and behavioural flexibility rises from the ability to disidentify from previous patterns and beliefs and thus see a situation more clearly (Shapiro et al., 2006). It is proposed that in the process of *reperceiving* and disidentifying with mental events,

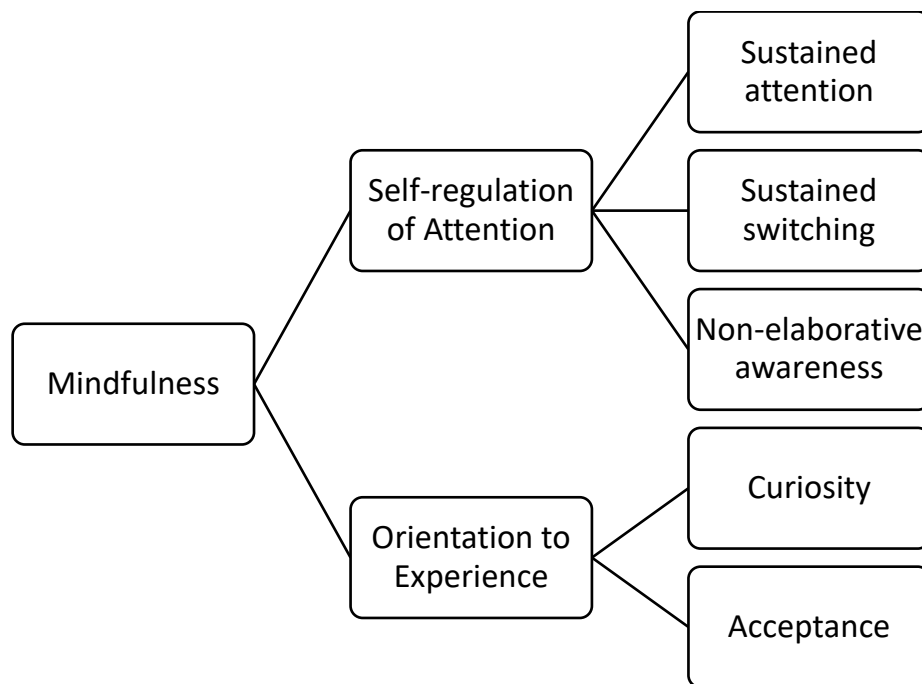
individuals come to realise awareness as separate from mental events, which allows for more adaptive responding that is suitable in the present moment (Shapiro et al., 2006).

4.4.2 The Two-component Model of Mindfulness (Bishop *et al.*, 2004)

Bishop et al. (2004) developed a two-component model of mindfulness. As depicted in Figure 4.2, the first component involves the self-regulation of attention to the present moment experience, and the second component refers to one's orientation toward the present moment experience. These components are discussed next.

Figure 4.2

Conceptual Outline of The Two-Component Model of Mindfulness (Bishop et al., 2004, p. 233).



▪ **Self-regulation of attention:**

Since mindfulness involves awareness of the present-moment experience, one regulates the focus of one's attention to the thoughts, feelings and sensations from moment-to-moment (Bishop et al., 2004). The model further proposes that the self-regulation of attention improves one's sustained attention, attention switching, and non-elaborative awareness.

According to Bishop et al. (2004), sustained attention refers to the ability to maintain a state of awareness over a period. Attention switching describes the ability to adjust one's focus of attention intentionally in response to a change in needs (Wimmer, Bellingrath, & Von

Stockhausen, 2016). Thus, attention switching involves flexible attention that can move from one object to another.

Bishop et al. (2004) also assert that the regulation of attention promotes a non-elaborative awareness of one's thoughts, feelings, and sensations as they arise; that is, the ability to prevent responding to events automatically.

▪ **Orientation to Experience:**

Bishop et al. (2004) propose that in a state of mindfulness, one should maintain an orientation of curiosity regarding the present-moment experience, which in turn allows for acceptance of the present-moment experience. Thus, mindfulness can be regarded as a process of connecting openly with one's own experiences.

For the purpose of the proposed research, the focus will be placed on Shapiro et al.'s (2006) axiom model of mindfulness, which focuses on the components of intention, attention, and attitude to explain the mechanisms of mindfulness. It correlates well with Brown and Ryan's (2003) definition of mindfulness, which focusses on attention and awareness of the present-moment experience.

4.4 RESEARCH DONE ON MINDFULNESS

Over the past few decades, the concept of mindfulness has made a robust occurrence in psychological research. Various authors have suggested the usefulness of mindfulness in promoting healthy career development (Galles, 2013). This section outlines the significant research findings on mindfulness in a career context.

4.4.1 Outcomes Associated with Mindfulness

Previous research has related mindfulness empirically to various positive career-related outcomes such as stress resilience; increased cognitive, psychological and behavioural flexibility (Hayes, 2004); increased problem-solving and decision-making abilities, and overall career success and satisfaction (Felsman et al., 2017; Jacobs & Blustein, 2008; Weinstein & Ryan, 2011).

In the cognitive domain, research has found consistently that mindfulness significantly influences brain activity, more specifically the area of the brain responsible for critical functional abilities such as learning, memory, affective processing, regulation of emotion, forming perspective, and facilitating adaptive responses (Hyland, Lee, & Mills, 2015). Jha,

Stanley, Kiyonaga, Wong, and Gelfand (2010) found that mindfulness increased focused attention and improved working memory capacity. Similarly, Anicha, Ode, Moeller, and Robinson (2012) found that mindfulness is related positively to enhanced perceptual abilities in working memory and cognitive control flexibility. It can be argued that since mindfulness allows direct contact with events as they occur, without any judgement, one's consciousness takes on clarity and freshness that allow more flexible, objectively informed behavioural responses (Brown et al., 2007).

More specifically, mindfulness has been found to lead to reduced tendencies to ponder on negative thoughts and feelings, along with better ability to solve problems and a greater sense of focus amid adversity (Siegel, 2010). These findings suggest that mindfulness has the potential to reduce insecurity levels and increase an individual's ability to be more fully in the present moment; therefore, being better prepared to deal with difficult situations as they arise. Grover, Theo, and Roche (2017) explain that individuals with greater levels of mindfulness are better able to focus on their immediate job demands and screen out irrelevant job demands, thereby utilising career resources more effectively.

In turn, mindfulness has also been associated with enhanced decision making in such a way that individuals are more likely to understand the value of information for current circumstances and interpret unexpected results rather than dismiss them (Fiol & O'Connor, 2003). Likewise, Zhang (2011) found that individuals with higher levels of mindfulness have less career decision-making difficulties arising from emotional concerns. Mindfulness has also been associated with increased job satisfaction and success, including more significant levels of work engagement (Leroy, Anseel, Dimitrova, & Sels, 2013), and enhanced productivity. These findings suggest that mindfulness could be incorporated with more holistic career management practices to help reduce anxiety and negative thoughts, while increasing self-clarity, flexibility, and problem-solving skills.

4.4.2 Mindfulness and Career Adaptability

The changing nature of work has encouraged interest in mindfulness as a possible answer to the stress and anxiety associated with employment uncertainty (Jacobs & Blustein, 2008). Although no research has been done on the associations between mindfulness and career adaptability, it is expected that mindfulness correlates with career adaptability and may allow individuals to deal with and adjust to the challenges of the constantly changing world of work positively.

Mindfulness allows sustained attention and direct contact with events as they occur, without any judgement, and one's consciousness takes on a clarity that allow for more flexible, objectively informed behavioural responses (Brown et al., 2007). In turn, this may support the concern element of career adaptability, as it allows individuals to notice changes in the environment and prepare better for the future.

Relating to the control element of career adaptability, mindfulness is believed to lead individuals in being more openly aware of themselves in various situations, resulting in behaviour that is more purposeful and taking responsibility for one's career (Brown et al., 2007). Mindfulness may also stimulate the curiosity dimension of career adaptability, as mindfulness allows better sensitivity to one's environment, increased openness to new information and greater awareness of various perspectives in problem solving (Langer & Moldoveanu, 2000). In view of this, it is expected that mindfulness may complement the curiosity element of career adaptability as individuals adopt an open attitude towards career options and information.

Research done by Weinstein, Brown, and Ryan (2009) established associations between mindfulness and more adaptive coping, signifying that mindfulness might decrease repressive coping behaviours. Therefore, it is expected that mindfulness complements the confidence element of career adaptability, as it enables the individual to deal more effectively with the stressors and transitions in the career journey. In essence, it is expected that mindfulness correlates positively with career adaptability, as it allows one to be more aware of one's current situation and subsequently manage one's career better.

4.3.3 Mindfulness and Vocational Identity

Literature on mindfulness points to its ability to increase an individual's ability to be more fully in the present moment, which may have relevance to a person's self-clarity, or vocational identity. Kabat-Zinn (1994) elaborates on the ability of mindfulness to bring about a view "that lies close to the core of who you believe yourself to be, what you value in life, and where you see yourself going" (p. 76). Similarly, Shapiro et al. (2006) elaborate on mindfulness as a means to clarify one's values and recognise what is meaningful and important.

A number of research findings suggest that mindfulness may be useful for boosting individual clarity of self-knowledge. For instance, Santorelli (1992) conducted a mixed-method case study analysis with the aim to explore the effects of mindfulness training on individual self-perception. Mindfulness has also been proven to facilitate the forming of identity. For example,

Galles et al. (2018) conducted a study on undergraduates at a university in the United States and found that increased levels of mindfulness were associated significantly with higher levels of vocational identity.

4.6 CHAPTER SUMMARY

This chapter elaborated on the various definitions, theories, and models of mindfulness. For the purpose of the present study, mindfulness was conceptualised using Brown and Ryan's (2003) definition of mindfulness as a one-dimensional construct referring to one's attention to and awareness of present events and experiences. This chapter concluded with a discussion on the documented outcomes of mindfulness in a career context and proposed possible connections between mindfulness and career adaptability. The following chapter provides an outline of the research methodology used in this study.

CHAPTER 5: RESEARCH METHODOLOGY

5.1 INTRODUCTION

The purpose of this study was to investigate the empirical relationship dynamics between mindfulness, vocational identity, and career adaptability among graduates in the early career stage. Additionally, this study also aimed to determine whether gender differences exist with regard to the level of career adaptability. The current chapter provides an overview of the research design, including an overview of the measures taken to ensure the study is conducted ethically, as well as a description of the participants and sampling method. Furthermore, this chapter outlines the data-collection and -analysis procedures adopted for the purposes of this study.

5.2 RESEARCH STRATEGY AND DESIGN

Maree (2012) notes that a correlational research strategy allows one to explore the association between variables without manipulating the variables (Goodwin, 2010). As such, this study followed a correlational research strategy to investigate the dynamic relationships between mindfulness, vocational identity, and career adaptability.

More specifically, a non-experimental, quantitative survey research design was used to obtain data on the constructs under investigation along with relevant biographical information. According to Babbie and Mouton (2015), survey research is ideal for collecting original data in the same form from all respondents using carefully constructed standardised questionnaires.

Electronic self-administered questionnaires were used to gather information from the participants. The use of self-administered questionnaires was suitable for the proposed research, as the respondents were graduates, and it could be assumed that they were literate and would be able to complete the questionnaires without additional assistance. The advantages associated with the use of self-administered questionnaires include that it is inexpensive and quick to collect data with little staff needed (Babbie & Mouton, 2015). However, a disadvantage of electronic surveys is the low response rate associated with this method of data collection. To address this drawback and to increase participation, several follow-up e-mails were sent as additional encouragement to participate in the study.

5.3 ETHICAL CONSIDERATIONS

The information that follows covers the measures taken in accordance with the ethical and legal guidelines provided by the HPCSA (2006) and APA (2010) to ensure that the research was conducted ethically. To comply with the ethical requirements, the following procedures were adhered to during the research:

- Before conducting this research study, approval of the Department of Industrial and Organisational Psychology, as well as the Ethics Committee of the University of the Free State was obtained (ethical clearance number: UFS-HSD2018/1356).
- Informed consent, including information on the researcher, the purpose of the study, the potential benefits of the study, confidentiality, time required to participate in the study, voluntary participation, the use of information gathered, and the researcher's contact information, was obtained from all participants before gathering data.
- Participation in this study was voluntary.
- All data gathered were treated confidentially.
- The researcher will keep the original data for five years. The data will be stored and kept safe on a password protected cloud system.
- All sources used were referenced explicitly.

5.4 PARTICIPANTS AND SAMPLING

The target group of this study constituted graduates in the early career stage who had completed, or were in the process of completing some form of tertiary education at the University of the Free State. A non-probability convenience sampling technique was used to select and recruit participants for the study. Babbie and Mouton (2015) refer to non-probability sampling as a sampling technique in which participants of a study do not have a specifiable probability of being selected to participate in a study. Drawbacks of this type of sampling are that the sample may not be representative of the population, and the ability to generalise findings is very limited (Babbie & Mouton, 2015). Convenience sampling, which is a non-probability sampling technique, refers to a sampling procedure in which the researcher selects any participants based on their availability and willingness to participate in the study (Babbie & Mouton, 2015).

Maree and Petersen (2007) assert that the sample size of research is determined largely by the type of statistical tests used. In this case, structural equation modelling was used to examine

the associations between the proposed variables. Although the determination of the appropriate sample size is essential, there is no consensus in the literature regarding the appropriate sample size for structural equation modelling (Maree & Petersen, 2007). Generally, a sample size ranging between 100 and 150 is considered the minimum sample size for conducting structural equation modelling (Wolf, Harrington, Clark, & Miller, 2013), while other researchers consider an even larger sample size of 200 appropriate for structural equation modelling. The current sample consisted of a total of 200 participants after 13 participants had been eliminated from the data set because they did not meet the requirements of the definition of being a graduate in the early career stage.

5.5 DATA COLLECTION AND DOCUMENTATION

Once permission had been obtained to gather data via the University of the Free State, the Department of Communication and Marketing distributed an electronic invitation and survey link to the survey to all graduates via Blackboard and email communication on behalf of the researcher. To gather data, three questionnaires, including the Career Adapt-Abilities Scale (CAAS), Mindfulness Attention Awareness Scale (MAAS), and the Vocational Identity Measure (VIM), along with a biographical questionnaire, were administered to the participants via EvaSys, which is an online survey tool.

5.5.1 Career Adapt-Abilities Scale – South African Form (CAAS-SA)

The next section includes a discussion on the nature and composition, validity and reliability, as well as rationale for inclusion of the CAAS South African Form (Maree, 2012).

5.5.1.1 Nature and Composition

The Career Adapt-Abilities Scale – South African Form is a multifactorial, self-rating measure consisting of twenty-four items that generate a total score indicating career adaptability (Savickas & Porfeli, 2012). Additionally, the CAAS represents four subscales, each with six items that measure concern, control, curiosity, and confidence as psychosocial resources for dealing with occupational adjustments, developmental tasks, and work traumas (Maree, 2012). A five-point Likert type scale ranging from one (not strong) to five (strongest) is used for subject responses to each of the items.

5.5.1.2 Reliability and Validity

Savickas and Porfeli (2012) claim that the CAAS-International scale has demonstrated an overall reliability score of .92. On the other hand, the subscales revealed slightly lower but still acceptable reliability scores (Savickas & Porfeli, 2012).

Maree (2012) investigated the psychometric properties of the CAAS – South Africa and found slightly lower, though still acceptable, reliability scores. Maree (2012) reports a total reliability score of 0.91, which is also slightly higher than the reliability scores of the subscale scores. Additionally, in comparing the CAAS – South Africa with the CAAS International, Maree (2012) found the psychometric properties to be very similar. Moreover, confirmatory factor analysis conducted by Maree (2012) demonstrated that the data for the CAAS – South Africa were suitable for the theoretical model. Maree's (2012) research indicated an RMSEA value of 0.046 and an SRMR value of 0.048. Both of these scores indicate that the CAAS – South Africa is a valid scale, as they fall within the fit criteria laid down by Hu and Bentler (1999). Another study conducted in South Africa by Coetzee et al.(2015) reported an overall reliability coefficient of 0.94 for the overall scale with slightly lower, though still acceptable, reliability scores for the subscales.

The findings mentioned above indicate that the CAAS – South-Africa has acceptable reliability and can be considered as trustworthy and consistent. As such, the CAAS – South-Africa was chosen for inclusion in this study, as it had been adopted numerously and proven to be valid and reliable in the South African context. Additionally, the measure is based on the chosen career construction model, which outlines career adaptability as consisting of four dimensions (concern, control, curiosity, and confidence).

5.5.2 Mindfulness Attention Awareness Scale

The following section includes a discussion on the nature and composition, validity and reliability, as well as rationale for inclusion of the Mindfulness Attention Awareness Scale (MAAS).

5.5.2.1 Nature and Composition

For the purpose of this study, the MAAS (Brown & Ryan, 2003) was used. The MAAS is considered a one-dimensional measure consisting of fifteen items that take on an indirect approach to measure mindfulness as the presence or absence of present-moment awareness (Osman, Lamis, Bagge, Freedenthal, & Barnes, 2015). The items require participants to rate

how frequently or infrequently they experience mindfulness in terms of a six-point Likert scale ranging from one (almost always) to six (almost never). As a one-dimensional measure, the items come together to reflect an “absence of mindfulness” (Brown et al., 2009, p. 728). In interpreting the MAAS, lower scores indicate higher levels of mindfulness. Scoring the MAAS involves calculating the participants’ mean responses across the fifteen items (Brown & Ryan, 2003).

5.5.2.2 Reliability and Validity

Brown and Ryan (2003) determined the internal consistency value (Cronbach’s Alpha) for the MAAS to be 0.82. Additionally, Brown and Ryan (2003) determined the test-retest reliability for the MAAS to be 0.82, indicating acceptable reliability. Additionally, Brown and Ryan (2003) established convergent validity for the MAAS with related measures; for instance, they found that the MAAS correlated positively with well-being. Similarly, a South African study by Kotze and Nel (2016) also found an acceptable reliability estimate of 0.89 for the MAAS. Moreover, to confirm the one-dimensionality of the MAAS, Osman et al. (2015) conducted confirmatory factor analyses, which respectively provided support for the one-dimensional model.

Additionally, Kotze and Nel (2016) found that the MAAS moderately correlates with the Freiburg Mindfulness Inventory (FMI), which further serves as an indication of the convergent validity of the MAAS. Kotze and Nel (2016) also established that the MAAS indicates an acceptable one-dimensional model fit with an RMSEA value of 0.065, a CFI value of 0.97, and an SRMR value of 0.054, which all meet the criteria proposed by Hu and Bentler (1999).

The MAAS was used for the purpose of this study, as it has a long empirical record of accomplishment as a valid and reliable measure of the trait mindfulness. Moreover, the MAAS is also applicable to all individuals with or without prior knowledge or experience of mindfulness.

5.5.3 Vocational Identity Measure (VIM)

The following section includes a discussion on the nature and composition, validity and reliability, as well as rationale for inclusion of the Vocational Identity Measure (VIM).

5.5.3.1 Nature and Composition

The VIM is a one-dimensional measure that seeks to measure how aware individuals are of their stable career goals, interests, and abilities (Gupta et al., 2015). The VIM consists of 23 items, of which two items are worded negatively. The response options are presented on a five-point Likert scale where one indicates ‘strongly disagree’ and five indicates ‘strongly agree’ (Gupta et al., 2015).

5.5.3.2 Reliability and Validity

Gupta et al. (2015) report that the VIM produced a reliability result of $\alpha = 0.97$. Therefore, it can be concluded that the VIM demonstrates strong internal reliability. According to Gupta et al. (2015), the VIM indicates a strong single factor structure, which supports the notion that it is a one-dimensional construct.

Furthermore, Gupta et al. (2015) state that the VIM demonstrates convergent validity with relevant constructs such as career decision self-efficacy and exploration. More specifically, Gupta et al. (2015) report that the VIM positively correlates with Holland’s MVS ($r = .72$), indicating discriminant validity. Furthermore, Gupta et al. (2015) report sufficient incremental validity for the VIM over the MVS in predicting the respondent’s career decision making. As this is a relatively new measure, little additional information is available on its reliability.

The VIM was chosen above Holland, Gottfredson, and Power’s (1980) My Vocational Situation (MVS) vocational identity subscale, because it adopts a Likert-type scale instead of a dichotomous type scale and therefore allows factor analysis to be conducted more easily. It also suits the intended purpose of this study to measure the participants’ level of awareness regarding their goals, interests, and abilities.

5.6 DATA ANALYSIS AND INTERPRETATION

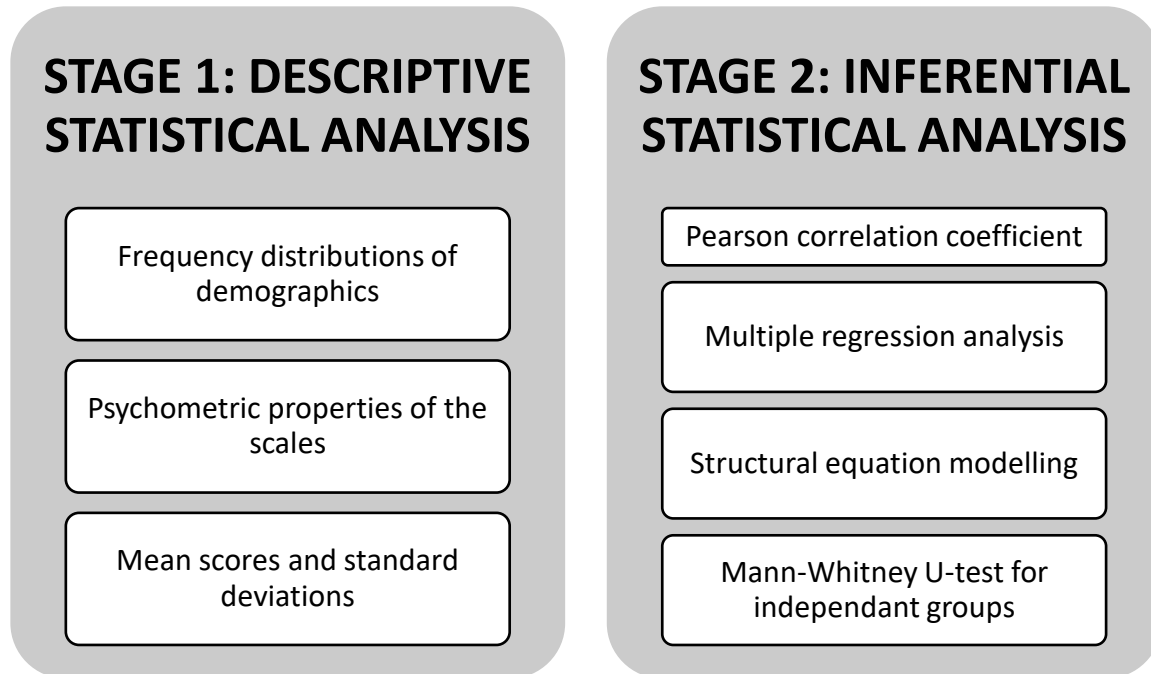
Kerlinger (1986) states that data analysis entails categorising, ordering, manipulating, and summarising data to answer research questions and hypotheses. As the study is of a quantitative nature, the Statistical Package for the Social Sciences (SPSS) programme and Smart PLS were used for statistical data analysis in order to determine the relationship between the variables under study.

The procedure of statistical data analysis consisted of two stages, each consisting of various steps, including descriptive statistical analysis and inferential statistical analysis (Figure 5.4).

In, the following section, the descriptive and inferential statistics that were used to analyse the results obtained are discussed.

Figure 5.1

Process of Data Analysis.



5.6.1 Descriptive Statistical Analysis

Descriptive statistics is a method used to present quantitative descriptions in a manageable form (Babbie & Mouton, 2015). This involves the reduction of data from unmanageable details to manageable summaries that can be presented graphically (Babbie & Mouton, 2015).

Frequency distribution tables were used to determine the demographic characteristics of the sample. Additionally, Cronbach's alpha coefficients were determined for the CAAS, VIM, and MAAS to establish the internal consistency reliabilities of these instruments. Lastly, the means and standard deviations as measured by the CAAS, VIM, and MAAS were determined to describe the sample of the study and to summarise associations among the proposed variables. Babbie and Mouton (2015) describe a mean (M) as the sum of the observed values divided by the number of cases, and the standard deviation (SD) as a measure of the average variation around the mean.

5.6.2 Inferential Statistics

According to Babbie and Mouton (2015), inferential statistics help assess the strength of the relationship between the independent variable (career adaptability), and the dependent variables (mindfulness and vocational identity). Inferential statistics, including correlation analysis, multiple regression analysis, variance-based structural equation modelling, and the t-test for independent groups, were used to answer the research questions of this study.

5.6.2.1 Correlation Analysis

Correlation is concerned with describing the degree and direction of relation between variables (Babbie & Mouton, 2015). The Pearson correlation coefficient, one of the most frequently used methods of correlation analysis, was used to determine the strength and degree of relationship between the variables under study.

5.6.2.2 Multiple Regression Analysis

Multiple regression analysis is one of the most widely used multivariate methods to examine the contribution of independent variables separately or in combination towards the variance of a dependent variable (Howell, 2017). It is a useful technique when examining two or more predictor variables. In essence, multiple regression analysis is useful in determining whether an increase or change in one or more variables results in an increase or change in another variable.

The beta (β) values produced by multiple regression analysis indicate the average amount of increase in the dependant variable when the independent variable increases. A positive correlation indicates that the predictive value of the dependant variable increases when the value of the independent variable increase, and vice versa (Howell, 2017). In the proposed research, multiple regression analysis was used to determine if the scores achieved on mindfulness and the scores achieved on vocational identity influenced the scores achieved on career adaptability.

5.6.2.3 Structural Equation Modelling

Structural equation modelling (SEM) is a key multivariate analysis technique used in the social sciences to investigate and specify direct and indirect relationships among multiple variables (Henseler, Ringle, & Sinkovics, 2009). Given that the purpose of this study was to investigate the dynamic relationships between career adaptability, mindfulness, and vocational identity,

the SEM technique was chosen to analyse the data further. The statistical software program, Smart PLS, was used to evaluate the proposed model and shed light on the direct, indirect, and mediating effects among variables (Wolf et al., 2013).

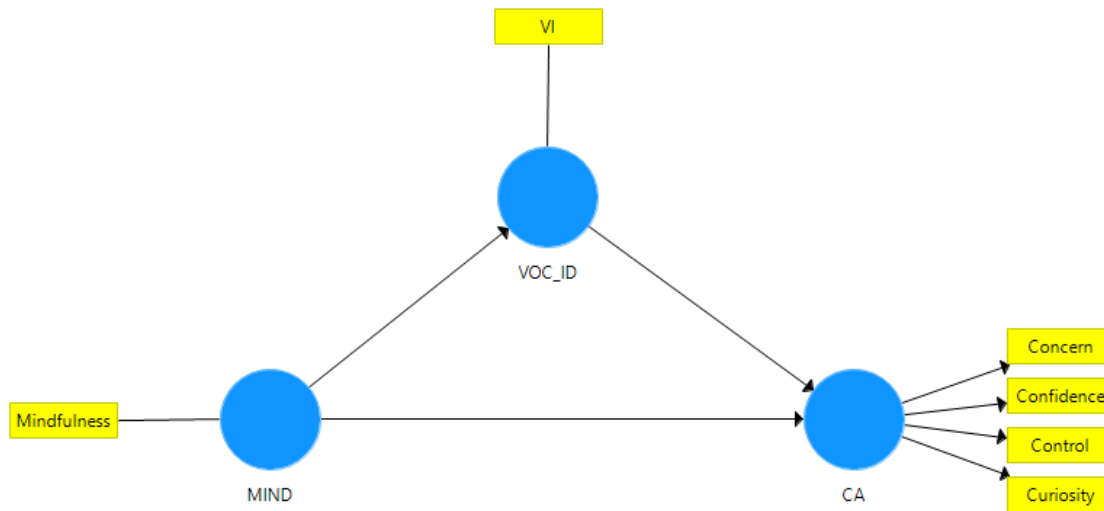
Partial Least Squares (PLS) path analysis is the most prominent representative variance-based SEM technique used to provide estimates of the magnitude and significance of hypothesised causal relationships. As part of SEM, PLS is often referred to as the “soft approach” to test whether a model makes sense and to develop theories. The motivation for using PLS is that it is suitable for the exploration and prediction of variables, and often recommended for testing and validating exploratory models. Moreover, when compared with correlation coefficients, PLS estimates are believed to reveal the strength and direction of the relationships among variables better (Henseler et al., 2009).

PLS path analysis models are outlined formally by two sets of linear equations, including the outer and inner model. According to Henseler et al. (2009), the inner model specifies the relationships between the unobserved or latent variables, whereas the outer model specifies the relationships between a latent variable and its observed or manifest variables. Chin (1998) has developed a catalogue of criteria to consider when assessing PLS models. It is believed that a systematic application of these criteria entails a two-step process encompassing the assessment of the outer and inner model (Henseler et al., 2009).

Although this study did not aim primarily to test the theoretical model, as suggested in Chapter 1, the results of the multiple regression analysis motivated the decision to do so. As such, the PLS SEM technique was utilised to explore the theoretical model (see figure 5.2) in order to determine whether vocational identity served as a mediator in the relationship between career adaptability and mindfulness. A discussion on the theory regarding the proposed model is presented in the last chapter.

Figure 5.2

Conceptual Model of The Study.



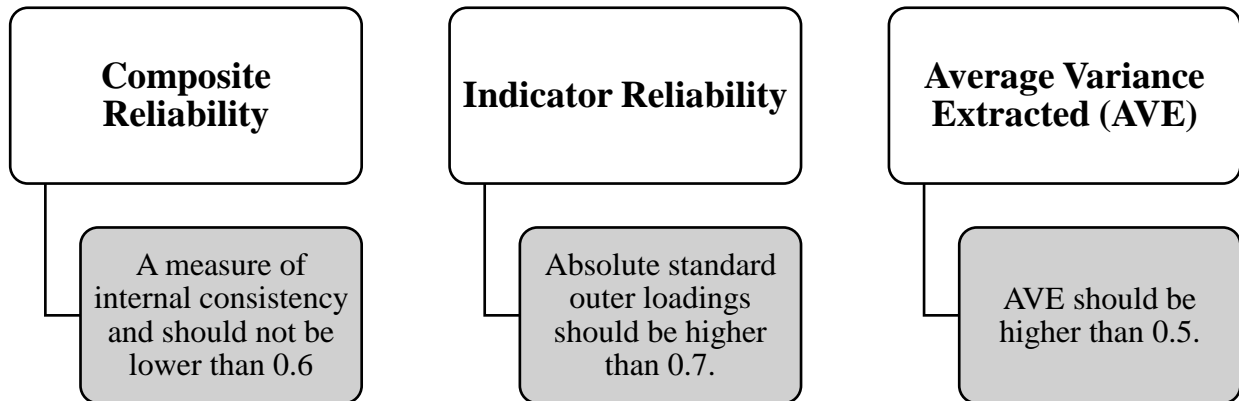
▪ **Outer model evaluation**

In PLS, the outer model is assessed with regard to its reliability and validity. When it comes to reliability, the usual criterion that is considered is the internal consistency reliability. The traditional criterion for measuring internal consistency (Cronbach’s α) assumes that all indicators are equally reliable and tends to provide an underestimation of internal consistency in latent variables in path models. However, PLS provides a measure of composite reliability (Werts, Linn, & Jöreskog, 1974) which takes into account that indicators have different loadings. According to Henseler et al. (2009), composite reliability should not be lower than 0.6. Accordingly, the absolute correlations between a construct and its outer loadings should be higher than 0.7.

For the assessment of validity, convergent validity is established. Henseler et al. (2009) note that convergent validity signifies that a set of indicators represent the same underlying construct. Fornell and Larcker (1981) suggest using the average variance extracted (AVE) as a criterion of convergent validity. According to Henseler et al. (2009), an AVE above 0.05 indicates sufficient convergent validity, indicating that on average the latent variable is able to explain more than half of the variance in its indicators. Figure 5.3 provides a summary of the criteria for a reliable and valid measure.

Figure 5.3

Criteria for Outer Model Evaluation.

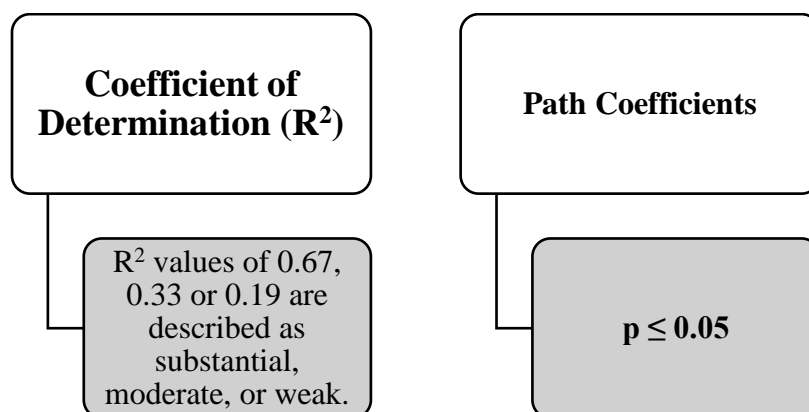


▪ **Inner model evaluation**

The essential criterion for assessing the inner model is the coefficient of determination (R^2) of the latent variable. Chin (1998) describes R^2 -values of 0.67, 0.33, and 0.19 in PLS models as substantial, moderate, and weak. Additionally, path coefficients represent the strength of the relationship between variables, and whether these effects are statistically significant ($p \leq 0.05$). Figure 5.4 provides a summary of the criteria for the inner model evaluation.

Figure 5.4

Criteria for Inner Model Evaluation.



Mediation analysis

According to Cepeda-Carrion, Nitzl, and Roldan (2018), mediation refers to underlying effects that link antecedent and consequence variables. In other words, mediation refers to the

possibility that a third variable influences the relationship between two variables. PLS was also used to analyse the mediation effects in order to determine whether vocational identity mediated the effect of mindfulness on career adaptability.

Nitzl and Cepeda-Carrion (2016) outline a two-step procedure for testing mediating effects in PLS. The first step entails assessing the indirect effect, which provides information about the significance and magnitude of the mediation. Once the indirect effect has been established as significant, one proceeds to the second step of determining the type of effect and/or mediation.

Current literature on mediation outlines two different types of mediation, namely full mediation and partial mediation. Full mediation is indicated in the case where the direct effect is not significant, while the indirect effect is significant (Cepeda-Carrion et al., 2018). In other words, full mediation indicates that the effect of one variable on another is transmitted entirely with the help of another variable. Partial mediation means that the direct and indirect effects between variables are statistically significant.

5.6.2.4 The Mann-Whitney U Test

The Mann-Whitney U Test is a statistical method used to compare two independent groups that do not have a normal distribution, or are not fairly equal in size (Salkind, 2013). As the gender groups were fairly equal in size, a Man-Whitney U test was conducted to determine the secondary research question, whether any statistical significant differences exist with regard to gender and career. When the p-value is below the usual 0.05, a significant difference may be assumed (Howell, 2017).

5.7 CHAPTER SUMMARY

In Chapter 5, the research strategy and design followed in this study was discussed. The sampling and data collection methods as well as data-analysis and -interpretation techniques utilised in this study were outlined. The following chapter presents an analysis of the various descriptive and inferential results obtained.

CHAPTER 6: RESEARCH RESULTS

6.1 INTRODUCTION

The previous chapter contains a discussion on the research methodology used to conduct the research. Chapter 6 presents the research results, more specifically, an overview of the descriptive statistics of the sample, including a presentation of the demographic characteristics of the sample, an analysis of the psychometric properties of the involved scales, and the mean scores and standard deviations for each variable under investigation. This is followed by a presentation on the inferential statistics, including correlation and multiple regression analyses, along with variance-based structural equation modelling and the Mann-Whitney U test.

6.2 DESCRIPTIVE STATISTICS

Descriptive statistics are used to describe the basic characteristics of the sample in numerical terms. This section presents the descriptive statistics of this study in terms of the frequency distributions of the demographic characteristics of the sample, followed by an outline of the mean scores and standard deviations for each of the variables under study, as well as an analysis of the psychometric properties of the scales involved.

6.2.1 Frequency Distributions of Demographics

In this section, the demographic characteristics of the sample, including gender, age, highest academic qualification, years of work experience, and employment status, are presented and discussed.

6.2.1.1 Gender

Table 6.1 presents the gender distribution of the respondents. The results indicate that the majority of the respondents (67.8 %) were female, followed by male respondents (32.2%).

Table 6.1*Frequency Distribution (Gender)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	64	32.0	32.2	32.2
	Female	135	67.5	67.8	100.0
	Total	199	99.5	100.0	
Missing	System	1	.5		
Total		200	100.0		

6.2.1.2 Age

Table 6.2 demonstrates the age distribution of participants. The results show that nearly half (49.5%) of the participants were between the ages of 21 and 25, followed by the 20 or younger age range (24.5%).

Table 6.2*Frequency Distribution (Age)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 or younger	49	24.5	24.5	24.5
	21-25	99	49.5	49.5	74.0
	26-30	33	16.5	16.5	90.5
	31-35	17	8.5	8.5	99.0
	36-40	2	1.0	1.0	100.0
	Total	200	100.0	100.0	

6.2.1.3 Highest Academic Qualification

Table 6.3 presents the frequency distribution on the highest academic qualifications of the participants. It is evident that the majority of participants (52%) have obtained a bachelor's degree, followed participants with an honours degree (19.7%).

Table 6.3*Frequency Distribution (Highest Academic Qualification)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	32	16.0	18.5	18.5
	Bachelor's Degree	90	45.0	52.0	70.5
	Postgraduate Diploma	6	3.0	3.5	74.0
	Honours Degree	34	17.0	19.7	93.6
	Master's Degree	10	5.0	5.8	99.4
	Doctoral Degree	1	.5	.6	100.0
	Total	173	86.5	100.0	
Missing	System	27	13.5		
Total		200	100.0		

6.1.2.4 Employment Status

Table 6.4 indicates that the majority of participants (52.5%) were unemployed, followed by 18.2% of participants being employed full-time at the time of participation

Table 6.4*Frequency Distribution (Employment Status)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full-time	36	18.0	18.2	18.2
	Part-time	31	15.5	15.7	33.8
	Contract	16	8.0	8.1	41.9
	Not employed	104	52.0	52.5	94.4
	Other	11	5.5	5.6	100.0
	Total	198	99.0	100.0	
Missing	System	2	1.0		
Total		200	100.0		

6.2.2 Mean Scores and Standard Deviations

This section reports on the mean scores and standard deviations for each of the variables under investigation.

6.2.2.1 Career Adaptability

Table 6.5 summarises the mean scores and standard deviations for the overall, as well as each of the four subscales of the CAAS. Overall, the sample indicated slightly above-average levels

of career adaptability with an overall mean score (M) of 3.61 and a standard deviation (SD) of 0.60. The means for the four dimensions (concern, control, curiosity, and confidence) ranged between 3.45 and 3.70. As shown in Table 6.5, the highest means score obtained was for the concern subscale (M = 3.70; SD = 0.70), whilst the lowest mean scores obtained was for the curiosity subscale (M = 3.45; SD = 0.77).

Table 6.5

Mean Scores and Standard Deviations (Career Adaptability)

	N	Minimum	Maximum	Mean	Std. Deviation
Concern	200	2.00	5.00	3.7026	.70466
Control	200	2.00	5.00	3.6782	.69079
Curiosity	200	2.00	5.00	3.4506	.76990
Confidence	200	2.00	5.00	3.6083	.76904
Career Adaptability	200	2.00	5.00	3.6099	.60370
Valid N (list-wise)	200				

6.2.2.2 Vocational Identity

Table 6.6 presents the mean score and standard deviation for the variable vocational identity. The results point to the sample having slightly above-average levels of vocational identity. As can be seen, vocational identity presents an average mean score of 3.78 and a standard deviation of 0.74.

Table 6.6

Mean Scores and Standard Deviations (Vocational Identity)

	N	Minimum	Maximum	Mean	Std. Deviation
Vocational Identity (VIM)	200	2.00	5.00	3.7783	.73947
Valid N (list-wise)	200				

6.2.2.3 Mindfulness

Table 6.7 shows that the results of the MAAS indicate that the sample demonstrated an average level of mindfulness with an average mean score of 3.03 and a standard deviation of 0.89. It should be reiterated that lower scores on the MAAS indicate higher levels of mindfulness (hence, the negative correlation reported later in this chapter).

Table 6.7*Mean Scores and Standard Deviations (Mindfulness)*

	N	Minimum	Maximum	Mean	Std. Deviation
Mindfulness	200	1.00	6.00	3.0343	.89033
Valid N (list-wise)	200				

6.2.3 Psychometric Properties

This section presents the psychometric properties, including the reliability, of the involved scales. Reliability refers to the extent to which the items of a measure or a scale are consistent with one another in order to ensure that the instrument would yield the same results consistently (Babbie & Mouton, 2015). Cronbach's alpha coefficient was used to test the reliability of the involved scales. Babbie and Mouton (2015) state that Cronbach's alpha coefficient ranges between 1 (signifying perfect internal reliability) and 0 (signifying no internal reliability). According to Moerdyk (2015), Cronbach's alpha scores above 0.70 indicate acceptable reliability.

6.2.3.1 Reliability of the scales

The reliability estimates for the involved scales are reported in Table 6.8.

Table 6.8*Reliability Estimates*

Construct	Cronbach's Alpha	Number of Items
Career Adaptability (Total)	.920	24
Concern	.778	6
Control	.778	6
Curiosity	.825	6
Confidence	.873	6
Mindfulness	.873	15
Vocational Identity	.950	22

As indicated in Table 6.8, the overall CAAS scale obtained a Cronbach's alpha coefficient of 0.920. Moreover, all the subscales of the CAAS indicate acceptable reliability ranging from 0.778 (Concern and Control) to 0.873 (Confidence). The VIM, as a composite measure of

vocational identity, indicated acceptable and satisfactory levels of reliability, with a Cronbach alpha coefficient of 0.950. In addition, the MAAS, as a composite scale of mindfulness, also indicated an acceptable reliability estimate of 0.873. In essence, all the scales used for this study indicated acceptable levels of reliability, as all Cronbach alpha coefficients were greater than 0.70.

With acceptable reliability scores established for each of the three involved scales, the researcher continued to use inferential statistics to answer the proposed research questions of this study.

6.3 INFERENCE STATISTICS

This section outlines the results obtained on the inferential statistics of this study, including the correlations, multiple regression analyses, PLS SEM, and the Mann-Whitney U test. More specifically, correlation and multiple regression analyses, as well as PLS SEM results, are presented and discussed in relation to the primary research question: Do mindfulness and vocational identity predict career adaptability amongst graduates in the early career stage? The Mann-Whitney U test results are presented and discussed in line with the secondary research question: Do differences with regard to gender exist in levels of career adaptability among graduates in the early career stage?

6.3.1 Research Question 1

The subsequent section will discuss the research findings with regards to the primary research question: Do mindfulness and vocational identity predict career adaptability amongst graduates in the early career stage? The results of the correlation analysis, multiple regression analysis as well as structural equation modelling will be presented and discussed.

6.3.1.1 Correlations

Correlation determines the strength and direction of relationships among variables (Babbie & Mouton, 2015). Pearson correlations were used to investigate the relationship between the variables under study.

– Career adaptability and vocational identity

Table 6.9 shows that all the dimensions of career adaptability correlated positively and significantly with vocational identity. More specifically, the correlation between the concern dimension of career adaptability and vocational identity seems to be the highest ($r = 0.307$; p

= 0.000). The lowest correlation was found between the control dimension of career adaptability and vocational identity ($r = 0.213$; $p = 0.002$).

Table 6.9

Correlations between career adaptability and vocational identity

		Concern	Control	Curiosity	Confidence	Career Adaptability
Vocational Identity (VIM)	Pearson Correlation	.307**	.213**	.224**	.276**	.310**
	Sig. (2-tailed)	.000	.002	.001	.000	.000
	N	200	200	200	200	200

** . Correlation is significant at the 0.01 level (2-tailed).

– Career adaptability and mindfulness

Table 6.10 indicates that overall career adaptability statistically correlated non-significantly and negatively with mindfulness ($r = -0.123$; $p = 0.84$). Moreover, Table 6.10 presents that all the dimensions of career adaptability correlated negatively with mindfulness, with varying results regarding the significance of the correlations. Moreover, the correlation between mindfulness and the career adaptability dimensions of concern ($r = -0.028$; $p = 0.698$); curiosity ($r = -0.129$; $p = 0.068$); and confidence ($r = -0.087$; $p = 0.221$) indicated statistically non-significant negative correlations. However, the career adaptability dimension of control ($r = -0.159$; $p = 0.024$) indicated a statistically significant negative correlation.

Table 6.10

Correlations between Career Adaptability and Mindfulness

		Concern	Control	Curiosity	Confidence	Career Adaptability
Mindfulness	Pearson Correlation	-.028	-.159*	-.129	-.087	-.123
	Sig. (2-tailed)	.698	.024	.068	.221	.084
	N	200	200	200	200	200

*. Correlation is significant at the 0.05 level (2-tailed).

6.3.1.2 Multiple regression analysis

Table 6.11 indicates that the coefficient of determination is 0.097. As such, the variables vocational identity and mindfulness explain 9.7% of the variance in the variable of career adaptability. From Table 6.12, it is clear that the regression model is statistically significant ($F = 10.638$; $p = 0.000$). Furthermore, Table 6.13 indicates that vocational identity is the only

statistically significant predictor for career adaptability ($\beta = 0.299$; and $p \leq 0.000$). On the other hand, mindfulness does not seem to be a statistically significant predictor of career adaptability ($\beta = -0.041$; and $p = 0.562$).

Table 6.11

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.312 ^a	.097	.088	.57643

a. Predictors: (Constant), Vocational Identity (VIM), Mindfulness

Table 6.12

ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.069	2	3.535	10.638	.000 ^b
	Residual	65.457	197	.332		
	Total	72.527	199			

a. Dependent Variable: Career Adaptability

b. Predictors: (Constant), Vocational Identity (VIM), Mindfulness

Table 6.13

Coefficients – Multiple Regression Analysis

	Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.773	.295		9.404	.000
	Mindfulness	-.028	.048	-.041	-.580	.562
	Vocational Identity (VIM)	.244	.057	.299	4.242	.000

a. Dependent Variable: Career Adaptability

6.3.1.3 Structural Equation Modelling – PLS Path Analysis

Although this study primarily did not aim to test the theoretical model, as suggested in Chapter 1, the results of the multiple regression analysis motivated the decision to do so. As such, the PLS SEM technique was utilised to explore the theoretical model in order to determine whether vocational identity served as a mediator in the relationship between career adaptability and mindfulness. This section provides a presentation and evaluation of the quality criteria associated with the outer and inner models.

6.3.1.3.1 Outer model evaluation

In estimating the reliability and validity of the model, the PLS algorithm was run for each of the variables in the proposed model. Table 6.10 provides a presentation of the results obtained, followed by a discussion on the reliability and validity of the associated variables.

– Construct reliability and validity

Table 6.14

Outer Model Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
CA	0.840	0.849	0.892	0.674
MIND	1.000	1.000	1.000	1.000
VOC_ID	1.000	1.000	1.000	1.000

Table 6.14 indicates that both Cronbach's α (0.840) and the composite reliability (0.892) for career adaptability were above the minimum value of 0.6 for acceptable reliability. Concerning validity, the AVE value for career adaptability was 0.674, which was higher than the minimum required value of 0.5. Therefore, it can be deduced that the variable career adaptability explains approximately 67% of the variance of its indicators in the proposed model. Both vocational identity and mindfulness were treated as one-dimensional; hence, Cronbach's α , the composite reliability value, and the AVE value for all the quality criteria were 1.

6.3.1.3.2 Inner model evaluation

– Path coefficients

Table 6.15 presents the results obtained regarding the path coefficients and their associated p-values of the inner model, followed by a discussion of the results.

Table 6.15

Inner Model Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
MIND -> CA	-0.031	-0.029	0.079	0.391	0.696
MIND -> VOC_ID	-0.274	-0.273	0.063	4.348	0.000
VOC_ID -> CA	0.308	0.313	0.080	3.836	0.000

The path coefficient for the relationship between vocational identity and career adaptability is 0.308, with a p-value of 0.00. Since the p-value is smaller than 0.05, the relationship between career adaptability and vocational identity can be interpreted as statistically significant. The

path coefficient between career adaptability and mindfulness is -0.031 with a p-value of 0.696, which is above the required minimum of 0.05. As such, the relationship between career adaptability and mindfulness can be interpreted as a statistically non-significant path. Interestingly, the relationship between mindfulness and vocational identity obtained a path coefficient of -0.274 with a p-value of 0.00, signifying a statistically significant relationship between the two constructs.

– **R² values**

The R² value refers to the overall effect size measure of the structural model and serves as an indication of the percentage of variance in an indicator that is explained by the model. A discussion of the R² values obtained for the inner model is presented in Table 6.16.

Table 6.16

Inner Model R² Values

	R Square	R Square Adjusted
CA	0.101	0.092
VOC_ID	0.075	0.070

The R² value of career adaptability = 0.101. Thus, the model explains approximately 10 % of the variance in career adaptability.

6.3.1.3.3 Mediation Analysis

A key point in mediation analysis is the evaluation of the significance of the indirect effect. As presented in Table 6.17, the indirect effect is statistically significant (p = 0.004;), therefore, there seems to be a mediating effect.

Table 6.17

Mediation Analysis Specific Indirect Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
MIND -> VOC_ID -> CA	-0.084	-0.085	0.029	2.894	0.004

With the significance of the indirect effect established, the direct effects were established to determine the type of mediation effect and its magnitude. Table 6.17 shows that both the total effects between vocational identity and career adaptability (p = 0.000) as well as the direct effect between mindfulness and vocational identity (p = 0.000) yielded significant results.

However, the direct effect between mindfulness and career adaptability indicate a non-significant effect with a p-value of 0.150.

Given that the indirect effect was statistically significant and the direct effect between mindfulness and career adaptability was statistically non-significant, a full mediation can be defended. In addition, the total variance accounted for (VAF) indicates that almost 87% of the total effect is due to the indirect effect.

Table 6.18

Mediation Analysis Total Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
MIND -> CA	-0.115	-0.115	0.080	1.442	0.150
MIND -> VOC_ID	-0.274	-0.273	0.063	4.348	0.000
VOC_ID -> CA	0.308	0.313	0.080	3.836	0.000

With the above-mentioned results in mind, the hypothesis related to the primary research question (Do mindfulness and vocational identity predict career adaptability amongst graduates in the early career stage?) is partially accepted. Although it has been found that vocational identity has a direct influence on career adaptability, it has not been found that mindfulness has a direct influence on career adaptability. However, the PLS results do indicate that mindfulness affects career adaptability via vocational identity.

6.3.2 Research Question 2

The Mann-Whitney U test results are presented and discussed in line with the secondary research question: Do differences exist in levels of career adaptability among graduates in the early career stage with regard to gender?

6.3.2.1 Mann –Whitney U Test

Based on the results displayed in Table 6.19 and Table 6.20, there is no statistically significant difference in overall career adaptability scores with regard to gender (Mann-Whitney U = 3860.500; p = 0.226). Furthermore, the mean rank for male participants (107.18) was higher than the mean rank for female participants (96.82) was on overall career adaptability.

Table 6.19*Gender Differences with Regard to Career Adaptability (Mean Ranks)*

	Gender	N	Mean Rank	Sum of Ranks
Concern	Male	64	104.93	6715.50
	Female	135	97.66	13184.50
	Total	199		
Control	Male	64	100.35	6422.50
	Female	135	99.83	13477.50
	Total	199		
Curiosity	Male	64	109.08	6981.00
	Female	135	95.70	12919.00
	Total	199		
Confidence	Male	64	108.82	6964.50
	Female	135	95.82	12935.50
	Total	199		
Career Adaptability	Male	64	107.18	6859.50
	Female	135	96.60	13040.50
	Total	199		

Table 6.20*Mann-Whitney U Test Results*

	Concern	Control	Curiosity	Confidence	Career Adaptability
Mann-Whitney U	4004.500	4297.500	3739.000	3755.500	3860.500
Wilcoxon W	13184.500	13477.500	12919.000	12935.500	13040.500
Z	-.833	-.059	-1.534	-1.492	-1.211
Asymp. Sig. (2-tailed)	.405	.953	.125	.136	.226

a. Grouping Variable: Gender

Owing to the results of the Mann-Whitney U test indicating that there are no statistical significant differences among males and females with regard to career adaptability, the secondary research question and related hypothesis is rejected.

6.4 CHAPTER SUMMARY

This chapter presented the results of the study, including the descriptive and inferential statistics. Regarding the reliability estimates, it was found that all three scales used had

acceptable reliabilities. The outcomes of the correlational analysis indicated that career adaptability and its subdimensions demonstrated a statistically significant positive correlation with vocational identity. However, the same cannot be said for the correlation between career adaptability and mindfulness, which was predominantly non-significant. Multiple regression analyses indicated that the variables of vocational identity and mindfulness explained 9.7% of the variance in career adaptability, although vocational identity was found to be the only significant predictor of career adaptability. Interestingly, the PLS results indicated that mindfulness significantly influences career adaptability via vocational identity, thus defending a full mediation. The following chapter provides a more detailed discussion of the results along with a review of the limitations of this study and recommendations for future research.

CHAPTER 7: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

This chapter begins with a discussion on the theoretical and empirical conclusions drawn from this study. It further highlights the limitations of this study, followed by recommendations for future research.

7.2 CONCLUSIONS

The following section provides a discussion on the theoretical and empirical conclusions drawn from this study, with specific focus on the following aims outlined in Chapter 1, namely to determine whether:

1. mindfulness and vocational identity predict career adaptability among graduates in the early career stage; and
2. differences exist in the levels of career adaptability with regard to gender among graduates in the early career stage.

7.2.1 Theoretical Conclusions

The general aim of this study was to investigate the relationship between career adaptability, vocational identity, and mindfulness as a means to provide practitioners with evidence as to how to assist graduates in the early career stage to manage their careers in the contemporary world of work effectively. To do so, this study sought to conceptualise the constructs of career adaptability, vocational identity, and mindfulness theoretically.

7.2.1.1 Conceptualising career adaptability

Savickas's (2005, 2013) CCT was used as a theoretical framework to conceptualise career adaptability. The CCT describes individuals as active agents in the construction of their own career development. Savickas (2005) defines career adaptability as "a psychosocial construct that denotes an individual's readiness and resources for coping with current and imminent vocational development tasks, occupational transitions and personal traumas" (p. 51). From the career construction perspective, career adaptability consists of four psychosocial dimensions known as concern, control, curiosity, and confidence. These dimensions incorporate a set of explicit attitudes, beliefs, and competencies that represent an individual's readiness to cope

with current and anticipated work demands and to manage developmental tasks more effectively (Sharf, 2013). More specifically, the psychosocial dimensions are summarised as follows:

- Concern refers to the degree to which an individual is future orientated and proactive in preparing for future career tasks and challenges.
- Control refers to one’s perceived responsibility to create preferable and alternative solutions and ideas regarding one’s self and career-related decisions.
- Curiosity comprises exploring potential future selves and opportunities while considering the influence of various work roles and environments.
- Confidence refers to the belief that one is capable of transforming career goals into reality and conquer any obstacles successfully.

7.2.1.2 Conceptualising vocational identity

For the purpose of this study, vocational identity was conceptualised using Savickas’s (2005, 2013) CCT. Within the CCT, vocational identity is regarded as being constructed by means of an individual’s career life story, which comprises a series of stories about the self in a particular role and acts as a cognitive compass that motivates individuals to adapt actively in order to realise opportunities that match their career aspirations (Coetzee et al., 2016).

Savickas (2005, 2013) draws on the works of Holland (1973) to conceptualise vocational identity as socially constructed attitudes, interests, abilities, and values, which can be used to explain why individuals engage in certain types of career behaviour. Additionally, similar to Super (1993), Savickas (2005, 2013) identifies forming a personally meaningful vocational identity as a key life task during the early career establishment phase.

Various scholars have acknowledged the influential role of vocational identity in the process of career development. For instance, a clear sense of vocational identity may serve as a guide during career transitions and in identifying career opportunities (Santisi, Magnano, Platania, & Ramaci, 2018) and represents a key driver for employability (Savickas, 2012).

According to CCT, career adaptability and vocational identity are two critical meta-competencies for career development in the twenty-first century (Savickas, 2002). Combined, these two meta-competencies serve to provide individuals with a sense of when it is time to change and whether they are capable of change (Haibo et al., 2017). In this sense, vocational

identity is regarded as supporting successful career adaptability formation. Thus, it was hypothesised that a clear picture regarding one's goals, interests, and abilities will enable one to manage current and anticipated career adjustments better and integrate one's self-concept with the working role.

7.2.1.3 Conceptualising mindfulness

For the purpose of this study, mindfulness was conceptualised using Brown and Ryan's (2003) definition of mindfulness as a dynamically changing state that entails attention to and awareness of present events and experiences. Given Brown and Ryan's (2003) definition as the presence or absence of present moment orientation, mindfulness was regarded as a one-dimensional construct.

Previous research has related mindfulness empirically to various positive career-related outcomes. In the cognitive domain, research has found consistently that mindfulness influences brain activity significantly, more specifically the area of the brain responsible for critical functional capabilities such as learning, memory, affective processing, emotion regulation, forming perspective, and facilitating adaptive responses (Hyland et al., 2015).

The present moment orientation of mindfulness was explained to aid career adaptability in the sense that it allows greater sensitivity to one's environment and more openness to new information, which assists individuals to notice and prepare better for changes in the environment (Brown et al., 2007). Furthermore, mindfulness was described to aid individuals in being more aware of themselves in various situations, resulting in behaviour that is more purposeful (Langer & Moldoveanu, 2000).

7.2.2 Empirical Conclusions

The following section provides a discussion of the research results that were reported in Chapter 6, with specific focus on the two main aims outlined in Chapter 1.

7.2.2.1 Research Question 1: The empirical relationship between vocational identity, mindfulness, and career adaptability

Correlational analysis indicated a statistically significant positive correlation between vocational identity and career adaptability (along with its four dimensions). Similarly, the results from the multiple regression analysis indicated that vocational identity is the only statistically significant predictor of career adaptability (along with its four dimensions). These

findings are consistent with that of Savickas and Porfeli (2012), who found that career adaptability correlated strongly with vocational identity. Similarly, Negru-Subtirica, and Pop (2015) found that vocational identity was closely related to the development of career adaptability, and that vocational self-doubt was related to lower levels of career adaptability.

These findings are in line with the CCT, which states that career success is gained by the ability to express appropriate behaviour in overcoming changing conditions and that vocational identity provides direction for individuals' careers and assists in developing career adaptability (Ebenehi et al., 2016). Moreover, the findings indicate that having a clear and stable picture of one's goals, interests, and abilities (vocational identity) appears to increase one's motivation and willingness to plan for one's future (career concern), take responsibility for one's career and work related experiences (career control), explore one's environment for opportunities (curiosity), and lead to greater confidence in mastering the developmental tasks and challenges associated with one's career (confidence).

Additionally, the results of the current study indicated the correlation between the concern dimension of career adaptability and vocational identity to be the highest. Similarly, Taber and Blankemeyer (2014) examined the relationships between vocational identity and time perspective among a sample of emerging adults and found that individuals with higher levels of vocational identity also tended to display a higher level of future career concern, which was associated with clarity of career goals. These findings are in line with the CCT, which states that vocational identity serves as an internal compass, which is particularly important in providing direction and facilitating self-directed career development (Hall, 2002). Moreover, the findings indicate that individuals with higher levels of vocational identity are more likely to display concern for and participate actively in managing career-related tasks and challenges. Albien (2018) explains that a well-established vocational identity fosters the concern dimension of career adaptability in the sense that it allows one to be more aware of one's desired future self and in turn guides the identification of goals and behaviours to achieve that self. In essence, the capacity to leverage on one's vocational identity as a guide when establishing goals and making career decisions may be critical in identifying and adapting to career opportunities (Coetzee, 2017).

On the other hand, no statistically significant correlation or relationship was found between mindfulness and career adaptability. Considering the fact that no other empirical study has been

conducted on the relationship between career adaptability and mindfulness, no connections can be made to other studies.

Interestingly, the PLS results indicated that vocational identity acted as a significant mediator between mindfulness and career adaptability. Given that the indirect effect was statistically significant and the direct effect between mindfulness and career adaptability was statistically non-significant, a full mediation was observed. In short, the result pointed to the possibility that mindfulness influences career adaptability via vocational identity.

Literature indicates the ability of mindfulness to bring about a view that lies close to the core of who you believe yourself to be, what you value in life, and where you see yourself going (Kabat-Zinn, 1994), and act as a means to clarify one's values and recognise what is meaningful and important (Shapiro et al., 2006). A number of research findings suggest that mindfulness may be beneficial for increasing individual clarity of self-knowledge (Santorelli, 1992). More specifically, mindfulness has been proven to facilitate identity formation. For example, Galles et al. (2018) found that higher levels of mindfulness were significantly associated with higher levels of vocational identity. Taber et al. (2014) found that higher levels of vocational identity were largely associated with the present time perspective and mindful awareness of the present. The findings suggest that awareness of one's thoughts and emotions, along with an attitude of openness and acceptance, relates to a clearer and more stable picture of one's goals, interests, and talents. In turn, having a clear sense of one's goals, interests and talents results in vocational commitment, which predicts career adaptability in time (Negru-Subtirica et al., 2015).

With the above-mentioned results in mind, the hypothesis related to the primary research question of whether mindfulness and vocational identity predict career adaptability amongst graduates in the early career stage is accepted partially.

7.2.2.1 Research Question 2: Differences between males and females with regard to career adaptability

Research on gender differences with regard to career adaptability is inconclusive. For instance, research conducted by Chan et al. (2015) found that males displayed higher levels of career adaptability than females did. In contrast, research conducted by Coetzee and Harry (2015) found that females displayed higher levels of career adaptability than their male counterparts did.

The results of the current study indicated that males displayed higher levels of career adaptability than females did. However, the difference was not found to be statistically significant. Various researchers have found that males display higher levels of career adaptability than females do (Chan et al., 2015; Han & Rojewski, 2015). It is argued that in traditionally male-dominated societies, males are likely to display higher levels of career adaptability owing to the beliefs that males advance faster in their careers than females do due to traditional gender roles.

Regardless, the non-significant difference is in line with the findings of Maggiori et al. (2013), who found no significant relationship between gender and career adaptability. Hirchi (2009) also found that gender does not affect the development of career adaptability. It is argued that a possible explanation for the insignificant finding may be due to the increased focus on employment equity where females and males are given equal opportunities to participate and succeed in the labour market.

With the abovementioned discussion of the results in mind, the secondary research question and hypothesis are not accepted, namely that there are no statistical significant differences between males and females with regard to career adaptability.

7.3 LIMITATIONS OF THE STUDY

The following limitations are noted with regard to the current study:

- The results of the current study represented a relative small heterogeneous sample. As such, caution should be exercised in terms of generalising the findings to the broader population of individuals in the early career stage.
- A convenience sampling method was used to gather participants. Therefore, it was not possible to ensure that the sample was representative in terms of the gender groups, which further limits the generalisability of the results to the broader population. The use of a random sampling technique may have improved the generalisability of the findings.
- The sample consisted of graduates associated with one university in South Africa; hence, the results cannot be accepted for graduates associated with other universities.
- This study focussed predominantly on graduates in the early career stage; therefore, the results cannot be generalised to a sample with different demographics.

- Because this study utilised a self-report methodology, the potential risk of common method bias should be considered.

Despite the above-mentioned limitations, it can be concluded that this study shows promise for the analysis of the relationships between career adaptability, vocational identity, and mindfulness, and can be used as a basis for understanding the dynamic relationships between the measured variables.

7.4 RECOMMENDATIONS

With the research conclusions and limitations in mind, this section outlines recommendations for the field of career psychology as well as future research.

7.4.1 Recommendations for the Field of Career Psychology

Based on the findings of this study, the following recommendations are made for the field of career psychology:

- To deal with the uncertainty associated with the contemporary world of work, career counsellors should consider interventions that are theoretically grounded in the contemporary career construction counselling approach to advance subjective and contextually situated understandings of career behaviours (Maree, 2010).
- In the South African context, interventions that promote and enhance career adaptability skills and competencies may have an important function in supporting career adaptability and employability (Maree, 2012). Career counsellors should consider interventions to facilitate the development of vocational identity in order to enhance the career adaptability of graduates in the early career stage. For example, Albien (2018) developed a life-designing intervention entitled *Shaping Career Voices*, which consists of six stages focussed on increasing individuals' self-awareness and adaptability by means of the completion of a career workbook covering each of the dimensions of career adaptability and specific exercises to facilitate reflection, self-awareness and meaning making.
- The significant positive correlation between mindfulness and vocational identity highlights the importance of considering mindfulness in a career development context. Mindfulness techniques should be considered as means to assist individuals to gain self-insight and in turn to respond better to the challenges and transitions they are dealing with.

7.4.2 Recommendations for future research

Based on the current study, the following recommendations are made for future research:

- As this study consisted of a relatively small heterogeneous sample size, further research with a larger sample size that is more representative in terms of demographic variables is recommended.
- This research focussed only on graduates in the early career stage. Future studies could consider investigating the relationships among the variables in a different sample, for instance individuals on a different skill level or individuals in different stages in their career development.
- The current study focussed only on two possible variables (vocational identity and mindfulness) influencing career adaptability. Moreover, the regression and PLS models of the current study explained only 10% of the variance in career adaptability. Given the possibly vital effects of career adaptability on positive career development, more research regarding predictors of career adaptability development is of great consequence (Ebenehi et al., 2016). In the past decade, numerous studies aimed to establish which variables influence the development of career adaptability. For instance, in investigating positive psychological traits as possible predictors of career adaptability on emerging adults, Buyukgoze-Kavas (2015) found moderate to strong correlations between career adaptability and the variables hope, resilience, and optimism. Additionally, a study conducted by Coetzee et al. (2015) in South Africa among human resource professionals found that lifelong learning capacities, problem solving, and interactive skills significantly predict career adaptability. Many other intrapersonal, interpersonal, and environmental factors may have a significant effect on career adaptability. Therefore, it is recommended that future research should consider other variables that may influence career adaptability.
- The use of alternative research methodologies, including both quantitative and qualitative approaches is recommended in order to gain more insight into the relationships between the variables. A possible viable alternative research design may be to use a mixed-method, experimental pre-test post-test design with a standardised career intervention to determine the relationships among the variables.
- Since the VIM is a relatively newly developed measure of vocational identity and the majority of studies use Holland et al.'s (1980) My Vocational Situation (MVS) to measure

vocational identity, it is recommended that additional studies be undertaken to investigate the psychometric properties of the VIM and its appropriateness for use in the South African population.

7.5 CHAPTER SUMMARY

This chapter presented a discussion on the results in line with the research questions of the study. In summary, it was determined vocational identity correlated significantly with career adaptability and its sub dimensions. Similarly, the results from the multiple regression analysis indicated that only vocational identity significantly predicted career adaptability and its sub dimensions. More specifically, it was found that vocational identity predicted the concern dimension of career adaptability the most. On the other hand, it was not found that mindfulness significantly influenced career adaptability directly. However, the PLS results indicated a significant relationship between mindfulness and vocational identity, which led to a mediation analysis indicating that mindfulness influenced career adaptability via vocational identity. Furthermore, no differences were found between males and females with regard to career adaptability.

The chapter also focussed on the limitations of and recommendations from the study. Limitations to this study included the relatively small heterogeneous sample, the convenience sampling method followed, and the fact that the study focussed only on graduates in the early career stage associated with one university in South Africa, which limits the generalisability of the findings. Recommendations were made to replicate the study with a larger sample size that is more representative in terms of demographics. Additionally, alternative research methodologies such as an experimental pre-test post-test design with a standardised career intervention was proposed in order to investigate the dynamic relationships between the variables in greater depth. Lastly, the study also recommended that additional studies be undertaken to determine the psychometric properties and appropriateness of use of the relatively newly developed VIM in the South African context.

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